

Draft Scoping Report in support of a Waste Management Licence for the Operation of the existing Dannhauser Landfill, Dannhauser Local Municipality, KwaZulu-Natal



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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 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 Dannhauser 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 Licence (WML) for the operation of the existing Dannhauser Landfill (the Project), on behalf of the Dannhauser LM.

PROJECT AREA

The existing Dannhauser landfill is located approximately 2 km south west of Dannhauser and has been in operation for more than 10 years. The landfill is located on Erf 10 of the Farm Dannhauser (SG21 Digit code NOGT006780000001000000), and measures some 94 736 m². Access is via Main Street between Cornwall and Palmietfontein, opposite the Dannhauser Golf Course.

PROJECT DESCRIPTION

The existing unlicensed Dannhauser landfill is operated by the Dannhauser LM, the applicant for the proposed WML. The facility is currently used for the disposal of general waste, garden waste and garden rubble sourced from residents and businesses in Dannhauser and surrounding areas, including Hattinghspruit and Durnacol Mine. The annual dump report prepared by the municipality assesses the daily disposal at 13 t/day and recycling sales at 0.11 t/day.

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 KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs (KZN EDTEA) 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 (DSR) with comment sheets were distributed to the following public venues in the project area from **04 December 2015 to 25 January 2016:**

Venue	Address
Dannhauser Waste Disposal Facility	Accessed via Main Street road between Cornwall and Palmietfontein, opposite the Dannhauser Golf Course
Dannhauser Public Library	8 Church Street, Dannhauser

Ms Bongzi Shinga from AECOM can be contacted on bongzi@deawaste2015.co.za or Tel. 012 421 3500 during office hours for any queries and/or to submit comments on the DSR.

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 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 EAP and presented in an EIA report, the report will be submitted to the KZN EDTEA 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 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.

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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
DSR	Draft Scoping Report
DWS	Department of Water & Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
EPWP	Extended Public Works Programme
GIS	Geographical Information System
GN R	Government Notice Regulation
Ha	Hectares
HIA	Heritage Impact Assessment
I&AP(s)	Interested and Affected Party (-ies)
IDP	Integrated Development Plan
km	kilometre
KZN EDTEA	KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs
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

SIA	Social Impact Assessment
WCMR	Waste Classification Management Regulations
WML	Waste Management Licence
WUL	Water Use Licence

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 licensed. 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 licensing these sites, with a target that all would be licensed 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 Dannhauser 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 Dannhauser Landfill (the Project), on behalf of the Dannhauser Local Municipality (LM).

The annual dump report prepared by the municipality assesses the daily disposal at 13 tonnes per day (t/day) and recycling sales at 0.11 t/day.

1.3 The Environmental Impact Assessment 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 KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs (KZN EDTEA) 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). Due to the nature of the proposed development, and the requirement to apply for a WML, a Scoping and Environmental Impact Reporting (S&EIR) application process is required.

This EIA process assists the KZN EDTEA, 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 entails the following main phases:

- Scoping Phase
- Environmental Impact Assessment Phase
- Decision-Making Phase.

1.3.1 Scoping Phase

The WML 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.

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 5.3).

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 BAR application process to obtain a WML for the existing landfill site.

Input from I&APs are considered and integrated into the Final Scoping Report. This Draft Scoping Report is available for public comment over a period of 30 days (excluding public holidays and the period from 15 December to 05 January), from 04 December 2015 to 25 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 will be investigated. Included in the EIA process is the identification of mitigation measures and how these will be addressed, which informs the Environmental Management Programme (EMPr).

This Draft Scoping Report will be made available for public comment over a period of 30 days (excluding public holidays). The Comment and Response Report will be updated with all comments received during this period.

1.3.3 Decision-Making Phase

The decision-making phase will commence once all of the issues have been addressed by the EAP and presented in an EIA Report that will be submitted to the KZN EDTEA. The report is reviewed by officials and a WML is drafted with conditions that the Dannhauser LM must adhere to during the operation and decommissioning of the landfill. Should I&APs or Dannhauser 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 KZN EDTEA 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 her 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; and,
- Process of engagement with identified I&APs.

Prior to submission of the Final Scoping Report to the KZN EDTEA, I&APs are given an opportunity to review the Draft Scoping Report (DBAR) 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 2	Legislation and guidelines that pertain to the project
Chapter 3	Public Participation Process
Chapter 4	Description of environmental issues and potential impacts
Chapter 6	Conclusion and Recommendations
Chapter 7	References

1.6 Assumptions and Limitations

The following assumptions, limitations and constraints, associated with this Project, have been identified for this EIA 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 31 August 2015 to identify activities triggered and studies required 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 Dannhauser LM is applying for a WML for the operation of the existing unlicensed Dannhauser Landfill. Details of the Applicant are provided in Table 2-1.

Table 2-1: Details of the Applicant and Landowner

Applicant	Dannhauser Local Municipality
Contact Person	W.B. Nkosi
Postal Address	Private Bag X1011, Dannhauser, 3080
Telephone	(034) 621 2666
Fax	(034) 621 3114
E-mail Address	municipalmanager@dannhauser.gov.za
Applicant's Representatives	
S. Naidoo	Director: Community Services, including waste management sevan@dannhauser.gov.za
P.K. Naidoo	Foreman
S. Cassim	Caretaker / Supervisor, record-keeping

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, while her CV can be found in Appendix E1.

