

# **Draft Scoping Report in support of a Waste Management License for the Operation of the existing Jan Kempdorp Landfill, Phokwane Local Municipality, Northern Cape**



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# Executive Summary

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## **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 licenced. 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 licenced during the 2014/15 financial year. The licencing of the Jan Kempdorp 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 Jan Kempdorp Landfill (the Project), on behalf of the Phokwane LM.

## **PROJECT AREA**

The existing Jan Kempdorp Landfill is located approximately 4 km east of the Central Business District (CBD) of Jan Kempdorp. Although Jan Kempdorp itself is situated within the Phokwane LM, Northern Cape, the landfill site is situated outside of the town within the Lekwa Teemane LM, North West Province.

The landfill is situated on Farm Guldenskat 36 Portion 0, and is accessed from the provincial R506. The Jan Kempdorp cemetery is situated directly to the north of the landfill, with an agricultural water canal located to the west. Agricultural activities are conducted to the west of the water canal associated with the Vaal-harts water scheme, with vacant land making up the remainder of the surrounding areas.

## **PROJECT DESCRIPTION**

The existing unlicensed Jan Kempdorp Landfill is operated by the Phokwane LM, the applicant for the proposed WML. However, the Lekwa Teemane LM is the landowner, due to the landfills location within the Lekwa Teemane LM, North West Province.

Although no record keeping of the influx of waste is being done, it is estimated that the site receives 60 tons of domestic waste and 30 tons of builder's rubble per week. Garden waste is estimated at less than 10 tons per week. 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 North West Department of Rural, Environment and Agricultural Development (NW READ) 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 16 November 2015 to 6 January 2016:

Venue	Address
Phokwane LM Offices: Jan Kempdorp	Henry Ferreira Street, Jan Kempdorp
Jan Kempdorp Public Library	Henry Ferreira Street, Jan Kempdorp

Ms Bongji Shinga from AECOM can be contacted on bongji@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. At present, it is not anticipated that specialist studies are required to be conducted in support of the EIA Process. The main reasons being that:

- The project entails the licensing of an existing operational landfill site;
- The licensing process would not entail extending the existing landfill beyond its existing footprint;
- The location of the existing landfill in relation to the nearest human settlement / town;
- The location of the landfill within a non-endangered environment; and,
- The semi-arid to arid conditions of the geographical location of the existing landfill.

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 Department of Water and Sanitation (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 NW READ 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.

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## List of Abbreviations

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



<b>SAWS</b>	South African Weather Services
<b>SDF</b>	Spatial Development Framework
<b>SIA</b>	Social Impact Assessment
<b>WCMR</b>	Waste Classification Management Regulations
<b>WML</b>	Waste Management License
<b>WUL</b>	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 licenced. 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 licenced during the 2014/15 financial year. The licencing of the Jan Kempdorp 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 Jan Kempdorp Landfill (the Project), on behalf of the Phokwane LM.

The existing unlicensed Jan Kempdorp Landfill is operated by the Phokwane LM, the applicant for the proposed WML. However, the Lekwa Teemane LM is the landowner, due to the landfills location within the Lekwa Teemane LM, North West Province.

Although no record keeping of the influx of waste is being done, it is estimated that the site receives an estimated amount per week of between 60 tons of domestic waste and 30 tons of builder's rubble. Garden waste is estimated at less than 10 tons per week. Waste generated by farming activities in the surrounding areas is also disposed of at the existing landfill. Thus, it is anticipated that hazardous waste may also be disposed of at the existing Jan Kempdorp Landfill.

## 1.3 The Environmental Impact Assessment Process

The proposed 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 North West Department of Rural, Environment and Agricultural Development (NW READ) in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) (NEMWA). A copy of the Waste Management Licence (WML) application is contained in Appendix B. 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 Project, 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 NW READ, 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. A S&EIR application process 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 Project 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. This Draft Scoping Report is available for public comment over a period of 30 days (excluding school and public holidays), from 16 November 2015 to 6 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. All comments received will be captured in a Comment and Response Report (CRR) and included in the Final Scoping Report submitted to the DENC for approval.

### **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 (excluding school and public holidays). The CRR will be updated with all comments received during this period and included within the Final EIA Report submitted to the NW READ for decision-making on the application.

