Western Cape Government

Department of Environmental Affairs
and Development Planning

State of Waste Management Report 2020

Annual State of Waste Management Report 2020

Cover Image by DEA&DP

Caption: Coastal Park Waste Management Facility

Western Cape Government

LIMITATIONS ON WASTE DATA

The tonnages of general and hazardous waste in the State of Waste Report 2020 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 the Integrated Pollutant and Waste Information System (IPWIS) and completeness of data;
- Tonnages for general waste disposed and as reported by municipalities on the 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 on quantities of waste recycled, recovered, treated and/or disposed;
- The tonnages of waste diverted is calculated and as reported by municipalities on the 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 Waste Disposal Facilities (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 might indicate an over or underestimation of diversion taking place at municipalities, the data reported in the State of Waste Management report for 2020 might change once verification by the Department takes place.
- The Directorate: Waste Management continuously strive to improve the consistency and accuracy of reporting of data by our regulated and reported sectors through various measures that includes methods and controls at the points of data collection prior to reporting.

Photo by DEA&DP, Stellenbosch Municipality Materials Recovery Facility

CONTENTS

LIST OF FIGURES

LIST OF TABLES

SCHEDULE OF ACRONYMS

The following acronyms, with their associated meanings, are used in this report:

2W2W	2Wise2Waste
ARO	African Reclaimers Organisation
CF	Composting Facility
CKDM	Central Karoo District Municipality
CoCT	City of Cape Town
COGTA	Cooperative Governance and Traditional Affairs
CSIR	Council for Scientific and Industrial Research
CWDM	Cape Winelands District Municipality
DEA&DP	Department of Environmental Affairs and Development Planning
DFFE	Department of Forestry, Fisheries and the Environment
DM	District Municipality
DoF	Drop-off Facility
DoH	Department of Health
DoLG	Department of Local Government
DPSIR	Driver-Pressure-State-Impact-Response
EPIP	Environmental Protection and Infrastructure Programmes
EPWP	Extended Public Works Programme
e-WASA	e-Waste Association of South Africa
GDP	Gross Domestic Product
GDPR	Gross Domestic Product Per Region
GITO	Government Information Technology Officers' Council
GRDM	Garden Route District Municipality
GRF	Garden refuse facility
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
IIWTMP	Integrated Industry Waste Tyre Management Plan
IndWMPs	Industry Waste Management Plan
IPWIS	Integrated Pollutant and Waste Information System
IPWM	Integrated Pollution and Waste Management
IWMFs	Integrated Waste Management Facilities
IWMPs	Integrated Waste Management Plans

MEC	Member of Executive Council
MIG	Municipal Infrastructure Grant
MRF	Materials Recovery Facility
MFMA	Municipal Finance Management Act (Act 56 of 2003)
MSA	Municipal Systems Act (Act 32 of 2000)
MTREF	Medium Term Revenue and Expenditure Framework
NEMA	National Environmental Management Act, (Act 107 of 1998)
NEMWA	National Environmental Management: Waste Act, (Act 59 of 2008)
NWMS	National Waste Management Strategy
ODM	Overberg District Municipality
OWMP	Organic Waste Management Plans
PPE	Personal Protective Equipment
PRO	Producer responsibility organisation
RF	Recycling Facility
RTS	Refuse Transfer Station
SANS 10234	South African National Standard: Globally Harmonized System of Classification and Labelling of Chemicals (GHS)
SAPRO	South African Plastics Recycling Organisation
SARS-CoV-2	Severe acute respiratory syndrome coronavirus 2
S@S	Separation at source
SAWIS	South African Waste Information System
SMMEs	Small, Medium and Micro Enterprises
SoWMR	State of Waste Management Report
WC IWMP	Western Cape Integrated Waste Management Plan
WCDM	West Coast District Municipality
WCG	Western Cape Government
WDF	Waste Disposal Facility
WIS	National Environmental Management: Waste Act (Act 59 of 2008): National Waste Information Regulations
WMF	Waste Management Facility
WMO	Waste Management Officer
WRAP	Waste & Resources Action Programme
WWF-SA	World Wide Fund for Nature