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

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 Dannhauser Landfill are indicated Table 2-3 below, while CVs are attached in Appendix E2.

Table 2-3: EIA Project Team

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

3. OVERVIEW OF THE PROJECT

3.1 Project Area

The existing Dannhauser landfill is located approximately 2 km south west of Dannhauser and has been in operation for more than 10 years. The landfill is located on Erf 10 of the Farm Dannhauser (SG21 Digit code N0GT006780000001000000). Access is via Main Street between Cornwall and Palmietfontein, opposite the Dannhauser Golf Course, (Refer to

Figure 3-2).

3.2 Description of Existing Dannhauser Landfill

The entire site (footprint area of approximately 94 736 m²) is fenced and fitted with a gate. There is access control and all vehicles are counted and volumes estimated depending on the type of vehicle. There is a waste recycling area under cover near the entrance to the landfill (refer to the site photographs in Appendix C). There is an active recycling programme in place. Staff collect recyclables from the active face of the landfill and carry it back to the recycling shed where it is sorted and baled. It is mainly cardboard, tin/aluminium and plastic. Glass is generally not separated due to its low price. A Newcastle recycling company regularly collects and purchases the material. The site supervisor keeps records of all of these financial transactions, as well as the volumes collected.

The waste disposal process on site is trenching to 3m with no liners. Daily cover and compaction occurs and waste is not burnt.

The trenches are used until waste is approximately 2– 4 m above ground level and then are left to collapse on their own. There are breakdowns of the site vehicles but replacement vehicles are brought on to site to alleviate the pressure to cover.

There are no storm water management controls on the landfill itself, but there is a drainage ditch at the entrance to divert water from neighbouring properties and the road away from the landfill.

The facility is currently used for the disposal of general waste, garden waste and garden rubble sourced from residents and businesses in Dannhauser and surrounding areas, including Hattingspruit and Durnacol Mine. The annual dump report prepared by the municipality assesses the daily disposal at 13 t/day and recycling sales at 0.11 t/day. The annual variation in waste reporting for disposal is presented in Figure 3 1. There is only slight variability in monthly disposal. The landfill site is generally well managed and the windblown litter accumulating on the boundary fence is regularly cleared.

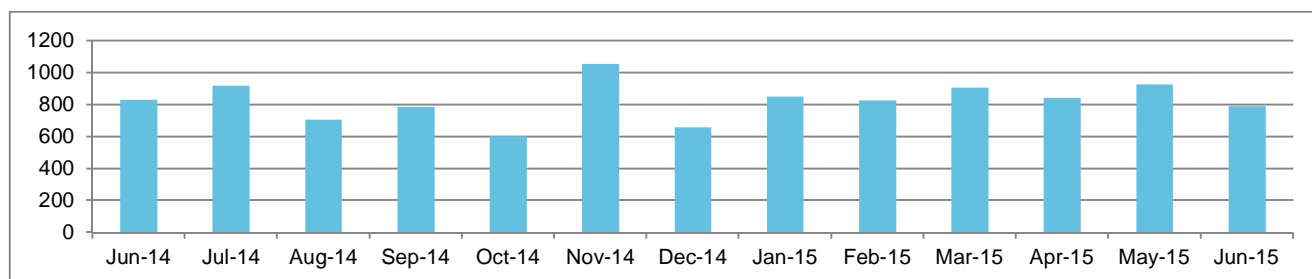


Figure 3-1 Monthly waste disposal in cubic metres at the Dannhauser Landfill from June 2014 to June 2015 (Source: Dannhauser Municipality, 2015)

Figure 3-2: Locality of the Dannhauser landfill

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). The impacts assessed will cover operation and decommissioning, as the site already exists and operates.

The WCMR 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. If the landfill accepts wastes that are deemed hazardous as per the information in the Annexure to the WCMR, the landfill cell that accepts this waste needs to be lined in accordance with that of a Class A landfill. 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

1.1.1 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 and the waste volume contained within;
- 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 operation procedures.

1.1.2 Costing of the Proposed Solution

The construction cost for addressing the design requirements will be estimated. This cost estimate can be used by the KZN EDTEA 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 Dannhauser 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 Dannhauser LM Integrated Development Plan (IDP).

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).

1.2 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.

1.2.1 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 Dannhauser 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

1.3 Study Area Context

1.3.1 Regional Context

The Dannhauser LM is located in the north-west corner of the KwaZulu-Natal (KZN) Province and is one of three local municipalities within the Amajuba District Municipality. It is the smallest municipality within the District Municipality and covers an area of approximately 1516 km². The main towns are Dannhauser, Hattingspruit, Inverness, Kilegethe, Klipbank, Milford, Normandien, Nyanyadu, Rutland, Tendeka and Witteklip.

Located along the southern boundary of the Amajuba District Municipality, it adjoins Newcastle and EmadIngeni Local Municipalities to the east and Emnambithi to the south.

