



# MUNICIPAL LANDFILL AUDIT REPORT

2022

by

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# Acknowledgements

A big thank you to AfriForum's staff and all the AfriForum branches across South Africa who have made this project possible.

Thank you to every individual member of AfriForum for your participation in this national project, and for sharing the vision of sustainable development and responsible waste management in South Africa with us.

Thank you also to every municipality providing guidance in South Africa and delivering excellent services by ensuring

that waste is managed in a responsible manner and thereby complying with appropriate legislation and licences for managing waste. These municipalities should be rewarded for protecting their communities and the environment against pollution and hazards.

Thank you to the Waste Management Division of the Department of Environmental Affairs and the Minister who supported the project, assisted with the compilation of the new landfill site audit list and made their provincial task team available to participate in branch audits.

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# Introduction

The civil rights organisation AfriForum launched the #CleanSA initiative in May 2014. This project strives to make a positive change in the management of waste across South Africa by holding the officials involved accountable and by creating cooperation between communities and the three spheres of government: the Department of Environmental Affairs; the respective provincial departments on the provincial level; and municipalities on the local level of government. From a waste management perspective, the latter is the most important and is also the level of government that is closest to communities. With the #CleanSA initiative, AfriForum wants to equip communities with solution-driven approaches. Therefore we introduce the latest technologies and processes for dealing with the growing waste issue and for processing waste through lower levels of pollution and more efficient recycling.

This initiative gave rise to the AfriForum's landfill site audit report. This audit aims to establish the extent to which landfill sites (legal as well as illegal) in the municipalities of AfriForum's 150 branches across the country comply with the minimum and to compare these with their waste management licences. With this project, AfriForum wants to

be known as a leader in waste management, as it is the only organisation that publishes this type of data on the status quo of South Africa's landfills. Factors such as inadequate waste management; the collapse of infrastructure; corruption, health and safety issues; a shortage of air space for waste, as well as worldwide concerns about global warming and pollution have compelled AfriForum to implement this project to protect South Africans' constitutional rights and our natural environment. AfriForum is of the opinion that very few municipalities comply with waste regulations, and that local authorities display a lack of accountability for proper waste management, monitoring and licensing.

For the purpose of this report, waste management practices in specific municipalities were assessed to determine whether responsible management takes place and to ensure that recommendations for best practice as well as environmental, health and safety requirements were being met. The audit results for each municipality were analysed and converted to a score out of 100 to measure compliance performance. The results are collated in this investigational report.



*Shacks in which people live on the Klerksdorp landfill site in the North West.*





*An impeccable landfill site in Tzaneen, with an operative weighbridge, fence and complete infrastructure.*

## The facts

In terms of the South African Constitution, waste management is a service that has to be provided by local governments.

According to the 2012 departmental report on the condition of the environment, it is calculated that 42 million m<sup>3</sup> of ordinary (household) waste and 5 million m<sup>3</sup> of hazardous waste are generated annually in South Africa. Non-compliance with regulations at landfill sites pollutes the air, soil and water sources. This cannot be tolerated because it directly affects the health and safety of the community.

The management of household waste in South Africa is currently facing many challenges, including law enforcement, management (among others financial and personnel management as well as the management of equipment) and institutional behaviour (management and planning).

The South African waste management strategy is based on a range of laws aimed at managing and preventing pollution of the environment. The most pertinent of these laws are the following:

- **The Hazardous Substances Act 15 of 1973, which regulates the treatment and destruction of hazardous substances**

- **The Environment Conservation Act 73 of 1989**
- **The National Environmental Management Act 107 of 1998**
- **The National Environmental Management: Waste Act 59 of 2008, which was promulgated specifically to regulate waste management in South Africa.**

The Local Government Municipal Systems Act 32 of 2000 furthermore requires waste management services to be provided to all local communities in a financially and environmentally sound manner to promote the accessibility of basic services as well as sustainable waste management.

The current South African legislation to manage waste properly seems to be adequate. However, the appropriate legislation is neither applied nor enforced.

The government is obliged by the Constitution to uphold the rights set out in Section 24 of the Constitution through organs of state that are responsible for the implementation of legislation on waste management. The government must introduce uniform measures aimed at reducing the amount of waste that is generated as well as ensuring that waste is reused, recirculated and recycled in an environmentally friendly manner, or treated and disposed of in a safe manner.



# Landfill sites

A landfill site is a place where waste is dumped, levelled, covered with sand and left to decompose. Landfill sites are also called “rubbish dumps”, “rubbish heaps”, or “rubbish tips”. These sites should be located in places where waste can be managed without harming people’s health or damaging the surrounding environment. It is therefore illegal to dump waste in places that are not licensed by the Department of Environmental Affairs as landfill sites.

In terms of section 9(1) of the National Environmental Management: Waste Act 59 of 2008 a municipality must employ its executive powers to provide waste management services – including refuse removal and the storage and destruction of waste – in such a way that it does not conflict with national and/or provincial standards.

## Classification of waste

Waste is divided into two categories, namely general and hazardous waste.

- 1. General waste** (also called household waste) is waste from urban areas, mainly from houses, offices and construction sites. This includes building rubble, garden refuse, waste from people’s houses and other waste from towns and cities. The local authority is responsible for the collection, transport and management of waste in urban areas. The local council must use a portion of the money collected from residents in their area to deliver this service. In other words: If you pay rates, you already pay to have your refuse removed. General waste is dumped at general landfill sites, identified in official documents by the symbol G.
- 2. Hazardous waste** can pollute the environment and harm people’s health. This waste comes from factories, mines and hospitals and includes toxic substances (toxic waste), germ-bearing waste and explosive or easily combustible waste. Hazardous waste is classified from 1 (very hazardous) to 10 (slightly hazardous). This kind of waste may be dumped only at sites that are equipped to handle this kind of waste. These sites are identified by the symbol H:h or H:H in official documents.



*Hazardous medical waste dumped at the general Springbok landfill site in the Northern Cape.*

**PLEASE NOTE:** This AfriForum audit report focuses only on municipal/private landfill sites for general waste. However, carcasses, sewage, medical waste and other types of hazardous waste were indeed found on some of the general landfill sites referred to in this report.

# The problem

Waste from any urban community will not only create an aesthetic problem but can also pose severe health risks if it is not properly controlled. These risks are increased if the waste contains hazardous substances.

Local authorities can and should be held criminally liable for acts of negligence that affect people's health or cause pollution. Local authorities can also be held civilly liable for associated financial costs, particularly relating to the closing or rehabilitation of landfill sites and the rehabilitation of polluted soil or land intended for urban development.

The waste generated by people in towns and cities can be detrimental to people's health and the environment if:

- **the landfill sites are located close to where people live;**
- **the landfill sites are poorly designed and developed (for instance where leached or toxic water gets into the groundwater reservoirs and rivers);**
- **the landfill sites are poorly managed (for example if the sites are not fenced, access control is not applied, animal carcasses are lying around, fires occur on a regular basis, or the waste is not covered with sand and compacted on a daily basis; or**
- **the waste is not taken to properly managed landfill sites but illegally dumped on open sites.**

## Problems with landfill sites

People who live or work close to landfill sites are exposed to a number of risks and hazards. These include:

- **Landfill sites can be very unsafe, noisy, smelly and visually unattractive.**
- **Vehicles collecting or dumping waste can pose safety risks.**
- **Spontaneous combustion and fires on the sites can pollute the air.**
- **The gases on landfill sites can cause explosions.**
- **Pollution on the site can penetrate the surrounding natural water sources and soil.**
- **People can become ill if they inhale the polluted air, drink toxic water or eat food that has been grown in poisoned soil.**
- **People can develop cancer or asthma and other lung and chest diseases.**
- **Birth defects may occur and children growing up close to landfill sites can show stunted growth and be sickly.**
- **Landfill sites attract animals and insects that may carry germs and diseases, for instance rats, mice and flies, and it can transmit these germs and diseases to people who come into direct contact with the site.**



*One of the terrains that were audited is littered with animal carcasses.*



*Burning refuse at landfills is a serious risk.*

# The project

Various communities participated in the project by inspecting their local landfill sites and answering 33 questions (counting 25 points altogether) about these sites. This contributed to the data used for the audit of compliance with the minimum requirements for landfill sites. They were accompanied by AfriForum's provincial coordinators and various other stakeholders, including municipal officials, the media and service providers.

The Director-General for Waste Management of the Department of Environmental Affairs provided AfriForum with the contact details of the department's provincial waste management officials so that they could be invited to the landfill site audits. They are also available to assist AfriForum after the conclusion of the project.

The Gauteng Department of Agriculture and Rural Development (GDARD) as well as waste management officials from private companies joined forces with AfriForum in 2017 to conduct a landfill site audit and provide input for the compilation of a new audit questionnaire.

Almost every licensed landfill site is required to be audited annually by independent parties or organisations. AfriForum is therefore well positioned as a community watchdog to conduct a reliable audit on the various local landfill sites.

Participants were encouraged to take photos as evidence to increase the credibility of the study. A final score was calculated by awarding one point for each category complying

with the minimum requirements. The final score was multiplied by four to achieve a compliance score out of 100.

*Example: 15 of the 33 questions (with a total of 25 points) comply with the requirements. (Please note: Certain points carry more weight than others, depending on the importance of the specific standard.)*

*Therefore:*

$$15 \times 4 = 60\%$$

Each municipality that achieves more than 80% will receive a certificate of appreciation from AfriForum. Sites that are managed in an excellent way can achieve 100%. Such sites will receive special recognition and a floating trophy on which the name of the municipality concerned will be affixed.

Please refer to the action plan below relating to municipalities obtaining a score of less than 80%.

In 2016 private landfill site companies approached AfriForum to showcase the standards upheld in the private sector. Since 2016, AfriForum has therefore been auditing the private sector's landfill sites as well, in order to compare their results with those of the government.

## Results

AfriForum audits in previous years (as from 2014) at landfill sites all over South Africa were as follows:

- **2014: 83 sites**
- **2015: 56 sites**
- **2016: 83, of which 3 in the private sector**
- **2017: 105, of which 3 in the private sector**
- **2018: 114, of which 5 in the private sector**
- **2019: 127, of which 3 in the private sector**
- **2020: 135, of which 3 in the private sector**
- **2021: 153, of which 4 in the private sector**
- **2022: 162, of which 5 in the private sector**

The most remarkable observation was that various sites had closed down, while others that are still open must be closed

according to their licences.

The results of the landfill sites audited between 2014 and 2021 are also included in this report so that they can be compared with the 2022 results. The results can be summarised as follows:

Only 30 of the 162 landfill sites that were audited in 2022 (18,5%) complied with 80% or more of the minimum requirements for landfill sites. This means that 126 landfill sites within municipalities (82,4%) did not meet the minimum requirements. This clearly points to major shortcomings with respect to systems and people responsible for proper waste management across the entire country.

Compared with 2021 this indicates to a deterioration in the number of sites that complied with 80% or more of the minimum requirements for landfill sites.

