Western Cape Government
Environmental Affairs & Development Planning

Annual State of Waste Management Report

2019

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SCHEDULE OF ACRONYMS

2W2W	2Wise2Waste
CF	Composting Facility
CoCT	City of Cape Town
CKDM	Central Karoo District Municipality
CWDM	Cape Winelands District Municipality
CSIR	Council for Scientific and Industrial Research
DEFF	Department of Environment, Forestry and Fisheries
DoF	Drop off Facility
DEA&DP	Department of Environmental Affairs and Development Planning
DM	District Municipality
DPSIR	Driver-Pressure-State-Impact-Response
eWasa	e-waste Association of South Africa
EPIP	Environmental Protection and Infrastructure Programmes
EPWP	Extended Public Works Programme
GDP	Gross Domestic Product
GDPR	Gross Domestic Product Per Region
COGTA	Cooperative Governance and Traditional Affairs
GRDM	Garden Route District Municipality
HCRW	Health Care Risk Waste
HCRWMR	Health Care Risk Waste Management Regulations
HCWMA	Health Care Waste Management Act
HCWMAA	Health Care Waste Management Act Amendment
HHW	Household Hazardous Waste
IDP	Integrated Development Plan
IDZ	Industrial Development Zone
IndWMPs	Industry Waste Management Plan
IPWIS	Integrated Pollutant and Waste Information System
IPWM	Integrated Pollution and Waste Management

IIWTMP	Integrated Industry Waste Tyre Management Plan
IWMPs	Integrated Waste Management Plans
MEC	Member of Executive Council
MIG	Municipal Infrastructure Grant
MRF	Materials Recovery Facility
MTREF	Medium Term Revenue and Expenditure Framework
MSA	Municipal Systems Act (Act 32 of 2000)
NEMA	National Environmental Management Act, 107 of 1998
NEMWA	National Environmental Management: Waste Act, 59 of 2008
NWMS	National Waste Management Strategy
ODM	Overberg District Municipality
RF	Recycling Facility
RTS	Refuse Transfer Station
SANS 10234	South African National Standard: Globally Harmonized System of Classification and Labelling of Chemicals (GHS)
SAWIS	South African Waste Information System
SoWMR	State of Waste Management Report
SMMEs	Small, Medium and Micro-Sized Enterprises
WDF	Waste Disposal Facility
WMF	Waste Management Facility
WMO	Waste Management Officer
WC IWMP	Western Cape Integrated Waste Management Plan
WCDM	West Coast District Municipality
WCG	Western Cape Government

WESTERN CAPE 2019 – AT A GLANCE

POPULATION SIZE

6.76 million people

GLOBALISATION

China places **ban** on plastic imports;

South Africa recovered **1.285 million tonnes** of recyclable paper;

Average South African generates about 6.2kg of **e-waste.**

DRIVERS OF WASTE BENEFICIATION

COST OF LANDFILLING

LIMITED LANDFILL AIRSPACE

JOB CREATION

42 Waste Management Licence variations issued

Increased compliance ratings at waste management facilities

3 100 496T

INCREASED WASTE DISPOSAL AND LOW DIVERSION RATES

Industry Waste Management Plans

"Notice of withdrawal"

WASTE CHARACTERISATION IN THE KAROO YIELDS GOOD RESULTS FOR ORGANIC WASTE.

LAND USE: Despite the best preventive measures and designs, the potential impacts of landfills extend beyond closure.

MODEL INTEGRATED WASTE BY-LAW VETTED

WASTE DIVERSION TARGETS FOR ORGANICS

Recognising the accomplishments of "Women in Waste"

Waste Management support to Municipalities

Separation @ Source

1. INTRODUCTION

1.1 STATE OF WASTE REPORTING

The Department of Environmental Affairs and Development (DEA&DP) has developed its fourth State of Waste Management Report (SoWMR) and focuses on waste management in the Western Cape for the 2019 calendar year. Compared to previous SoWMRs', this year's approach is based on the Driver-Pressure-State-Impact-Response (DPSIR) framework to assess and manage environmental issues and concerns. The report also highlights the state of waste management in the Western Cape by tracking indicators such as waste volumes, waste types, waste diversion rates, collection services, waste management facilities and waste planning.

This SoWMR includes the following main sections:

1. **Introduction:** introduces the SoWMR and structure of the report;
2. **Drivers and Pressures:** provides a brief description of the main drivers and resulting pressures that cause waste-related challenges in the Western Cape and South Africa;
3. **State:** provides a brief overview of the state of waste in the Western Cape and includes the main waste types and quantities of waste generated at municipal level and the condition of waste management infrastructure;
4. **Impacts**: provides a brief description of the impacts, positive and negative resulting in some of the challenges facing the Western Cape.
5. **Responses:** provides a brief description of the current and future action to avoid or mitigate the negative impacts resulting from the waste-related challenges and successful waste interventions;
6. **Conclusion:** provides a conclusion to the report.

1.2 PURPOSE

The SoWMR is developed to provide stakeholders with the current activities, projects and accessible information relating to waste management in the province. It looks at the state of waste management at municipal level and the challenges they are currently facing, such as waste infrastructure, human and financial constraints. The information related to waste recycled, treated and disposed is dynamic at times, in that, it constantly changes as developments at municipal level change and thus, the report seeks to provide relevant information for the 2019 calendar year.

1.2.1 DPSIR Reporting Framework

The 2019 SoWMR is based on the Driver-Pressure-State-Impact-Response (DPSIR) framework developed by the European Environment Agency (EEA) and presented in **Figure 1**.

- Drivers, are the primary agents for driving change in the environment (e.g. the human population);
- Pressures, are the human activities and processes which cause environmental change (e.g. agricultural production);
- State, describes the current condition of the environment and its transition over a period (e.g. extent of cultivation);
- Impacts, are the consequences of change (positive/negative) to the state of environmental sustainability (e.g. this considers the effects that humans, the economy, ecosystems and other sectors, such as the fragmentation of the natural habitat); and
- Responses, are actions (corrective or survival responses) which influence drivers and pressures, or to change the state (including easing or preventing negative environmental impacts, correcting damage, or conserving natural resources, through improved monitoring and compliance services) (DEA&DP, 2019).

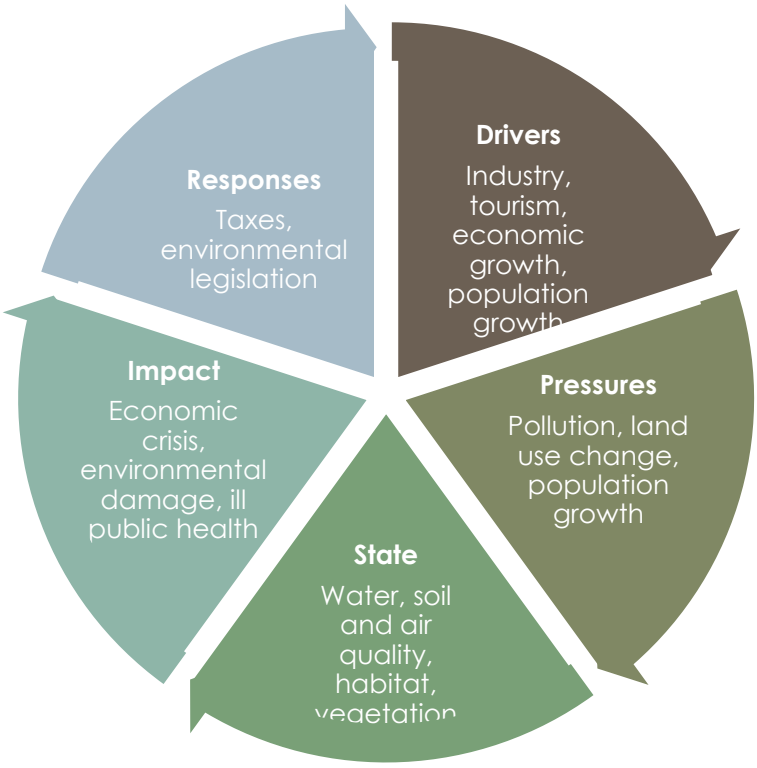


Figure 1: The Driver-Pressure-State-Impact-Response (DPSIR) Framework

2. DRIVERS AND PRESSURES

2.1 INTRODUCTION

Waste generation is driven by issues such as population growth, economic development, employment levels and urban growth, which affect the demand for goods and services. As consumerism, industrialisation and urbanisation continue to increase, so too does the impact and waste generation. This places significant pressure on the ability of waste management facilities and ecosystems to process waste material.

2.2 DEMOGRAPHICS

An increase in populations size has a direct effect on the amount of waste being generated and in many cases, the waste sector and relevant infrastructure is caught unawares by the influx of people into an area. According to Statistics South Africa (Stats SA), the mid-year population is estimated at 58.78 million, with rising population numbers being due to rising fertility numbers and a larger ageing population. (Staff Writer, 2019)

The Western Cape Department of Social Development projects the province to grow by 700 000 people over the next five years. In a media statement, the Department said the province is the third largest province in South Africa, with an estimated 6.76 million people – 11.5% of South Africa's total population – and 1.9 million households with an average household size of 3.6 people in 2019. (Krige, 2019) This highlights a 17% increase in the population between 2011 and 2019.

2.3 ECONOMY

Waste represents a substantial loss of resources in the form of materials and energy. The treatment and disposal of the waste generated has the potential to cause environmental damage and expose humans to harmful substances and infectious organisms. [1]Waste generation is closely linked to the production of goods and services in a country and reflects society's production and consumption patterns. Its most likely that provinces' who contributed the most towards the National Gross Domestic Product (GDP), would then enforce more stringent conditions and efforts on waste managed at facilities. [2]The Gauteng province (34%) contributed R1.59 trillion to the country's GDP of R4.65 trillion (current prices), translating to R111,171 per person. The Western Cape contributed 14% towards the national economy.

[1] https://www.unece.org/fileadmin/DAM/env/europe/monitoring/Indicators/I-1-en-final.pdf

[2] https://businesstech.co.za/news/business/308326/this-is-how-much-you-contribute-to-south-africas-gdp/waste

The waste management industry tends to track GDP and thus as the economy continues to be unpredictable and consumption grows, so too does the waste. The waste economy contributed R24.3 billion to the South African GDP, provided 36 000 formal jobs and supported an estimated 80 000 informal jobs/livelihoods (GreenCape, 2019).

Going forward, it is essential for all waste management entities and industry to bring about trends focusing on reduced waste to landfill, exploring recycling streams and other quantity avenues of revenue generation from waste through the circular economy model, legislation promulgations that need to be adhered to by the industry, as well as new technologies for waste treatment and recovery. With the economy under pressure and the increase in the unemployment rate, it is becoming essential to develop and invest in alternative waste solutions to create green job opportunities. [3]The Western Cape has the lowest official unemployment rate, at 20.9% compared to the national official unemployment rate of 29.1%. **Figure 2** represents a breakdown of each province's contribution to the national GDP.

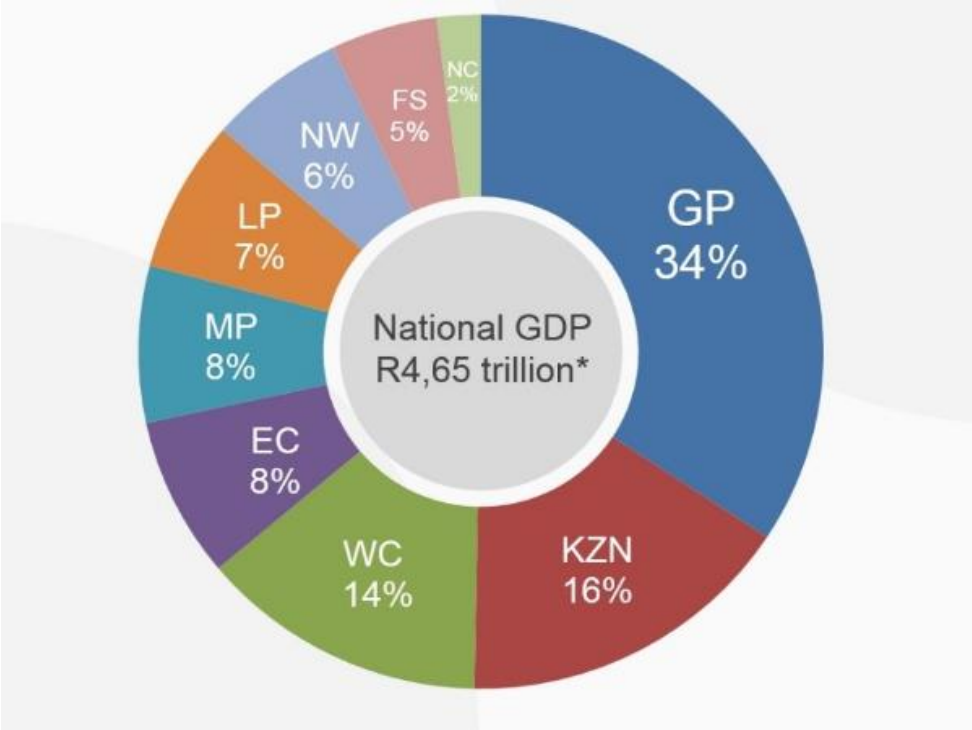


Figure 2: Provincial contribution to the national economy's GDP (Stats SA, 2019)

[3] https://www.capetownetc.com/news/western-cape-has-lowest-unemployment-rate-in-sa/

2.4 INCOME

In South Africa, the domestic waste generation rate varies between the different income groups. [4]Global waste is expected to grow to 3.40 billion tonnes by 2050, more than double the population growth over the same period. Overall, there is a positive correlation between waste generation and income level. Waste is a mounting issue of global concern and can be linked directly to socio-economic development, population growth rates and the rise of middle-income earners; as middle and high-income groups generate more waste than lower income groups.

[5]In South Africa, the generation rates per income category and the results were as follows:

- Low income= 0.41kg/per person/day or (0.41kgx365 days) =149.65kg/person/year
- Middle income=0.74kg/per person/day or (0.74kgx 365days) = 270.1kg/person/year
- High income= 1.29kg/person/day or (1.29kgx365days) = 470.85kg/person/year

2.5 URBANISATION

Urbanisation is the increasing share of the national population living in urban areas. Urban population growth is also important but distinctive, reflecting natural growth (births minus deaths) as well as urbanisation. South Africa clearly reflects the economic structure of an upper-middle income country and is therefore, no different from the global community and is experiencing similar huge urbanisation rates, with residents seeking better socio-economic opportunities, which are often associated with towns and cities. A country reaches the urban tipping point when 50% of its population live in urban areas. This transition is often associated with its progression from a low or lower-middle income to an upper-middle income country. The composition of its economy also shifts, from predominantly agriculture to a combination of resource production, manufacturing and services. Urbanisation can also generate substantial opportunities for economic growth and, if properly managed, contributes to poverty reduction through creating jobs and enhancing livelihood strategies for the poor, such as home gardens and informal trading, etc. However, urban growth also brings rising levels of non-renewable resource consumption, inequality and environmental damage (COGTA).

Areas urbanising rapidly include the northern suburbs in the City of Cape Town (CoCT), Vredenburg, Langebaan, Mossel Bay, George, Knysna, Plettenberg Bay, rural towns such as Malmesbury, Worcester, Wellington, Robertson, Caledon, Oudtshoorn, Bredasdorp, Swellendam, Riversdale and Beaufort West. Areas showing the least change include the southern suburbs of the

[4] https://datatopics.worldbank.org/what-a-waste/trends_in_solid_waste_management.html

[5] http://iwmp.environment.gov.za/guideline/2/2_2_3

CoCT and areas in Overberg, Garden Route and Cape Winelands District Municipalities. The Port of Saldanha has grown quickly and large tracts of vacant land have been rezoned for industrial use, specifically for incorporation into the planned Industrial Development Zone (IDZ), which envisages the development of a multi-port facility (DEA&DP, 2018).

2.6 GLOBALISATION

Globalization is one of the major challenges for the long-term sustainability of waste management and there is an increasing need to focus on the linkages between globalization and waste management, and to understand their nature. There is a globalisation footprint in every local waste management system. Through globalisation, the evolution of the recycling market has created global recycling hubs, like China and south-east Asia, which really support waste recovery efforts worldwide. At the same time, new problems and challenges concerning the quality and the final use of recyclables have emerged (ISWA, 2012).

2.6.1 Recovered Plastic

[6]The world plastic production has been multiplied by 23 since 1964 to reach 348 million tonnes in 2017. This production level is expected to double in the next 20 years, largely because of the significant growth in plastic consumption in developing countries. In total, South Africa recycled 519 400 tonnes of plastic waste during 2018, representing a 46.3% recycling rate and making the country a world leader in mechanical recycling. Of this volume, 70% was recovered from the landfill waste stream by formal and informal waste collectors. South Africa has always had a strong waste management industry that is able to cope with the country's output of waste. Many developed countries around the world used to export their waste to Asian countries, however, China started a trend by banning these waste imports. South Africa was not affected by this ban, as plastic waste has always been locally recycled into raw materials and new products. The plastics recycling industry provided almost 58 500 income opportunities for South Africans during 2018 (PlasticsSA, 2019).

2.6.2 Recovered Paper

In the past 30 years the global trade in recyclable materials, particularly paper and plastics, has grown substantially, based on the movement of recovered paper from the United States to China. There are economic and environmental benefits for both first and third world economies for

[6] https://www.ifri.org/en/publications/editoriaux-de-lifri/edito-energie/deglobalization-international-plastic-waste-trade

substituting pulp-based materials with recovered paper, such as reduction of energy and water usage. Overall around 20% cost and environmental impact reduction can be accounted for by use of recovered paper. The total value of paper products traded internationally amounts to 1% of global GDP. In relation to paper trade, as economic development progresses, so the amounts of paper and board products consumed increases.

In 2018 and according to RecyclePaperZA, South Africa recovered 1.285 million tonnes of recyclable paper products, putting the country's paper recovery rate at 71.7%, which is above the global average of 59.3%. If baled, this amounts to1.285 million tonnes of paper and paper packaging, saved 3.855 million cubic metres of landfill airspace and ensured that the recovered fibre was made into new products.