### **1.3.3 Decision-Making Phase**

The Final EIA Report is submitted to NW READ and reviewed by officials. A WML is drafted and issued with conditions that the Phokwane LM must adhere. All I&APs will be notified of the decision and appeal provisions. Should I&APs or the Phokwane 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 Scoping Report is to document the outcomes of the Scoping Phase, for submission to the NW READ 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 the submission of the Final Scoping Report to the NW READ, I&APs are given an opportunity to review the Draft Scoping Report (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 the Project, have been identified for this S&EIR application 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 and Northern Cape Department of Environment and Nature Conservation (DENC) on 17 August 2015 to identify activities triggered and studies to be conducted.
- Public Participation Process: 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 Phokwane LM is applying for a WML for the operation of the existing unlicensed Jan Kempdorp Landfill. Details of the Applicant are provided in Table 2-1.

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

<b>Applicant</b>	<b>Phokwane Local Municipality</b>
<b>Contact Person</b>	Mr Bafedile Shadrack Lenkoe
<b>Postal Address</b>	Private Bag X3, Hartswater, 8570
<b>Telephone</b>	(053) 474 9700
<b>Fax</b>	(053) 474 1768
<b>E-mail Address</b>	<a href="mailto:bslenkoe@ncpg.gov.za">bslenkoe@ncpg.gov.za</a>
<b>Applicant's Representatives</b>	
<b>Mr M Mojaki</b>	Unit Manager: Waste (Phokwane LM) <a href="mailto:mojaki@phokwane.gov.za">mojaki@phokwane.gov.za</a>
<b>Mr T Lesie</b>	Director: Community Services (Lekwa Teemane LM) <a href="mailto:lesiet@lekwa-teemane.co.za">lesiet@lekwa-teemane.co.za</a>

### 2.2 The Landowner

Although the existing Jan Kempdorp is operated by the Phokwane LM, it is located within the Lekwa Teemane LM, North West Province. The details of the landowner are provided in Table 2-2

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

<b>Landowner</b>	<b>Lekwa Teemane Local Municipality</b>
<b>Contact Person</b>	Mr Ndoda Mgengo
<b>Postal Address</b>	PO Box 13, Christiana, 2680
<b>Telephone</b>	053 441 2206
<b>Fax</b>	053 441 3735
<b>E-mail Address</b>	<a href="mailto:mgengon@lekwa-teemane.co.za">mgengon@lekwa-teemane.co.za</a>

### 2.3 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 2-3.

**Table 2-3: Details of the EAP**

<b>Environmental Consultant</b>	<b>Sustainable Environmental Solutions (Pty) Ltd</b>
<b>Environmental Assessment Practitioner</b>	Ms Victoria Napier
<b>Postal Address</b>	Suite 51, Private Bag X108, Centurion, 0046
<b>Telephone</b>	078 278 2898
<b>Fax</b>	086 664 6885
<b>E-mail Address</b>	<a href="mailto:vici@sesolutions.co.za">vici@sesolutions.co.za</a>

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.

## 2.4 The EIA Project Team

Details of the Project Team assisting the EAP in conducting the S&EIR application process in support of a WML for the unlicensed Jan Kempdorp Landfill are indicated Table 2-4. CVs of the Project Team are contained in Appendix E.

**Table 2-4: EIA Project Team**

Name	Role on Team	Company
<b>EIA Team</b>		
<b>Mike Howard</b>	Environmental Executive	AECOM
<b>Johan Hayes</b>	Project Manager	AECOM
<b>Soleil Jones</b>	Environmental Scientist	AECOM
<b>Bongi Shinga</b>	Public Participation Practitioner	AECOM
<b>Mamokete Maimane</b>	Public Participation Practitioner	AECOM

## 3. OVERVIEW OF THE PROJECT

### 3.1 Project Area

The existing unlicensed Jan Kempdorp Landfill is located approximately 4 km east of the Central Business District (CBD) of Jan Kempdorp. Although Jan Kempdorp itself is situated within the Phokwane LM, Northern Cape, the landfill site is situated outside of the town within the Lekwa Teemane LM, North West Province.