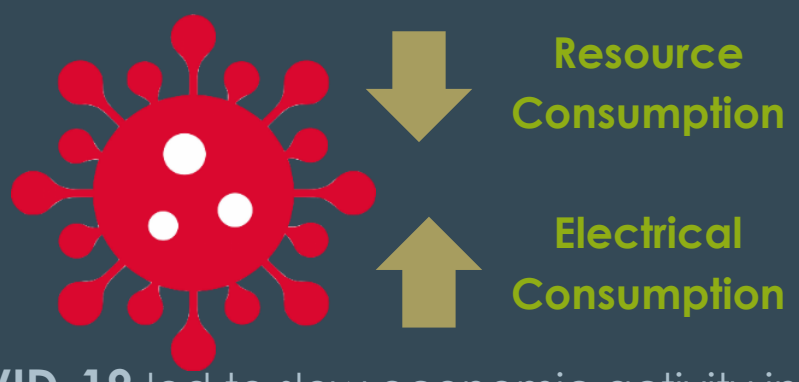
"WASTE AT A GLANCE" - 2020

WESTERN CAPE WASTE SUMMARY

INCREASED POPULATION GROWTH & MIGRATION TO 3 MAIN AREAS

- Greater Metropolitan area
- Greater Saldanha area
- Southern Cape Coastal Belt

88% migration to the City
(DEA&DP Strategic Plan 2020-2025)



COVID-19 led to slow economic activity in 2020

WASTE DIVERSION

LIMITED LANDFILL AIRSPACE
regionalization & regional co-operation

GROWING COST OF LANDFILLS
alignment of gate fees & operational costs

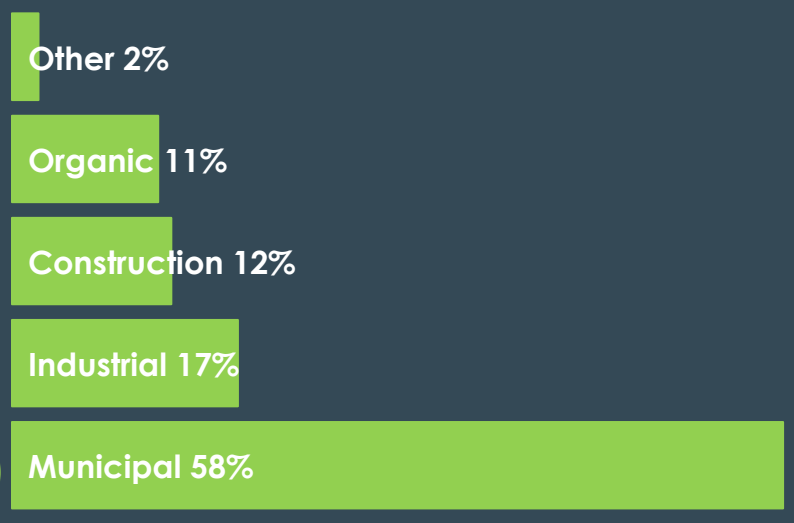
EXTENDED PRODUCER RESPONSIBILITY
registration of EPR schemes

WASTE LANDFILL RESTRICTIONS
Organics, Batteries & E-waste

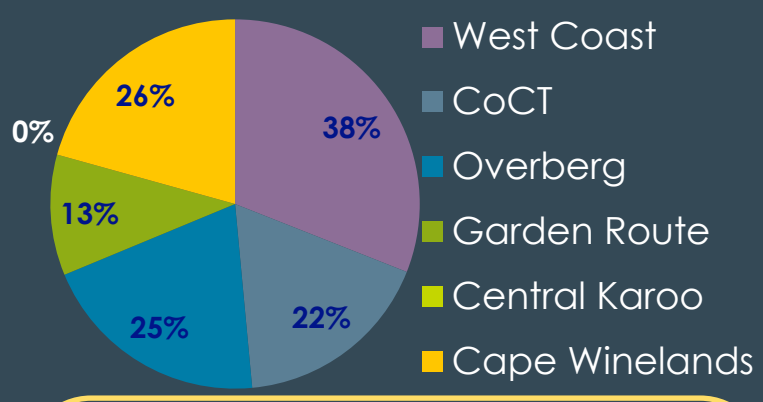
±3 MILLION TONNES WASTE GENERATED

- **92% GENERAL WASTE** — 6% (2019)
- **8% HAZARDOUS WASTE** — 31% (2019)

GENERAL WASTE COMPOSITION



DIVERSION RATES PER DISTRICT



68% of all **ORGANIC WASTE GENERATED** is disposed at landfills

WESTERN CAPE - 23% WASTE DIVERSION RATE

WASTE CHARACTERISATION STUDIES

Shows that 30% of Municipal Waste is organic in nature

Dry waste & wet waste, (Pin clipart)