2.6.3 Scrap Metal

[7]World crude steel production reached 1.808 billion tonnes in 2018, up 4.5% from 2017. Whereas in 2019, crude steel production amounted to 925.1 million tonnes in the first six months, an increase of 4.9% over the same period in 2018. There were crude steel production increases for China, the United States and the Republic of Korea. On the other hand, production declines were registered by the European Union, Japan, Russia and Turkey. In the first six months of 2019, there was a further 20.7% leap in China's steel scrap usage and this growth reinforces China's position as the world's largest steel scrap user. Albeit with the US import tariffs on Turkish steel, sluggish long steel demand in the domestic and export markets and the weakness of the Turkish economy, Turkey remains the world's foremost steel scrap importer. (Willeke, 2019)

2.6.4 Waste Electrical and Electronic Equipment (WEEE)

If a conservative range of between R1 309 and R1 636 per tonne of scrap e-waste (excluding higher value materials) is applied, then the low value of e-waste in the Western Cape is between 54.5 million and R108.4 million per year, with the CoCT holding the largest value of between R34.9 and R75.4 million (GreenCape, 2019). [8]The e-waste Association of South Africa (eWasa) estimates that everyone in South Africa generates about 6.2kg of e-waste and the Department of Environmental Affairs estimates an annual national tally of 360 000 tonnes. The National Environmental Management Waste Act, 59 of 2008 (hereafter referred to as NEMWA) and the National Environmental Management Act, 107 of 1998 (hereafter referred to as NEMA), have

[7] https://www.worldsteel.org/media-centre/press-releases/2019/Global-crude-steel-output-increases-by-4.6--in-2018.html

[8] https://mg.co.za/article/2018-03-16-00-south-africans-are-drowning-in-e-waste/

guidelines for how e-waste should be managed but the guidelines are voluntary and has resulted in gaps in legislation.

2.7 DRIVERS OF WASTE BENEFICIATION

2.7.1 Increasing cost of landfilling

The cost of landfill disposal (the gate fee charged per tonne) continues to be relatively low in South Africa compared to benchmarks in developed economies. Despite this, waste generators still regard landfilling as a costly overhead, especially in the Western Cape. The CoCT has the highest landfill gate fees (R556, including VAT (15%)), with expected increases in 2020/21. As the cost of landfill disposal increases above inflation, and with it increasing overheads for waste generators, so too does the demand for alternatives to landfill solutions (GreenCape, 2019).

2.7.2 Limited landfill airspace

New waste disposal facilities are costly to develop and suitable sites near waste sources (urban areas) are hard to find. The management of the remaining landfill capacity (airspace) consequently, needs to be a key aspect of solid waste management in the province. To extend the life of the existing WMFs, innovative solutions to reduce the amount of waste disposed at WMFs must be found. There are landfills in the Western Cape owned by the private sector namely, Mossel Bay (PetroSA), De Hoek and Riebeek West (PPC), Vredenburg (Exxaro) and Saldanha Bay (ArcelorMittal). Vissershok (Averda Enviroserv) Private landfill operates as a commercial landfill receiving waste from businesses and municipalities. Furthermore, there are three (3) existing and nine (9) proposed regional landfills to serve not only one local municipality, but multiple municipalities.

2.7.3 Job creation in waste

Operation Phakisa is an initiative of the Department of Environment, Forestry and Fisheries (DEFF), designed to fast track the implementation of solutions on critical issues, such as poverty and unemployment (DEA, South Africa State of Waste Report, 2018). In 2017, DEFF identified 20 initiatives across four work streams to divert 20 million tonnes of waste from landfill. If realised, these initiatives could unlock an additional R11.5 billion per year to help create 45 000 direct, 82 000 indirect jobs and 4 300 small, medium and micro-sized enterprises (SMMEs). This has resulted in DEA's active role in regulation reform and industry SMME support (GreenCape, 2019).

3. STATE

3.1 INTRODUCTION

This section focuses on the state of waste management in the province, resulting from the driving forces and pressures. Waste management in the province is mainly focused on providing guidance and support to district and local municipalities relating to waste disposal (tonnes), waste characterisations (types), waste management facilities (capacity and compliance) and waste collection services, etc.

3.2 WASTE TYPES

The National Environmental Management: Waste Act (59 of 2008): National Waste Information Regulations (hereafter referred to as the WIS regulations), is divided into General and Hazardous Waste based on the risk it poses to humans and the environment. These categories are evident in Annexures 3 and 4 of the WIS regulations. All public and private entities who are regarded as waste holders, as defined by the WIS regulations, are required to report on general and/or hazardous waste via the Integrated Pollutant and Waste Information System (IPWIS). IPWIS is aligned and regularly submits reported information to the South African Waste Information System (SAWIS).

Waste types are classified to avoid inappropriate waste disposal to landfill sites not designed to accommodate that waste type and can damage the containment barrier and cause environmental impacts. Hazardous waste deposited at a general waste landfill site can result in leachate build-up, which the general landfill is not designed for and can compromise the integrity of the lining, soil contamination, groundwater pollution and exposure to people on the landfill site.

3.3 WASTE DISPOSAL

Municipalities are required to submit monthly reports via IPWIS, reporting on waste disposed (represented in tonnes) and diverted from waste disposal facilities. Municipalities use weighbridge reports and the Department's waste calculator to complete the online waste reports. These weighbridge reports and waste calculators are regarded as supporting documentation for the information submitted to the IPWIS.

3.3.1 General waste

General waste is clearly defined in the National Environmental Management: Waste Amendment Act 26 of 2014 (hereafter referred to as the Waste Amendment Act) and municipalities in the Western Cape predominantly report on municipal, commercial, industrial, construction, demolition and organic waste and can include additional waste types as seen in Annexure 3 of the WIS regulations. In 2019, **3 100 496T** of municipal general waste was disposed in the Western Cape, and includes

119 812T of waste that was disposed transboundary by Theewaterskloof, Bergrivier, George, Knysna, Mossel Bay and Bitou Municipalities. Bergrivier Municipality disposes their waste at Vredenburg WDF and Highlands WDF. Theewaterskloof Municipality disposes their waste at Karwyderskraal and George, Knysna, Mossel Bay and Bitou municipalities dispose at PetroSA. There was an increase in waste being disposed in 2019 as compared to disposal in 2017.

Table 1 represents the data reported to the IPWIS and presents a comparison of the general waste disposed over a 3-year period.

Table 1: Municipal Waste disposed on IPWIS in tonnages (2017-2019)

MUNICIPALITY	2017 (T)	2018 (T)	2019 (T)
WEST COAST DISTRICT	146 222	138 512	300 798
CITY OF CAPE TOWN	1 174 991	1 089 233	2 220 254
OVERBERG DISTRICT	104 328	101 563	110 743
GARDEN ROUTE DISTRICT	333 329	233 275	294 263
CENTRAL KAROO DISTRICT	6 132	4 838	5 192
CAPE WINELANDS DISTRICT	199 393	265 243	200 215

Table 2 provides a snapshot of the municipal waste disposed and diverted in the Western Cape, per municipality and as reported on the IPWIS. It should be noted that the data on the IPWIS is constantly changing as data is submitted, corrected where errors occur and resubmitted to the IPWIS. There are limitations in terms of waste data submitted and various reasons for this, please also refer to the section **LIMITATIONS,** when reading the section below.

Waste disposal in the Western Cape was high in 2018 and remains high in 2019 with despite a decrease in the amount of waste disposed between 2017 and 2018. In 2018, **1 710 838 tonnes general waste** was reported as being disposed. In 2019 and after waste data audits were conducted for the 2017 calendar year of waste disposed, the 2018 corrected figure is **1 836 967 tonnes,** resulting in 27% being diverted for the Western Cape, as compared to 29% for 2018, as previously reported.

In 2019, **3 100 496 tonnes** was disposed and almost double what was initially reported as disposed in 2018. The waste diversion for the Western Cape is currently very low and the data provided thus far to the IPWIS by various entities, must still be verified and for this reason, the diversion rate for the Western Cape will be omitted in this report. Swellendam Municipality reported the low diversion rate speaks to various issues and concerns that municipalities are currently experiencing, such as

low recyclables in the municipal area, making it unviable for the general entrepreneur. Plastics-specific risks and barriers include low end-market growth, public pressure, and compostable materials replacing plastics. There is a growing awareness of the impact of plastics on the environment, with pressure on brand owners and especially retailers to reduce non-recyclable packaging. Most major retailers are investigating alternatives to single-use packaging and plastic shopping bags.

Cederberg Municipality reported more waste diversion awareness campaigns being conducted in 2018 with private recyclers', whereas in 2019, there was an unwillingness by the recyclers to continue with their efforts. This resulted in a slight decrease in their diversion being reported for 2019. There are plans at the municipality to put forward more waste minimisation initiatives to their council, hoping that this will encourage the private recyclers.

CoCT disposed the most waste but also diverted 90% of the waste that was generated within the Metro. CoCT also experienced a dip in their waste diversion figures, where previously in 2018, they had a 30% diversion rate. Currently, the long-term aim is to reduce the volume/mass of waste going to the City landfill facilities. The monthly waste diversion percentage, is currently at 14.75% against their Quarter 3 (January - March) target of 20%. The main contributors to the decline were respectively the appeal against the chipping and processing of garden greens tender, resulting in the disposal thereof, a significant drop in the crushing of builders' rubble because of a decline in industry demand and lastly, the worldwide drop in the market of certain dry recyclables, which again impacted the local demand and lead to increased storage.

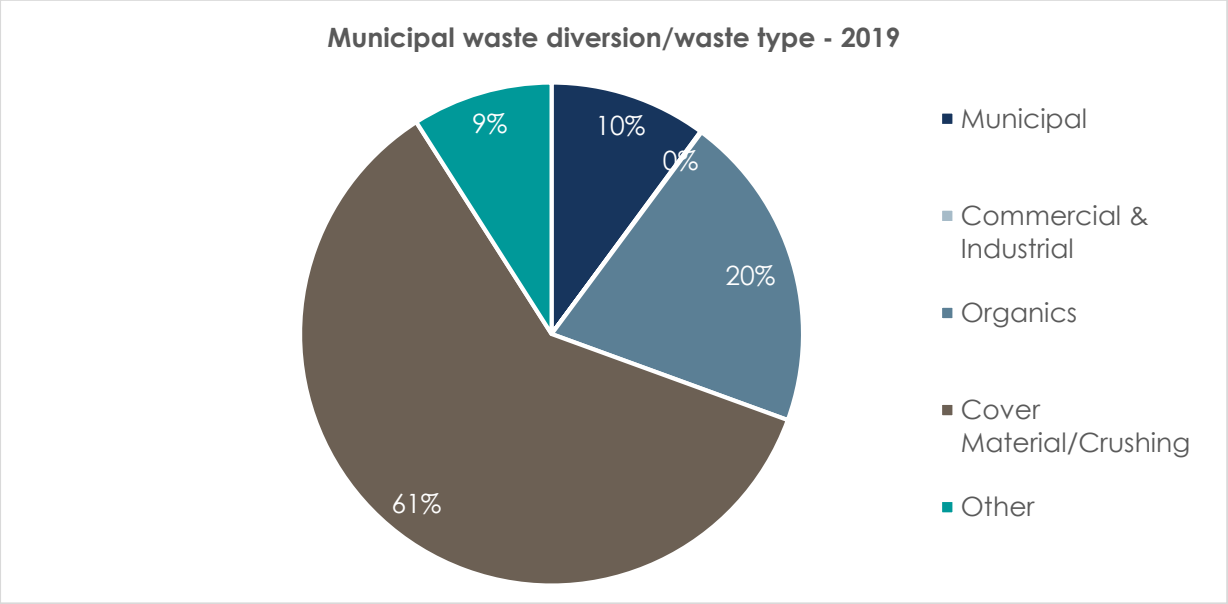


Figure 3: Municipal waste diversion/waste type – 2019

Most of the waste diverted in the province by the municipalities is attributed to builders' rubble, with 61%, followed by organic waste, as in **Figure 3** . As waste diversion is not standardised and

differs from municipality to municipality in how its regarded and calculated, it's difficult to distinguish if the waste diversion rate for the province is accurate and therefore further waste data audits on 2019 waste reporting, will be conducted in 2020. This will ascertain whether the methodology, practices and reporting by municipalities of waste types associated with diversion is under or overestimated, thus resulting in data anomalies observed in the 2019 waste data set.

There are also some successes where municipalities have increased their diversion rates by their sheer efforts and initiating various waste minimisation interventions that came to fruition in 2019, such as in the case of Matzikama Municipality and as can be seen in **Table 2**.

Table 2: Comparison of waste disposed and diverted by municipalities - 2019

MUNICIPALITIES	WASTE DISPOSAL (T)		WASTE DIVERTED (T)		WASTE DIVERSION RATE (%)	
	2018	2019	2018	2019	2018	2019
SWARTLAND	51 004	194 076	12 128	1 563	19.21%	0.80%
BERGRIVIER	6 733	21 794	12 868	5 517	65.65%	20.20%
CEDERBERG	2 792	6 340	199	164	6.66%	2.52%
SALDANHA BAY	73 277	73 658	55 540	45 464	43.12%	38.17%
MATZIKAMA	4 705	4 930	0	4 333	0.00%	46.78%
COCT	1 089 233	2 220 254	472 074	258 165	30.24%	10.42%
CAPE AGULHAS	20 812	32 724	1 293	3 435	5.85%	9.50%
OVERSTRAND	60 277	54 535	54 005	44 423	47.26%	44.89%
SWELLENDAM	8 198	7 553	502	0	5.77%	0.00%
THEEWATERSKLOOF	12 276	15 932	241	3 727	1.93%	18.96%
OUDTSHOORN	0	0	0	0	0.00%	0.00%
KANNALAND	1 385	1 323	0	0	0.00%	0.00%
GEORGE	47 488	49 499	5 609	6 992	10.56%	12.38%
MOSSEL BAY	142 076	163 077	5 985	21 621	4.04%	11.71%
BITOU	17 252	16 059	4 852	612	21.95%	3.67%
KNYSNA	11 902	11 071	2 670	1 775	18.32%	13.82%
HESSEQUA	13 172	22 265	1 312	1 366	9.06%	5.78%
LAINGSBURG	1 106	2 373	0	0	0.00%	0.00%
PRINCE ALBERT	1 064	1 371	0	0	0.00%	0.00%
BEAUFORT WEST	2 668	1 448	131	101	4.68%	6.54%
DRAKENSTEIN	43 051	51 769	12 409	28 815	22.37%	35.76%
LANGEBERG	25 831	24 512	4 115	6 465	13.74%	20.87%
BREEDE VALLEY	34 299	55 878	595	257	1.70%	0.46%
STELLENBOSCH	150 722	57 658	38 382	57 297	20.30%	49.84%
WITZENBERG	11 341	10 398	2 391	2 453	17.41%	19.09%

3.3.2 Hazardous waste

The Waste Amendment Act defines hazardous waste as "any waste that contains organic or inorganic elements or compounds that may, owing to the inherent physical, chemical or toxicological characteristics of that waste, have a detrimental impact on health and the environment and includes hazardous substances, materials or objects within the business waste, residue deposits and reside stockpiles". The South African National Standard: Globally Harmonized System of classification and labelling of chemicals (GHS) (hereafter referred to as SANS 10234), sets criteria for the classification of hazardous substances and mixtures according to the health, environment and physical hazards. The purpose of the Waste Classification and Management Regulations is to ensure adequate, safe storage, handling of hazardous waste and to inform suitable waste management options.

There are only two (2) waste disposal facilities within the Western Cape Province that are authorized and capable of accepting hazardous waste for disposal namely the City of Cape Town's Vissershok Landfill site and the privately owned, Vissershok Waste Management Facility. **Figure 4** represents a comparison of the hazardous waste received and disposed at these 2 premises, where Vissershok Waste Management Facility disposed **204 304T** of hazardous waste in 2019, as compared to the City's **5 976.25T**.

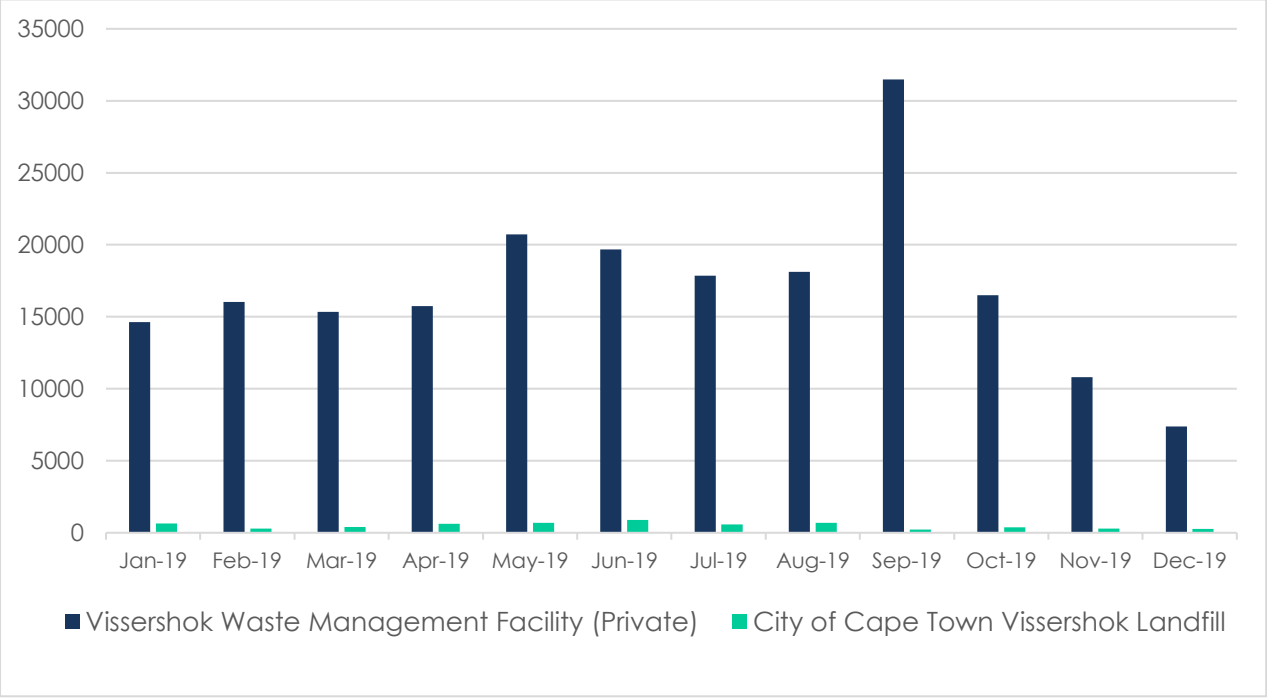


Figure 4: Hazardous waste disposed for 2019

Health Care Risk Waste (HCRW) is infectious materials, sharps, pharmaceutical waste, pathological waste, laboratory waste, chemical waste and genotoxic (including cytotoxic) waste typically

generated by households, public and private health care facilities. HCRW poses a risk and must be appropriately treated prior to disposal at landfill.