Some of the largest coal-producing mines in KZN surround the town of Dannhauser. Numerous rivers flow through the municipal area, the most important being the Ngagane and uMzinyathi Rivers.

Refer to the Locality Map in

Figure 3-2.

1.3.2 Local Context

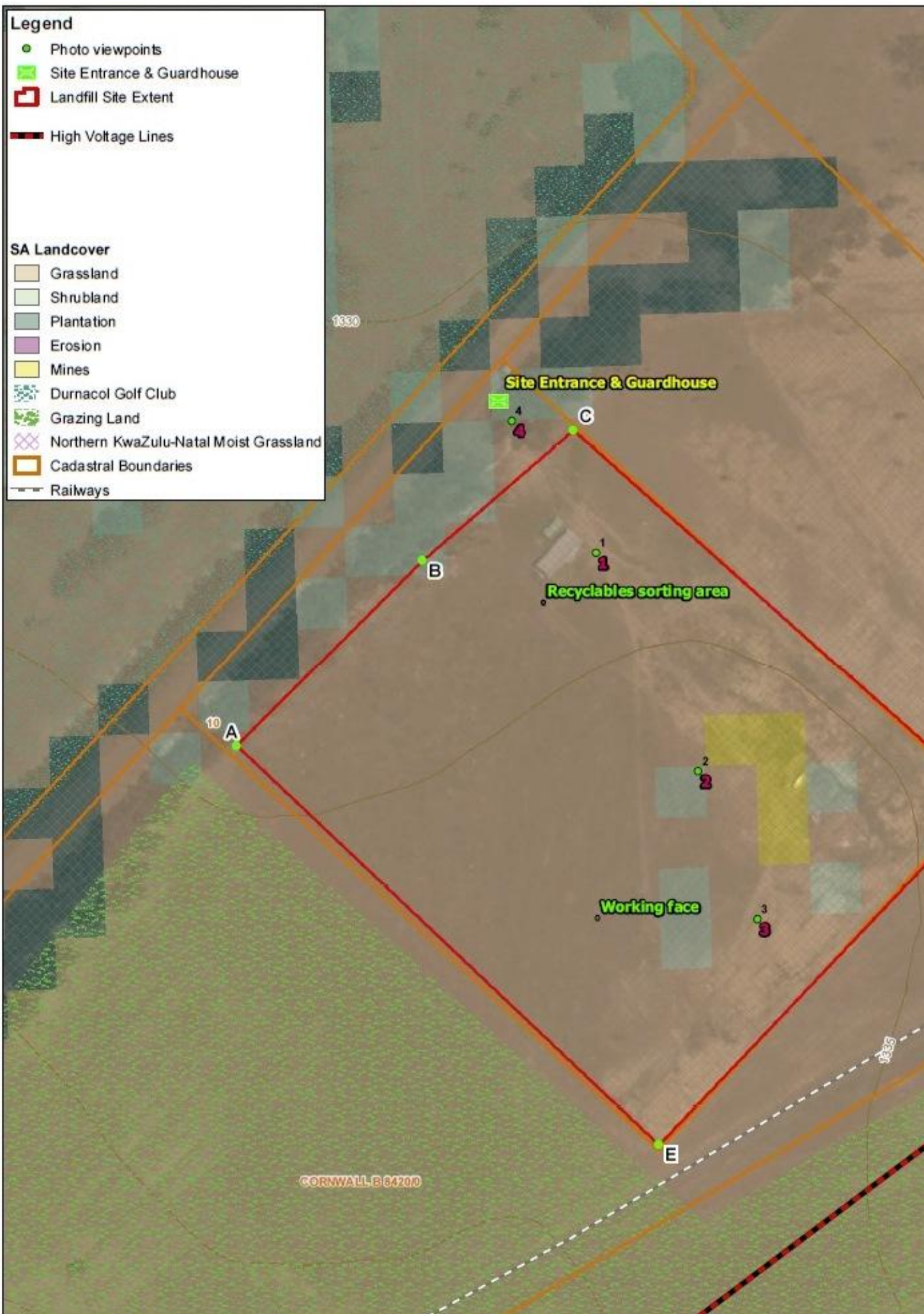
The landfill site is situated on relatively flat land just north of Cornwall and south west of Palmietfontein and Emafusini. Dannhauser town lies further north east of the site approximately 2 km away. Refer to

Legend

- Photo viewpoints
- Site Entrance & Guardhouse
- Landfill Site Extent
- High Voltage Lines

SA Landcover

- Grassland
- Shrubland
- Plantation
- Erosion
- Mines
- Durnacol Golf Club
- Grazing Land
- Northern KwaZulu-Natal Moist Grassland
- Cadastral Boundaries
- Railways



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Figure 5-1 at the end of this section for the Site Plan.

1.4 Physical Environment

1.4.1 Climate and Atmospheric Conditions

Dannhauser's climate is classified as warm and temperate. It has a significant amount of rainfall during the year which is true even for the driest months of June and July. The highest summer temperatures occur during January and December while June and July experience the lowest temperatures. The annual average temperature is 16.5°C. Rainfall occurs predominantly during the summer months with 782mm per annum. Peak rainfall occurs during January, in excess of 130mm while the winter rainfall low occurs in June, at below 10mm of precipitation (www.Climate-data.org, 2015).