The number of landfill sites that were audited in each province is indicated in table 1 below, as well as the number that complied or did not comply with the minimum requirements for landfill sites.



Table 1: Statistics on compliance/non-compliance with minimum requirements for audited landfill sites, per province

Province	Number of landfill sites that were audited										Number of audited landfill sites that comply with more than 80% of the minimum requirements										Number of audited landfill sites that do not comply with minimum requirements									
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2014	2015	2016	2017	2018	2019	2020	2021	2022	2014	2015	2016	2017	2018	2019	2020	2021	2022			
Gauteng	12	4	10	22	20	21	16	17	19	3	0	2	13	15	11	11	9	11	9	4	8	9	5	10	5	8	8			
KwaZulu-Natal	13	3	6	7	6	7	8	9	9	5	0	1	1	1	2	1	1	1	8	3	5	6	5	5	7	8	8			
Limpopo	10	7	8	9	13	12	9	11	15	3	1	3	3	4	4	1	1	2	7	6	5	6	9	8	8	10	13			
Mpumalanga	11	8	11	17	24	25	19	21	22	0	1	0	0	5	2	0	1	0	11	7	11	17	19	23	19	20	22			
Northern Cape	7	5	9	10	8	12	15	16	18	3	0	1	1	0	2	0	1	1	4	5	8	9	8	10	15	15	17			
North West	11	7	12	13	14	14	18	21	23	3	1	3	1	3	1	2	2	3	8	6	9	12	11	13	16	19	20			
Eastern Cape	-	7	5	3	7	6	6	7	6	-	1	1	0	1	2	1	0	0	-	6	4	3	6	4	5	7	6			
Free State	11	10	13	14	14	20	25	24	25	1	0	2	1	0	0	0	0	0	10	10	11	13	14	20	25	24	25			
Western Cape	8	5	9	10	8	9	19	27	25	3	2	2	3	4	4	8	12	12	5	3	7	7	4	5	11	15	13			
<b>National total</b>	<b>83</b>	<b>56</b>	<b>83</b>	<b>105</b>	<b>114</b>	<b>127</b>	<b>135</b>	<b>153</b>	<b>162</b>	<b>21</b>	<b>6</b>	<b>15</b>	<b>23</b>	<b>33</b>	<b>28</b>	<b>24</b>	<b>27</b>	<b>30</b>	<b>57</b>	<b>50</b>	<b>68</b>	<b>82</b>	<b>81</b>	<b>99</b>	<b>111</b>	<b>126</b>	<b>132</b>			



The Hatherley landfill site, just outside Pretoria in Gauteng.

The information in table 1 can be better visualised by way of the column graphs in figures 1 and 2.

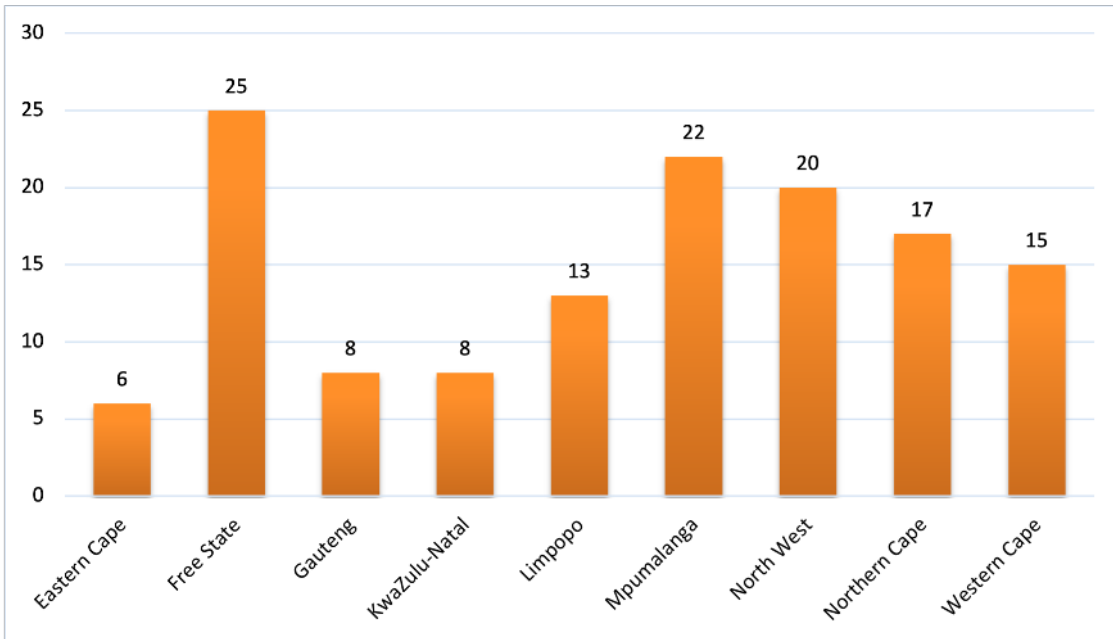


Figure 1: Number of audited landfill sites per province not complying with minimum requirements in the 2022 report

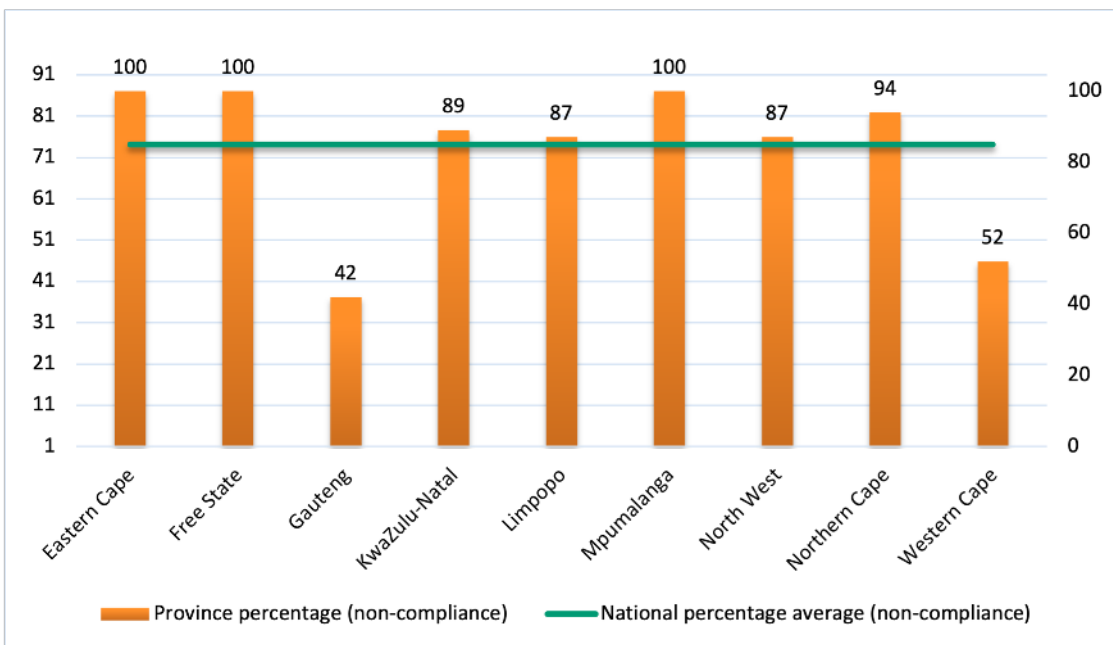


Figure 2: The national average of audited landfill sites in comparison with the provincial average of audited landfill sites not complying with minimum requirements in the 2022 report



The percentage of all audited landfill sites that complied with/did not comply with the minimum requirements for landfill sites in 2022 is shown in figure 3 below.

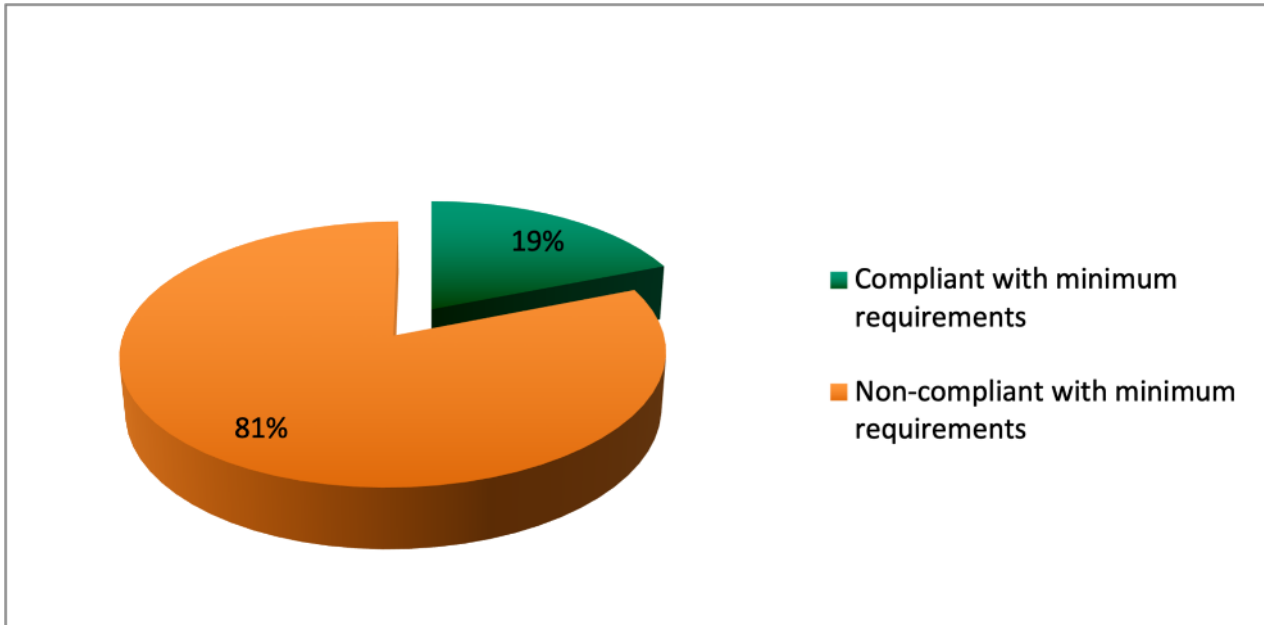


Figure 3: Percentage of audited landfill sites complying/not complying with minimum requirements in 2022

The audit results for 2014 to 2022 are compared in figure 4 below. It is not indicated in the graph whether the performance of landfill sites improved or deteriorated.