Note: As the HCRW waste is reported in IPWIS from various sources, the Provincial transversal system called BizBrain extracts the information into the required format. Due to the anomalies in HCRW data observed during extraction of the data, the accuracy of the HCRW treated for 2019 is omitted in the drafting of this report until the data is verified.

3.4 MUNICIPAL WASTE COLLECTION AND REFUSE REMOVAL SERVICE

The provision of a waste removal service by municipalities is identified as an essential service (Municipal Systems Act (MSA)) and the Constitution of South Africa, 1996, specifies that municipalities must provide services to communities in a sustainable manner and promote a safe and healthy environment. Schedules 4(b) and 5(b) of the Constitution further requires municipalities to provide cleansing services, refuse removal and to manage solid waste management facilities. In fulfilling their constitutional obligations, municipalities must provide their services in accordance with the National Norms and Standards for disposal of waste to landfill, 2013 and Waste service standards as indicated in the NEMWA.

In January 2011, the National Domestic Waste Collection Standards were published. These standards support the overall objectives of the NEMWA as amended and the National Waste Management Strategy (NWMS), 2011, by including aspects of source separation of waste and recovery of different waste types (National Domestic Waste Collection Standards, 2011). South Africa's waste sector comprises the public, private sectors and households. Recycling industry associations and Producer Responsible Organisations support their respective sectors.

Table 3 shows the relationship between sectors, and their legal roles and responsibilities. High levels of poverty, unemployment and inequality is still very much prevalent throughout the Western Cape with households struggling to pay for basic services. The MSA stipulates that poor households must have access to at least basic services and tariff policies that subsidise the poor.

Table 3: Waste collection and treatment responsibilities in South Africa (GreenCape, 2019)

		COLLECTION	
		LOCAL MUNICIPALITIES	**PRIVATE SECTOR**
GENERATION	**HOUSEHOLD**	Local municipalities are constitutionally mandated to ensure that household waste is collected. They can either provide the collection service themselves, or appoint private waste contractors.	Waste management companies can be contracted by local municipalities (through a procurement process) to collect household waste, or to manage drop-off facilities open to households and waste holders.
	COMMERCIAL/ INDUSTRIAL	Local municipalities are not obligated to service commercial/industrial waste generators. However, the latter may ask local municipalities to collect waste, thereby incurring a service fee.	Commercial and industrial waste generators are responsible for the management of their own waste, including safe disposal. This is usually outsourced to private waste management entities.
TREATMENT/DISPOSAL		Municipalities are mandated to ensure the availability of waste management facilities (landfills). They can support alternative waste treatment by means of providing material recovery and aggregation infrastructure. Such facilities can be managed by the municipality itself, or contracted to the private sector through a procurement process.	The private sector can either have its own waste treatment and/or waste management facilities; or it can be contracted by local municipalities to manage municipal recovery, aggregation or waste management facilities.

Table 4 displays the results obtained from the 2017/18 Municipal Annual reports relating to Municipal Basic Removal Services. There are 25 municipalities in the Western Cape, of which fourteen (14) provide a 100% refuse removal service, six (6) between 80% - 100% and five (5) between 80% and 60. The Western Cape's service delivery is currently at 99.2%.

Table 4: Municipal Basic Removal services (2019)

MUNICIPALITY	BASIC REFUSE REMOVAL (%)	MUNICIPALITY	BASIC REFUSE REMOVAL (%)
CITY OF CAPE TOWN (METRO)	100	STELLENBOSCH	71
CAPE AGULHAS	100	WITZENBERG	100
THEEWATERSKLOOF	100	BEAUFORT WEST	100
OVERSTRAND	100	PRINCE ALBERT	100
SWELLENDAM	88	LAINGSBURG	100
SALDANHA BAY	78	OUDTSHOORN	100
BERGRIVIER	100	HESSEQUA	91
CEDERBERG	100	BITOU	95
MATZIKAMA	100	GEORGE	100
SWARTLAND	83	KNYSNA	94
BREEDE VALLEY	67	MOSSEL BAY	98
DRAKENSTEIN	100	KANNALAND	66
LANGEBERG	79		

3.4.1 Costs of existing waste management systems

Most municipalities generate revenue to cover their operating expenses, with some generating a profit and others having a shortfall. The rising cost of managing waste collection, transportation and disposal of waste is a serious concern, with costs impacted by the following:

- Cost recovery from waste management services is poor;
- Lack of cost reflective tariffs (in certain municipalities, over 80% of the municipal budget is allocated for the collection and transportation of waste);
- Non-payment of tariffs reduces potential income;
- Lack of ring-fenced funds for waste management services;
- New legislative requirements (Norms and Standards for the Disposal of Waste to Land (August 2013), particularly associated with the establishment and development of new

waste management facilities, due to stringent liner conditions and prohibitions for disposal at WDFs;

- Municipalities struggle to obtain funds for licences for closure and rehabilitation (capping budgets); and
- Difficulty in accessing donor and Municipal Infrastructure Grant (MIG) funding for costly municipal infrastructure, especially at district municipalities (DEA&DP, 2018).

Information relating to waste management costs is poorly reported by the district municipalities, as the SoWMR used Operational Expenses (OPEX) and Capital Expenses (CAPEX) recorded by Provincial Treasury (2019), as a proxy for direct cost data. A financial summary of waste management services for the district municipalities is seen in **Table 5**.

Table 5: 2019 Municipal Capex and Opex

MUNICIPALITIES	OPEX	CAPEX
CITY OF CAPE TOWN	R1 843 487 787	R8 992 432
BREEDE VALLEY	R48 159 935	R24 331 654
CAPE WINELANDS DISTRICT	R0	R0
DRAKENSTEIN	R74 050 446	R2 374 261
LANGEBERG	R30 972 339	R4 146 703
STELLENBOSCH	R70 302 731	R13 564 515
WITZENBERG	R33 496 875	R791 556
BEAUFORT WEST	R14 416 832	R0
CENTRAL KAROO DISTRICT	R10 470	R0
LAINGSBURG	R1 318 629	R0
PRINCE ALBERT	R2 805 433	R0
BITOU	R45 118 459	R1 176 732
GARDEN ROUTE DISTRICT	R3 875 995	R0
GEORGE	R80 325 946	R15 348 996
HESSEQUA	R27 200 191	R150 934

MUNICIPALITIES	OPEX	CAPEX
KANNALAND	R5 918 183	R340 000
KNYSNA	R46 330 380	R733 369
MOSSEL BAY	R54 215 198	R2 734 799
OUDTSHOORN	R26 791 517	R3 133 323
CAPE AGULHAS	R19 260 727	R3 421 293
OVERBERG DISTRICT	R2 471 077	R6 764 559
OVERSTRAND	R73 369 290	R1 055 392
SWELLENDAM	R6 970 044	-R24 750
THEEWATERSKLOOF	R40 715 776	R13 073 911
BERGRIVIER	R17 651 323	R587 518
CEDERBERG	R19 384 537	R27 961
MATZIKAMA	R13 737 452	R3 902 654
SALDANHA BAY	R72 791 216	R19 297 911
SWARTLAND	R32 147 409	R4 379 009
WEST COAST DISTRICT	R470 130	R1 021 058

Note: All the municipalities have spent budgets on operational requirements however, at the time the data was requested and extracted, "R0" results were obtained for certain municipalities and might not be an accurate representation of the Opex and Capex for 2019.

3.5 MUNICIPAL INTEGRATED WASTE MANAGEMENT PLANS (IWMP'S)

The Department assisted CKDM, Beaufort West, Laingsburg and Prince Albert Municipalities with the development of 3rd generation IWMPs. The DEA&DP provided the IWMP guideline to municipalities which outlines the IWMP development process and sourcing relevant information, questionnaires for the public participation process and timeframes. Municipalities were required to submit the situational analysis, however, only the CKDM submitted the draft document. No

correspondence was received from Laingsburg Municipality and the DEFF provided funding to Beaufort West Municipality for appointment a service provider, to develop their IWMP.

The Garden Route municipalities drafted 3rd generation IWMPs and have employed a service provider, who initiated a meeting with the DEA&DP to discuss the development process and waste-related challenges. Comments were provided to GRDM, Bitou, Knysna, Oudtshoorn, Kannaland, Hessequa, Mossel Bay and George municipalities. The final IWMPs will be assessed and scored for endorsement.

The following municipalities submitted their IWMPs for assessment and endorsement:

- Bergrivier Municipality drafted its 4th generation IWMP, (scored 83%) and
- Matzikama Municipality amended its 3rd generation IWMP and their score improved from 71% to 76%.

3.5.1 Waste Characterisation

The Department assisted Prince Albert Municipality with a waste characterisation study to inform their IWMP. Training was provided to workers of the Community Workers Programme to familiarise them with the different waste types that would be separated and weighed during the study.

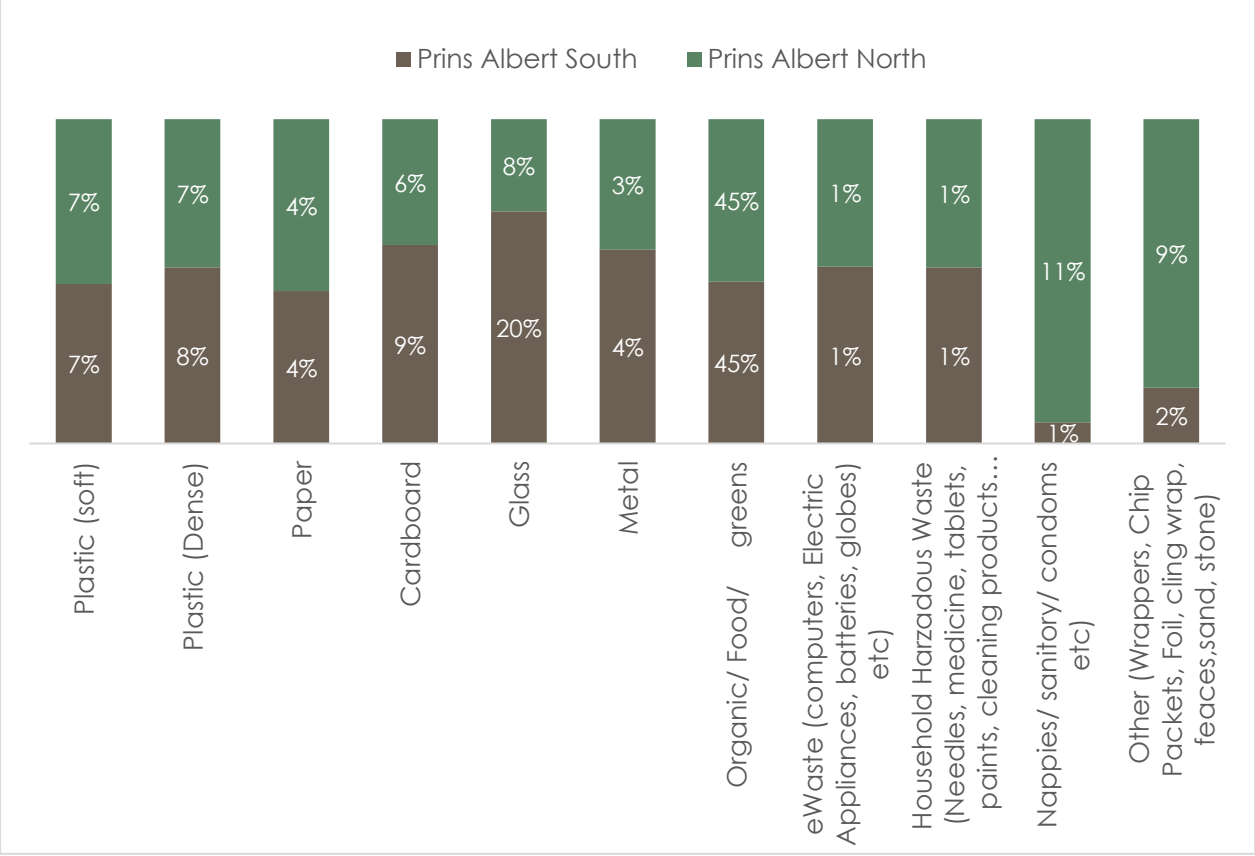
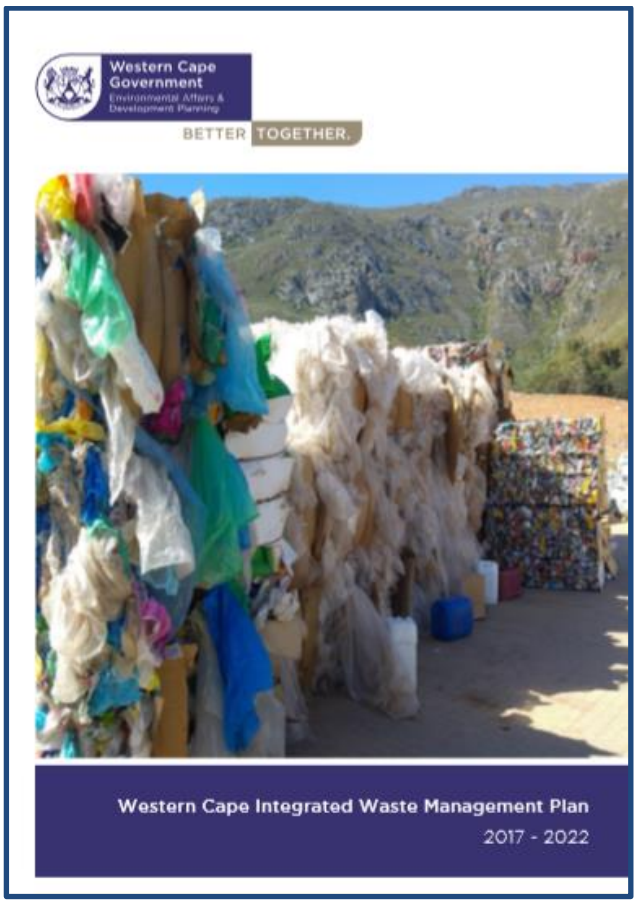


Figure 5: Prince Albert - Waste Composition (kg

The results of the study have been compiled and must be verified. Two hundred (200) were bags sampled and 45% is organics (food and green waste), where previously in 2014, it was 30%. Based on the results in **Figure 5** of the waste characterisation studies conducted, it is advisable for CKDM to investigate a regional solution for organic waste diversion from landfill, considering the ban on organic waste to landfill in the Western Cape Province.

3.6 WESTERN CAPE INTEGRATED WASTE MANAGEMENT PLAN (WC IWMP)

The aim of the Western Cape IWMP 2017-2022 is to provide strategic direction in the province to improve integrated waste management practices and is reported on annually to provide progress on the implementation of activities. The WC IWMP is reviewed and updated every five (5) years and municipalities must align their IWMPs with the WC IWMP.



To view the **WC IWMP 2017-2022**, please see https://www.westerncape.gov.za/eadp/about-us/meet-chief-directorates/environmental-quality/waste-management

3.7 INDUSTRY WASTE MANAGEMENT PLANS

DEFF evaluated 13 Industry Waste Management Plans from the Waste Electrical and Electronic Equipment (WEE), Lighting Industry and the Paper & Packaging sector. The plans were not

approved as they did not meet the stipulated Section 28 notice criteria. The National Minister's Notice of withdrawal (No. 1659) dated 13 December 2019, indicated a new approach would be followed focusing on the Extended Producer Responsibility (EPR) principle.

3.8 LICENCING OF WASTE MANAGEMENT FACILITIES

Chapter 5 of the Waste Amendment Act, makes provision for the licensing authority to issue a waste management license upon receipt of an application with the associated Basic Assessment/Scoping and Environmental Impact Reporting/Assessment processes. The licensing process is governed by the NEMWA and the NEMA: Environmental Impact Assessment Regulations, 2014 (Government Notice (GN) No. R. 982 of 4 December 2014). Activities that require a waste license are listed in GN No. 921 of 29 November 2013, as amended. There were 48 Waste Management Licences (WMLs) issued for the period 1 January 2019 to 31 December 2019. See **APPENDICES, Table 20,** as this represents a breakdown of the number of WMLs issued in the province**.** Two (2) WMLs were new applications and 42 were variation WMLs issued. In addition, there were two (2) administrative error corrections and two (2) WML issued, were surrendered.

3.9 CONDITIONS OF WASTE MANAGEMENT FACILITIES

The Department is mandated to monitor compliance with the Waste Act and in doing so, a unique approach to fulfil this mandate was taken, where the compliance rating for each WMF was determined by means of an audit report. **Table 6** and **Figure 6** details the Departmental compliance audits completed at various WDFs in 2019 and indicates an increase in compliance ratings between the current and previous audit reports.