The landfill is situated on Farm Guldenskat 36 Portion 0, and is accessed from the provincial R506 (Surveyor-general Cadastral Code 21 digit site T0HN0000000003600000) (Figure 3-1). The Jan Kempdorp cemetery is situated directly to the north of the landfill, with an agricultural water canal located to the west. Agricultural activities are conducted to the west of the water canal associated with the Vaal-harts water scheme, with vacant land making up the remainder of the surrounding areas (Figure 3-2).

### 3.2 Description of Existing Jan Kempdorp Landfill

The existing Jan Kempdorp Landfill is currently unlicensed. The entire site (footprint area of approximately 39,245 m<sup>2</sup>) is fenced and fitted with a gate, however no access control is exercised. Illegal dumping is currently taking place outside the boundaries of the existing landfill.

The facility is currently used for the disposal of general waste, garden waste and garden rubble sourced from residents and businesses in Jan Kempdorp. No official records of waste volumes exist for the site, but the following waste disposal quantities from Jan Kempdorp are estimated:

- 50 – 80 tons of domestic waste per week; and
- 10 tons of garden waste per week.

Waste generated by farming activities in the surrounding areas is also disposed of at the existing landfill. It is thus anticipated that hazardous waste may also be disposed of at the existing Jan Kempdorp Landfill.

Due to a shortage of equipment within the Phokwane LM, compaction of waste at the landfill is undertaken once a month. There is limited cover material available on the site, resulting in sporadic covering of waste. The only recycling taking place on site is through informal waste collectors (or waste scavengers) living within the landfill boundaries.

### 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 site receives general domestic waste only which requires no classification or assessment as per the Waste Classification and Management Regulations (WCMR) promulgated on 23 August 2013 (Government Gazette No. 36784). The WCMR also state that all general 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.

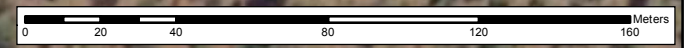


**Legend**

- Site Corners
- Erven
- Landfill Site Extent











Corner	Longitude	Latitude
A	24° 52' 25.856" E	27° 54' 33.167" S
B	24° 52' 27.817" E	27° 54' 32.731" S
C	24° 52' 28.843" E	27° 54' 32.905" S
D	24° 52' 30.103" E	27° 54' 33.971" S
E	24° 52' 32.540" E	27° 54' 41.385" S
F	24° 52' 25.834" E	27° 54' 42.028" S



Project Title: <b>DEA Waste Licenses 2015</b>		Scale 1:2 000 <small>(When page size is: A3 portrait)</small>	<b>Figure</b>
Map Title: <b>Detailed Locality Map of Jan Kempdorp Landfill Site</b>		Projection: Transverse Mercator Datum: Hartebeesthoek 1994 Central Meridian: 25.0	<b>Sources:</b> © 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
<small>Whilst every care has been taken in compiling the information on this map, AECOM cannot accept responsibility for any inaccuracies. © Copyright</small>		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.: 1 of 13	
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**Legend**

-  Landfill Site Extent
-  Kimberley Thornveld
- SA Landcover**
  -  Grassland
  -  Shrubland
  -  Cultivated
  -  Mines
  -  Cemetery
  -  Open Space



Corner	Longitude	Latitude
A	24° 52' 25.856" E	27° 54' 33.167" S
B	24° 52' 27.817" E	27° 54' 32.731" S
C	24° 52' 28.843" E	27° 54' 32.905" S
D	24° 52' 30.103" E	27° 54' 33.971" S
E	24° 52' 32.540" E	27° 54' 41.385" S
F	24° 52' 25.834" E	27° 54' 42.028" S

<b>Project Title:</b> DEA Waste Licenses 2015	<b>Scale 1:1 500</b> <small>(When page size is: A3 portrait)</small>	<b>Figure 2</b>
<b>Map Title:</b> Site Plan of <b>Jan Kempdorp Landfill</b>	<b>Projection:</b> Transverse Mercator <b>Datum:</b> Hartebeesthoek 1994 <b>Central Meridian:</b> 25.0 <b>Compiled By:</b> GA Maree <b>GIS QC By:</b> TBD <b>Approved By:</b> J Hayes <b>Date Saved:</b> 2015/11/11 <b>Project Number:</b> 60437185 <b>Map Ref:</b> EnviroConsolidated.mxd <b>Revision:</b> 00	<small>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 &amp; contributors          NFEPA, SANBI, 2011. Vegetation, SANBI 2012. CBA, SANBI BGIS.          Land Cover, GeoTerraImage (GTI) 2013.</small>
<small>Whilst every care has been taken in compiling the information on this map, AECOM cannot accept responsibility for any inaccuracies. © Copyright</small>		
		
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## 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 NW READ 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 Jan Kempdorp 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 Phokwane LM Integrated Development Plan (IDP).