1.4.2 Topography

The topography of the study area is relatively flat. The notable topographic features in close proximity to the landfill are two small hills located due west of the site. The elevation on site is approximately 1335 metres above mean sea level (mamsl).

1.4.3 Geology

The underlying geology consists primarily of shale beds which in various locations are intruded by dolerite dykes and sheets (Refer to the Geological Map in Appendix D).

1.4.4 Soils

Most of Dannhauser comprises of Arenite and small portions are covered in Dolerite and Shale. The major soil types covering Dannhauser LM are Loam Soil, Sandy Clay Loam, Silt Loam and Silty Clay soils (Dannhauser Draft IDP, 2014/15).

1.4.5 Existing Land Use and Land Cover

The municipal area is largely covered by grasslands, natural freshwater, bushlands and agricultural activities (crop farming). The grasslands are mainly found within the commercial farms and these serve as the grazing areas for livestock farming. Subsistence agriculture mainly exists within the traditional council areas. The predominant land use categories in the area include settlements, commercial farmlands, conservation and mining. The agricultural potential of the municipal area varies but falls within six main ratings, ranging from High potential to very low potential land. About 19% of the land constitutes high potential agricultural land, located in the western segment of the municipal area while portions of the mid-northern sections and the south eastern areas are rated as good agricultural land. The rest of the eastern portions of the municipal area, which constitutes about 52% of the land, are considered as moderate agricultural land (Dannhauser Draft IDP, 2013/2014).

The Project area is in close proximity to rural settlements located to the east of the N11. These include Cornwall and Durnacol. The site's western boundary is approximately 6km from the N11 national road. To the north-east of the site is the Durnacol Golf Club, while the area to the south-west, south and east of the site is grassland (Northern KwaZulu-Natal Moist Grassland, which is used as grazing land (cattle were observed grazing to the west of the site during the site visit. The site is bordered to the south by a railway line and a power transmission line. The area indicated as 'Mining' on the Site Plan (

Legend

- Photo viewpoints
- Site Entrance & Guardhouse
- Landfill Site Extent
- High Voltage Lines

SA Landcover

- Grassland
- Shrubland
- Plantation
- Erosion
- Mines
- Durnacol Golf Club
- Grazing Land
- Northern KwaZulu-Natal Moist Grassland
- Cadastral Boundaries
- Railways