Table 6: WMFs Compliance Status Indicators

COMPLIANCE RATING	STATUS INDICATOR		REQUIRED ACTION	CRITERIA	NO.	%
85 – 100 %	Compliant (Green)	X	Minor Improvements	84.5 ≤ X ≤ 100%	7	10%
65 – 84 %	Partially Compliant (Amber)	X	Improvements	64.5% ≤ X < 84.5%	19	26%
0 – 64 %	Non-Compliant (Red)	X	Major Improvements	X < 64.5%	46	64%
Total No. of audits					**72**	**100%**

It was evident that the Permit/Licence Holders were implementing some of the recommendations albeit, at a slow rate. The table and pie chart below provided an indication of the percentage of WMFs that were compliant (~10%), partially compliant (~26%) and non-compliant (~64%), with the conditions associated with the respective environmental authorisations.

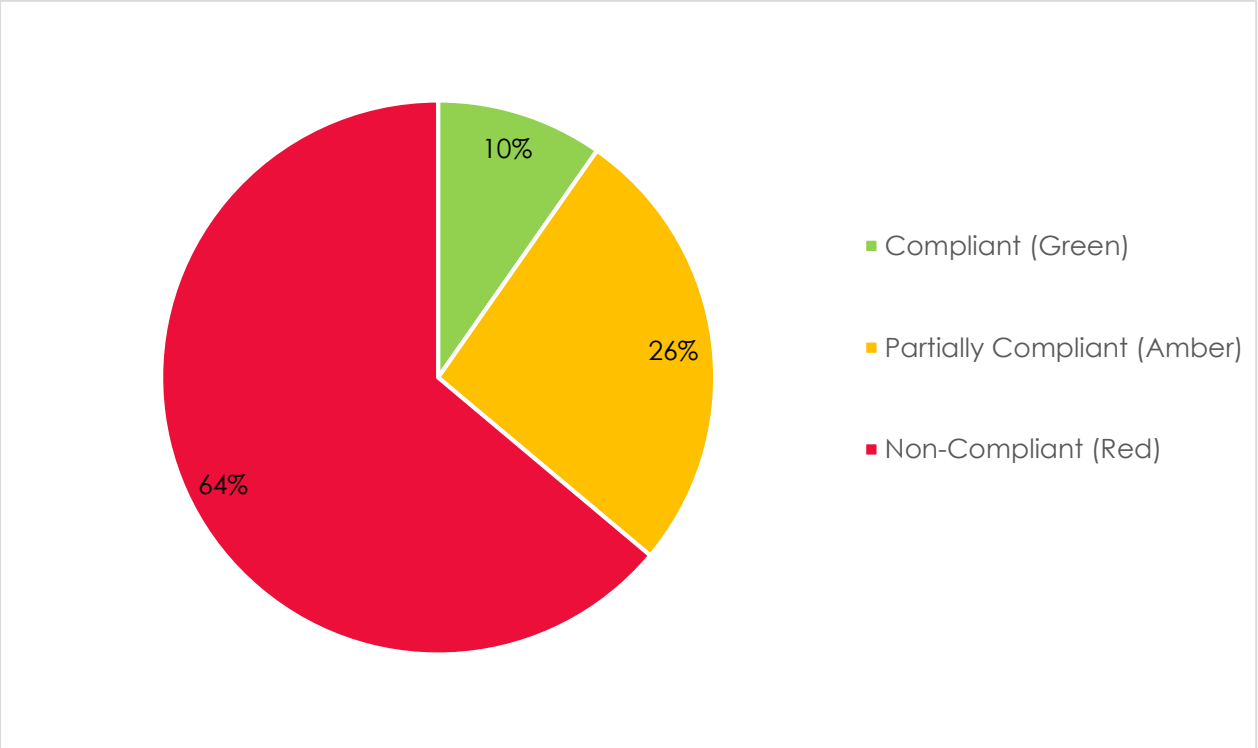


Figure 6: Percentage of WMF compliance in 2019

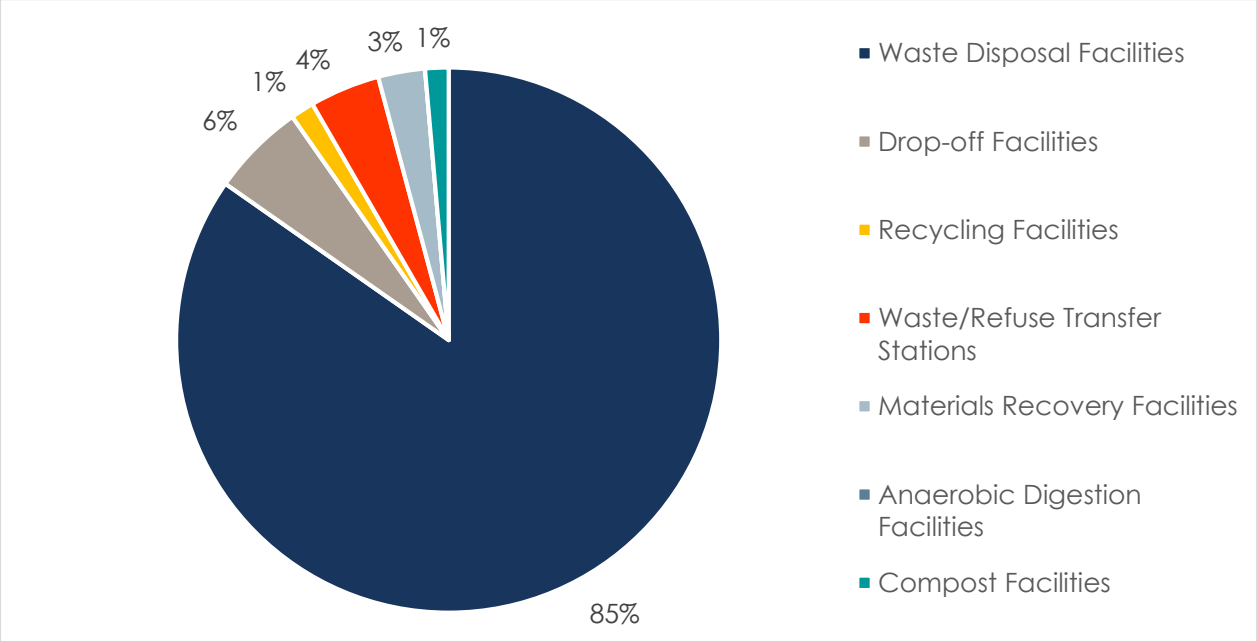


Figure 7: Types of WMF audited in 2019

Waste disposal by landfill remains a practice that poses a risk to the detriment and degradation of the environment. WDFs (~85%). Refuse Transfer Stations (RTSs), Material Recovery Facilities (MRFs), Composting Facilities (CFs), Recycling Facilities (RFs) and Drop off Facilities (DoFs) were also audited (~15%), see **Figure 7**. In **Figure 8**, audits were done in the Garden Route (33%) and West Coast (29%) municipal districts, where many WDFs were located.

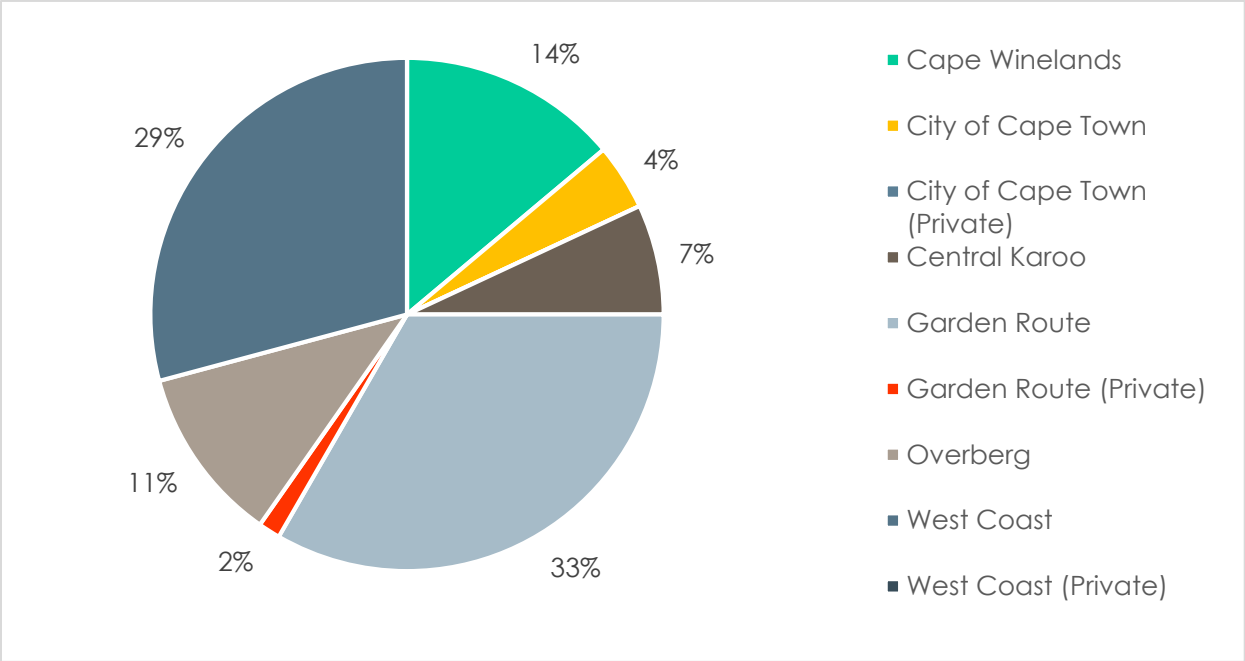


Figure 8: Percentage audits/Municipal District in 2019

To comply with Section 41 of the Constitution of the Republic of South Africa, municipalities that fell into the red and amber status indicators were afforded the opportunity to submit mitigation action plans for the rectification of the partial and non-compliances at each WMF. The compliant WMFs, although very few, were not required to submit any form of mitigation action plan, unless there were other circumstances that required action plans to reduce negative environmental impacts. Facilities with red (0 - 64%) and amber compliance ratings (65 - 84%) are prioritised for management interventions in the 2020/21 financial year.

Many of the disposal facilities were constructed during a period where the legislative requirements were less stringent, without any form of containment barriers. It should therefore be noted that its more difficult to comply with the conditions for operation of a WDF, than it is to comply with conditions for operation of other waste management facilities. This is due to the disposal, cell construction, compaction and covering activities that take place for 260 disposal days per year. Some municipalities have not installed boreholes at the WDFs, resulting in no groundwater quality monitoring being conducted. Storm water diversion and leachate management infrastructure were not installed at all WDFs when they were established previously. Currently, the non-compliances at WDFs will take time to rectify due to new and increased budgets, that requires

approval for changes to take effect. Gradual improvements are evident at this stage and it is envisaged that further improvements will be forthcoming in future.

As in **Table 7**, Stellenbosch WDF obtained the highest compliance rating (98.53%), followed by Gordon's Bay DoF (94.44%), Great Brak WDF (90.20%), Highlands WDF (89.47%), Kwanonqaba DoF (89.29%), Sonskynvallei RTS (88.89%) and Hout Bay DoF (86.60%).

Table 7: Compliance audit outcomes of WMFs audited in 2019

NO.	FACILITY	TYPE	DISTRICT MUNICIPALITY	INSPECTION DATE	REPORT DATE	PREVIOUS COMPLIANCE RATING	CURRENT COMPLIANCE RATING	ASSESSMENT
1	VILLIERSDORP	WDF	OVERBERG	17-Jan-19	28-Jan-19	35.87%	44.44%	8.57%
2	CLANWILLIAM	WDF	WEST COAST	17-Jan-19	29-Jan-19	27.50%	43.02%	15.52%
3	GROOTKOP	WDF	GARDEN ROUTE	24-Jan-19	12-Feb-19	-	34.09%	1st Audit
4	LOUIS FOURIE	WDF	GARDEN ROUTE	14-Jan-19	19-Feb-19	76.10%	75.96%	-0.14%
5	MOORREESBURG	WDF	WEST COAST	18-Jan-19	19-Feb-19	-	80.76%	1st Audit
6	PLETTENBERG BAY	WDF	GARDEN ROUTE	25-Jan-19	19-Feb-19	-	80.23%	1st Audit
7	DYSSELSDORP	WDF	GARDEN ROUTE	23-Jan-19	21-Feb-19	7.84%	14.70%	6.86%
8	KNYSNA	RTS	GARDEN ROUTE	24-Jan-19	21-Feb-19	78.00%	84.00%	6.00%
9	SEDGEFIELD	RF	GARDEN ROUTE	24-Jan-19	21-Feb-19	31.25%	63.80%	32.55%
10	SONSKYNVALLEI	RTS	GARDEN ROUTE	15-Jan-19	21-Feb-19	83.30%	88.89%	5.59%
11	DE RUST	WDF	GARDEN ROUTE	23-Jan-18	28-Feb-19	-	13.71%	1st Audit
12	GREAT BRAK	WDF	GARDEN ROUTE	16-Jan-19	28-Feb-19	43.48%	80.77%	37.29%
13	KWANONQABA	DoF	GARDEN ROUTE	15-Jan-19	04-Mar-19	-	89.29%	1st Audit
14	ELANDS BAY	WDF	WEST COAST	18-Jan-19	08-Mar-19	29.30%	47.67%	18.37%
15	LAMBERTS BAY	WDF	WEST COAST	18-Jan-19	08-Mar-19	52.54%	50.00%	-2.54%
16	SS TRANSPORT	CF	GARDEN ROUTE (P)	29-Jan-19	12-Mar-19	-	55.08%	1st Audit
17	VAALKOPPIES	WDF	CENTRAL KAROO	28-Jan-19	13-Mar-19	39.39%	41.27%	1.88%
18	KLAARSTROOM	WDF	CENTRAL KAROO	28-Jan-19	20-Mar-19	9.23%	45.00%	35.77%
19	EBENHAEZER	WDF	WEST COAST	10-Apr-19	17-May-19	-	17.64%	1st Audit
20	LANGEBAAN	WDF	WEST COAST	11-Apr-19	30-May-19	-	74.50%	1st Audit
21	BITOU IWMF	RTS	GARDEN ROUTE	02-May-19	30-May-19	-	56.41%	1st Audit
22	KLAWER	WDF	WEST COAST	10-Apr-19	31-May-19	35.53%	35.53%	0.00%
232	GENADENDAL	WDF	OVERBERG	16-Apr-19	31-May-19	50.00%	45.65%	-4.35%
4	STRANDFONTEIN	WDF	WEST COAST	10-Apr-19	12-Jun-19	-	54.54%	1st Audit
25	DARLING	WDF	WEST COAST	11-Apr-19	13-Jun-19	-	77.50%	1st Audit
26	SARON	WDF	CAPE WINELANDS	23-May-19	13-Jun-19	-	51.43%	1st Audit
27	WELLINGTON	WDF	CAPE WINELANDS	23-May-19	13-Jun-19	70.28%	77.08%	6.80%

NO.	FACILITY	TYPE	DISTRICT MUNICIPALITY	INSPECTION DATE	REPORT DATE	PREVIOUS COMPLIANCE RATING	CURRENT COMPLIANCE RATING	ASSESSMENT
28	GWAING	WDF	GARDEN ROUTE	03-May-19	13-Jun-19	-	48.04%	1st Audit
29	GREYTON	WDF	OVERBERG	16-Apr-19	31-May-19	55.00%	58.89%	3.89%
30	RIVIERSONDEREND	WDF	OVERBERG	17-Apr-19	14-Jun-19	51.92%	61.40%	9.48%
31	ZOAR	WDF	GARDEN ROUTE	07-May-19	14-Jun-19	43.48%	48.89%	5.41%
32	CALITZDORP	WDF	GARDEN ROUTE	06-May-19	25-Jun-19	22.22%	29.59%	7.37%
33	LADISMITH	WDF	GARDEN ROUTE	07-May-19	26-Jun-19	65.90%	44.00%	-21.90%
34	BONTEBOK	WDF	OVERBERG	12-Jun-19	26-Jun-19	65.00%	51.59%	-13.41%
35	MELKHOUTFONTEIN	WDF	GARDEN ROUTE	13-Jun-19	27-Jun-19	47.32%	64.55%	17.23%
36	INFANTA	WDF	OVERBERG	11-Jun-19	28-Jun-19	23.73%	39.22%	15.49%
37	ASHTON	WDF	CAPE WINELANDS	22-Jul-19	27-Aug-19	65.12%	75.00%	9.88%
38	BESSIEKOP	WDF	CAPE WINELANDS	22-Jul-19	20-Sep-19	79.63%	69.05%	-10.58%
39	BITTERFONTEIN	WDF	WEST COAST	12-Jul-19	07-Aug-19	22.85%	28.57%	5.72%
40	BONNIEVALE	WDF	CAPE WINELANDS	23-Jul-19	25-Sep-19	85.00%	73.44%	-11.56%
41	BREDASDORP	WDF	OVERBERG	19-Jul-19	27-Aug-19	58.33%	72.58%	14.25%
42	ELIM	WDF	OVERBERG	18-Jul-19	13-Aug-19	42.31%	37.50%	-4.81%
43	GEORGE	MRF	GARDEN ROUTE	30-Jul-19	12-Sep-19	65.38%	67.31%	1.93%
44	GORDON'S BAY	DoF	COCT	19-Jul-19	30-Aug-19	89.47%	94.44%	4.97%
45	GOUDA	WDF	CAPE WINELANDS	14-Aug-19	16-Sep-19	-	51.25%	1st Audit
46	HOUT BAY	DoF	COCT	19-Jul-19	11-Sep-19	97.29%	86.60%	-10.69%
47	KILLARNEY	DoF	COCT	11-Jul-19	30-Aug-19	-	75.00%	1st Audit
48	LEEU GAMKA	WDF	CENTRAL KAROO	19-Aug-19	26-Sep-19	43.75%	56.35%	12.60%
49	LUTZVILLE	WDF	WEST COAST	11-Jul-19	29-Jul-19	44.12%	14.28%	-29.84%
50	NELSPOORT	WDF	CENTRAL KAROO	19-Aug-19	26-Sep-19	38.90%	32.76%	-6.14%
51	PAARL	MRF	CAPE WINELANDS	14-Aug-19	23-Sep-19	-	69.32%	1st Audit
52	REDELINGHUYS	WDF	WEST COAST	22-Aug-19	05-Sep-19	25.00%	43.90%	18.90%
53	RIETPOORT	WDF	WEST COAST	12-Jul-19	29-Jul-19	28.79%	22.72%	-6.07%
54	SLANGRIVIER	WDF	GARDEN ROUTE	20-Aug-19	29-Sep-19	59.62%	64.04%	4.42%
55	HIGHLANDS	WDF	WEST COAST	02-Oct-19	11-Nov-19	98.00%	89.47%	-8.53%