The 2013/2014 Phokwane LM IDP was compiled to be aligned with a range of National and Provincial policy documents. In terms of the Service Delivery Agreement (Outcome 9), the first priority relates to ensuring that “municipalities meet the basic service needs of communities”. Outcome 2 of this agreement specifically talks to the improvement of access to basic services specifically pertaining to improving universal access to refuse removal by 2014 from 64% to 75%.

Environmental challenges relating to waste management currently faced by the Phokwane LM include:

- Blocking of sewer pipes;
- Dumping in water canals;
- Illegal dumping on open spaces in both towns and in townships; and,
- Burning of tyres causing air pollution.

Existing waste management strategies include:

- Illegal dumping: development of a prevention tool kit, followed by site maintenance and control; and
- Licensing of the existing Jan Kempdorp Landfill.

## 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 a 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 Jan Kempdorp Landfill remains unlicensed. 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 effective 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

#### 5.1.1 Regional Context

The Phokwane LM is named after Queen “Phokwane” the wife of Kgosi Galeshewe of the Barolong boo Ra-Tlhaping tribe. Phokwane is situated in the green delta of the Hartswater region and boasts the second largest irrigation scheme in the Southern Hemisphere: the Vaalharts Irrigation Scheme. The administrative seat of the municipality is Hartswater. The municipality covers an area of 82 077 ha. It is made up of three main towns, namely, Hartswater, Jan Kempdorp and Pampierstad.

#### 5.1.2 Local Context

Jan Kempdorp is an agricultural town situated in the centre of the Vaalharts Irrigation Scheme in the Northern Cape Province. It is situated 96 km north of Kimberley, the provincial capital, and 43 km west of Christiana in North West province. The town is located on the N18 national road, which branches from the N12 Kimberley–Johannesburg road at Warrenton and runs through Jan Kempdorp to Vryburg, Mahikeng and the Botswana border. It is also situated on a railway line which branches from the Kimberley–Johannesburg main line at Fourteen Streams and runs parallel to the N18 to Mahikeng and Botswana.

Originally, the border between the Cape and Transvaal provinces ran through the town, making it the only town in South Africa that was in two provinces. This led to confusion about the administration until in 1964 it was decided by Parliament that the town would be deemed to fall in the Cape for legal purposes.

When new provincial boundaries were drawn in 1994 Jan Kempdorp was still divided, now between the Northern Cape and North West provinces. The whole of the town was included in the cross-border Phokwane Local Municipality. In 2006 cross-border municipalities were eliminated and the entire town was included in the Northern Cape.

### 5.2 Physical Environment

#### 5.2.1 Climate and Atmospheric Conditions

For the project area, the mean summer temperature measured during January is 32 °C and for June is 18°C. The region experiences its coldest temperatures during July with a mean temperature of 0.3°C. Rainfall occurs predominantly during the summer months with 283 mm per annum. Peak rainfall occurs during March. The winters are very dry (Mucina & Rutherford 2006). All areas with less than 400 mm rainfall are considered to be arid. The study area can therefore be considered to be semi-arid to arid.

#### 5.2.2 Topography

The topography of the study area is relatively flat. There are no topographic features of note on site. The elevation on site is approximately 1230 m above sea level (masl).

#### 5.2.3 Geology

The underlying geology consists primarily of shale of the Prins Albert Formation (Ecca Group). However, quaternary deposits of calcrete and sand occur as widespread patches in the area, whereas the hills and ridges are underlain by andesite of the Allanridge Formation (Randian Erathem) and Karoo dolerites (Pachnoda, 2012).

#### 5.2.4 Soils

Detailed soil information is not available for broad areas of the country. As a surrogate, land type data was used to provide a general description of soils in the study area (land types are areas with largely uniform soils, topography and climate). There is one land type in the study area, namely the Ae land type (Land Type Survey Staff, 1987).