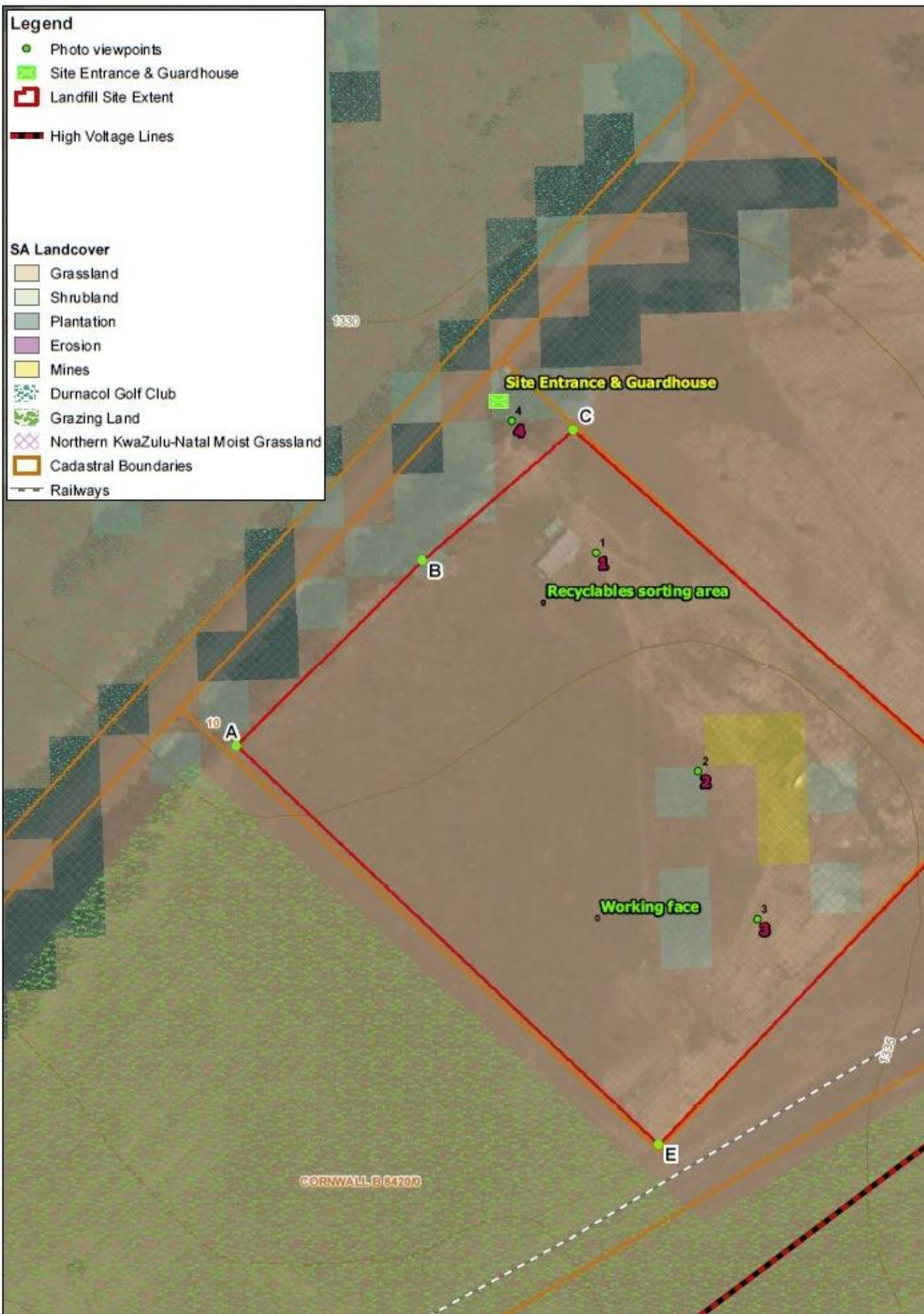


Figure 5-1) is actually an old section of the landfill. The area indicated as 'Plantation' running south-west to north-east on the Site Plan is a screen row of eucalyptus trees (refer to the Site Photographs in Appendix C).

1.4.6 Hydrology

A number of drainage lines traverse the LM with associated functional wetlands. Some of these main wetlands are located in the north-eastern and south-eastern segments of the Municipal area. These include the sub-catchments of the Mbabane and Mzinyashana Rivers, which are within the larger Buffelsrivier catchments. The mid northern portions fall within the larger Ngagane catchment, which contains significant and endangered ecosystems and plant species, which are of high conservation value. Wetlands cover approximately 10% of the Dannhauser Municipality (SANBI 2015).

Various water bodies are located within 1km (wetlands to the north and south) and 2km (dams to the south) of the landfill site. There are two water management areas (WMAs) within the Dannhauser Municipality namely the Thukela and Upper Vaal which make up 99.83% and 0.17% of the total land, respectively.

1.5 Biophysical Environment

1.5.1 Environmental Assets

Areas remaining natural have been calculated at approximately 104390 ha (68.9% of municipality) whereas areas with no remaining natural habitat is estimated at 47201.5ha (31.1% of municipality). The Dannhauser LM is characterised by an array of environmental assets. These include:

- The Chelmsford Nature Reserve - This is the only KZN Wildlife protected area within the LM. It is a 6014 ha reserve and is located around the Ntshingwayo Dam;
- Important Escarpments - These are found along the western and southern boundary of the municipality and are characterized by high conservation value. They also form part of the upper catchment of the Ngagane River;
- Important species sites - these include the wetlands e.g. Paddavlei (which is a habitat for the endangered White winged Flufftail) and grasslands; and,
- Important ecosystems - The municipality falls within the Acocks Veld Type 66 (Natal sour sandveld) which is endemic to KwaZulu-Natal. The area has a high incidence of Red Data species, forest patches and medicinal plants.

1.5.2 Flora

Two biomes traverse the Dannhauser LM, namely the Grassland and Savanna biomes. The dominant biome is the Grassland biome which accounts for more than 99% of the total area. Vegetation types within the LM varies significantly but is dominated mainly by five vegetation types. These include the Income Sandy Grassland, Glencoe Moist Grassland; Northern KwaZulu-Natal Moist Grassland; KwaZulu-Natal Highland Thornville; and the Low Escarpment Moist Grassland. According to the KZN Wildlife Vegetation Status Database, the Northern KZN Moist Grassland is vulnerable while the Glencoe Moist and Income Sandy Grasslands are endangered and endemic to KZN (Mucina & Rutherford, 2006)

The landfill site is highly disturbed. Surrounding land can be characterised by impacted Northern KZN Moist Grassland, interspersed with alien vegetation such as Bluegum trees.

1.5.3 Fauna

The Dannhauser LM is home to a number of important habitat sites which include wetlands such as Paddavlei, approximately 11 km south of the Dannhauser landfill (which is a habitat for the endangered White winged Flufftail) (Dannhauser Draft IDP 2014/15). No species of concern are expected on site as it is an existing landfill.

1.6 Socio-economic Environment

1.6.1 Population

The local population of Dannhauser LM in 2001 was estimated to be 102,779 and decreased to 102,161 in the 2011 census (Stats SA, Census 2011). This slight decrease in population (-0.06%) could be as a result, amongst others, of outward migration where residents and/or indigenous people are moving to neighbouring areas or illness associated with HIV/AIDS. The number of households in the municipal area slightly increased to 20,439 in 2011 from 19,320 in 2001. These households are predominantly rural settlements and are characterised by a scattered pattern. The scattered nature of these households poses a great challenge in the provision of basic services such as water, roads, electricity, etc. for the municipality.