NO.	FACILITY	TYPE	DISTRICT MUNICIPALITY	INSPECTION DATE	REPORT DATE	PREVIOUS COMPLIANCE RATING	CURRENT COMPLIANCE RATING	ASSESSMENT
56	**KORINGBERG**	WDF	WEST COAST	02-Oct-19	21-Nov-19	-	61.90%	1st Audit
57	**VREDENBURG**	WDF	WEST COAST	04-Oct-19	21-Nov-19	78.13%	82.64%	4.51%
58	**LEIPOLDTVILLE**	WDF	WEST COAST	03-Oct-19	01-Nov-19	-	22.72%	1st Audit
59	**WUPPERTAL**	WDF	WEST COAST	03-Oct-19	01-Nov-19	24.24%	14.86%	-9.38%
60	**CITRUSDAL**	WDF	WEST COAST	04-Oct-19	04-Nov-19	52.00%	40.81%	-11.19%
61	**LAINGSBURG**	WDF	WEST COAST	28-Oct-19	05-Dec-19	72.62%	57.02%	-15.60%
62	**PRINCE ALBERT**	WDF	CENTRAL KAROO	28-Oct-19	12-Dec-19	94.00%	52.27%	-41.73%
63	**GREAT BRAK**	WDF	GARDEN ROUTE	28-Oct-19	11-Dec-19	80.77%	90.20%	9.43%
64	**ALBERTINIA**	WDF	GARDEN ROUTE	30-Oct-19	12-Dec-19	62.00%	62.50%	0.50%
65	**STEYNSKLOOF**	WDF	GARDEN ROUTE	30-Oct-19	12-Dec-19	68.52%	64.00%	-4.52%
66	**DROEKLOOF**	WDF	GARDEN ROUTE	31-Oct-19	12-Dec-19	69.64%	66.30%	-3.34%
67	**WOLSELEY**	WDF	CAPE WINELANDS	23-Oct-19	10-Dec-19	20.97%	20.83%	-0.14%
68	**TULBAGH**	WDF	CAPE WINELANDS	23-Oct-19	11-Dec-19	78.17%	74.60%	-3.57%
69	**PORTERVILLE**	WDF	WEST COAST	24-Oct-19	03-Dec-19	32.43%	25.00%	-7.43%
70	**UNIONDALE**	WDF	GARDEN ROUTE	14-Nov-19	12-Dec-19	50.00%	42.31%	-7.69%
71	**GROOTKOP**	WDF	GARDEN ROUTE	14-Nov-19	11-Dec-19	34.09%	40.38%	6.29%
72	**STELLENBOSCH**	WDF	CAPE WINELANDS	08-Nov-19	20-Dec-19	73.00%	98.53%	25.53%

3.10 LANDFILL GAS MONITORING

The Department determines baseline data for landfill gas at WDFs in the Western Cape, where preliminary methane specific determination is done, to assist municipalities to investigate or implement mitigation measures. Methane (CH_4) is a colourless, odourless asphyxiant, flammable, non-toxic gas that is lighter than air with a vapour density of 0.6. CH_4 is explosive between the concentrations of 5% - 15% by volume in air, as per the Department of Water Affairs and Forestry, *Minimum Requirements for Waste Disposal by Landfill, Second Edition, 1998*. This concentration range is referred to as the explosive range with the two extremes being referred to as the lower explosive limit (LEL) and upper (UEL) explosive limit respectively. Methane production is a function of waste volume, waste composition, moisture content, landfill design and operating practices, and climate. Unless captured by a gas recovery system, CH_4 generated by the disposal facility is emitted directly through the landfill cover surface. CH_4 levels at WDFs are determined by selecting measuring points in and around the waste body for the measurement of methane gas concentration. The measuring points are determined by establishing where older waste was disposed of, particularly in areas where the decomposition of solid waste has already begun. The results of the landfill gas monitoring exercise were compiled into a Landfill Gas Report and the findings communicated to the relevant municipality, see **Table 8.**

Table 8: Landfill gas monitoring results - 2019

QUARTER	FACILITY	TYPE	DATE	MAX. CH_4 (VOLUME) LEVEL DETECTED
January -March 2019	**LOUIS FOURIE**	WDF	14 January 2019	0%
	GROOT BRAK	WDF	16 January 2019	0%
	CLANWILLIAM	WDF	17 January 2019	0%
	MOORREESBURG	WDF	18 January 2019	0%
	LAMBERTS BAY	WDF	18 January 2019	0%
	DE RUST	WDF	23 January 2019	0%
	GROOT KOP	WDF	24 January 2019	0%
	PLETTENBERG BAY	WDF	25 January 2019	0%
	KLAARSTROOM	WDF	28 January 2019	0%
April - June 2019	**KLAWER**	WDF	10 April 2019	0%
	DARLING	WDF	11 April 2019	0%

QUARTER	FACILITY	TYPE	DATE	MAX. CH_4 (VOLUME) LEVEL DETECTED
	LANGEBAAN	WDF	11 April 2019	0%
	GENADENDAL	WDF	16 April 2019	0%
	GREYTON	WDF	16 April 2019	0%
	RIVIERSONDEREND	WDF	17 April 2019	17.8%
	GWAING	WDF	3 May 2019	0%
	SARON	WDF	23 May 2019	0%
	WELLINGTON	WDF	23 May 2019	1.2%
July - September 2019	**SLANGRIVIER**	WDF	20 August 2019	0%
	CALEDON	WDF	3 September 2019	0%
	STANFORD	WDF	3 September 2019	0%
	KARWYDERSKRAAL	WDF	3 September 2019	Avg. 0.85%; Max 2.8%
	YZERFORNTEIN	WDF	11 September 2019	0%
	ORLEANS	WDF	18 September 2019	0%
	BREDASDORP	WDF	3 September 2019	0%
	BOY LOUW	WDF	26 September 2019	0%
	DEVON VALLEY	WDF	26 September 2019	0.3% Avg.; 1% Max
October – December 2019	**HIGHLANDS**	WDF	2 October 2019	0.2% Avg.;0.7% Max
	LEIPOLDVILLE	WDF	3 October 2019	0%
	WUPPERTHAL	WDF	3 October 2019	0%
	VREDENBURG	WDF	4 October 2019	0.05% Avg.; 0.2% max
	CITRUSDAL	WDF	4 October 2019	0%
	LAINGSBURG	WDF	28 October 2019	0%
	GROOTBRAK	WDF	29 October 2019	0%
	DEVON VALLEY	WDF	8 November 2019	5.525% Avg.; 20.9% max
	GROOTKOP	WDF	14 November 2019	0

4. IMPACTS

4.1 INTRODUCTION

Poor management of waste and WMFs, has an adverse impact on the environment, manifesting as impacts such as contamination to air, land and water sources, spread of diseases, poor living conditions and land use changes. This section provides a summary of the key impacts resulting from the changes in the state of waste generation and management in the Western Cape (**STATE**) and because of the driving forces and pressures (**DRIVERS AND PRESSURES**).

4.2 LAND USE

With WDFs rapidly reaching capacity across the Western Cape, new sites are needed limiting the availability of land for other land uses, such as housing or industry. New sites for will only be considered if regionalism is the preferred option. The loss of land extends beyond the footprint of a WDF to the offsite land compromised by the impacts associated with the waste disposal facility (buffer zone). Locating new WDFs too far from waste sources escalates OPEX, while site sensitivity, suitability and proximity to sources (in urban areas), could infringe on quality of life, hence it is extremely difficult to identify suitable locations for WMFs (DEA&DP, 2018).

4.3 WASTE RELATED COMPLAINTS

There were 42 waste related complaints received by the Department in 2019, with 20 falling within the CoCT, see **Figure 9**. Two (2) complaints were received from ODM and CKDM respectively. The WCDM had three (3) complaints, while GRDM had six (6) complaints and CWDM had nine (9). Many complaints were related to illegal dumping of waste (18), followed by operations and nuisances at WMFs (16). There were five (5) complaints related to burning at WDFs and few complaints were noted for treatment and storage. Illegal dumping and littering are symptomatic of poor integrated waste management systems with inadequate awareness programmes and is often a major indicator of neighbourhood decline and disorder, alongside graffiti, vandalism and derelict buildings. This leads to a decline in property values and a potential rise in criminality due to the perception of reduced regulatory control.

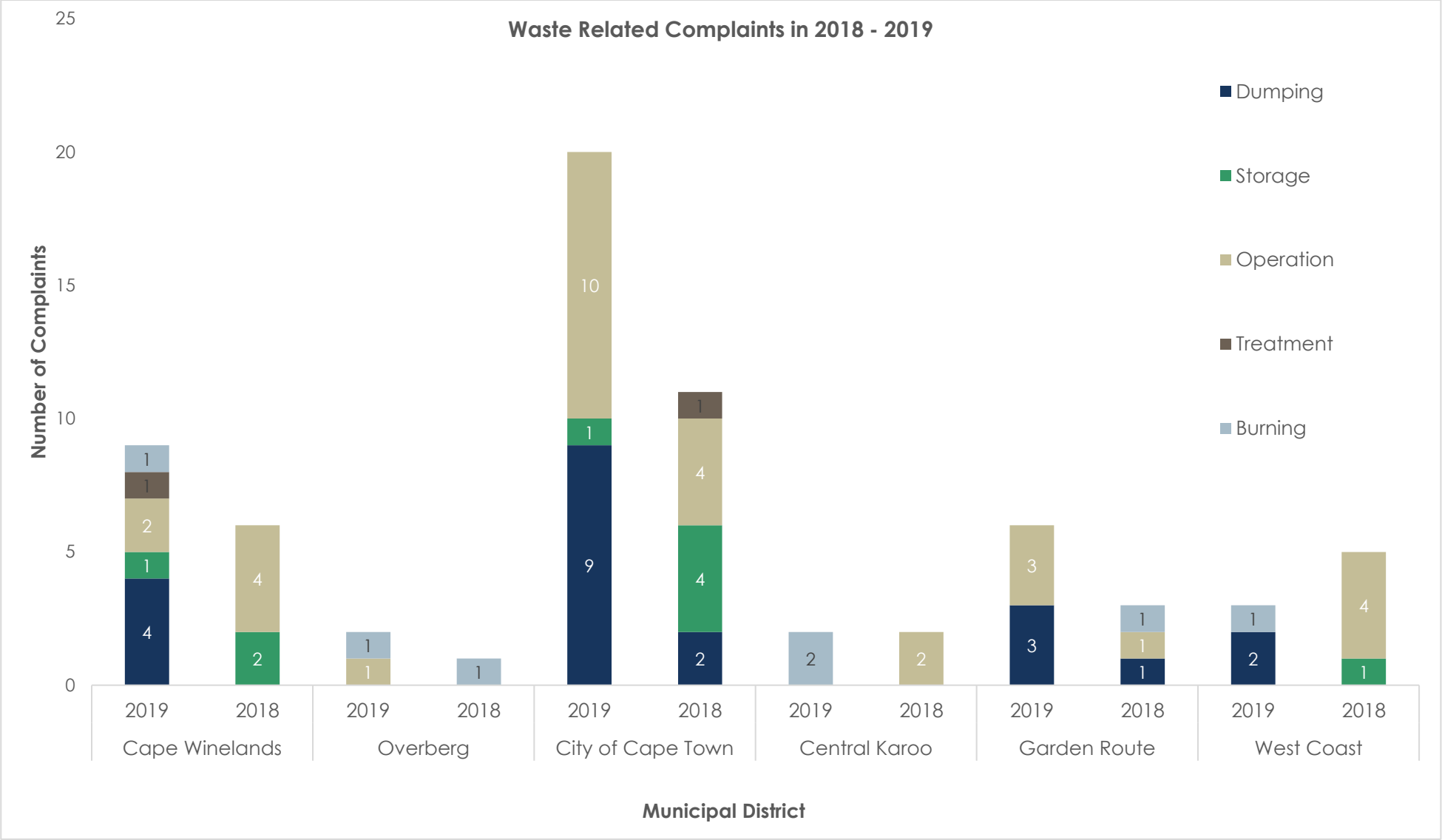


Figure 9: Complaints investigated for 2018-2019

5. RESPONSES

5.1 INTRODUCTION

This section looks at the activities and responses undertaken by the Department to avoid and mitigate the impacts identified in the section **IMPACTS**.

5.2 LEGISLATION, POLICY AND TOOLS

In South Africa, waste management is structured around the waste hierarchy, which is made up of various levels, each representing a waste management option, looking at what is best for the current environment. The objectives of the NEMWA are structured around the steps in the waste management hierarchy, which is the overall approach that informs waste management in South Africa. [9]The hierarchy is good for a circular system and the continual use of resources but some materials might be more expensive to recycle compared to making from new. In other instances, some materials will be generated out of necessity and by their nature, will either end up disposed, composted, treated via anaerobic digestion or pyrolysis. See **Figure 10** referring to the waste hierarchy**.**

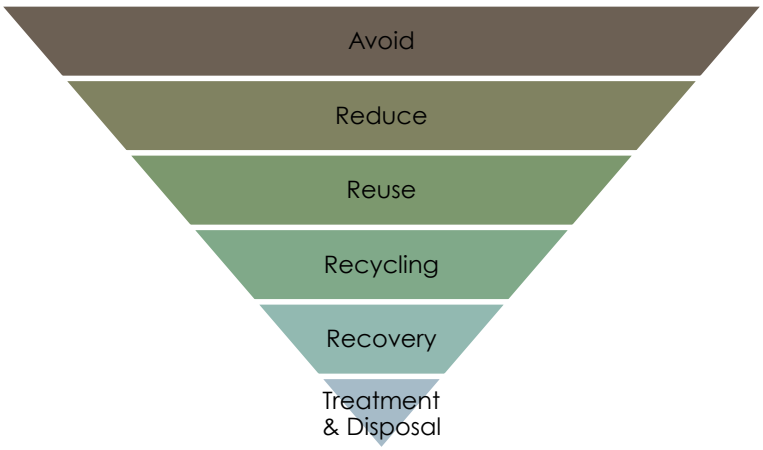


Figure 10: The Waste Hierarchy

National and provincial legislation governs waste management and related aspects such as the environment, health, air quality, hazardous substances and water resources. International conventions pertaining to hazardous substances and waste, to which South Africa is party is also applicable.

[9] https://www.bettermeetsreality.com/the-waste-hierarchy-explained/

5.2.1 National Legislation

There are two (2) pertinent legislative frameworks central to waste disposal in South Africa. The first being the Environment Conservation Act, 1989 (Act No. 73 of 1989), also referred to as ECA. DEFF is the overarching authority for waste management in South Africa and is the licensing authority for hazardous waste treatment activities. DEFF has already released (and continues to release) changes to the NEMWA, such as the ban placed on all forms of liquid waste, as well as hazardous waste with a calorific value of >20MJ/kg from landfill disposal, from 23 August 2019.

5.2.2 Provincial Legislation

DEA&DP is the Western Cape's provincial authority regulating general waste management. Waste holders triggering certain thresholds stipulated in the National Waste Information Regulations (R. 625 of 2012), must register with and report waste figures to the IPWIS, which is managed by the Department.

The changes to South African environmental and waste legislation are highlighted below, to mention a few:

- Additionally, the National Pricing Strategy for Waste Management, which aims to standardise and create the review of charges from time to time involved in waste management, has signalled a massive shift in South African waste legislation and places significant importance for waste management providers to start offering cost effective and zero-waste-to-landfill options going forward. The National Pricing Strategy for Waste Management, 2016 (GN. No. 904) gives effect to the principle of EPR and provides for waste management charges to fund the re-use, recycling, and/ or recovery of waste; it also makes provision for the establishment of a Waste Management Bureau, to facilitate the implementation of industry waste management plans and to promote the minimisation, reuse, recovery and recycling of waste;
- The National Domestic Waste Collection Standards, 2011 (GN. No. 21) set out rules and regulations for how domestic waste should be collected in South Africa, and how municipalities are to provide acceptable, affordable and sustainable waste collection services;
- The National Waste Information Regulations, 2012 (GN. No. R. 625) aim to regulate the collection of data and information to fulfil the objectives of the national waste information system; and
- In November 2013, the NEMWA National Norms and Standards for the Storage of Waste, Government Notice No. 926 and in October 2017, the NEMWA, National Norms and Standards for the Sorting, Shredding, Grinding, Crushing, Screening or Bailing of General

Waste, Government Notice No. 1093 was published. This requires all facilities that conduct these waste management activities to register with the Competent Authority and those meeting the threshold, to comply with the requirements of these norms and standards. These norms and standards replace the need for the relevant facilities to apply for a waste management licence (DEA&DP, 2018).

5.2.3 Provincial Government Platforms

The DEA&DP has established three (3) governance platforms, including the Provincial Waste Management Officer Forum; Western Cape Recycling Action Group and the Western Cape Industry Waste Management Forum.

5.2.3.1 Western Cape Industry Waste Management Forum (WC IWMF)

The Department hosted its annual Western Cape Industry Waste Management Forum at the Tygerberg Nature Reserve on the 11 September 2019. This year's forum focused on alternatives to waste disposal and related issues of compliance and waste diversion. Limited landfill airspace in the province is forcing municipalities to look at other waste management options other than disposal and thus, some are shifting towards alternative waste management methods. Current legislation has sought to address the issue of limited landfill airspace through restrictions and diversion target-setting. For instance, the NEMWA National Norms and Standards for Disposal of Waste to Landfill provides Government Notice R. 636 prohibitions/restrictions in terms of disposal of certain waste types within stipulated timeframes. Waste which has an angle of repose of less than five (5) degrees, becomes free flowing at or below 60 degrees Celsius or when it is transported, is not generally capable of being picked up by a spade or shovel. Waste with a moisture content of greater than 40 percent or liberates moisture under pressure in landfill conditions, and which has not been stabilized by treatment, prohibitions were also placed on hazardous waste with a calorific value (CV) of more than 20 MJ/kg from landfill disposal effective August 23rd, 2019. Another example are the national diversion targets which have been set for garden waste (25% by 2018 and 50% by 2023) and similarly the provincial targets for organic waste of 50% by 2022 and 100% by 2027).