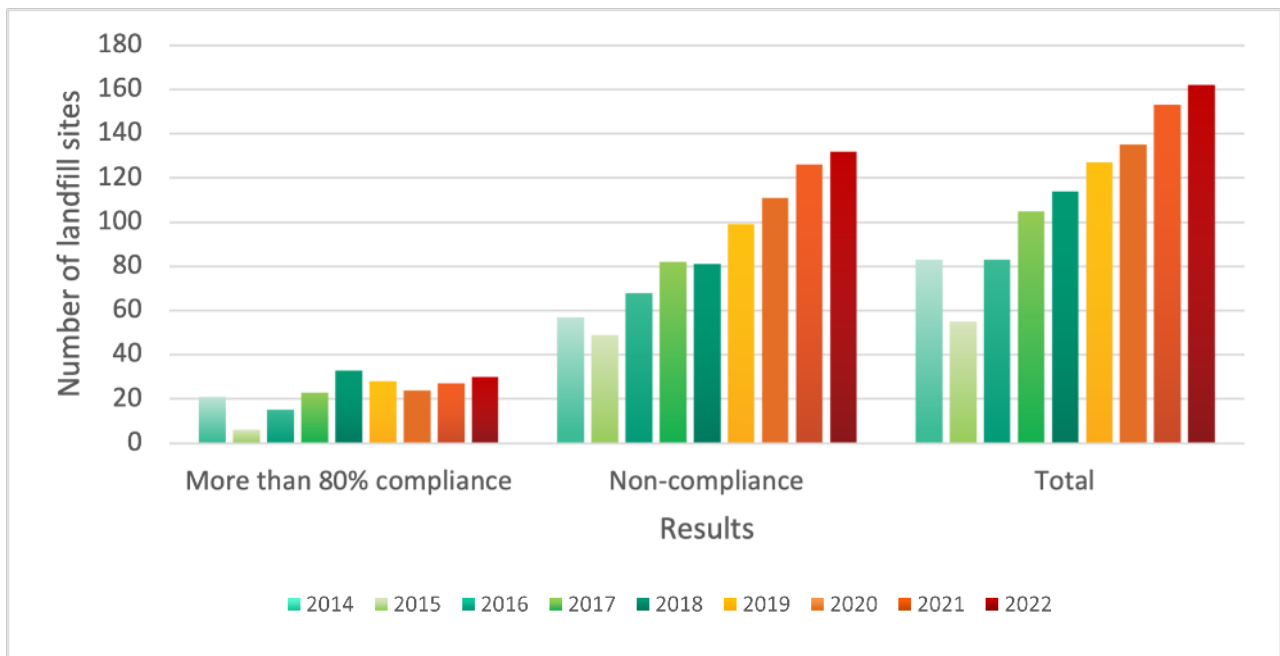


Figure 4: Comparison of the number of audited landfill sites complying/not complying for 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021 and 2022

In table 2 below, the percentages allocated to all audited landfill sites from 2015 up to and including 2021, based on the landfill site audit questionnaire from each municipality, are shown.

Some landfill sites that were included in the previous report have been omitted as they have closed since the last reporting period.

Table 2: *AfriForum audit scores for the period of time 2014–2021*

**Key:**

Landfill site with permit	
Landfill site without permit	
Private landfill site	
Transfer station	

EASTERN - CAPE												
Name of branch or landfill site	Municipality or responsible institution	Licence number	Compliance (%)									
			2015	2016	2017	2018	2019	2020	2021	2022		
Aliwal-North	Maletswai LM	12/9/11/P131	-	-	-	30	34	36	56	26		
Cradock	Inxuba Yethemba LM	B33/2/1000/33/P122	24	36	-	-	-	-	10	32		
Elliot	Sakhisizwe LM	-	16	-	-	0	2	4	0	0		
Hankey	Kouga LM	BB33/2/1100/5/P209	-	-	-	-	40	72	42	30		
Jeffreys Bay (Humansdorp)	Kouga LM	12/9/17/P53	-	-	-	-	58	88	68	-		
Port Elizabeth (Arlington)	Nelson Mandela Bay Metro	16/2/7/M200/D1/21/P278	76	-	-	99	90	78	62	78		
Uitenhage (Koedoeskloof)	Nelson Mandela Bay Metro	B33/22/1200/7/P37	-	-	-	-	90	74	36	38		

FREE STATE												
Name of branch or landfill site	Municipality or responsible institution	Licence number	Compliance (%)									
			2015	2016	2017	2018	2019	2020	2021	2022		
Allanridge	Matjhabeng LM	-	-	-	-	-	-	0	4	0		
Bethlehem	Dihlabeng LM	12/9/11/L98/2 & WM-L/1B/03/2010	-	-	56	22	16	6	32	18		
Bethlehem Mōreli transfer station	Dihlabeng LM	-	-	-	-	-	-	-	-	14		
Bloemfontein North	Mangaung Metro	16/2/7/C522/D1/22/P478	72	96	89	18	10	16	22	12		
Bloemfontein South	Mangaung Metro	B33/2/350/2/P162	68	80	68	18	14	20	28	28		
Boshof	Tokologo LM	WML/BAR/11/2014	-	-	19	11	18	26	14	20		



Bothaville	Nala LM	16/2/7/C604/D1/Z1/P340	8	4	-	4	-	4	-	4	4	4	4	4	10
Brandfort	Masilonyana LM	-	4	24	9	-	24	2	2	34	12	12	12	12	12
Bultfontein	Tswelopele LM	WML/BAR/07/2014	-	-	42	-	-	24	24	28	24	24	24	24	24
Dealesville	Tokologo LM	12/9/11/L886/2	-	52	31	3	52	26	26	38	24	24	24	24	24
Frankfort	Mafube LM	-	48	16	1	0	16	3	4	0	0	0	0	0	0
Harrismith	Maluti-A-Phofung LM	16/2/7/C801/D2/Z1/P333 & 16/2/7/C801/D2/Z2/P343	24	16	-	20	16	13	13	18	24	24	24	24	24
Heilbron	Ngwathe LM	-	12	8	0	0	8	-	0	2	0	0	0	0	0
Hennenman	Matjh Beng LM	-	-	-	-	-	-	26	0	0	0	0	0	0	0
Hertzogville	Tokologo LM	WML/BAR/10/2014	-	-	-	52	-	36	36	56	62	62	62	62	-
Kroonstad	Moghaka LM	B33/2/360/1/P36	-	-	-	-	-	16	16	14	16	16	16	16	16
Odendaalsrus	Matjh Beng LM	B33/2/325/6/P108	-	-	-	-	-	7	7	2	52	52	52	52	20
Parys	Ngwathe LM	16/2/7/C233//D1/Z1/P336	-	-	-	8	-	16	16	10	20	20	20	20	20
Reitz	Nketoana LM	16/2/7/C805/D4/721/P341	68	-	-	-	-	13	13	14	14	14	14	14	14
Sasolburg	Metsimaholo LM	12/9/11/L1905Z215440712	-	36	16	18	36	18	18	20	14	14	14	14	20
Senekal	Setsoto LM	B33/2/340/16/P221	-	-	-	23	-	-	-	18	14	14	14	14	14
Steynsrus	Moghaka LM	B33/2/340/88/P112	-	-	-	-	-	-	-	10	8	8	8	8	8
Theunissen	Masilonyana LM	16/2/7/C402/D3/Z1/P339	-	24	33	-	24	24	24	12	4	4	4	4	4
Vijoenkroon	Moghaka LM	-	-	-	-	-	-	-	-	-	4	4	4	4	4
Virginia transfer station	Matjh Beng LM	-	-	-	-	-	-	6	-	-	-	-	-	-	-
Weilkom	Matjh Beng LM	B33/2/340/32/P85	-	16	33	-	16	13	13	48	36	36	36	36	36
Winburg	Masilonyana LM	B33/2/340/20/P48	12	12	11	13	12	54	54	32	6	6	6	6	6

## GAUTENG

Name of branch or landfill site	Municipality or responsible institution	Licence number	Compliance (%)									
			2015	2016	2017	2018	2019	2020	2021	2022		
Alberton (Platkop)	Ekurhuleni LM	33/2/2/321/1450	-	-	-	-	97	95	96	100		
Boksburg (Rooikraal)	Ekurhuleni LM	16/2/7/c221/D24/21/P512	-	-	-	97	97	97	Closed (under construction)	Closed (under construction)		
Bon Accord	The Waste Group	B33/2/123/154/P191	-	-	98	98	94	98	86	92		
Brakpan (Wettevreden)	Ekurhuleni LM	B33/2/321/172/P137	-	-	89	97	94	91	94	94		
Bronkhorstspuit	Tshwane Metro	B33/2/220/116	-	64	75	88	84	84	64	82		

Carletonville	Meratong City LM	16/2/7/C231/D004/Z1/P415	-	-	-	-	-	-	-	-	68	94	80
Fochville transfer station	Maratong LM	-	-	-	-	-	-	-	-	-	-	4	14
Ga-Rankuwa	Tshwane Metro	16/2/7/A230/D9/Z3/P489	-	-	83	92	92	92	92	74	74	72	72
Germiston (Simmer & Jack)	Ekurhuleni LM	B33/2/0322/494/P223	-	-	92	100	100	78	84	84	84	94	94
Hatherley	Tshwane Metro	B33/2/123/88/P215	-	36	80	80	80	88	88	88	88	84	70
Heidelberg transfer station	Lesedi LM	12/9/11/P80	32	-	18	30	18	30	18	-	-	4	46
Interwaste FG	Intenwaste Environmental Solutions	GAUT 002/10-11/W0030	-	100	100	100	100	100	100	100	100	Closed	Closed
Kempton Park (Chloorkop)	Ekurhuleni LM	-	-	-	97	-	-	-	-	Closed	Closed	Rehabilitation	
Meyerton	Midvaal LM	002/12-13/W0001	-	-	96	96	96	100	96	96	96	98	92
Mooiplaats	The Waste Group	16/2/7/A230/154/21/p311	-	76	99	98	98	96	96	96	96	98	98
Norkempark transfer station	Ekurhuleni LM	-	-	-	-	-	-	75	-	-	-	-	-
Onderstepoort	Tshwane Metro	B33/2/123/7/P6	-	52	70	84	76	76	76	Closed	Closed	Closed	Closed
Randfontein	Rand West City	B33/2/323/34/P12 12/9/11/L68331/3	-	-	33	26	46	46	46	Closed	Closed	4	4
Roodepoort	Johannesburg Metro	16/2/7/C221/D11/Z3/P65 B33/2/121/53/P65	-	-	-	-	34	34	34	Closed	Closed	Closed	86
Soshanguve	Tshwane Metro	B33/2/123/101/P43	-	-	83	84	78	78	86	86	86	94	94
Springs (Rietfontein)	Ekurhuleni LM	16/2/7/C221/D494/P275	-	-	88	86	88	88	94	94	94	Closed (under construction)	94
Vanderbijlpark (Boitshepi)	Emfuleni LM	006/15-16/W0005-	-	-	28	38	32	32	26	26	26	12	34
Vereeniging (Sonland transfer station)	Emfuleni LM	-	-	-	-	8	-	-	-	-	-	-	-
Waldrift	Emfuleni LM	006/15-16/W0004	-	-	-	-	68	68	60	60	24	24	34
Westonaria (Libanon)	Rand West City	16/2/7/C231/D21/Z	-	-	47	9	100	100	48	48	18	18	30