Population of the Dannhauser town is 5,389 (Stats SA, Census 2011) with:

- 73% of the population classified as Black African and 70.4% speak isiZulu as their first language.
- The majority (56.7%) of the population within the municipality are between the age of 15 and 64 years which is slightly lower than the Provincial average of 63.1%. Approximately 38.2% are below the age of 15 and only 5% are over 65 years (Stats SA, Census 2011).

1.6.2 Employment

Despite its strategic location, Dannhauser functions as a small rural service centre (providing commercial and service facilities in addition to agricultural industries and services), and is not a large employment generator. Residents of the municipal area rely on the larger urban centres of Dundee and Newcastle for employment opportunities and higher order goods and services. The mining sector does provide employment, which is another contributing factor in terms of the economic development to the districts growth (Dannhauser Municipality Annual Report 2013/2014).

In 2011, approximately 47.6% of the population in Dannhauser LM were unemployed out of which 58.2% were youth between the ages of 15 and 34 years. High unemployment levels of the youth pose a particular challenge (Dannhauser Draft IDP 2014/15).

1.6.3 Education

There are 64 schools within the Dannhauser LM. These range from junior primary through to senior secondary schools, and are spread unevenly in space with the highest concentration coinciding with the settlements in the north. There are no tertiary education facilities within the LM. In 2011, only 1.3% of the population had a higher level of education and approximately 25.3% had metric. People with no schooling declined to 8.9% in 2011 from 22.8% in 2001. (Dannhauser Draft IDP 2014/15).

1.6.4 Service Delivery

1.6.4.1 Health Services

The Dannhauser LM has 10 clinics that are administered by the Department of Health. There is one Community Health Care Centre (CHCC) located within the town of Dannhauser, which is currently under construction. The CHCC aims to ensure that health services are accessible and closer to the people. The Department of Health further supports 36 mobile clinics in areas where health services are not available (Dannhauser Draft IDP, 2014/15).

1.6.4.2 Electricity

Eskom is the electricity service provider in the Dannhauser LM. The Dannhauser LM became the first municipality in the country to electrify all households within its area of jurisdiction. About 80.7% of the population within the municipal area use electricity for lighting, cooking and heating (Dannhauser Draft IDP, 2014/15).

1.6.4.3 Waste Management and Recycling

The Dannhauser LM removes refuse for 15% of the households on a weekly basis (Dannhauser Draft IDP, 2014/15) to the unlicensed Dannhauser landfill site located 2 km from the Dannhauser town. This appears only to be undertaken within the urban areas of Dannhauser town, Hattingspruit and the Durnacol Mine.

1.6.4.4 Water and Sanitation

Access to water is one of the key challenges facing the Dannhauser LM as a substantial amount of people do not have access to good quality water. According to the 2011 Census data 19.5% of households receive piped water within their dwelling. Nonetheless, the District Municipality has, through the Amajuba Water Services Development Plan's (WSDP) drought relief programme, implemented some standpipe projects in the areas of Steildrift (Annievale, Kiel Keel and Nelly valley), Emfundweni, Fairbreeze, Eastbourne Farm Extension and Ubuhlebomzinyathi. The programme was aimed at giving these communities purified water as a temporary measure and a relief as some of the boreholes were dry due to drought. These areas are still to be covered for the long-term supply (Dannhauser Draft IDP, 2014/15).

1.6.5 Economy

Agriculture and mining are currently the main economic activities in the Municipality. The average growth rate of the Dannhauser economy was about -2.5% per annum between 1995 and 2004. This was due mainly to the high negative growth rates for the two biggest sectors of the Dannhauser economy at the time which were mining and manufacturing, growing at an average of -5.9% and -4% per annum between 1995 and 2004, respectively. The mining sector contributed about 30% to the local economy in 2004, and the manufacturing sector 13.8%. Coal mining, the dominant mining activity in Dannhauser, declined by nearly 50% between 1995 and 2004. Nonetheless, the mining sector remains an important sector in the Dannhauser economy. Indications are that an increasing number of newly established mining companies have started operating within Dannhauser and this could be a future boost to the local economy (Dannhauser Draft IDP, 201/15).