The forum provided a platform for government and industry to engage on waste-related matters and to highlight successes stories in the application of alternative waste technologies. Presentations providing updates on recent waste legislative changes and the implications thereof for industry, were delivered. In line with the theme of waste management alternatives, the Department also presented the roll out of its Alternative Waste Management Technology Selection Tool. Meanwhile, GreenCape presented the Western Cape Industrial Symbiosis Programme (WISP)and stimulating innovative waste management practices in industry. Two (2) organisations presented on alternative waste technology options and provided examples of where these technologies were being implemented.

5.2.3.2 *Western Cape Integrated Waste Management Officers' Forum (WC IWMOF)*

The Department hosted three (3) WC WMOF with local and district municipal officials, where guest speakers are invited to inform the forum relating to new innovations and technologies in waste management. The forum aims to assist municipalities with challenges and provides an opportunity for municipal officials to share and coordinate successful waste management interventions and practices and keep municipal Waste Managers aware of the latest legislative developments.

5.2.3.3 *Western Cape Recycling Action Group (WCRAG)*

The Western Cape Recycling Action Group (WCRAG) aims to address issues pertinent to the growth of the recycling sector in the Western Cape. In 2019, the Department hosted various interventions, namely an event, themed 'Women in Waste', one (1) themed meeting 'Navigating Market related challenges' and a further meeting to discuss future initiatives.

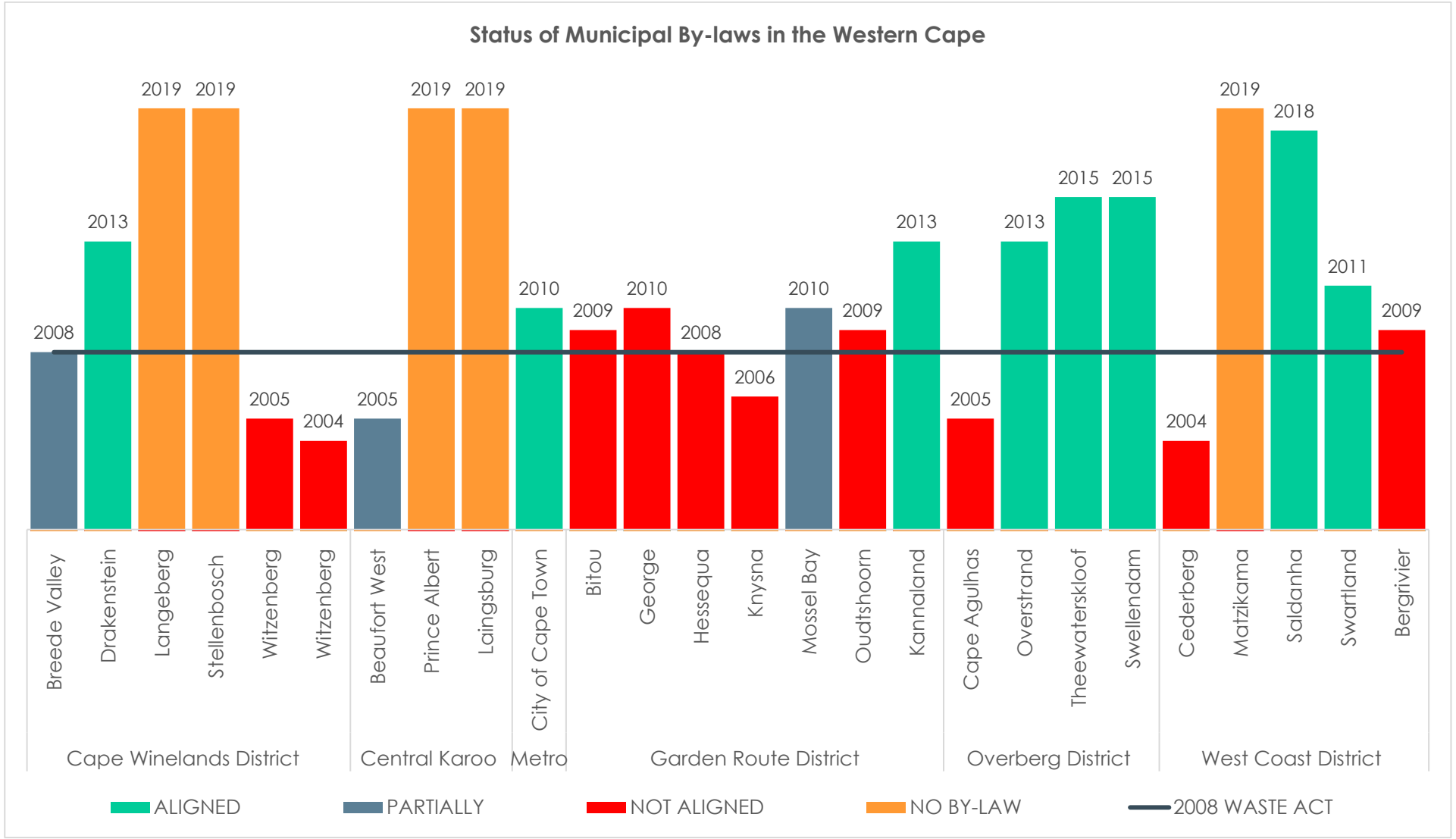
5.2.4 Model Integrated Waste Management By-Law

The DEA&DP have developed a model integrated waste management model by-law, to support local municipalities to compile local waste management by-laws. The by-law is currently vetted and incorporates the following:

- Improvement of waste management and service delivery;
- Recognition of the private sector to have easy access to waste material and drive the waste economy; and
- Alignment with NEMWA.

Two (2) stakeholder workshop engagements were held with municipal waste managers during the development of the Draft model by-law and communicated to all Municipal Mayors and Municipal officials via the MEC, for their consideration, as there were shortfalls in local legislation regarding waste management. It is evident that only eight (8) out of 26 municipalities have existing by-laws that are aligned to the Waste Act. This therefore supported the need for a standard/ model by-law to be drafted. Please refer to **Table 9** for municipal status of by-laws.

Table 9: Status of Municipal By-laws in the Western Cape



5.2.5 Provincial Strategy for the diversion of organic waste

DEA&DP developed a Provincial Strategy for the diversion of organic waste to landfill. One (1) workshop was hosted in the WCDM aimed to propose a regional solution and look at synergies to divert organic waste, working with all the organic waste generators and treaters, focusing on an industrial symbiosis model. The vision of the strategy is to support the circular economy, where organic waste is utilized within the entire value chain and where prevention and beneficiation interventions are applied to reduce organic waste to landfill and its effects on climate change. It looks at private sector and agencies forming good collaborative networks and interventions such as Voluntary Agreements, as a mechanism to reduce food waste by means of Industry Waste Management Plans (IWMPs). It aims to apply policy instruments, by various organs of state to meet the 50% and 100% organic waste bans for 2022 and 2027, respectively. This should result in higher demand for organic waste solutions from both the private sector and municipalities.

5.3 COMPLIANCE AND ENFORCEMENT

5.3.1 Waste Management Officers (WMO's)

In accordance with Section 10(3) of NEMWA, municipalities must appoint a WMO to coordinate waste management. To address the objectives of the 2nd generation WC IWMP, the Department initiated the development of minimum criteria for WMOs' appointments. This task required reviewing the current and existing job descriptions from all 30 municipalities and was presented to municipalities at the Integrated Waste Management Capacity-building workshop (see **5.5.4**). **Figure 11** currently represents the 23 (77%) designated WMOs in the province.

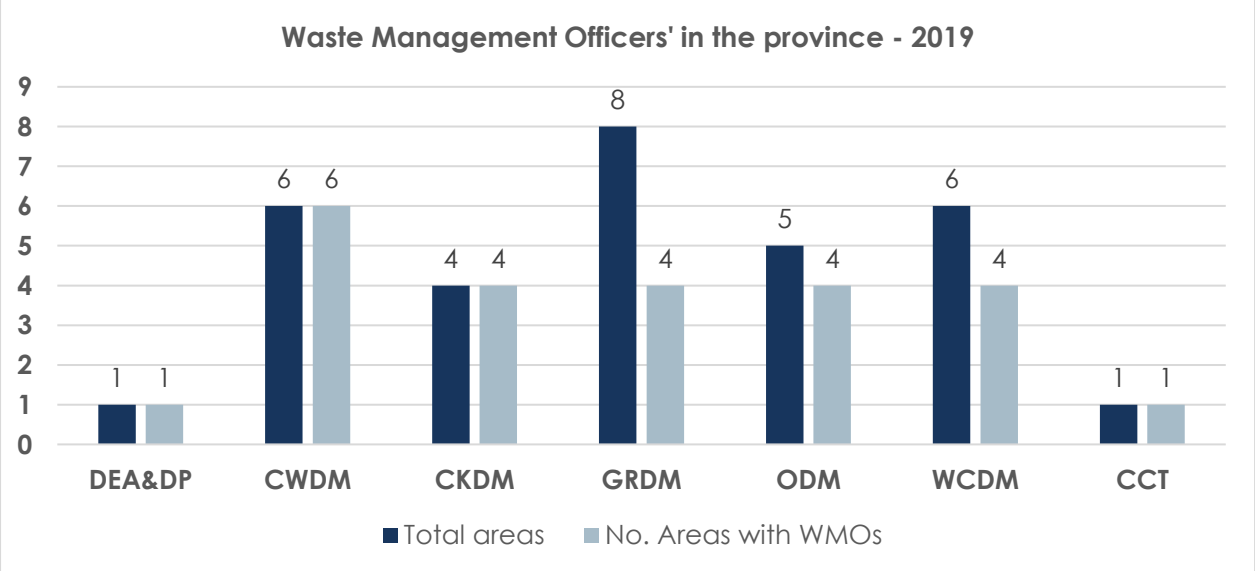


Figure 11: Waste Management Officers' in the province – 2019

The GRDM and ODM are well-structured to implement integrated waste management services. Each district has a designated WMO who manages all district matters as well as the Regional Waste Managers' Forum. The forum creates a platform for local municipalities to discuss waste related matters and share best practice. In the CKDM, an Environmental Forum has been developed, which also focuses on waste related issues, while the WCDM has a dedicated staff component for waste management.

5.3.2 Waste Reporting

Municipalities are required to submit monthly waste reports via the IPWIS, recording waste quantities disposed of and diverted from WMFs, based on weighbridge records or the DEA&DP waste calculator. Compliance with the IPWIS reporting is scored based on the number of waste reports submitted by municipalities over the reporting period (1 Jan 2019 - 31 December 2019), where 100% indicates that all the required reports have been submitted. For 2019, three (3) out of 25 municipalities did not submit all the IPWIS reports for the calendar year and therefore, they did not achieve 100% compliance. Shortage or absenteeism of staff was noted as reasons for non-submission of data to the IPWIS.

5.3.2.1 IPWIS Municipal Waste Data Audits

For 2019, the Department has been focusing on and striving towards rectifying the inaccurate reporting by both government and private entities, by conducting verifications of waste data submitted to the IPWIS. **Table 10** displays the audits conducted at various municipal WMFs for the data submitted for the 2018 calendar year.

Table 10: IPWIS waste data verification audits 2019

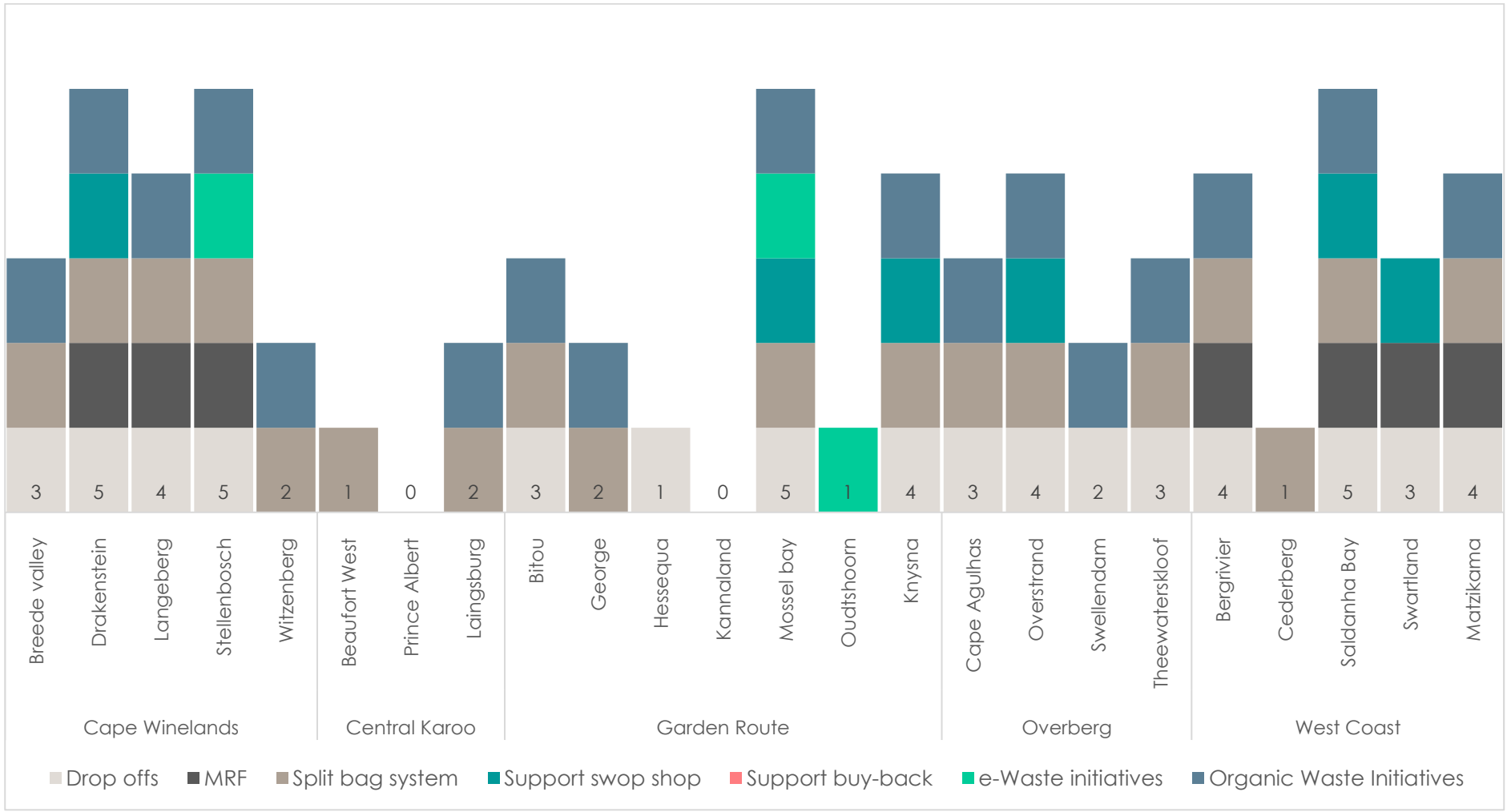
MUNICIPALITY	NAME OF FACILITY	IPWIS ACTIVITY	YEAR AUDITED
BEAUFORT WEST	Vaalkoppies WDF	General Waste Disposal	2018
BERGRIVIER	Velddrift Materials Recovery Facility	General Waste Recovery	2018
BREEDE VALLEY	Worcester WDF	General Waste Disposal	2018
DRAKENSTEIN	Wellington WDF	General Waste Disposal	2018
GEORGE	George WDF	General Waste Disposal	2018
HESSEQUA	Heidelberg WDF	General Waste Disposal	2018

MUNICIPALITY	NAME OF FACILITY	IPWIS ACTIVITY	YEAR AUDITED
KNYSNA	Old Place Garden Waste Treatment Facility	General Waste Treatment	2018
LAINGSBURG	Laingsburg Landfill	General Waste Disposal	2018
MATZIKAMA	Vredendal North WDF	General Waste Disposal	2018
MOSSEL BAY	Great Brak WDF	General Waste Disposal	2018
OVERSTRAND	Karwyderskraal WDF	General Waste Disposal	2018
PRINCE ALBERT	Prince Albert WDF	General Waste Disposal	2018
STELLENBOSCH	Stellenbosch WDF	General Waste Disposal	2018

5.4 CAPACITY BUILDING AND AWARENESS CAMPAIGNS

Some municipalities have initiated capacity building and awareness raising campaigns. These campaigns are typically aimed at educating the public about the different types of waste, waste minimisation, recycling, recovery and the impact of waste on human health and the environment (DEA, 2018). These goals align to Goal 4 of the NWMS, which is to ensure that people are aware of the impact of waste to their health and well-being. **Table 11** indicates the number of waste minimisation initiatives implemented per municipality in the Western Cape.

Table 11: Waste Minimisation Initiatives per Municipality - 2019



5.4.1 Women in Waste

The 'Women in Waste' event conducted under the WCRAG banner, celebrated the achievement of women in the waste sector and created the opportunity for these pioneers to showcase the value in waste as an "untapped commodity". The purpose of the event was to recognise the role women play in the recycling sector and to celebrate their successes amid the broader societal challenges of gender bias and inequalities, see **Figure 12.** The event brought waste sector representatives from NGO's, industry and SMME's together to network amongst peers and industry leaders.

Figure 12: Women in Waste speakers

5.4.2 Good Green Deeds

Eleven (11) informal waste collectors were trained on waste minimisation in Philippi, a project that forms part of the Good Green Deeds Campaign and seeks to capacitate informal waste collectors. The Good Green Deeds Campaign was initiated by DEFF in collaboration with the Presidency and is aimed at behaviour change with special focus on promoting sustainable waste management. The waste pickers received First Aid medical training and were provided with "Trike bikes" for the collection of recyclables. In lieu of Arbour Month and National Clean Up and Recycle Week, the Department conducted waste minimisation training with environmental management learnership candidates in Beaufort West and held a blitz clean- up yielding 25kg of waste, see **Figure 13.**

Billy The Bin (Good Green Ambassador) visits Beaufort West during a Waste Blitz conducted at a field outside of St Matthews Primary School in celebration of Arbor Month and Good Green Deeds Campaign.