## KWAZULU-NATAL

Name of branch or landfill site	Municipality or responsible institution	Licence number	Compliance (%)										
			2015	2016	2017	2018	2019	2020	2021	2022			
Amazimtoti transfer station	eThekweni Metro	-	-	-	-	-	-	-	-	-	-	60	60
Hluhluwe	The Big Five False Bay LM	-	24	0	20	2	0	0	0	12	0	0	0
Margate	Ray Nkonyeni LM	16/2/7/T402/DS/Z1/P26/A1	-	-	70	-	96	96	96	72	58	58	58
Newcastle	Newcastle LM	B33/2/2010/8/P138	-	80	80	80	88	88	60	84	52	52	52



Paulpietersburg	eDumbe LM	-	4	16	14	10	14	4	10	8
Pongola	uPhongolo LM	DC26/WML/0001/2014	-	68	54	68	52	38	28	42
Richards Bay (Empangeni)	uMhlatuze LM	B33/2/2112/006/P245	-	-	-	-	-	60	60	100
Utrecht	eMadlangeni LM	Site closed, but still operational	32	68	16	7	0	12	30	16
Vryheid	AbaOulusi LM	-	40	32	41	24	3	6	2	0

## LIMPOPO

Name of branch or landfill site	Municipality or responsible institution	Licence number	Compliance (%)							
			2015	2016	2017	2018	2019	2020	2021	2022
Ellisras	Lephalale LM	-	-	-	58	32	16	22	16	18
Groblersdal	Elias Motsoaledi LM	12/4/10-B/10M2	20	72	90	92	98	-	66	66
Hoedspruit (Muraleng)	Maruleng LM	12/9/11/L207/5	-	-	18	18	20	-	12	14
Leeupoort	Thabazimbi LM	16/2/7/A240/D21/21/P354	52	-	-	2	4	Closed	Closed	18
Louis Trichardt	Makhado LM	12/9/11/L413/5	-	32	70	80	84	Closed	Closed	-
Marble Hall	Ephraim Mogale LM	16/2/7/B300/D58/Z1/P261	72	88	84	84	84	78	72	80
Musina	Musina LM	12/4/10/8/B/8N4	-	-	-	-	-	-	-	66
Naboomspruit	Mookgophong LM	16/2/7/A600/D7/Z2/P399	28	36	19	32	34	30	12	28
Naboomspruit (Western Breeze transfer station)	Mookgophong LM	-	-	-	-	20	20	-	Closed	-
Naboomspruit (Die Oog transfer station)	Mookgophong LM	-	-	-	-	32	32	-	Closed	-
Nylstroom	Modimolle LM	16/2/7/A600/D2/Z1/P380	48	16	-	12	0	4	4	6
Phalaborwa	Ba-Phalaborwa LM	16/2/7/B700/016/21/P276	84	80	32	64	36	54	64	72
Polokwane	Polokwane LM	16/2/7/A700/D3/Z2/P319	-	-	-	-	-	-	-	74
Potgietersrus	Mogalakwena LM	16/2/7/A600/C21/Z3/A1	-	-	-	-	-	-	-	50
Roedtan	Mookgophong LM	16/2/7/A600/D23/Z1/P262	-	-	-	-	-	-	0	4
Thabazimbi	Thabazimbi LM	16/2/7/A240/D4/Z1/P345	-	-	-	-	-	0	4	4
Tzaneen	Greater Tzaneen LM	16/2/7/B800/D2/Z23/1/P501	-	100	100	100	100	98	100	88
Warm Baths	Bela-Bela LM	B33/2/123/3	-	56	40	37	40	38	36	30

# MPUMALANGA

Name of branch or landfill site	Municipality or responsible institution	Licence number	Compliance (%)									
			2015	2016	2017	2018	2019	2020	2021	2022		
Amersfoort	Pixley Ka Isaka Seme LM	-	-	-	-	6	-	-	-	-	2	Toe
Barberton	Mbombela LM	B33/2/10960/P131	-	-	-	-	-	-	46	70	48	
Belfast	Emakhazeni LM	12/9/11/P95	-	8	10	14	41	48	28	28	28	
Bethal	Govan Mbeki LM	17/4/WL/MP/307/13/02	72	12	17	11	10	5	4	4	8	
Carolina	Albert Luthuli LM	-	-	-	-	0	4	0	Closed	Closed	Closed	
Delmas	Victor Khanye LM	B33/2/220/9/P218	48	24	14	6	12	30	38	22	22	
Dullstroom	Emakhazeni LM	17/4/WL/MP314/14/01	-	12	2	0	4	0	16	12	12	
Ermelo	Msukaligwa LM	16/2/7/C112/D1/Z1/P427	84	52	42	18	2	18	10	8	8	
Evander	Govan Mbeki LM	17/4/WL/MP307/14/01	-	-	-	0	0	6	4	Terrain too dangerous	4	
Kinross	Govan Mbeki LM	17/4/WL/MP/307/15/01	-	-	6	6	6	4	16	4	4	
Leandra	Govan Mbeki LM	-	-	-	-	20	6	6	32	14	14	
Lydenburg	Thaba Chweu LM	-	56	12	35	36	33	10	12	8	8	
Machadodorp	Emakhazeni LM	17/4/WL/MP314/14/02	16	16	6	3	10	6	8	6	6	
Morgenon	Lekwa LM	-	-	-	1	1	0	0	0	2	2	
Middelburg	Steve Tshwete LM	16/2/7/B10/D33/Z1/P412	-	-	36	95	28	58	64	74	74	
Middelburg (Dennesig transfer station)	Steve Tshwete LM	-	-	-	44	94	86	-	-	68	68	
Middelburg transfer station	Steve Tshwete LM	-	-	-	-	100	92	-	-	74	74	
Nelspruit	Mbombela LM	12/9/11/P5 16/2/7/X205/D06/P130	-	-	64	80	74	-	90	72	72	
Piet Retief	Mkhondo LM	-	40	68	57	39	12	48	38	48	48	
Secunda	Govan Mbeki LM	17/4/WL/MP/307/13/01	-	76	42	19	24	10	26	4	4	
Standerton	Lekwa LM	12/9/11/L109/6	24	32	26	14	0	18	18	12	12	
Volkstrust	Dr. Pixley Ka Seme LM	-	-	-	-	16	2	16	58	-	-	
Witbank	Emalahleni LM	B33/2/210/32/P136	68	64	47	30	60	34	44	24	24	
Witvriev transfer station	Mbombela LM	16N/2/7/X205/D06	-	-	74	80	80	-	60	76	76	

# NORTH WEST

Name of branch or landfill site	Municipality or responsible institution	Licence number	Compliance (%)									
			2015	2016	2017	2018	2019	2020	2021	2022		
Bloemhof	Lekwa-Teemane LM	NWP/WM/DR4/2011/11	16	20	2	10	6	44	32	26		
Brits (Hartebeesfontein)	Madibeng LM	B33/2/0121/41/P81	-	84	-	-	-	26	16	58		
Christiana	Lekwa-Teemane LM	NWP/WM/DR4/2011/09	-	36	4	12	4	18	22	16		
Coligny	Ditsobotla LM	-	12	8	0	0	0	0	0	0		
Delareyville	Tswaing LM	B33/2/330/44/P219	8	8	9	2	10	28	28	30		
Hartbeesfontein	City of Matlosana LM	-	-	-	-	-	-	-	-	22		
Klerksdorp	City of Matlosana LM	16/2/7/C241/D4Z2/P514	64	-	45	18	10	36	36	68		
Koster	Kgetlengrivier LM	NWP/WM/BP5/2013/23	-	-	-	-	4	2	16	12 Must be closed and rehabilitated		
Lichtenburg	Ditsobotla LM	B33/2/330/3/P58	-	8	-	-	16	2	4	6		
Mooi-nooi	Sibanye-Stillwater (Intervaste)	16/2/7/A210/C29/Z1/P379 NWP/WM/BP2/2016/06	-	-	-	-	94	94	80	88		
Orkney transfer station	City of Matlosana LM	12/9/11/P59	-	-	-	-	-	-	-	14		
Ottosdal	Tswaing LM	NWP/WM/NM4/2012/11	-	40	29	2	-	-	40	36		
Potchefstroom	Tlokwe LM	16/2/7/C231/D13/Z1/P	-	100	90	94	64	16	46	82		
Potchefstroom transfer station (garden refuse)	Tlokwe LM	-	-	-	-	-	-	-	10	28		
Rustenburg (Waterval)	Rustenburg LM	NWP/WM/BP1/2011/02	-	-	37	88	62	94	86	82		
Sannieshof	Tswaing LM	NWP/WM/NM4/2012/09	-	12	2	2	2	34	28	36		
Schweizer-Reneke	Mamusa LM	NWP/WM/DR6/2012/22 (variation of WML NWP/WM/DR6/2012/22)	-	64	17	-	8	22	16	22		
Stella	Naledi LM	NWP/WM/DR1/2013/16	12	16	4	2	-	-	24	34		
Swartruggens	Kgetlengrivier LM	-	-	-	0	0	-	0	0	2		
Ventersdorp	JB Marks LM	-	-	-	-	3	-	0	6	0		
Vryburg	Naledi LM	NWP/WM/DR1/2009/01	92	96	50	52	32	28	58	52		
Wolmaransstad	Maquassi Hills LM	B33/2/330/19/P166	-	-	-	-	34	8	4	4 Must be closed		
Zeerust	Ramotshere Moiloa LM	B33/2/130/7/P214	-	-	-	-	4	16	38	30		



## NORTHERN CAPE

Name of branch or landfill site	Municipality or responsible institution	Licence number	Compliance (%)							
			2015	2016	2017	2018	2019	2020	2021	2022
Douglas	Siyancuma LM	-	-	-	-	2	-	4	10	8
Hartswater	Phokwane LM	-	76	-	57	14	2	42	20	
Hopetown	Thembellihle LM	-	-	-	-	2	10	10	10	
Jan Kempdorp	Phokwane LM	-	32	-	-	10	0	10	8	
Kakamas	Kai IGarib LM	B33/2/450/24/S/P160	-	-	-	-	-	-	-	10
Kamieskroon	Kamiesberg LM	16/2/7/F300/D8/Z1/P347	-	-	-	-	8	8	26	
Kathu	Gamagara LM	B33/2/4441/15/P116	-	56	19	16	28	26	12	18
Kimberley	Sol Plaatje LM	16/2/7/C901/D2/P265	48	36	-	-	82	52	70	32
Kuruman	Ga-Segonyana LM	B33/2/441/9/P128	72	56	39	27	10	52	34	38
Keimoes	Kai IGarib LM	-	-	-	-	-	2	6	2	2
Lennertsville	Kai IGarib LM	-	-	-	-	-	-	-	2	2
Orania	Orania Dorpsraad	NC/PIX/SIY/ORR/04/2016	-	-	95	-	80	66	82	90
Postmasburg	Tsantsabane LM	-	-	56	12	41	20	-	Closed	Closed
Prieska	Siyathemba LM	16/2/7/D720/D1/Z1/P479	-	-	-	-	-	16	46	20
Springbok	Nama Khoi LM	16/2/7/F300/D9/Z1/P315	8	20	7	0	0	4	4	4
Strydenburg	Thembellihle LM	-	-	-	-	-	-	-	-	14
Upington	Khara Hais LM	-	-	84	8	4	6	18	10	26
Warrenton	Magareng LM	12/9/11/P103	-	-	6	-	-	14	18	6
Williston	Karoo Hoogland LM	-	8	-	10	10	4	22	0	0