The A-group of land types refer to yellow and red soils without water tables belonging to one or more of the following soil forms: Inanda, Kranskop, Magwa, Hutton, Griffin, Clovelly. The Ae land type consists of red, high base status, > 300 mm deep soils and no dunes (MacVicar *et al.* 1974).

#### 5.2.5 Existing Land Use and Land Cover

The project area consists of an existing operational landfill. The Jan Kempdorp cemetery is situated directly to the north of the landfill, with an agricultural water canal located to the west. Agricultural activities are conducted to the west of the water canal associated with the Vaal-harts water scheme, with vacant land making up the remainder of the surrounding areas (Figure 3-2).

#### 5.2.6 Hydrology

As can be seen in Figure 3-2, no natural water bodies occur within close proximity to the existing Jan Kempdorp Landfill. Currently, there is also no data available from the DWS.

### 5.3 Biophysical Environment

#### 5.3.1 Flora

The study area falls within the Savanna Biome (Rutherford & Westfall 1986, Mucina & Rutherford 2006) with Kimberley Thornveld (SVk4) vegetation type present.

This vegetation type occurs on the slightly irregular plains of parts of the North-West, Free State and Northern Cape Provinces. It has a well-developed tree layer with *Acacia erioloba*, *Acacia tortillis*, *Acacia karoo* and *Boscia albitrunca* and a well-developed shrub-layer with occasional dense stands of *Tarchonanthus camphoratus* and *Acacia mellifera*. The grass layer is open with much uncovered soil. Overgrazing leads to encroachment of *Acacia mellifera*.

The Kimberley Thornveld vegetation type is classified as Least Threatened (Driver *et al.* 2005; Mucina *et al.*, 2006).

No Critical Biodiversity Areas have been identified for municipal areas of the North-West Province (bgis.sanbi.org). It is therefore not possible to identify areas of concern at a regional level in the current study area.

#### 5.3.2 Fauna

As the site consists of an existing operational landfill, it is not anticipated that significant faunal communities exist. However, there are two mammal species of conservation concern that could occur in available habitats in the study area. This includes one species classified as Near Threatened (NT), the Brown Hyena and one species classified in South Africa as Near Threatened, but globally as Least Concern (LC), the South African Hedgehog.

There are four threatened bird species (Blue Crane, Kori Bustard, Lesser Kestrel, Martial Eagle, all VU) and four Near Threatened bird species (Caspian Tern, Lanner Falcon, Secretary bird, White Pelican) that have a medium to high probability of utilising available habitats in the study area, either for foraging or breeding. None of these species are likely to use the site for breeding or foraging due to ongoing operational activities.

## 5.4 Social Environment

### 5.4.1 Population

The local population of the Phokwane LM in 2001 was estimated to be 61 329 and increased to 63 000 in the 2011 census. This population increase has led to the number of households increasing by 737 households. Jan Kempdorp's population is estimated to be 24,220 people (Census 2011). A significant characteristic of the Phokwane population is the youth who account for 33% (ages 15–34) of the total population.

The majority of the population within the municipal area for the past 10 years is still of the Black African ethnic group. The Indian or Asian community has increased by 196 over the past 10 years. The ethnic group that has changed drastically is the White population which has decreased by 3 064, approximately 44% over the last 10 years (Phokwane IDP, 2013/2014).

The majority of the residents within the municipality are below the age of 20.

### 5.4.2 Employment

The number of employed people in the Phokwane LM has increased slightly over the past 10 years. However, approximately 16 250 people between the ages of 15 – 65 are not economically active, and are currently dependent on a small economically active group. The economy of Phokwane is based on agriculture, community development, retail, private household and informal sectors. These five sectors alone provide jobs to 11 160 persons within the municipal area. This accounts for 65% of employment within Phokwane.

### 5.4.3 Education

There are no tertiary education facilities found in the Phokwane LM. However, Jan Kempdorp has 9 primary and secondary schools. It is estimated that approximately 22% of the population has a matric certificate, 7% has a higher education, while 18% of the population has received no schooling.

### 5.4.4 Service Delivery

#### 5.4.4.1 Health Services

Hartswater and Jan Kempdorp are the only two towns within the Phokwane LM which both have a clinic and hospital.