Figure 13: Good Green Deeds blitz clean-up – Beaufort West

5.4.3 Cape Nature

The Department assisted Cape Nature with the youth of the [10]"YES" programme to build their necessary skills and to include waste minimisation. The training provided participants with tools to conduct a waste awareness campaign and presenting their awareness campaign to their fellow colleagues.

5.4.4 2Wise2Waste Programme in Western Cape Government (WCG) buildings

The 2Wise2Waste programme aims to create awareness amongst WCG officials on resource efficiency, thereby reducing the environmental footprint of WCG operations. For 2019, the programme ensured sufficient infrastructure was available at the WCG building floors and rolled out a monitoring programme to promote the recovery of waste. Fourteen (14) [11]PAYE interns and 11 cleaners were trained between various government departments in 2019.

Within the WCG, 581 365 kg (89%) was disposed and 71 191 kg (11%) from January till September 2019, where previously, 570 000 kg and 61 000 kg, was disposed and recovered respectively, see **Figure 14**. **Figure 15** represents the various waste types recovered from the buildings, namely glass

[10] Youth Employment Service (YES)

[11] Pay As You Earn (PAYE)

(2%), metal (1%), paper (91%) and plastic (6%). Further training was rolled out to staff and cleaning contractors on waste minimisation and recycling initiatives within WCG buildings. All new cleaning contractors are familiarised with the WCG waste minimisation and recycling system through this training.

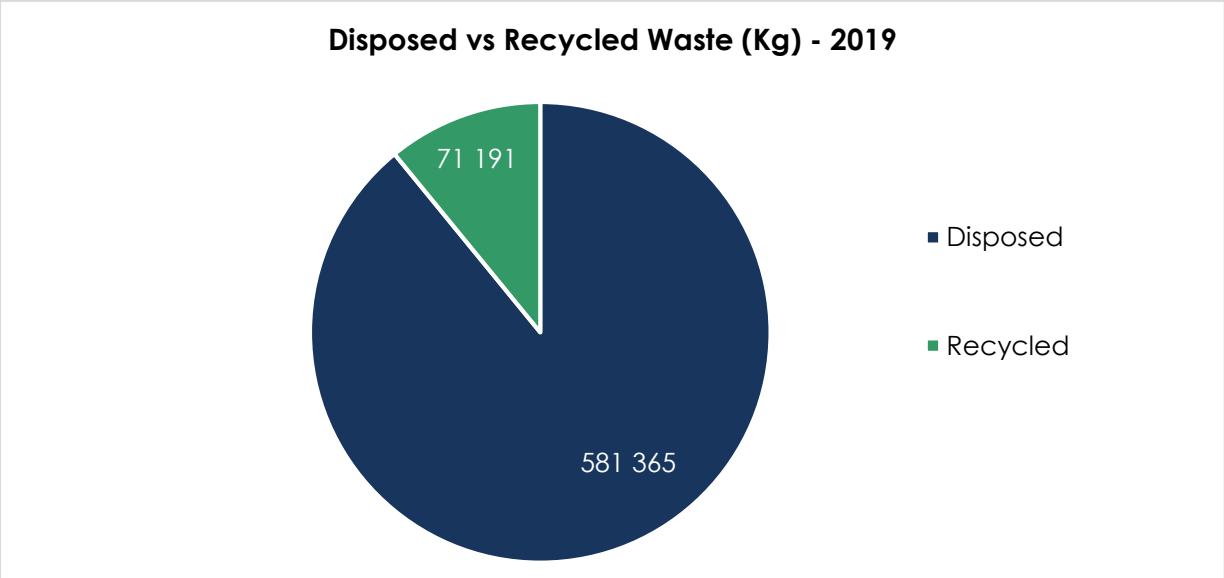


Figure 14: WCG disposal and recovery – 2019

Figure 15: WCG recovery in 2019

5.4.5 Separation at Source (S@S)

The Separation at Source programme was initiated in the Western Cape to provide support to municipalities and involve the WastePrenuers. Engagements and workshops were held with Cederberg and Kannaland Municipalities' waste management staff. Assistance was provided to WastePrenuers and the Department secured plastic bags to use in their S@S programmes. This programme, seeks to capacitate municipalities to effectively roll out separation at source initiative and to facilitate partnerships between municipalities and waste entrepreneurs while also creating awareness to mobilise citizens to participate in these initiatives.

5.4.6 Greenest Municipality

The evaluation of the GMC for 2019 kicked off with 16 municipalities indicating their interest to partake in the competition. This however was reduced to 13 of 16 official entries being received by the GMC administrators. Evaluators visited these 13 municipalities to verify their submissions and they were scored accordingly. District municipalities were not invited to participate in the competition this year.

The winners of the competition were announced at the annual GMC Awards Ceremony, where the prize money is proportionally allocated to the winning municipalities. Saldanha Bay Municipality received the first-place award, while Drakenstein Municipality walked away with "The Most Improved Municipality" award. The DEFF indicated the competition will not continue next year and to keep traction gained through this competition, DEA&DP will engage with Waste Managers at the WC IWMOF, to discuss a way forward.

5.4.7 Training of Health Care Waste Inspectors

The implementation of the Western Cape Health Care Waste Management (HCWMA) legislation is responsible for the management of health care risk waste in the province. The Department developed a policy to appoint "inspectors" to adequately manage and perform inspections, relevant to the inherent risks linked to health care waste. Thirty-two (32) inspectors were designated in 2018 and 12 in 2019. Municipalities now have the task to designate and are required to designate officials as HCWMA inspectors in their respective municipalities. The Department also hosted an internal training workshop with our law enforcement directorate to ensure that there was a common approach when monitoring and enforcing health are waste management legislation in the Western Cape .

5.5 DEPARTMENTAL SUPPORT TO MUNICIPALITIES AND INDUSTRY

5.5.1 Industry Compliance Promotional Visits

Two (2) compliance promotion visits were conducted based on companies identified and sourced from the IPWIS, in terms of large hazardous waste generators for 2018. Duferco and Gayatri Paper had large quantities of miscellaneous (HW9901) and organic waste without halogen and sulphur (HW1102) constituents generated by these companies. The promotional visits were focused to understand the operations, waste management practices and to provide possible areas for improvement for waste generation, general management and waste reporting to the IPWIS. Further compliance promotion site visits will be conducted at companies within the Consumer-Formulated Chemical Sector.

5.5.2 Household Hazardous Waste Guideline

Household Hazardous Waste (HHW) was identified in the WC IWMP and to complement the insight gained from the HHW Status Quo report, a HHW Guideline was drafted by the Department to assist municipalities in the overall management of HHW. Specific focus was given to how municipalities can use integrated waste management planning, waste infrastructure, HHW collection days and HHW awareness raising, as tools for HHW management. These processes were elaborated upon with case studies in Stellenbosch, Overstrand and Mossel Bay municipalities.

5.5.3 IPWIS Capacity building workshop

The Department hosted an IPWIS capacity building workshop with municipalities and industry regarding waste reporting, where the stakeholders had access to a Wi-Fi venue to access the IPWIS and capture their data online, with the assistance of the IPWIS team. The workshop took place in October 2019 and was well attended by a variety of stakeholders from various industries, generating both general and hazardous waste. The aim of the workshop was to capacitate stakeholders who were using the IPWIS for the first time and inform them of the waste information requirements in terms of the Waste Information System regulations, as well as enhancements made to the IPWIS to improve the users' experience.

5.5.4 Integrated Waste Management Capacity-building workshop

The WC IWMP strives to build and strengthen waste management capacity in the province. To meet the 2019 objective of the WC IWMP, the Department hosted an Integrated Waste Management Capacity Building Workshop in Stellenbosch. The aim was to build capacity amongst municipal waste managers to improve waste management compliance, integrated

waste management planning and promote waste diversion within their municipalities. Topics covered at the workshop were:

- State of waste management in the Western Cape;
- Compliance of waste disposal facilities;
- Waste diversion;
- Littering and illegal dumping;
- Waste marketing and awareness;
- Minimum requirements for the appointment of waste managers;
- Integrated waste management; and
- Planning and Integrated Development Plan (IDP) integration.

5.5.5 Waste Avoidance, Recycling and Recovery

Various waste minimisation initiatives have been implemented in the Western Cape Province in accordance with the NEMWA, which promotes integrated waste management through the Waste Management Hierarchy. The focus of DEA&DP's waste minimisation initiatives has been to meet the objectives of the DEA&DP's WC IWMP Goals 1 and 3, including:

- Goal 1 aims to implement integrated waste management, by effecting behavioural change and increasing participation by capacitating municipalities to implement waste minimisation initiatives. Waste minimisation workshops were hosted with municipal personnel and the Waste Management in Education (WAME) programme assisted municipalities with their waste awareness campaigns.
- Goal 3 aims to convert waste systems towards a circular economy, through guidelines for various waste streams, with a key focus on problematic waste streams, including organic waste and construction and demolition waste.

Many waste avoidance, reduction and recycling initiatives are currently being implemented in the WCDM, CWDM, ODM, GRDM and CKDM, including the following:

- Waste awareness (Youth Jobs in Waste workers, newsletters, advertising boards, clean up campaigns and illegal dumping);
- Minimisation (source separation, swap-shops, recycling bins in public areas, chipping of garden greens, composting, drop off facilities, crushing of building rubble and MRFs); and
- Job creation programmes (Expanded Public Works Programme (EPWP) workers, Community Workers Programme (CWP), Youth Community Outreach Programme (YCOP), food for waste projects and Youth in Waste workers.

The CWDM Municipal Health Services division implements waste awareness programmes, mainly providing educational material to schools and businesses to build capacity around the 3R's of the waste management hierarchy: Reduce, Reuse, Recycle. Solid waste management improvements implemented in terms of the Berg River Improvement Plan adopted in 2012 allowed for the potential value of the organic waste to be harnessed by communities.

The City's Waste Minimization and Recycling Project forms part of its Climate Change Programme and according to their IDP, the City will aim to further enable the re-use or recycling of waste materials into economic resources, at the same time reducing waste to landfill and contributing to a resource efficient economy by continuing to implement various waste minimisation and recycling projects across the City. This includes the construction and implementation of additional IWMFs, MRFs and Drop-off facilities, expansion of the City s Think Twice (separation at source) kerbside recycling collection programme, the provision of garden waste chipping facilities for the public at 12 locations, the continued distribution of home composting containers to residents in the City, and facilitating the crushing and re-use of construction and demolition waste or builders rubble at selected City waste management facilities.

The ODM's Regional Waste Forum creates a platform for local municipalities to discuss waste related matters and share best practice models. A recycling programme has been adopted in ODM offices (DEA&DP, 2018).

5.5.5.1 Drakenstein Municipality

Forty-two (42) waste collectors employed at Drakenstein Municipality were trained on waste challenges, health and safety, waste opportunities and adding value to waste. Participants were recognised for their eagerness to participate in the initiative, see **Figure 16**.

Figure 16: Drakenstein Municipality Training session

At Drakenstein Municipality, community leaders were vital role-players in mobilising communities and bridging a partnership between the municipality and waste pickers, who rely on the WDF for their livelihood. To date, 30 peoples' lives have changed and been empowered through this intervention and working with the Municipality, thereby achieving a sustainable and dignified livelihood.

5.5.5.2 Cederberg Municipality

Waste Minimisation training was also conducted with Cederberg Municipality in November 2019. This event was attended by 53 individuals which included private recyclers, EPWP, municipal staff and Good Green Deeds Youth, see **Figure 17.**

Figure 17: Cederberg Municipality Training session

Table 12: Waste Minimisation Training - 2019

ORGANISATION	DATE	AREA	NO OF PARTICIPANTS
CAPE NATURE	26 Feb 2019	Driftsands	52 YES programme participants
	3 Jul 2019	Driftsands	44 YES programme participants
	16 Oct 2019	George	23 YES, programme participants
ITHEMBA LABANTU	8 Mar 2019	Philippi	11 Informal collectors
BEAUFORT WEST MUNICIPALITY	11 Sept 2019	Beaufort West	36 Youth in Environmental Management Learnership Program

ORGANISATION	DATE	AREA	NO OF PARTICIPANTS
DRAKENSTEIN MUNICIPALITY	8 Oct 2019	Paarl	42 Collection staff
CEDERBERG MUNICIPALITY	19 Nov 2019	Clanwilliam	53 Private Recyclers, EPWP, Municipal Staff, Good Green Deeds Youth
TOTAL PARTICIPANTS TRAINED			261

Table 12 highlights the waste minimisation training successfully completed in 2019, where 261 participants were trained.

5.5.6 Green Economy Support Programme (GreenCape)

The Department initiated this programme with waste managers in the Western Cape to stimulate the circular economy, to divert waste from WDFs, to support greener technologies and ensure implementation. An Alternative Waste Management Technology Tool was developed by GreenCape and made user-friendly for municipalities to use. The tool looks at WMFs with anaerobic digesting, incineration, composting, clean and dirty MRFs and sanitary disposal at WDFs. It focuses on various criteria pertaining to waste types (residual waste, organics, garden/greens, builder's rubble, paper, metals, glass and plastic), waste tonnage and waste characterisation. It allows for population size of the municipality to calculate the population growth rate and the waste generation growth rate of the municipality, more accurately. The Department also supports small and micro waste entrepreneurs by facilitating the support of various agencies and providing support through the WCRAG.

5.6 COST OF WASTE MANAGEMENT SERVICES

The Directorate: Waste Management develops and implements waste management plans, legislation, policies, norms and standards, guidelines, regulations and systems which support communities, municipalities, industry and the private sector, through the implementation of project-directed measures and initiatives. The main purpose is to improve integrated waste management in the Western Cape Province. The Directorate falls within the Chief Directorate of Environmental Quality within the DEA&DP and facilitates Integrated Waste Management through:

- Integrated waste management planning: supporting municipalities and industry by facilitating and improving the management of waste;

- Regulating waste management facilities: providing technical assistance and training to municipalities to improve the construction, management and operation of waste management facilities in the Western Cape;
- Administers Waste Management Licensing applications and the development of Integrated Waste Management Plans;
- Waste Policy and Minimisation: promoting the minimisation, reuse and recovery of waste material and stimulation of the waste economy, job creation and policy development; and
- Waste Information Management: providing a central information hub for the IPWIS by enhancing data collection mechanisms, improving waste quantification, record keeping, providing technical assistance and training to municipalities and industries.

Together with the cost for projects, total cost of Waste Management to the Provincial Government is **R 21 517 004.64,** a **1.68%** increase from 2018. See **Table 13**.

Table 13: Cost of Provincial Waste Management Services - 2019

TYPE OF EXPENDITURE	AMOUNTS (R')
Compensation of employees	R18 340 518.42
Goods and services	R3 046 555.95
Payments for Financial Assets	R1 273.39
Transfers and subsidies	R98 361.82
Capital assets	R30 295.06
GRAND TOTAL	**R21 517 004.64**

6. CONCLUSION

The state of waste management in the Western Cape is driven by various forces and pressures that contribute to the increase in the quantity and complexity of waste generated and the pressure on existing infrastructure to manage the waste. While the waste disposed for 2019 has increased tremendously and with so many recycling and recovery facilities in the Western Cape, there is still a large dependency to dispose of waste to land and this requires a change in mindset.

Waste minimization initiatives have been and continues to be implemented, many efforts have been made pertaining to legislation to ensure greater compliance and enforcement, prioritizing and focusing on certain waste types and specific to activities, to avoid, recycle and recover waste.

Poor waste planning has become a growing environmental problem at a National, and in some cases a Provincial and Municipal level. The main method to manage waste in South Africa is disposal at WDFs, and approximately 90% of waste information generated in South Africa reports to WDFs.

There are 164 general WDFs in the Western Cape, three hazardous WDFs, three HCRW treatment facilities (2 incinerators and 1 electro thermal deactivation plant) and very few accredited hazardous waste laboratories.

Waste Management is a fundamental part of sustainable development as set out in the NWMS. The NWMS, articulates the promotion of sustainable waste management practices to ensure a sustainable future. The WCG vigorously engages with the national law reform by consistently providing comments on new legislation and through robust discussions held at the DEFF Working Group meetings to ensure that legislative provisions are practical, implementable and affordable. In recent years, the Western Cape has made significant strides in improving waste management and, more importantly the integration of sustainable practices that recognise waste as a resource.

7. SIGN OFF

I, Lance McBain-Charles, hereby approve the Annual State of Waste Management report for 2019.

_____ 2020/03/27

Acting Director: Waste Management Date

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9. LIMITATIONS

The tonnages of general and hazardous waste in the State of Waste Report 2019 has a few limitations and is listed below:

- Municipal general waste data should be considered with a degree of caution due to inconsistencies in definitions, data collection methodologies, data corrections made by municipalities on IPWIS and completeness of data;
- Tonnages for general waste disposed and as reported by municipalities on IPWIS, is mostly based on estimation of the total quantity of municipal solid waste disposed in the municipal area.
- The tonnages of general and hazardous waste reported as waste generated is based quantities of waste recycled, recovered, treated and/or disposed;
- The tonnages of waste diverted is calculated and as reported by municipalities on IPWIS, using the reported waste diversion (recycled, recovered and treated) total divided by the sum of waste generated;
- Data collection at municipalities is initially captured by gate controllers at the WDFs. The data is then recaptured by data capturers, for which the accuracy could not always be verified and this data was used;
- Given the variations in the data accuracy of the different waste types, it is not possible to assign an overall level of accuracy to the calculated tonnages of general and hazardous waste disposed;
- While many municipalities have calculated and reported on waste diversion in their respective municipalities, these waste diversion calculations and methods differ from municipality to municipality. As the data night indicated an over or underestimation of diversion taking place at municipalities, the data reported in the report for 2019 might change once verification by the Department takes place.