## WESTERN CAPE

Name of branch or landfill site	Municipality or responsible institution	Licence number	Compliance (%)							
			2015	2016	2017	2018	2019	2020	2021	2022
Belville	Cape Town Metro	19/2/5/4/A5/6/WL0050/12 (B33/2/720/213/P201)	80	-	80	97	-	90	96	90
Bitterfontein	Matzikama LM	19/2/5/4/F3/2/WL0005/18 (variation of WML 19/2/5/1/F3/2/WL0025/14)	-	-	-	-	-	-	30	20
Bredasdorp	Cape Agulhas LM	16/2/7/G501/D1/Z1/P329	-	-	-	-	-	46	42	36
De Doorns	Breede Valley LM	19/2/5/4/B2/3/WL0041/18 (variation of WML 19/2/5/1/B2/3/WL0026/14)	-	-	-	-	-	-	30	18

Gansbaai	Overstrand LM	16/2/7/G400/D24/21/P335	-	96	-	-	-	-	-	-	86	84	82
George	George LM	WL0683/4	-	52	41	52	-	-	-	-	44	44	-
Gordons Bay transfer station	Cape Town Metro	E13/2/10/1-A3/193-DWLT404/10	-	-	-	-	-	-	-	-	-	96	98
Hermanus	Overstrand LM	16/2/7/G501/D3/Z3/P374	92	88	100	100	-	-	-	-	86	88	94
Klawer	Matzikama LM	19/2/5/4/F3/6/WL0042/19	60	44	43	-	-	-	-	-	24	26	20
Kraaifontein Interwaste Management Facility	Richardo Cheemee	12/9/11/P124	-	-	-	-	-	-	-	-	98	98	94
Langebaan transfer station	Saldana LM	19/2/5/1/F4/7/WL0043/15	-	-	-	-	-	-	-	-	-	-	92
Lutzville	Matzikama LM	19/2/5/4/F3/10/WL0006/18	-	36	44	-	-	-	-	-	22	12	14
Mossel Bay (Grootbrak)	Mossel Bay LM	19/2/5/4/D6/17/WL0065/18 (variation of WML 19/2/5/1/D6/17/WL0084/14)	-	64	80	-	-	-	-	-	96	86	92
Mossel Bay (Sonskynvallei transfer station)	Mossel Bay LM	EG13/2/10/1 - D6/17 - DWLT 002/09	-	-	-	-	-	-	-	-	-	88	92
Malmesbury (Highlands)	Swartland LM	19/2/5/4/F5/16/WL0030/18 (variation of WML B33/2/720/132/P67)	-	-	-	-	-	-	-	-	94	98	92
Malmesbury (Chatsworth)	Swartland LM	B33/2/900/3/5/P167	-	-	-	-	-	-	-	-	80	4	Closed
Malmesbury (Kalbaskraal transfer station)	Swartland LM	-	-	-	-	-	-	-	-	-	-	80	88
Nuwerus	Matzikama LM	19/2/5/4/F3/13/WL0033/18 (variation of WML 19/2/5/1/F3/13/WL0118/12)	-	-	-	-	-	-	-	-	-	20	24
Oudtshoorn (Grootkop)	Oudtshoorn LM	B33/2/900/3/5/P167	40	32	0	26	-	-	-	-	48	26	54
Riversdale	Hessequa LM	19/2/5/4/E3/10/WL0088/18 (variation of WML B33/2/800/106/S/P212)	-	-	-	84	-	-	-	-	-	86	86
Stellenbosch	Stellenbosch LM	16/2/7/G203/D16/21/P331	-	-	-	89	-	-	-	-	96	96	94
Stilbaai	Hessekwa LM	19/2/5/1/D/11/WL0060/14	-	-	62	38	-	-	-	-	72	88	Closed
Swellendam	Swellendam LM	19/2/5/4/E3/2/WL0076/18 (variation of WML B33/2/800/9/S/P171)	-	-	-	-	-	-	-	-	-	-	Denied access
Veldrif	Bergrivier LM	19/2/5/1/F1/14/WL0071/13	-	-	-	69	-	-	-	-	48	44	44
Vredendal	Matzikama LM	19/2/5/4/F3/17/WL0032/18	-	28	53	-	-	-	-	-	74	32	46
Vanrhynsdorp	Matzikama LM	19/2/5/4/F3/16/WL0044/18	-	68	73	-	-	-	-	-	54	38	30
Wellington	Drakenstein LM	19/2/5/4/B3/39/WL0109/17 (variation of WML E13/2/10/1-B3/36-WL0045/10)	-	-	-	68	-	-	-	-	68	66	62
Worcester	Breede Valley LM	19/2/5/4/B2/32/WL0126/18 (variation of WML B33/2/800/12/P70)	-	-	-	-	-	-	-	-	70	58	52

An average audit was calculated for each province in which the landfill sites were audited between 2014 and 2022. The percentage allocated to each individual site in a particular province was aggregated and the total was then divided by the number of sites in that province.

The average audit scores for each province for 2014–2022 are indicated in figure 5.

*Example: In Mpumalanga, six landfill sites were audited in 2014, 2015 and 2016. Therefore:*

$$76\% + 8\% + 40\% + 64\% + 32\% + 64\% = 284\% \text{ and } 284\%/6 = 47\% \text{ average in 2014}$$

$$84\% + 16\% + 56\% + 40\% + 24\% + 68\% = 288\%; \text{ therefore } 288\%/6 = 48\% \text{ average in 2015}$$

*The conclusion can therefore be made that in 2015 the landfill sites in this province have improved by 1% in comparison with the previous year.*

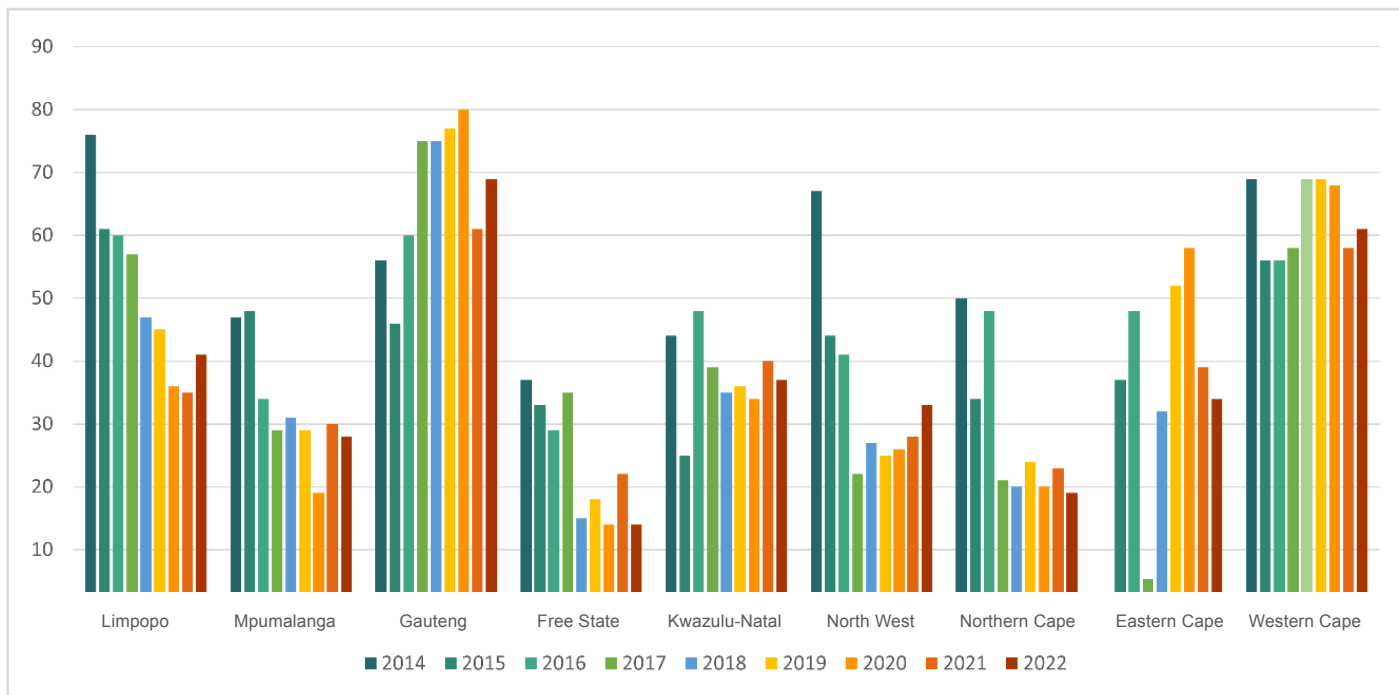


Figure 5: Average annual audit score (in percentages) for the period 2014–2022, per province

The percentage of compliance at national level for the period 2014–2022 is reflected in figure 6 below.

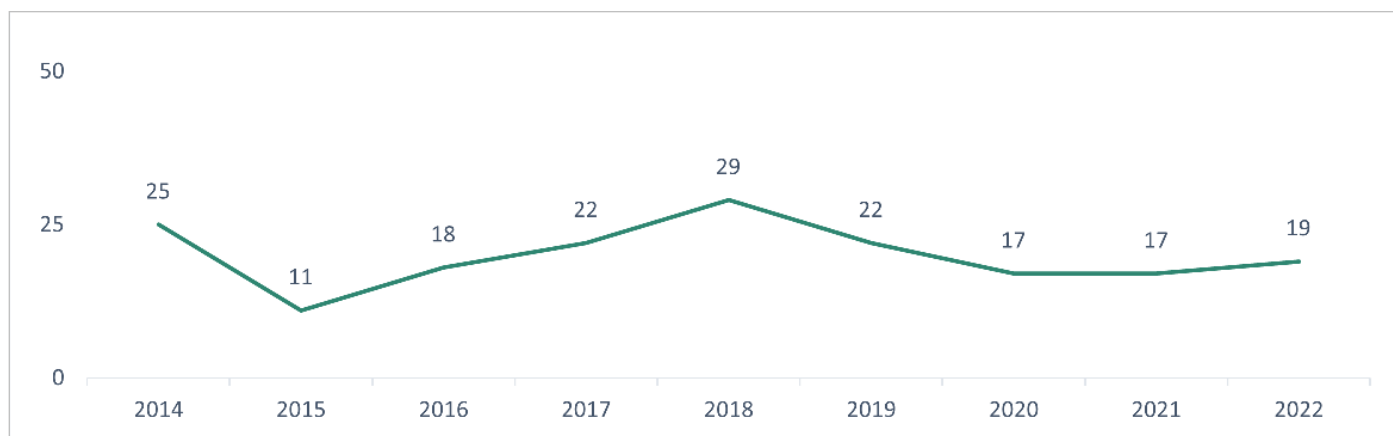


Figure 6: Average annual national compliance score (in percentages) for the period 2014–2022