#### 5.4.4.2 Electricity

Electricity in the municipal area is provided by both Eskom as well as the municipality. Hartswater, Jan Kempdorp Central Business District and Ganspan are serviced by the municipality, whereas Pampierstad, Valspan, Kingston and Masakeng are serviced by Eskom. According to the 2001 and 2011 Census data the main energy sources for lighting in the Phokwane LM is electricity.

#### 5.4.4.3 Waste Management and recycling

The Phokwane LM removes refuse for the majority of the households in the municipal area. There are three landfill sites located within this municipality: Hartswater, Pampierstad and Jan Kempdorp. Of all three landfill sites the new Hartswater Landfill site has been licensed while the Pampierstad and Jan Kempdorp site are still to be licensed.

No waste management is being practiced at these sites and burning of waste is a frequent occurrence due to waste not being covered. Hazardous waste is collected only from Hospitals by the Health Collector. Illegal dumping in the municipality is currently a challenge.

#### 5.4.4.4 Water and Sanitation

Water sources for the Phokwane LM are mainly taken from the Vaal- or Harts Rivers. Jan Kempdorp is also supplied with water from the Vaal River. The Phokwane Municipality supplies water to Hartswater and Jan Kempdorp and Ganspan. Groundwater usage for human consumption is very limited.

Most of the municipal households have access to toilet facilities. The majority of the households (11 964) have flush toilets connected to a sewerage system (Census, 2011).

#### 5.4.4.5 Housing

Over the past 10 years there has been an increase of households within the Phokwane LM which reside in informal dwellings that is shacks not in backyards. This is a challenge as there is a shortage of land to allocate for residential development.

### **5.4.5 Economy**

The main economic activities in the municipal area are agriculture (42%), private household (12%), wholesale and retail trade (11%) and community-initiatives (10%).

The towns support the agricultural activities that occur and house a majority of the labour force. All the towns are surrounded by agricultural land which makes it difficult for any developmental expansion. This is a result of the vast fertile land in the municipality and the irrigation scheme in the areas.

The Vaalharts irrigation scheme plays a large role in the agricultural contribution of the municipality. Crop and livestock farming practices are the predominant farming methods practised. The main crops produced are maize (25%) and wheat (28%). These crops are followed by barley (14%), groundnuts (12%) and Lucerne (7%). Although grain is the dominant crop on all the farms there seems to be a tendency for smaller farms to produce more long-term crops and pastures. Other agricultural products produced in the study area include milk, vegetables, sheep and cattle, citrus and soft fruit.

## 6. LEGISLATIVE FRAMEWORK

### 6.1 Introduction

The overarching legal framework pertinent to the licensing of the Jan Kempdorp 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 Jan Kempdorp landfill will take these new Regulations on Norms and Standards into account.

##### 6.2.1.3 Activities applicable to NEMWA

The operation of the Jan Kempdorp 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 Waste Management Licence. 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	7	The disposal of any quantity of hazardous waste to land
		8	The disposal of general waste to land covering an area in excess of 200 m <sup>2</sup> 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 Environmental Impact Assessment (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 Scoping and Environmental Impact Reporting (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 Jan Kempdorp Landfill does 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 Decision 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
<b>Constitution of South Africa, 1996 (Act No. 108 of 1996)</b>	Chapter 2	Bill of Rights
	Section 24	Environmental rights
	Section 25	Rights in property
	Section 32	Administrative justice
	Section 33	Access to information
<b>National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)</b>	Sections 56 and 57	Protection of threatened or protected species;
	Sections 65 -73	The control of alien species, invasive species and genetically modified organisms.
<b>Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983) and regulations</b>	Section 5, 6	Implementation of control measures for alien and invasive plant species, especially in urban areas.
<b>National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004)</b>	Section 32	Control of dust
	Section 34	Control of noise
	Section 35	Control of offensive odours
<b>Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) and regulations</b>	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.
	Section 9	General duties of employers and self-employed persons to persons other than their employees.