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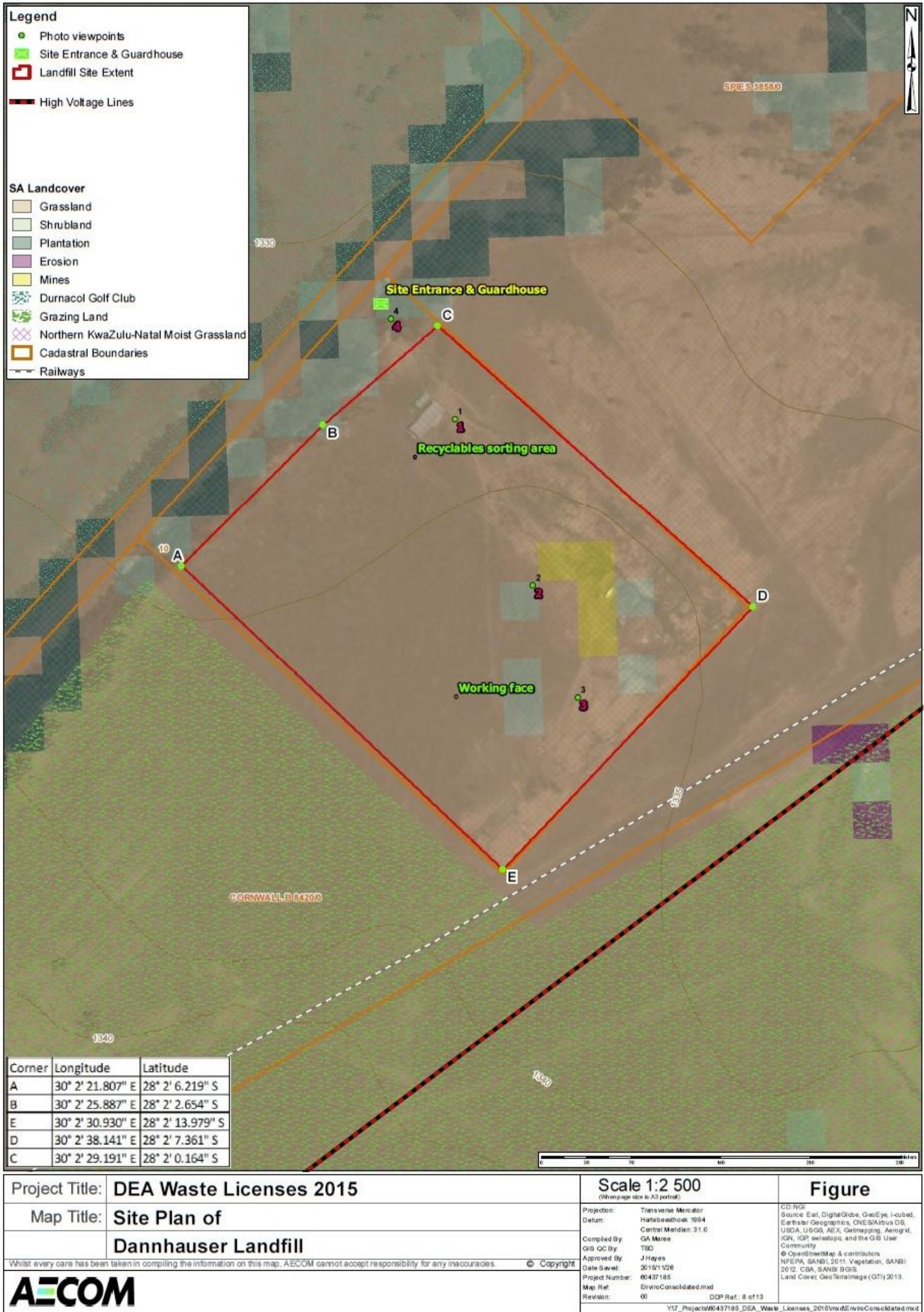


Figure 5-1: Site Plan of the Dannhauser Landfill

2. LEGISLATIVE FRAMEWORK

2.1 Introduction

The overarching legal framework pertinent to the licensing of the Dannhauser landfill site is NEMA and the associated Specific Environmental Management Acts (SEMA). 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.

2.2 Relevant National Legislation

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

2.2.1.1 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.

2.2.1.2 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 Dannhauser Landfill will take these new Regulations on Norms and Standards into account.

2.2.1.3 Activities applicable to NEMWA

The operation of the Dannhauser Landfill includes activities listed in Categories A of Government Notice (GN) 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 2-1, for which authorisation by means of a BAR application process must be obtained.

Table 2-1: 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	A	2	The sorting, shredding, grinding, crushing, screening or bailing of general waste at a facility that has an operational area in excess of 1000m ² .
GNR 37083 of 29 November 2013 in terms	B	8	The disposal of general waste to land covering an area in excess of 200m ² and with a total capacity exceeding 25 000 tons.

No. and Date of the Relevant Notice	Category A or B	Activity Number	Description of the Listed Activity
of Section 19(1) of NEMWA		10	The construction of a facility for a waste management activity listed in Category B of this Schedule (not in isolation to associated waste management activity).

2.2.2 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.

At this stage, no applicable NEMA activities have been identified as having been triggered by the application. The scope of this project is to license the operation of the existing landfill.

2.2.3 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.

2.3 Additional Applicable Legislation

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

Table 2-2: 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.
	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.
	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 Dannhauser 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

Relevant Legislation	Sections	Applicability to the Project
		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.

2.4 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.

2.4.1 Dannhauser LM Integrated Waste Management Plan

The Dannhauser LM Integrated Waste Management Plan (IWMP) was prepared in 2010/2011. The reviewed IWMP reflects on the previous status quo and objectives set, as well as current conditions, limitation and challenges currently experienced by the LMs. 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 municipality. Currently the municipality is servicing 15 % of the residents, 3000 out of a total of 20439 households.

The municipality makes provision for twenty refuse bags per end-user (domestic and commercial) on a monthly basis. Furthermore, the municipality has installed skip bins within the CBD area and within areas where waste collection is not done on a regular basis as the means to ensure extension of this basic service. CBD street sweeping is conducted on a daily basis and refuse removal thereof.