10. APPENDICES

10.1 WESTERN CAPE WASTE REMOVAL TARIFFS - 2019

Please see the Municipal waste removal tariffs in the Western Cape for 2019.

Table 14: CoCT refuse removal tariffs - 2019

MUNICIPALITIES	PLACE	VOLUME	FREQUENCY/WEEK	TARIFF 2016/2017	TARIFF 2017/2018	TARIFF 2018/2019
CoCT	Property owner with property valued from R1 up to and including R100 000 (100% rebate)	240L bin	1	137.39		145.26
	Property value between R100 001 up to and including R150 000 (75% rebate			102.99		108.84
	Property value between R150 001 up to and including R350 000 (50% rebate)			68.7		72
	Property value between R350 001 up to and including R400 000 (25% rebate)			34.39		36
	Hostels, Flats, Retirement villages - excluding Single Residential	240L bin	3			
	Residential and non-residential	85L bin	1	Free		

Table 15: Cape Winelands DM refuse removal tariffs - 2019

MUNICIPALITIES	PLACE	VOLUME	FREQUENCY/WEEK	TARIFF 2016/2017	TARIFF 2017/2018	TARIFF 2018/2019
DRAKENSTEIN		240L bin	1	2,347.81	2,575.55	2825.37
			2	6,399.40	7,020.14	7558.58
			3	10,824.08	11,874.02	12883.31
			5	18,267.73	20,039.70	
		770L bin	1	8,029.39	8,808.24	9512.89
			2	21,889.33	24,012.60	

MUNICIPALITIES	PLACE	VOLUME	FREQUENCY/WEEK	TARIFF 2016/2017	TARIFF 2017/2018	TARIFF 2018/2019
			3	37,018.90	40,609.73	
WITZENBERG	Res. Prop. ≤ 100 000	2 refuse bags or less			157.09	179.9
	Res. prop > 100 000 ≤ 150 000				169.18	193.7
	Res. prop > 150 000 ≤ 200 000				181.26	207.5
	Res. Prop > 200 000 ≤ 500 000				193.34	221.4
	Res. prop > 500 000 ≤ 800 000				210.26	240.8
	Res. prop > 800 000 ≤ 1 000 000				217.51	249
	Res. prop > 1 000 000				241.68	276.7
	Other properties	240L bin	1		302.1	349.11
			2		604.2	698.21
			3		906.3	1047.32
		770L bin	1		725.04	837.86
			2		1450.08	1675.71
			3		2175.12	2513.57
STELLENBOSCH	Indigent household (250 m²) and max. value R200 000	3 closed bags	1	R 98.25	107.09	116.73
	Basic residential collection	3 closed bags or 240L bin	1	R 127.20	138.65	151.13
	Hostels, flats, old age/retirement villages	Blue lid 240L bin	3	R 451.33	491.95	536.23
	Business and commercial	3 standard refuse bags or 240L bin	1	R 150.44	163.98	178.74
		3 standard refuse bags or 240L bin		R 451.33	491.95	536.23
		240L bin		R 752.20	819.9	893.69
	Restaurant (food waste only)		5	R 370.00	403	439.6
BREEDE VALLEY	household/Flat	240L bin or 3 Black bags	1	145.61	177	190
	Hostels			120.18	146	157
	Residential homes used for home industries/businesses or career practices			185.96	225	241
	Commercial		1	2 689.47	3 254.00	3480
			2	4 495.61	5 438	6960
			3	6 285.09	7 603.00	10440

MUNICIPALITIES	PLACE	VOLUME	FREQUENCY/WEEK	TARIFF 2016/2017	TARIFF 2017/2018	TARIFF 2018/2019
			4	8 083.77	9 778.00	13920
			5	9 874.56	11 944.00	17400
			6	11 663.16	14 108.00	
			7	13 537.72	16 375.00	
	Sport clubs, educational (crèche's, schools and colleges), institutions and old age homes, churches		1	989.47	1 197.00	1280
			2	1 593.86	1 928.00	2560
			3	3 188.60	3 857.00	3840
			4	4 250.88	5 142.00	5120
			5	5 290.35	6 399.00	6400
			6	6 346.49	7 677.00	
			7	7 405.26	8 957.00	
	Municipal (departmental)			1 773.68	2 146.00	2295
LANGEBERG	**General**: informal housing and indigent tariff		1, 2 or 3	108.55	121.58	137.38
	General: bulk removal and perishable products			859.36	962.49	1087.61
	Mega industries: Langeberg & Ashton foods			15 652.89	17 531.24	19810.3
	Langeberg & Ashton foods			12 298.72	13 774.36	15565.25
	Fruits packers			1 613.18	1806.76	2041.64
	Parmalat			3 015.27	3 377.10	5065.65
	All wine cellars			1 507.64	1688.55	1908.07
	Small cheese factories					1908.07
	Moreson			1 085.51	1 215.77	1373.82
	Sport ground			98	109.76	124.03
	Rejected material: Robertson Abattoir			10 221.79	11 448.41	
	Robertson Abattoir (manure)			6 663.76	7 463.41	
	Excull					
	Bonnievale abattoir			4 839.52	5420.26	
	Delgado fishery			3 663.56	4103.19	
	Parmalat			12 905.38	14 454.02	
	Municipal departments		1	108.55	121.58	137.38
			2 or 3	437.23	489.7	553.36

Table 16: Central Karoo DM refuse removal tariffs - 2019

MUNICIPALITIES	PLACE/TYPE OF WASTE	VOLUME	FREQUENCY/WEEK	TARIFF 2016/2017	TARIFF 2017/2018	TARIFF 2018/2019
LAINGSBURG	Household			83	103	96
	Businesses and offices			392	482	449
	Garden refuse			137.6	170	158.4
	Compost bins					
		Garbage bags		2.3	2.85	2.7
PRINCE ALBERT						
BEAUFORT WEST						

Table 17: Garden Route DM refuse removal tariffs -2019

MUNICIPALITIES	PLACE	VOLUME	FREQUENCY/WEEK	TARIFF 2016/2017	TARIFF 2017/2018	TARIFF 2018/2019
MOSSEL BAY	Households, crèches, churches	1 bag	1	135.16	155.43	**190.31**
	Old age home, hospitals, clinics and schools			67.58	77.71	1198.85
GEORGE	Hotels, hospitals	2*240L bin	3	10 878		311.95
	Guest houses	7 black refuse bags or 240L bin	1	2 831		15.43
	Caravan parks	240L bin	1 a week/site	140		623.9
	Industries	2*240L bin	1	5 661		1198.85
	Schools / school hostels	2*240L bin	3	10 878		2892.97
		Bulk (1700 litre)	3	26 250		311.95
	Churches and church halls	7 black refuse bags or 240L bin		2 831		63.6
	Holiday chalets	240L bin	1 a week/chalet	577		55.55
	Uniondale / Haarlem: Res.	7 black refuse bags	1	42		119.03
	Uniondale / Haarlem: Bus.	Refuse bags	2	90		165.69
	To all vacant Erven			1 729		311.95
	Botanical Garden	240L bin	1	2 831		190.56
	Residences, flats	7 black refuse bags or 240L bin	1	1 729		1198.85
BITOU	Domestic/	110L bin	1	2 388	2 567	2865

MUNICIPALITIES	PLACE	VOLUME	FREQUENCY/WEEK	TARIFF 2016/2017	TARIFF 2017/2018	TARIFF 2018/2019
	churches/crèches		2	4 775	5 133	5728
	Domestic	240L bin	1	2 502	2693	
			2	5 010	5 386	
	Group housing			2 388	2 567	2731
	Business/ commercial	110L bin	1	3 106	3 339	3960
			2	6 211	6 677	7811
			3	9 317	10 016	11717
			Daily removal	15 528	16 693	19528
		240L bin	1	3 415	3 671	
			2	6 831	7 343	
			3	10 246	11 014	
			Daily removal	17 076	18 357	
	PDI Areas	110L bin	1	1 552	1 668	
		240L bin	1	1 708	1 836	
	Garden refuse	Up to half load		422	454	482
		Full Load		847	911	969
		Plastic Bag		199	214	228
		Up to half Load - Sub-economic		213	229	2865
KNYSNA	Accommodation	170L bin	1	1 568	1 717	1 880
	Commercial			8 801	9 637	10 553
	Light Industry			1 050	1 150	1 259
	Government: general			913	1 000	1 095
	Government: schools			777	850	931
	Priv: Domestic			425	465	509
	School/education			673	737	807
	Sport Organisation			801	878	961
	Church			9	10	11
	Domestic residential			937	1 026	1 123
	Old age homes			1 867	2 044	2 238
	Business and other properties	1 wheelie bin per premises		1 755	1 922	2 105
		2-3 wheelie bin per premises		10 504	11 502	12 595
		4-5 wheelie bin per premises		21 010	23 006	25 191

MUNICIPALITIES	PLACE	VOLUME	FREQUENCY/WEEK	TARIFF 2016/2017	TARIFF 2017/2018	TARIFF 2018/2019
		6-7 wheelie bin per premises		31 514	34 508	37 786
		8-9 wheelie bin per premises		42 020	46 011	50 382
		10-11 wheelie bin per premises		52 524	57 514	62,977
		12-13 wheelie bin per premises		63 029	69 017	75 574
		14-15 wheelie bin per premises		73 535	80 521	88 170
		16-18 wheelie bin per premises		94 544	103 526	113 361
		19- 20 wheelie bin per premises		105 049	115 028	125 956
		21-28 wheelie bin per premises		147 068	161 040	176 339
		29-30 wheelie bin per premises		157 574	172 543	188 935
		31-47 wheelie bin per premises		159 326	174 462	191 036
		48-49 wheelie bin per premises		260 887	285 671	312 810
	Residential	4 Black bags	1	163.51	179.92	190.74
	Small Businesses	7 Black bags		202.47	222.8	236.16
	Hotels B&B's and self-Catering			204.38	224.89	238.39
	Old Age Homes and Frail Care centres			163.51	179.92	190.71
KANNALAND	Residential and Small Business		1/fortnight	85.36	93.93	99.56
HESSEQUA						
	Residential			1303	1438.5	
	Business per 85dm³			11,80	13	
	Garden refuse by owner			no charge	no charge	
OUDTSHOORN	Garden refuse by Contractor				50	
	Building Rubble removed by owner				no charge	

MUNICIPALITIES	PLACE	VOLUME	FREQUENCY/WEEK	TARIFF 2016/2017	TARIFF 2017/2018	TARIFF 2018/2019
	Building Rubble removed by Contractor					
	Building Rubble removed by Municipality				570	
	Removal and Cleaning of refuse after function				1140	

Table 18: Overberg DM refuse removal tariffs - 2019

MUNICIPALITIES	PLACE	VOLUME	FREQUENCY/WEEK	TARIFF 2016/2017	TARIFF 2017/2018	TARIFF 2018/2019
OVERSTRAND	Household		1	166.74	176.74	164.34
THEEWATERSKLOOF	Domestic refuse and sport clubs	3 standard refuse bags/ wheel bin	1		163.2	
	Catering premises	standard container	3		638.4	
	Non- catering premises and hospitals	standard container	2		437.5	
		Bulky refuse except industries	1		1 758.40	
			2		3 516.80	
			3		5 275.20	
			4		7 033.60	
			5		8 792.00	
			Special Removals on weekends (Sun & Sat)		2 227.50	
CAPE AGULHAS	Residential					138
SWELLENDAM	Agricultural properties		Removal service per service per month	5 5.21	67.97	74.06
	Industries			3 23.37	398.13	433.76
	Residential			1 10.56	136.12	148.3
	Deviant/consent consumers/small businesses			1 33.45	164.3	179
	Cafes/supermarkets/grocery/ liquor stores/hotels			228.73	247.03	306.81

MUNICIPALITIES	PLACE	VOLUME	FREQUENCY/WEEK	TARIFF 2016/2017	TARIFF 2017/2018	TARIFF 2018/2019
	Hotels/hospitals/clinics			1 64.83	202.94	
	Medium big businesses			2 086.17	2 568.49	
	Large businesses (malls)/large industrial businesses			6 376.79	7 851.10	

Table 19: West Coast DM refuse removal tariffs - 2019

MUNICIPALITIES	PLACE	VOLUME	FREQUENCY/WEEK	TARIFF 2016/2017	TARIFF 2017/2018	TARIFF 2018/2019
SWARTLAND	Household/business	Black bags or 240L bin/ (2*85L drum)		122.19	129.52	130.78
SALDANHA BAY	Single residential sites, small holdings & residential accommodation businesses	240L bin	1		176.23	193.83
	Business and industrial premises	240L bin	1		180	198
			2		271	299.13
			3		359	394.96
		6 m³ skip			1 632.28	1795.48
	Special and Expired food removals	240L bin			359.04	394.96
	Removal and disposal of cats				9.47	10.43
	Removal and disposal of dogs				18.95	20.87
	Removal of larger animals				142.11	156.35
	Amusement parks, circuses and similar entertainment businesses	240L bin			359.04	394.96
		6 m³ skip			1 713.77	1885.13
	Schools, churches, and charity events	240L bin			107.98	118.78
		6 m³ skip			514.39	565.83
	Building rubble	6 m³ skip			1 632.28	1795.48

MUNICIPALITIES	PLACE	VOLUME	FREQUENCY/WEEK	TARIFF 2016/2017	TARIFF 2017/2018	TARIFF 2018/2019
MATZIKAMA	Residential/small offices/hair saloon		1	141.22	150	159.34
	Churches/schools /residences/old age home			194.11	207	220
	home stores			288.85	307	500
	Previous DMA Management Area			62.56	67	71
	hospital			7 601.33	8 088.00	
CEDERBERG	Basic charge: Households		1		81.93	94.22
	Businesses		1		91.29	104.98
			2		167.58	178.3
			3		255.44	271.78
			4		346.42	368.59
			> 4		440.56	468.75
	Schools				168.68	179.48
	Hospital				252.36	268.51
	School residences					
	Church and halls				85.02	90.46
	Nursery schools					
	Old age homes				499.33	
BERGRIVIER	Household		1	191	202	214
	Businesses	2 bags	1	666	706	748
	Garden refuse	By cargo or part thereof		170	180	191
		Garbage bag per pack of 25		39	41	43
		Rubble by cargo or part thereof		352	373	395

10.2 WASTE MANAGEMENT LICENCES ISSUED - 2019

Please refer to **LICENCING OF WASTE MANAGEMENT FACILITIES** on Page **31.**

Table 20: Waste Management Licences issued for 2019

NO.	APPLICATION TYPE	LICENCE HOLDER/ MUNICIPALITY	DATE OF ISSUE	TYPE OF WMF
1	SURRENDER	SALDANHA BAY	11-Jan-19	WDF
2	ADMINISTRATIVE ERROR	CAPE AGULHAS	17-Jan-19	WDF
3	VARIATION	MATZIKAMA	06-May-19	WDF
5	VARIATION	MATZIKAMA	06-May-19	WDF
6	VARIATION	MATZIKAMA	07-May-19	WDF
7	VARIATION	MATZIKAMA	07-May-19	WDF
8	VARIATION	MATZIKAMA	07-May-19	WDF
9	VARIATION	MATZIKAMA	07-May-19	WDF
10	VARIATION	MATZIKAMA	07-May-19	WDF
11	VARIATION	MATZIKAMA	07-May-19	WDF
12	VARIATION	MATZIKAMA	07-May-19	WDF
13	VARIATION	MATZIKAMA	10-May-19	WDF
14	VARIATION	MATZIKAMA	16-May-19	WDF
15	GENERAL	LANGEBERG	26-Jul-19	WDF
16	ADMINISTRATIVE ERROR	CEDERBERG	22-Aug-19	WDF
17	VARIATION	CEDERBERG	27-Aug-19	WDF
18	VARIATION	CEDERBERG	28-Aug-19	WDF
19	VARIATION	CEDERBERG	04-Sep-19	WDF
20	VARIATION	CoCT	23-Sep-19	WDF
21	VARIATION	CoCT	23-Sep-19	WDF
22	VARIATION	CoCT	23-Sep-19	WDF

NO.	APPLICATION TYPE	LICENCE HOLDER/ MUNICIPALITY	DATE OF ISSUE	TYPE OF WMF
23	VARIATION	CoCT	23-Sep-19	WDF
24	VARIATION	CoCT	23-Sep-19	WDF
25	VARIATION	CoCT	26-Sep-19	WDF
26	VARIATION	GEORGE	26-Sep-19	WDF
27	VARIATION	CoCT	27-Sep-19	WDF
28	VARIATION	SWARTLAND	30-Sep-19	WDF
29	VARIATION	CoCT	30-Sep-19	WDF
30	VARIATION	CoCT	30-Sep-19	WDF
31	VARIATION	CoCT	30-Sep-19	WDF
32	VARIATION	CoCT	30-Sep-19	WDF
33	VARIATION	DRAKENSTEIN	30-Sep-19	WDF
34	VARIATION	CoCT	29-Oct-19	WDF
35	GENERAL	PRIVATE ENTITY	29-Oct-19	WTF
36	VARIATION	OUDTSHOORN	05-Nov-19	WDF
37	VARIATION	OUDTSHOORN	06-Nov-19	WDF
38	VARIATION	GEORGE	06-Nov-19	WDF
39	VARIATION	SALDANHA BAY	06-Nov-19	WDF
40	VARIATION	CAPE AGULHAS	19-Nov-19	WDF
41	VARIATION	CAPE AGULHAS	19-Nov-19	WDF
42	VARIATION	CAPE AGULHAS	19-Nov-19	WDF
43	VARIATION	DRAKENSTEIN	26-Nov-19	WDF
44	VARIATION	CAPE WINELANDS	26-Nov-19	WDF
45	VARIATION	DRAKENSTEIN	26-Nov-19	WDF
46	SURRENDER	SWARTLAND	26-Nov-19	WDF
47	VARIATION	THEEWATERSKLOOF	03-Dec-19	WDF
48	VARIATION	THEEWATERSKLOOF	03-Dec-19	WDF

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