Relevant Legislation	Sections	Applicability to the Project
<b>Hazardous Substances Act, 1973 (Act No. 15 of 1973) and regulations</b>	As Type 2, 3 and 4 waste may be disposed of at the existing Jan Kempdorp Landfill, the controls of the Hazardous Substances Act must thus be complied with.	
<b>Fertilisers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act No. 36 of 1947) and regulations</b>	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.
<b>National Veld and Forest Fire Act, 1998 (Act No. 101 of 1998)</b>	Chapter 4, 5	Fire prevention, management and control measures to be implemented
<b>National Building Regulations and Building Standards Act, 1977 (Act No. 103 of 1977)</b>	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 IWMP

The Integrated Waste Management Plan (IWMP) was prepared in 2010 as a review and update of the IWMP completed and adopted in July 2004. The reviewed IWMP reflect on previous status quo and objectives set, as well as current conditions, limitation and challenges currently experienced by the local municipalities.

The purpose of the IWMP is to optimize waste management in order to maximize efficiency and minimize the associated environmental impacts of waste generation and financial costs of waste disposal and to improve the quality of life of inhabitants of the District.

There are three landfill sites located in the Phokwane LM in Hartswater, Pampierstad and Jan Kempdorp, with only the one in Hartswater having been licensed. No management is done at the refuse sites, and burning of waste is a frequent occurrence. As such, illegal dumping and insufficient managed landfill sites pose major environmental and health problems to the residents of the Phokwane LM.

### 6.4.2 Phokwane LM Spatial Development Framework (SDF), 2006

A municipal Spatial Development Framework (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 Phokwane LM, it is indicated that the Jan Kempdorp landfill is to be licensed.

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

The 2013/2014 Phokwane LM Integrated Development Plan (IDP) was compiled to be aligned with a range of National and Provincial policy documents. In terms of the Service Delivery Agreement (Outcome 9), the first priority of relates to ensuring that “municipalities meet the basic service needs of communities”. This agreement specifically aims to improving access to basic services. Existing waste management strategies include:

- Illegal dumping: development of a prevention tool kit, followed by site maintenance and control; and
- Licensing of the existing Jan Kempdorp Landfill.

The licensing of the Jan Kempdorp landfill will thus assist in the Phokwane LM to achieve some of the objectives of the IDP.

## 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). 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 Jan Kempdorp 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
Noord-Kaap	Local	English	09 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

Three (3) A2-sized site notices were erected at various public places in the project area on 31 August 2015.

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

Site Notice No	Location
1	Jan Kempdorp Landfill Entrance Fence
2	OK Store Jan Kempdorp
3	Phokwane Local Municipality Offices, Jan Kempdorp

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 Jan Kempdorp 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 from 16 November 2015 to 6 January 2016 (excluding public and school holidays). The DSR will be available at the following venues:

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

Venue	Address
Phokwane Local Municipality Offices: Jan Kempdorp	Henry Ferreira Street, Jan Kempdorp
Jan Kempdorp Public Library	Henry Ferreira Street, Jan Kempdorp

Electronic copies of the DSR can be downloaded from [www.deallicenses2015.co.za](http://www.deallicenses2015.co.za). Refer to **Appendix A** for a copy of the notification letter.

## 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 NW READ 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 Sutherland 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 Sutherland Landfill are indicated in Table 8-1.

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

Potential Negative Impacts	Potential Positive Impact
<ul style="list-style-type: none"> <li>• Increased traffic</li> <li>• Increased emissions from vehicles</li> <li>• Increased noise on site</li> <li>• Health and safety risks on site</li> <li>• Night-time and / or weekend fly tipping</li> <li>• Landfill gas generation</li> </ul>	<ul style="list-style-type: none"> <li>• Long term employment opportunities</li> <li>• Local business - direct i.e. contractors</li> <li>• Local businesses - indirect i.e. vehicle repairs</li> <li>• Local supplier income from materials and services required once the landfill is licensed.</li> <li>• Decrease in wind-blown litter</li> <li>• Decrease in soil and groundwater contamination due to liner and stormwater management implementation.</li> <li>• Decrease in nuisance impacts (dust, odour)</li> </ul>

#### 8.1.3 Decommissioning and Closure Phase

The capacity of the landfill (within the existing fenced area) 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. At present, it is not anticipated that specialist studies are required to be conducted in support of the EIA Process. The main reasons being that:

- The project entails the licensing of an existing operational landfill site;
- The licensing process would not entail extending the existing landfill beyond its existing footprint;
- The location of the existing landfill in relation to the nearest human settlement / town;
- The location of the landfill within a non-endangered environment; and,
- The semi-arid to arid conditions of the geographical location of the existing landfill.

