

LAWTIG Seminar : What it takes to build a landfill

Landfill Site Selection and Licensing Process

10 April 2019

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● Need for landfill

The Overberg District Municipality (ODM) incorporates the following local municipalities:

- Overberg
- Cape Agulhas
- Overstrand
- Swellendam and
- Theewaterskloof.

These municipalities then consist of various small towns. In the past every small town had its own landfill/dump site and most of these sites were not engineered landfills.

To this end it was decided in the 1990s to construct a regional landfill where municipalities could dispose of waste and share the cost of resources rather than construct and operate many small sites.

The landfill site does not allow disposal of Hazardous Waste and Medical Health Care Risk Waste.

Please note that the selection of the site was done by others.

Landfill Selection

Landfilling of waste forms part of the Integrated Waste Management Plan for the ODM

The normal procedure for site selection:

For the purposes of this presentation it is assumed that the landfill is within reasonable reach of the communities it serves. There are legal requirements that must be met before construction of any landfill infrastructure, this is addressed later in the presentation.

The investigation of the site must in as far as is possible include the following:

- Define the disposal need and determine landfill airspace requirements;
- Identify a number of suitable candidate landfill sites;
- Rank the candidate landfill sites according to environmental, economic, social acceptance and technical criteria.
- Document the results of the study in a report for consideration by the municipalities and by other interested and affected parties. This report will form part of the Waste License Application process,

- Karwyderskraal 2004



- **Criteria for selection include:**

- **Social**

- Proximately to residents,
- Prevailing wind direction,
- Aesthetics during and after operations of the site,
- Proposed end use of the site.

- **Environment**

- Fauna and Flora,
- Topography,
- Land Use compatibility,
- Existing soil contamination,
- Depth to ground water and the importance of the source,
- Geological formations,
- Distance to wetlands and rivers,
- Presents of heritage sites,
- Aesthetics during and after operations.

- **Economic**

- Distance to waste generators
- Access to the site from main roads
- Land Availability
- Integration to the waste disposal strategy
- Size of the site
- Availability of cover materials
- Availability of liner and capping materials

- Karwyderskraal 2005



● Fatal Flaws

If a fatal flaw is identified the site will be excluded and the following appropriate site used and so on. These flaws dictate that the site must not be:

- Within a 3,000 m radius of the end of an airport landing strip
- Within the 1:50 year flood line of any watercourse
- Within an unstable area (fault zone, seismic zone, dolomitic area, sinkholes)
- Within the drainage area or within 5 km of a water source
- Within an area with a shallow and/or visible water table
- Within an area adjacent to or above an aquifer
- Within an area with shallow bedrock and limited available cover material
- within 100 m of a source of surface water
- Within 1 km of a wetland
- Within 500m of the boundary of the nearest residential area depending on the wind direction
- Within 200m of the boundary of the nearest industrial area

- Karwyderskraal 2016



● Legal Requirements

- The chosen site must either belong to the municipality or the municipality must hold sole rights over the property,
- Use of the site must not conflict with the zoning of the property,
- The site must have a waste management licence issued by the competent authority ITO of the NEM:WA (Act 59 of 2008) Category B (5)

“The disposal of general waste to land covering an area of more than 100m² or 200 m³ of airspace, including the construction of a facility and associated structures and infrastructure for such disposal”.

- NEM:WA requires that a full EIA accompany the Waste Licence Application.

Once the is approved and the Waste Licence issued for the site the municipality can move over into the design phase of a landfill development process.

Licensing Process

As mentioned above a municipal landfill site requires a Waste Management License (WML). The following is a short description of the process to acquire such a license.

- Once the location of the site has been established the municipality must appoint a independent company to complete the WML and EIA process. This will include various specialist studies to ensure that all aspects that may have an environmental impact are defined and where necessary the correct mitigating measures can be included in the WML application. These may include Heritage, Ecology, Biodiversity etc. These studies will also include technical work such as topographical survey, geotechnical and geohydrological studies to inform a preliminary design that will be submitted to the competent authority. (Dept of Water and Sanitation)
- The service provider must follow the EIA process as Defined in NEMA (Act 107 of 1998 as amended)
- See next Slide

EIA Process Flow