# Questionnaire

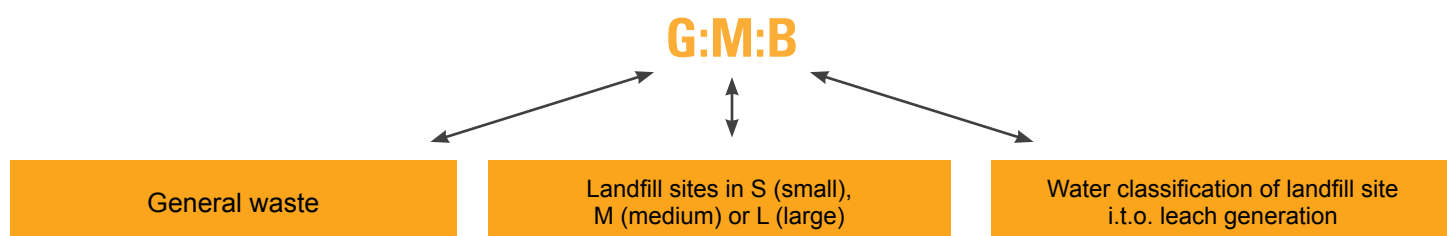
The questionnaire used for landfill site audits from 2017 to 2022 was revised and differs from the one used in 2014, 2015 and 2016. The 33 questions now cover all the minimum requirements for a landfill site.<sup>1</sup> Applicable legislation was also studied to determine the minimum requirements for transfer stations, and the audit can also be used for this purpose, where applicable.

The questionnaire was compiled to establish whether a landfill site complies with the minimum requirements for landfill sites as prescribed in the National Environmental Management: Waste Act 59 of 2008. To pass this audit, a landfill site has to comply with at least 80% of the minimum requirements and then strive to improve on the 20% non-compliance.

The coordinates were also added because the sites' locations are not always set out clearly on the licences.

The challenge for the community is that each landfill site has a unique permit or licence with requirements that can be even stricter than the abovementioned minimum requirements. Inadmissible waste in terms of the legislation can for example be permitted on certain conditions and requirements that have to be met by that particular landfill site. In addition, landfill sites are categorised into three sizes – each with its own conditions. The general rule is: the bigger the site, the stricter the requirements.

Accordingly, AfriForum decided to compile a questionnaire that can apply to any general (G type) landfill site. The classification system works as follows:



## Example:

The questionnaire is divided into five **main categories and sub-categories**.

The sum total of the points for the questionnaire is 25. This can be multiplied by 4 to obtain the percentage (%) of the result.

Minimum requirement	Fully compliant 1	Partially compliant 1/2	Non-compliant 0	Comments	Score
<b>1. Access and control</b>					/ 8
<b>1.1 Signs</b>					
a) Signs in the appropriate official languages must be erected in the vicinity of the landfill, indicating the route and distance to the landfill site from the nearest main roads.	x				1/2 / 1/2
b) Is there a sign at the gate indicating what type of waste can be dumped as well as the operating hours of the site?		x			/ 1/2
<b>1.2 Road access</b>					
a) Are all roads to and within the site maintained?			x		0 / 1

Score for main category

Weight of question

Mark with x in appropriate box. Use own discretion, with minimum requirement as outcome.

Comments are important for evidence, notes and additional information for discussions with authorities after the audit.

1. The minimum requirements for landfill sites (1998, second edition) that was published by the Department of Water Affairs and Forestry. Available at <http://sawic.environment.gov.za/documents/266.PDF>.

Table 3: Questionnaire

**AFRIFORUM'S GENERAL CHECKLIST ON MINIMUM REQUIREMENTS FOR LANDFILL SITES**

(Take photos as proof of maladministration)

What is the name of the landfill site?					
Who is the responsible authority?					
Small/medium/large site (see classification below)					
Minimum requirement	Fully compliant 1	Partially compliant ½	Non-compliant 0	Comments	Marks
<b>1. Access and controls</b>					<b>/ 8</b>
<b>1.1 Signs</b>					
a) Are signs erected in the appropriate official languages in the vicinity of the landfill, indicating the route and distance to the landfill site from the nearest main roads?					/ ½
b) Is there a sign at the gate indicating what type of waste can be dumped, as well as the operating hours of the site?					/ ½
<b>1.2 Road access</b>					
a) Are all roads to and within the site maintained?					/ 1
b) Is two-way traffic possible in all weather conditions?					/ ½
c) Are unsurfaced roads watered regularly to restrict dust levels?					/ ½
<b>1.3 Access control and security</b>					
a) Is there a proper 1,8 m fence around the landfill to keep people and animals out?					/ ½
b) Is the fencing fixed/whole and is it maintained?					/ ½
c) Is there access control at the landfill's gate(s)?					/ 1
d) Does the site have security guards patrolling the site?					/ 1
<b>1.4 Waste acceptance and waste types</b>					
a) Is waste inspected before it is accepted to confirm that it is general waste?					/ 1
<b>1.5 Tariffs</b>					
a) Are disposal tariffs displayed on notice boards?					/ ½
b) Are disposal fees collected?					/ ½
<b>2. Resources</b>					<b>/ 3</b>
<b>2.1 Infrastructure</b>					
a) Are there services such as water, sewerage, electricity, weighbridges and site offices?					/ 1
<b>2.2 Plant and equipment</b>					
a) Is there sufficient machinery and is the equipment in working condition?					/ 1
<b>2.3 Staff</b>					
a) Is the operation of all sites carried out under the direction of sufficiently qualified staff? For example: <ul style="list-style-type: none"> <li>• Site supervisor</li> <li>• Landfill manager</li> </ul>					/ 1

<b>3. Operations</b>					<b>/ 7 ½</b>
<b>3.1. Operating plan</b>					
a) Does the responsible authority have a waste operating management plan?  The plan must include the following:  1) Excavation sequence  2) Projected/progressive development of landfill with time  3) Daily cell construction  4) Provision of wet weather cells  5) Site access  6) Drainage  7) Operating monitoring procedures, including the role of a monitoring committee  8) Action plans in response to problems detected by monitoring.					/ 1
b) Does the responsible authority have a response action plan? This includes an emergency evacuation plan.					/ ½
<b>3.2 Site development and cells</b>					
a) Is waste compacted daily and covered with soil to prevent waste from being blown away by the wind?					/ 1
b) Is an easily accessible wet weather cell (with a well-drained gravel-type base) constructed close to the site entrance, for use under wet weather conditions?					/ 1
<b>3.3 Control of nuisances</b>					
a) Are there any fires burning on the site?					/ 1
b) Is all litter contained within the site itself (preferably to be contained in the disposal area only)?					/ 1
<b>3.4 Waste reclamation</b>					
a) Is waste reclamation by reclaimers prohibited at general waste disposal sites because of the risk to health and safety? Therefore, no reclaimers may be present at the site.					/ ½
b) Are there facilities/provisions available for recycling, if waste reclamation/recycling is taking place?					/ ½
<b>3.5 Prohibited waste (unless specifically authorised by the permit or licence)</b>					
a) Does the dumping of medical or animal waste (carcasses, bones, stomach content) occur?					/ ½
b) Does the dumping of tyres occur?					/ ½
<b>4. Drainage</b>					<b>/ 3</b>
a) Is there a proper and operational stormwater infrastructure on the site?					/ 1
b) Are all drains maintained to promote run-off without excessive erosion?					/ 1
c) Are all contaminated water and leachate that form on-site stored in a sump or retention dam?					/ 1



<b>5. Monitoring and recordkeeping</b>					<b>/ 3 ½</b>
a) Are records kept of all waste entering the site?					/1
b) Does the landfill site have a permit or waste management licence? What is the permit or licence number? A copy of the permit/licence should be available on site				Permit/licence no:	/1
c) Was the correct personal protective equipment issued to municipal workers on site?					/ ½
d) Is the landfill site audited and inspected internally every 12 months? Copies should be made available for public comment/input (e.g. landfill audit committee).					/ ½
e) Is there a landfill audit committee within the municipality of which communities can form part?					/ ½
<b>Total</b>					<b>/ 25</b>



*The Waste Group Class B liner being completed at the Mooiplaats landfill site in Centurion, Gauteng.*

## What has been achieved so far?

### National landfill site audit project

After the completion of the 2016 landfill site audit report, a number of meetings were held with the Waste Management Division of the Department of Environmental Affairs. AfriForum also made a submission to the department's waste management licensing task team to have one landfill site per province rehabilitated.

### Liaison with national, provincial and local governments

In cooperation with the Minister of Environmental Affairs and her team, AfriForum identified six sites at the end of 2020 that pose various challenges, with the aim of rehabilitating and restoring these through different models. It is an ongoing process and various meetings are held to address the challenges that face these sites.

These six sites are:

- **Libanon landfill site in Westonaria (Rand West City LM)**
- **Naboomspruit (Mookgophong LM)**
- **Thabazimbi (Thabazimbi LM)**
- **Frankfort (Mafube LM)**
- **Sasolburg (Metsimaholo LM)**
- **Potchefstroom (JB Marks LM)**

During the last meeting between AfriForum and the national Department of Environmental Affairs in May 2021, it was decided that these six sites were to be visited. Resulting from

these visits, decisions would be made about the road ahead and possible alternatives for managing and getting these sites up to standard. AfriForum believes this could be the answer to steer landfills in a new direction.

The first meetings were held with the respective municipalities at the end of 2021 and possible solutions were discussed. It was decided that AfriForum would compile a memorandum of understanding (MOU) and send it to the municipalities for discussion on improved cooperation. Unfortunately, the problem is that the municipalities have neither the will nor the knowledge to manage these sites.

It became clear in these meetings that there is insufficient communication between the national, provincial and municipal authorities.

The JB Marks Municipality in Potchefstroom made a dramatic turnaround and appointed a private company to assist it with its landfill. This is clearly visible in the audit results of the past three years.

A positive relationship has been established with the Department of Environmental Affairs. Mr Mark Gordon, Deputy Director-General of Chemicals and Waste Management, wrote a letter to AfriForum in which he provided the provincial waste management officers' contact details so that branches were able to involve them in the audit. He also requested AfriForum to meet with him after the completion of the project to discuss the findings.

AfriForum's environmental team has also been meeting with various experts in the waste industry since the end of 2019. These include Unisa, the UWC, the CSIR, The Waste Group and other private companies. All parties support what AfriForum wants to achieve with the project.