During the EIA phase, a Draft EIA report 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.

### 9.3 Impact Assessment Methodology

The impacts identified during the Scoping Phase, as described in Chapter 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
<b>Nature</b>	Includes a description of what causes the effect, what will be affected and how it will be affected.
<b>Extent</b>	Physical and spatial scale of the impact.
<b>Duration</b>	Lifetime of the impact is measured in relation to the lifetime of the landfill.
<b>Intensity</b>	Examining whether the impact is destructive or benign, whether it destroys the impacted environment, alters its functioning, or slightly alters the environment.
<b>Probability</b>	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.
<b>Status</b>	Description of the impact as positive, negative or neutral, and direct or indirect.
<b>Significance</b>	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
<b>Footprint</b>	Impacted area extends only as far as the activity, footprint.	1
<b>Site</b>	Impact could affect the whole, or a significant portion of the site.	2
<b>Regional</b>	Impact could affect the area around the site including neighbouring farms, transport routes and/or adjoining towns.	3
<b>National</b>	Impact could have an effect that expands throughout the country (South Africa).	4
<b>International</b>	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 Jan Kempdorp landfill.

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

Description	Explanation	Scoring
<b>Short term</b>	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
<b>Short to medium term</b>	Impact will be relevant through to the end of the construction phase.	2
<b>Medium term</b>	Impact will last up to the end of the development phases, where after it will be entirely negated.	3
<b>Long term</b>	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
<b>Permanent</b>	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
<b>Low</b>	Impact alters the affected environment in such a way that the natural processes or functions are not affected.	2
<b>Low-Medium</b>	Impact alters the affected environment in such a way that the natural processes or functions are slightly affected.	4
<b>Medium</b>	Affected environment is altered, but functions and processes continue, albeit in a modified way.	6
<b>Medium-High</b>	Affected environment is altered, and the functions and processes are modified immensely.	8
<b>High</b>	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
<b>Improbable</b>	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
<b>Possible</b>	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
<b>Likely</b>	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
<b>Highly likely</b>	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
<b>Definite</b>	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 Jan Kempdorp 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. All registered I&APs will be notified of the availability of the report for review and 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.dealicensess2015.co.za](http://www.dealicensess2015.co.za).

The draft EIR will be made available at the same public venues used during the Scoping Phase. Electronic copies on CD will be provided to core stakeholders on request.

## 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 NW READ 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 Jan Kempdorp 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 Draft Scoping Report contains issues and impacts identified by the project team. The Plan of Study for the remainder of the EIA process is also provided. This Draft Scoping Report 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 Final Scoping Report, to be submitted to the NW READ 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.

Driver, A., Maze, K., Rouget, M., Lombard, A.T., Nel, J., Turpie, J.K., Cowling, R.M., Desmet, P., Goodman, P., Harrils, J., Jonas, Z., Reyers, B., Sink, K and Strauss, T. 2005. National Spatial Biodiversity Assessment 2004: priorities for biodiversity conservation in South Africa. *Strelitzia* 17. South African National Biodiversity Institute, Pretoria.

Macvicar, E. N., Scotney, D. M. Skinner, T. E. Niehaus, H. S. & Loubser, J. H., 1974. A classification of land (climate, terrain form, soil) primarily for rainfed agriculture. *S. Afr. J. Agric. Extension*, 3(3): 1-4.

Mucina, L. & Rutherford, M.C. (eds). 2006. The vegetation map of South Africa, Lesotho and Swaziland. *Strelitzia* 19, South African National Biodiversity Institute.

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.

Pachnoda Consulting CC, 2012. Ecological evaluation for the proposed alternative energy plant on !Xun and Khwe, Northern Cape. Draft Report: Terrestrial Vertebrate Component.

# **Appendix A**

## **Public Consultation Documentation**

# **Appendix B**

## **WML Application Form**

# **Appendix C**

## **Site Photographs**

# **Appendix D**

## **EAP CV**

# **Appendix E**

## **Project Team CVs**