ASSUMPTION: 30% MUNICPAL WASTE = ORGANICS

DISTRICT	TONNES	% DISPOSED ORGANICS
WCDM	35 570	44
CoCT	325 052	70
ODM	35 151	73
GRDM	36 742	89
CKDM	428	100
CWDM	52 404	64

MUNICIPAL SERVICES ARE ESSENTIAL

2 077 254T of general waste disposed; **6%** increase by City of Cape Town for refuse collection from households & businesses; **94.5%** waste removal collection service

Improper Waste Disposal (Clipstation)

REDUCING THE COST (3Rs)

Waste Reduction

- Making less that goes to waste, saves money spent on natural resources, energy & transport costs

Reuse and recycling

- Informal waste sector plays a main role in waste diversion (post-consumer recyclables) from disposal sites
- Integration of waste pickers into municipal waste collection services

"NWMS 2019, Separation @ Source"

FOCUS AREAS

Waste streams

- Organics, Plastics, Electronic & Construction & Demolition waste

Alternative waste treatment

- The rising cost of landfilling supports the need for
- alternative waste treatment technologies
- Municipalities are required to divert waste & minimise
- degradation to the environment
- Large quantities of waste biomass are being generated by industry, but thermal & biological technologies remain under-utilised

Waste Management Infrastructure

- Shared infrastructure & waste services between municipalities reduces individual responsibility to comply with waste management licences

Western Cape Integrated Waste Management Plan (2017 - 2022) to be reviewed in 2021

LEGISLATIVE AND POLICY RESPONSES

Scheduled landfill restrictions (2019- 2021)

- Identified waste streams banned from landfilling - 23 August 2021

Norms and Standards for Separation at Source

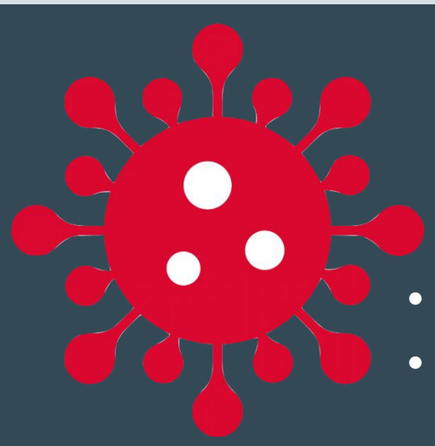
- **50%** of households separating at source by 2023
- The inclusion of separation at source into municipal integrated waste management plans & all waste management by-laws – 2021

DEA&DP Organic Waste 2027

- Municipalities to draft and submit organic waste diversion plans
- Divert **50%** of organic waste from landfill by 2022; **100%** by 2027
- Biological treatment – need composting & anaerobic digestion facilities

DEA&DP Waste Model By-law

- The Waste Model By-law provides municipalities with a template to either adopt in part or in its entirety
- Provision for Separation @ Source



The Coronavirus disease of 2019 (COVID-19)

The perfect storm of crises

The World Health Organisation (WHO) declared COVID-19 an international pandemic – 11 March 2020

- Understanding municipal challenges, unveiling of existing inefficiencies and poor governance
- Disruptions with waste collection services due to shortage of workers (contracting the virus and entire team of workers for self-isolation) and limited Personal Protective Equipment (PPE)
- Many municipalities also depend on income from residents and businesses resulting in reduced municipal income
- Municipalities need to be more responsive to citizens & use limited resources more efficiently
- Municipal Integrated Development Plans must focus on additional sources of funding. There is no **'right'** and **'wrong' answer** – each local situation and municipality is different
- Building local recycling economies and partnerships with business, civil society and local communities to benefit all
- Municipalities need to think of alternatives and be innovative to deliver essential waste services

Photo by Jeremy Bezanger, Unsplash, Published on June 5, 2021

EXECUTIVE SUMMARY

It gives me great pleasure to present to you the State of Waste Management report which has been developed annually by the Department of Environmental Affairs and Development Planning since 2016. The development of the report is crucial and presents the current waste management policies, waste reduction initiatives, waste diversion programs and waste disposal practices across the municipal areas to provide a snapshot of the status of Waste Management in the Western Cape. The report further seeks to raise awareness on key issues and challenges in the waste sector and requires an understanding of the types and quantities and more so, the complexities of the waste types and challenges being managed by the relevant municipalities and my department and how best to manage it going forward.