The municipality has initiated a Recycling program in line with the existing IWMP. The municipality also actively participated in the Zibambeke Waste Reduction programme. Through this programme, the municipality has created a total of 110 jobs opportunities which is comprised of ten community members per Ward. However, the Waste Management Section is still currently under capacity to provide adequate service delivery and to meet the current service demands.

2.4.2 Dannhuaser LM's Integrated Development Plan (IDP), 2014.

The 2014 Dannhauser 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". Currently only 15% of the Dannhauser community receives regular waste services. Challenges relating to waste management currently faced by the Dannhauser LM include:

- Licencing of the Dannhauser Landfill; and,
- Under capacity for delivery of services.

3. 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.

3.1 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 KwaZulu-Natal province. Refer to **Appendix A** for the I&AP Register.

3.2 Announcement of the Proposed Project

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

3.2.1 Media

Newspaper advertisements notifying the public about the environmental application and opportunities to participate in the EIA process for the proposed WML application for the existing Dannhauser landfill were placed in the following newspapers:

Table 3-1: Project Announcement Newspaper advertisements

Newspaper	Distribution	Language	Date
Newcastle Advertiser	Local	English	11 September 2015
The Mercury	Regional	English	11 September 2015

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

3.2.2 On-site Notices

Two (2) A2-sized site notices were erected at various public places in the project area on the 31st August 2015. The site notices were written in English and were placed at the following places around the affected area:

Table 3-2: Site Notice Locations

Site Notice No.	Location
1	Site fence
2	Dannhauser LM Reception, Church St, Dannhauser

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

3.3 Dissemination of Information

Information was disseminated to registered I&APs primarily by means of a Background Information Document (BID) and Notification letters. Issues raised and comments received from I&APs were integrated into the DBAR.

3.3.1 Background Information Document

The BID has been useful in providing background information to the public on the proposed waste licence application for the existing Dannhauser 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**.

3.3.2 Draft Scoping Report Review Period

The DSR will be available for a thirty (30) calendar day review period to registered I&APs from 04 December 2015 to 25 January 2016 (excluding public holidays and the period from 15 December to 05 January). The DSR will be available at the following venues:

Table 3-3: Venues for Draft Scoping Report

Venue	Address
Dannhauser Waste Disposal Facility	Accessed via Main Street between Cornwall and Palmietfontein, opposite the Dannhauser Golf Course
Dannhauser Public Library	8 Church Street, Dannhauser

Electronic copies of the DSR can be downloaded from www.deawaste2015.co.za.

3.4 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.

3.5 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 KZN EDTEA for their approval.

4. DESCRIPTION OF POTENTIAL ENVIRONMENTAL IMPACTS

4.1 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. It also provides a framework for the impact assessment that the landfill will have during operation. The following environmental impacts have been identified and will be investigated during the EIA phase of the process.

4.1.1 Planning, Design and Construction Phase

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

4.1.2 Operational Phase

The impacts anticipated during the operation of the existing Dannhauser Landfill are indicated in Table 4-1.

Table 4-1: Anticipated impacts during operation

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

4.1.3 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.

5. PLAN OF STUDY FOR EIA

5.1 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.

5.2 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.

5.3 Impact Assessment Methodology

The impacts identified and described in Chapter 4, will be assessed using the methodology described below.

5.3.1 Impact Assessment Criteria

The criteria used for the assessment of potential impacts are described in **Table 5-1**.

Table 5-1: 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 5-2: Description of Extent Criteria

Description	Explanation	Scoring
Footprint	Impacted area extends only as far as the activity, such as footprint occurring within the total site area.	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 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 Dannhauser landfill.

Table 5-3: 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 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 5-4: 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 5-5: 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 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 5-6: 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 5-7: 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 5-8: 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:

$\text{Significance} = (\text{Extent} + \text{Duration} + \text{Intensity}) \times \text{Probability}$
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This is the importance of the impact in terms of physical extent and time scale, and is rated as follows:

Table 5-9: 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	90 – 100

5.4 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 KZN EDTEA. 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 Dannhauser landfill by means of a Landfill Monitoring Committee.

5.5 Draft EIR 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 EIR. The draft EIR 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 EIR will be made available at the same public venues used during the Scoping Phase. Electronic copies can be downloaded from www.deawaste2015.co.za.

5.6 Final Environmental Impact Report

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

5.7 Decision-making Phase

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.

6. CONCLUSION

The licensing of the unlicensed Dannhauser 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 these 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 and during consultation with I&APs and other key stakeholders. The plan of study for the remainder of the EIA process is also indicated in this DSR. This DSR is currently available for public comment over a period of 30 days to provide I&APs with an opportunity to raise issues 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 a Final Scoping Report, to be submitted to the KZN EDTEA for their approval, after which the EIA Phase of the S&EIR will commence.

7. REFERENCES

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Appendix A

Public Consultation Documentation

Appendix B

WML Application Form

Appendix C

Site Photographs

Appendix D

Site Locality

Appendix E

CVs of the Project Team