## Court cases

AfriForum's Naboomspruit branch was involved in a landfill site court case, which was heard on 9 October 2017, but with the decision of the court pending. Judgment was eventually delivered in favour of AfriForum in a court case against the Lim 368 Local Municipality. Judgment was also delivered in favour of AfriForum in the Northern Gauteng High Court on 7 February 2018, with costs, regarding the appalling way in which the Naboomspruit landfill site was managed.

Since then, however, there has been little improvement to this landfill site. AfriForum will monitor the situation closely and, if required, bring an application of contempt of court to bring the site up to the required standard.

This landfill site is one of the six sites earmarked by AfriForum and the national Department of Environmental Affairs for rehabilitation. The site will probably be rehabilitated through a public-private partnership.

The provincial Department of Environmental Affairs in Limpopo refused to have follow-up meetings with AfriForum and the national department. According to them, there are criminal prosecution investigations underway. However, AfriForum does not regard this as sufficient, as the community is still bearing the consequences of the bad conditions at the landfill and these steps will not result in immediate relief. AfriForum is in the process of bringing an application of contempt against the municipality and the provincial department.

## Action plan

The 2021 report touched on various issues with municipalities across the country that are responsible for waste management.

Several municipalities that did not meet the minimum requirements in the period 2014–2021 also did not respond to the letters AfriForum sent to them regarding the mismanagement of the landfill sites under their control. Letters were once again sent to all the municipalities that did not comply with the minimum requirements in 2021. Some sites even deteriorated further since the 2021 audit took place. AfriForum will monitor the progress of these sites and will act more decisively to ensure compliance with the minimum requirements.

In 2021, AfriForum brought up the landfill site issue during the public participation process for the integrated development plan in the various municipalities. AfriForum branches also started to compile action lists and submitting these to municipal managers to address the landfill site issue. In this way, AfriForum wants to ensure that the municipalities concerned budget sufficiently in the coming financial year to meet the needs of the community with respect to landfill sites.

## Challenges

The greatest challenge to solving the problems is a matter of will from the side of the different government spheres. It seems that the national government is eager to see improvement on a local level, but provincial and local government spheres do not share this sentiment and/or do not have the competence to improve.

Another major challenge is that municipalities do not know that the new Municipal Infrastructure Grant (the so-called yellow fleet) can be utilised to fund landfill site infrastructure. Municipalities also do not know how the application process works. The grant is paid to municipalities by the Department of Cooperative Government. This grant could have helped municipalities to fund the necessary infrastructure via National Treasury instead of putting local taxpayers under more pressure.

A major concern is that money is not utilised correctly since municipalities are gripped by corruption. No responsibility is taken for corruption and there are no consequences. Subsequently, available funds are not spent correctly and effectively.

After meetings held at the end of 2021 with the respective national, provincial and municipal authorities, it was clear that there is hardly any communication between the departments.

One of the latest issues that AfriForum got wind of on ground level is that many landfill sites that still have adequate air space have received notice of closure. It seems that there are plans to open joint district landfill sites that will service three to four towns.

The 2022 report will be used as a constant against which to measure the same infrastructure in all the other AfriForum branches in 2023.

The process for ensuring compliance includes the following:

1. A comprehensive track record or paper trail was started to keep a record of specific sites.
2. Non-compliance will be addressed in a letter demanding a comprehensive plan of action from the responsible authority. The municipality must indicate how and by what dates they will meet the requirements with which they do not comply at present.
3. Branch structures should participate in the integrated development plan to ensure that the paper trail is as comprehensive as possible.
4. Provincial departments are responsible for monitoring landfill sites, enforcing the law and issuing licences for unlicensed landfill sites. AfriForum will continue to exert pressure on the provinces to carry out their duties.

5. Should municipalities fail to resolve the issues, legal action will be taken. It is possible to open a criminal case against the relevant administrative official.
6. AfriForum will also be obliged to rehabilitate landfill sites that do not comply with the minimum requirements, and to claim the money back from the municipality in question.
7. This report will also be handed to the Green Scorpions (Environmental Management Inspectors or EMIs) for further investigation of landfill sites not complying with the minimum requirements.
8. A generic criminal charge sheet was compiled to be used to charge the relevant municipalities and municipal managers for their gross negligence.
9. The 2022 report – which contains landfill site records over a period of seven years – will be submitted to the relevant minister and the department to discuss and implement strategies that will address the problems.
10. AfriForum will attempt in 2022 to take control of landfill sites by way of public-private partnerships of PPPs, or will facilitate this process between the state and private companies that are suitable to perform the duties involved.

This process can be implemented by following the following steps as set out in figure 7 below.



Figure 7: Possible steps to be followed by communities to bring about sustainable improvement at a landfill site

AfriForum believes that municipalities and the relevant departments will collaborate in order to resolve these important matters and to ensure a safe and healthy environment for all people in South Africa.

AfriForum will constantly investigate new technologies in terms of alternatives for landfill sites and in this way attempt to bring relief from the overburdening of landfill sites, ensuring that not all waste ends up in landfill sites. AfriForum will make some proposals in this regard.

## Alternative solutions for landfill sites

### Waste-to-energy

In collaboration with waste-to-energy (WtE) companies AfriForum envisages putting alternative solutions for landfill sites and recycling on the table.

The handling of municipal waste is an expenditure which can be turned into a profit by extracting the energy locked in the waste, through a process of combustion or gasification. This is common practice in many countries and provides high yields. Only a small portion of waste which is not combustible or gasifiable needs to be removed and taken to a landfill site or must be treated by another suitable process.

The health risks associated with a combustion or gasification plant are substantially less than those associated with operating a landfill site. No significant poisonous gasses are released. However, a gasification process should not be mistaken for a fermentation process. A gasification process is a fire-related or pyrolytic process, whereas a fermentation process is anaerobic in nature and produces methane gas, which is four times more damaging to the earth when compared to carbon dioxide.

Municipal solid waste (MSW) can be successfully converted

into combined heat and power (CHP) energy, instead of storing it at a high cost in landfill sites. Two methods which are applied all over the world for reaching this goal are combustion and gasification. The combustion option requires a one-time design of a plant generating steam to feed a steam turbine which will drive a generator.

An even better option is to gasify the MSW, which produces a flammable gas consisting mainly of carbon monoxide and hydrogen and which is called Syngas. The Syngas is then used to power an internal combustion engine (ICE) similar to a diesel or petrol engine. The rotating ICE in turn drives a generator to generate electricity. The Syngas can also be directly combusted in steam boilers to generate steam and hot water. Enormous amounts of heat energy in the form of steam and hot water are generated during the cooling phase of the process. Such heat energy can be transferred directly to nearby industries.

The gasification process produces a higher yield when compared to the combustion process. It also produces more by-products which can be sold at a profit, such as biochar and biomass concentrates. Biochar is a valuable commodity to be used in agriculture to enrich the carbon content of poor agricultural soil. Biomass concentrate is also used as an ingredient in insecticides.

In this way, a landfill site can serve as a power plant providing CHP energy to an industrial plant and/or a community or settlement. The provision of power to such an industrial park or community will also not be subject to power supply interruptions.

According to Doctor Linda Godfrey of the CSIR, there are several categories of waste to energy:

- **Low-temperature WtE includes landfill gas recovery, and all landfill sites should aspire (if technically possible) to implement landfill gas recovery systems to reduce emissions from landfills which contribute to GHGs. In fact, landfill sites result in the waste sector being the second largest contributor of methane to South Africa's greenhouse gas inventory (a reason why all organic waste should be diverted from landfills).**
- **Medium-temperature WtE includes biogas or anaerobic digestion technologies for the treatment of organic waste, including the organic fraction municipal solid waste (OFMSW) as well as industrial and agricultural biomass. More municipalities should look into the implementation of this technology, including possible co-digestion with sewage sludge, as it creates higher value products than simple composting.**
- **High-temperature WtE includes incineration, pyrolysis and gasification. These are expensive technologies to operate and would require landfill**

**gate fees to reach >R1 500/tonne to make them economically competitive for a municipality to consider this. Currently, some of our most expensive gate fees are in the Western Cape and are closer to R500/tonne. These technologies also require very expensive scrubber systems (installed and maintained) to ensure they comply with emission standards. These technologies are not part of what we consider to be a circular economy, as we are simply burning resources, which are then lost to the economy. Plus, we know that more jobs are created in waste prevention, reuse and recycling, than in recovery (WtE) or in landfills. High-temperature WtE should be a last resort for developing countries given the costs and the risks of maintenance and operation. Also, pyrolysis or gasification are very seldom, if ever, considered for MSW. Typical high-temperature WtE for MSW would be incineration.**

An aspect which should definitely be considered is the stakeholder community who make a living out of landfill sites. Such people can be employed and/or their collected waste can be bought from them for purposes of gasification or recycling. In addition, a portion of the share capital should be reserved for the upliftment of the surrounding poor communities. Without such initiatives, the gasification plants will be opposed by the local community. Investors should take the utmost care that no members of the stakeholder community are disadvantaged in the process. In this way, the goodwill surrounding the construction of a WtE plant will be noticed and appreciated, leading to the initiation of more projects of this kind.

The life expectancy of such a plant can be more than 50 years. Considering the fact that the combined plant consists of a number of separate modules, the whole plant does not need to be switched off for repair or maintenance work. The surface area needed for a gasification plant is substantially smaller than that needed for a landfill site.

There are some strategies South African municipalities should be pursuing:

1. Diversion of all organic waste originating from households and businesses away from landfills towards either composting or anaerobic digestion (this includes food waste and garden waste). This creates valuable products such as compost, biogas and, liquid digestate. This can account for 30-60% of the MSW stream depending on the municipality. This is also wet waste, and does not burn in high-temperature WtE facilities, which is why such facilities in Ethiopia and India have failed. This action would need to be driven by the municipality.
2. Diversion of building rubble or construction and demolition waste away from landfill. This creates valuable products, like alternative building material. This can account for 10-30% of the MSW stream depending on the municipality.



This action would need to be driven by the municipality.

3. Diversion of paper and packaging waste away from landfills. This creates valuable products through mechanical recycling (paper, plastic, glass, metal). This can account for 10-20% of the MSW stream depending on the municipality. This action will now hopefully be driven by the Producer Responsibility Organisations (PROs) under the new EPR regulations.
4. Implementing the above three actions could reduce MSW to landfills by 70-80%, leaving a small fraction of waste that could then go to regional, engineered, well-operated,

compliant landfill sites. This would still be a cheaper option for municipalities than installing high-temperature thermal treatment technologies, and would recover valuable resources (and jobs) back into the economy, which would otherwise be lost through burning.

5. There are some waste streams where thermal treatment remains a viable option. This includes health care risk (medical) waste and possibly waste tyres (through pyrolysis or gasification). Mechanical recycling is however still an option.

**Keywords:**

waste-to-energy (WtE)
municipal solid waste (MSW)
refuse-derived fuel (RDF)
combined heat and power (CHP)
internal combustion engine (ICE)
internal rate of return (IRR)
kilowatthour (kWh) of energy
megawatt (MW) power

**Ecobricks**

AfriForum believes alternative products can be manufactured from waste, which will assist in relieving the pressure of the enormous quantities of waste which are dumped unnecessarily on landfill sites despite the fact that it could be used in economically viable ways. One of the proposals to realise this objective is the manufacturing of so-called ecobricks which will relieve pressure on landfill sites as well as contribute to the erection of low-cost housing.