To set the scene for successful integrated waste management services, policies, planning and target-setting needs to be informed by accurate data and information. The allocation of adequate budgets and the implementation of municipal cost reflective tariffs to achieve compliance and regulatory obligations towards sustainable waste management services is paramount. The Department has taken a policy decision to institute a 50% restriction on organic waste being disposed to landfill by December 2022 and a full prohibition of organic waste disposed to landfill by December 2027. This stance, together with focussed organic waste diversion management plans complementing municipal integrated waste management plans will assist and support municipalities in addressing diminished landfill airspace.

In some instances, municipalities are struggling to deliver basic waste management services such as collection services and implementing a minimal degree of control at disposal sites while facing increasing waste amounts due to urbanisation trends. Secondly, the availability of resources is closely connected to the economic situation and waste management still holds a weak position in this context compared with other public services. Generally, there is a close link with increased economic activity, consumption and waste generation and this is evident in the IPWIS data, indicating decreased waste generation and disposal in 2020. COVID-19 led to the prohibition on the distribution and sale of alcohol had a significant impact on the Western Cape Wine industries, especially during Alert levels 4 and 5 and reduced the amount of glass bottles being recycled and disposed.

However, important progress has been made in the waste sector over the last few years and the Department will continue to guide, assist and provide support to both municipalities and industry alike, to ensure mechanisms that foster integrated waste management. The most important improvement is the increased level of awareness among both the public and politicians.

The extraordinary implications of COVID-19 has forced government departments and municipalities to think of alternatives and innovative mechanisms to continue providing an efficient and effective waste management service to the communities while information sharing and capacity building sessions has been conducted using digital online platforms such as video conferencing and webinars to engage the COVID-19 challenges. Amidst all the pandemic challenges, we haven't lost sight of our essential role in protecting the environment as we move towards a more circular economy. Let us as government, municipalities, industry and communities continue to work together as one to support and implement the plans and our programmes effectively and ensuring our facilities are legislatively compliant as we strive to continuously improve waste management and work towards our waste diversion initiatives and targets to achieve integrated waste management in the province.

I would like to thank the DEA&DP Management and Officials, other Government Authority Officials, Municipalities and Industry for their valuable contributions in providing the data and information for the State of Waste Management Report.

Anton Bredell

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Anton Bredell

Minister of Local Government, Environmental Affairs and Development Planning

Photo by NS, Unsplash, Published on April 28, 2021

1. INTRODUCTION

1.1 STATE OF WASTE MANAGEMENT REPORT 2020

The period under review for the State of Waste Management (SoWM) report 2020 is the calendar year from January 2020 to December 2020. The report provides details on integrated waste management within the Western Cape Province and focuses on indicators and challenges linked to waste volumes, waste types, waste diversion, waste collection services, waste management facilities and waste planning.

Section 2 provides an overview of the drivers and pressures linked to waste management such as demographics and waste beneficiation in the Western Cape. **Section 3** addresses the current state of waste as it relates to solid waste management, service levels, infrastructure and the implementation of various plans linked to integrated waste management. **Section 4** addresses the key concerns linked to the environmental impacts of integrated waste management. **Section 5** provides an overview of responses and mechanisms in the waste sphere such as legislation, policy, compliance and enforcement and capacity and awareness raising. **Section 6** provides for discussion and conclusions focusing on key areas to address and where more focus is needed.

1.2 PURPOSE

The report also focuses on the management of waste under the Coronavirus Disease 2019 (COVID-19) pandemic and this will be presented throughout the report. The report provides an overview and current state of waste management at provincial and municipal level and the challenges currently being faced linked to municipal waste infrastructure, human and financial constraints, as well as highlighting key waste streams. The information related to waste recycled, treated and disposed is dynamic and constantly changes as developments at municipal level change. The report thus seeks to provide relevant information for the 2020 calendar year, where much was overshadowed with the outbreak of the pandemic. Data presented in this report includes quantitative information (volumes disposed, diverted, etc.), and qualitative information, such as relevant policies and legislation, programs, regulations, norms and standards, and guidelines, with observations made and discussed.

2. DRIVERS AND PRESSURE POINTS

2.1 INTRODUCTION

In the Western Cape there are numerous challenges faced by Provincial and Local government that impact on the efficient and proper management of waste. In addition, COVID-19 was rapidly spreading across the globe, forcing responses from nations worldwide such as lockdown measures to combat the spread of the disease, resulting in a global recession. [1]When South Africa entered its national lockdown on 27 March 2020, the country was already in recession. The Western Cape economy suffered a significant shock in 2020 and is expected to grow on average at an annual growth rate of 1.0 per cent between 2020 and 2024, only surpassing the 2019 GDPR levels in 2023 (Treasury, 2020).