An ecobrick basically consists of a plastic 2-litre bottle which is filled with clean, dry, non-recyclable waste that is compacted in the bottle. Such a bottle, when compacted, can then be used as building material for low-cost housing as well as for manufacturing various kinds of furniture.

The biggest issue with this model is that ecobricks will be used in building projects, which means this plastic is captured into the walls of buildings, schools, etc. With time, the plastic bottles become friable, break and start to leak this low-value plastic into the environment. It would therefore be better. These bottles are currently being recycled and are very valuable for the informal waste industry and people who recycle plastic. It would therefore be better if (i) high-quality PET cooldrink bottles are directed toward recycling (current extended producer responsibility targets [EPR targets] are in place for this), (ii) pressure is exerted on producers of low-value plastics to either change their packaging to something that is recyclable, or to increase their recycling rates (current EPR targets in place will help with this), and (iii) any final low-value plastic that cannot be recycled, rather than safely captured in compliant, regional engineered landfill sites.

## HOW TO MAKE AN ECOBRICK

**Warning.** This is a temporary solution. Reusable solutions should replace problematic materials.

- 1

**USE A CLEAN PLASTIC BOTTLE**
- 2

**LOCATE A STICK**
- 3

**FIND OUT WHAT IS NOT BEING RECYCLED IN YOUR COMMUNITY**
- 4

**STUFF THE CLEAN AND DRY NON-RECYCLABLES TIGHTLY INTO THE BOTTLE**

## Plastic roads

The notion of a “plastic road” is a fairly new concept in the world and in South Africa. South Africa’s first patch of plastic road was built in Jeffreys Bay in the Eastern Cape in 2019. The process allows for an efficient way of recycling plastic optimally and shows exciting potential for job creation, reduction of waste and pollution as well as cost savings.

The project involved “tarring” a 300-metre stretch of a road by making use of plastic waste. The companies who successfully completed this product were the Scottish manufacturer MacRebur in collaboration with the Port Elizabeth-based companies SP Excel and Scribante.

This has just been shown by the CSIR to be a viable technology for South Africa, under very specific manufacturing and operating conditions. It is important that any use of waste plastic in roads be done in accordance with SABS standards

for additives in bitumen, so that it does not compromise the performance of our roads. It is not a case of simply adding any plastic, or any amount of plastic to the aggregate or to the bitumen, as this can cause the materials to separate. The final CSIR technical reports will be made available at <https://wasteroadmap.co.za/research/grant-021/>.

Hopefully, this can provide new opportunities for South Africa in addressing both our current low-value, non-recyclable plastic fractions as well as the performance of our roads. It is very important here that we do not divert currently recyclable waste plastic into this technology solution, as these waste streams already have end-use markets. Instead, the focus of any application of plastic in roads must be for the currently non-recyclable plastic fractions, otherwise we simply create competition between current recyclers for the same plastic waste stream, instead of unlocking new end-use markets.

## Recycling

Recycling is a growing industry that contributes to decreased volumes of raw resources used in the manufacturing of products. It prevents the unnecessary dumping of usable materials in landfill sites, decreases the tempo at which landfill sites fill up, and contributes to a more aesthetic environment. Many recyclable materials find their way into the garbage where it is forgotten. AfriForum has launched a recycling project in Centurion, which is gaining momentum every month.

use of proven management processes and technologies. A PPP creates an ideal opportunity to bridge the gap which has developed in this respect in an efficient way.

Without reinventing the wheel, the use of proven technologies, experience and expertise can be shared, which will be cost-efficient for organs of the state. For the general public, it will entail the delivery of better and cost-efficient services, which will leave a surplus of financial means to deliver even more services.

## PPPs

A public-private partnership or PPP refers to a long-term agreement between an organ of the state such as a municipality and a private entity, usually a registered company. The objective of a PPP is to transfer services or functions for which an organ of the state is responsible to a private company which will then deliver such services or functions. The agreement involves a concomitant financial risk for the private partner.

Municipalities find themselves in a rapidly changing technological environment and often cannot access such technologies because of competitive costs. In contrast, the private sector competes on a level playing field and makes



*Sorting is done at AfriForum’s Centurion branch’s sorting facility.*



*A street in Jeffreys Bay is repaired by making use of plastic waste.*



*Recycling station at a school in Centurion.*

# What do the experts say?

AfriForum had discussions with an expert in waste research, Professor Linda Godfrey of the CSIR.

“What’s emerging, is the importance of taking a broader systems perspective to how a municipality manages its waste,” she says.

1. Start with getting the basics right – improved waste collection, city cleansing, and dealing with littering and illegal dumping (an increasing problem in SA).
2. The safe management of waste at end of life is important – compliant landfill operation.
3. Waste treatment technologies should be considered – especially for easy-to-recycle streams like organic waste, building rubble, and paper and packaging.

## Conclusion

AfriForum’s landfill site audit project shows the need for clear political intent and decisions to reuse, recycle and reduce waste in a sustainable way, as well as to maintain and manage the infrastructure for waste management. For this reason, the minister of Environmental Affairs was approached in 2016 to address the poor communication on the local level of government and to create political will at grassroot level.

It becomes clear from the 2022 audit report that the watchdog function performed by AfriForum bears fruit at the local level, and particularly in stimulating communication between communities and government officials. According to the 2022 landfill site audit report, only 19% of municipalities complied with the minimum requirements. This is a 2% improvement compared to 2021 when only 17% of landfill sites met the 80% requirement.

However, these figures are unacceptable and South Africa’s landfill sites are on the verge of total collapse. Meetings between AfriForum and national, provincial and local government about cooperation, clearly indicated that there is insufficient communication between the different spheres of government. Provincial and local governments had disagreements and the local authorities failed to give feedback to the provincial authorities. Certain aspects made it obvious that the government has lost control over the local authorities.

In some cases, the provincial departments refused to give their cooperation for the project and also didn’t heed the requests made by the national department.

Mismanagement of landfill sites is caused by several factors, including the following:

- **corruption**
- **lack of political will**

She says the ways in which landfill sites are managed need to be improved and there are three issues to consider:

1. Improved enforcement of legislation on all public and private landfills to ensure compliance, and the facilitation of appropriate action to improve operations.
2. Public-private partnerships. If implemented correctly, this allows municipalities to act as referees, thereby ensuring improved operation of landfills in compliance with licence conditions (through penalties for instance) while also building waste diversion strategies into contracts (such as incentivising waste diversion from landfills).
3. Mobilising CapEx funding at a national level for landfill rehabilitation, closure or new cell development in compliance with legislation.

- **lack of leadership and denial of accountability**
- **lack of the necessary skills in respect of waste management**
- **gross contempt for the relevant legislation as well as for the natural environment**
- **insufficient funds for rehabilitation**
- **mismanagement of available funds**
- **low priority given to managing landfill sites**
- **no repercussions for contempt of legislation.**

The report also shows that not a single illegal landfill site (a site which does not have a licence nor a waste management plan) conforms to the minimum legal requirements; yet municipalities continue to use these sites as dumping terrains. Very little or no recycling takes place on these sites, and this greatly increases the associated risks for people’s health and the environment. This problem should be addressed as a matter of urgency.

The report shows that there is an increasing number of waste pickers that are taking residence on landfill sites and that many of these terrains are too dangerous for community members to visit. It is becoming a massive problem. AfriForum’s structures were also denied access to some of these sites by municipalities, despite the fact that the minister approved the project and agreed that there would be cooperation.

The most noteworthy observation is that various sites had closed; also that some sites are still operational although these should have been closed according to their licences.

This is worrisome, because it means that certain towns and cities have no landfill sites left – which will most probably lead to illegal dumping. There is also no indication yet of newly identified landfill sites.

The report shows that success was obtained in the management of certain of the above-mentioned problems, however, which can be ascribed to four important elements:

1. Wherever the AfriForum branch is involved in an efficient way in the waste management of the local municipality, the watchdog function of the community is automatically activated. This enhances the transparency of the services delivered by the municipality and thus improves the management of waste processing in general.
2. The community's participation in the democratic process was improved, for instance by insisting on the municipality's obligation to create forums where the community can provide inputs and keep a critical eye on operations. This exerts pressure on municipalities to comply with and progressively improve on their constitutional obligation, i.e. to manage landfill sites in a sustainable way and to improve year after year.
3. The role of the provincial departments in charge of monitoring, legal compliance and issuing of licenses was placed under the spotlight. By involving the provincial regulators in AfriForum's annual landfill site audit project, cooperation between the AfriForum branches and the provincial departments was promoted. It also forces the

provincial departments to comply with their constitutional obligations where this may have been omitted in the past. In future, AfriForum plans to work closely with the national departments to restore some of the landfill sites and to investigate the potential of PPPs.

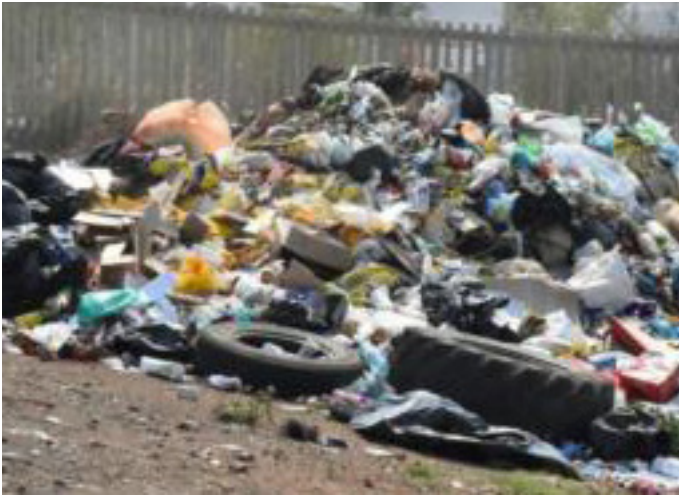
4. AfriForum continuously investigates new technologies and alternative ways to improve the functioning of landfill sites as well as looking at alternatives for dumping waste in landfill sites.

It is obvious that the success of municipalities is in the community's hands, especially in cases where private companies become involved in the local community. One such an example is Potchefstroom, where the private company has the knowledge, ability and skills to assist the municipality, and to manage and solve problems.

Finally, the focus is directed to the most important contributions by national government: the overall supervision of the two lower spheres of government, and the creation of the legislative and regulatory framework which must define South Africa's waste management strategies and the standards set for these. The challenge is to bring together the three spheres of government and the local communities so that they can function in harmony to manage the country's solid waste in a sustainable way.

AfriForum will continue to monitor the landfill sites that have been audited, and investigate alternatives for satisfactory waste management in South Africa.









2022

MUNICIPAL LANDFILL  
**AUDIT REPORT**