The addition of an ever-expanding urban sprawl and continuous development result in complex waste streams that must be managed. The complexity of the waste stream directly affects its management, which is compounded by the mixing of hazardous with general waste. It's not all doom and gloom, as new and changing national and provincial legislation and regulations that are already promulgated or in the process of being promulgated, such as the Carbon Tax Act (Act 15 of 2019), Scheduled Landfill Restrictions (R.636 of 2013, Norms and Standards for Separation at Source, Draft National Waste Management Strategy, National Health Care Risk Waste Regulations (GN 463 of 2018), etc. are set to unlock several key waste streams, notably organics, plastics, and e-waste (GreenCape, 2020). Environmental problems linked to the increased use of waste disposal facilities as the default option of waste disposal and treatment have in recent years become a matter of public concern and environmental awareness is growing as a result of the pressure to change this behaviour.

2.2 DEMOGRAPHICS AND URBANIZATION

The Western Cape accounts for 12% (49% males and 51 % females) of the estimated South African total population of 59.62 million (StatsSA, 2020). An increase in population growth and migration into the Western Cape drives and influences the amount of waste generated, and the demand for waste and sanitation services. The population increased from 6.84 million to 6.97 million in 2020 at a growth rate of 1.79 per cent. The Western Cape is officially the third most populated province and the second most urbanised province in the country. The population is, for the most part, concentrated in the Greater Cape Metropolitan and Greater Saldanha region, as well as the Southern Cape Coastal Belt. Eighty-seven percent (87%) of the Western Cape population is

[1] The 2020 stock market crash is a global stock market crash that began on 20 February 2020. From 24 to 28 February, stock markets worldwide reported their largest one-week decline since the 2008 financial crisis.

concentrated in these three urban regions. Ninety- five percent (95%) of the estimated growth in population over the next 5-year planning term will be in these three regions (DEA&DP Strategic Plan 2020-2025). Trends and projections suggest that rural areas and in some cases the smaller rural towns are de-populating, while the mid-sized towns, and intermediate cities such as Paarl and surrounds and Stellenbosch surrounds, along with Cape Town are the primary destinations for migrants from within and outside of the Province. It is estimated that 88%of projected population growth will be in the Greater Cape Metropolitan Region (DEA&DP Strategic Plan 2020-2025).

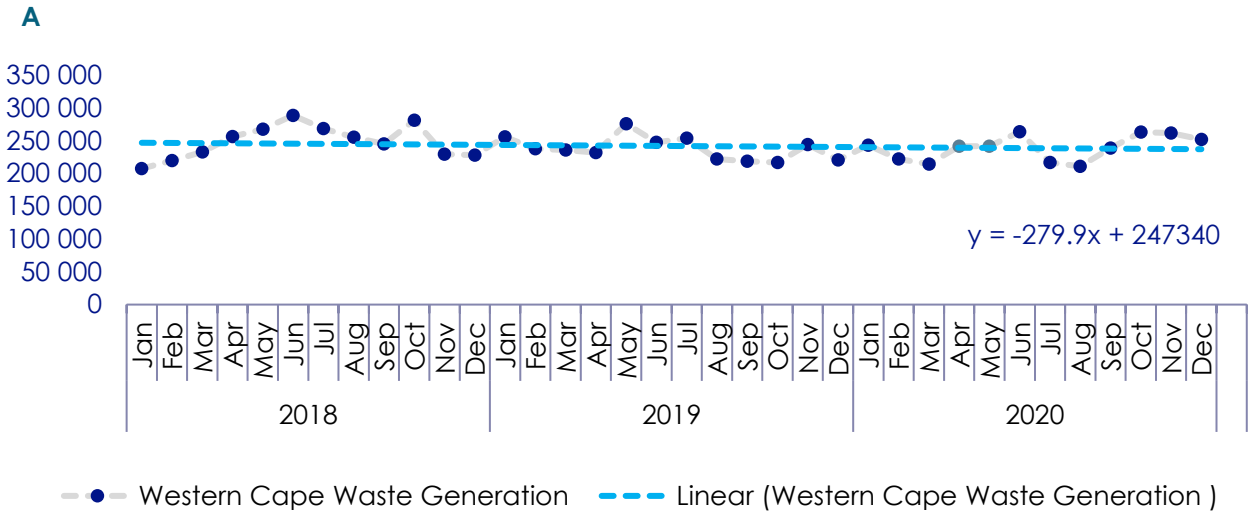
2.3 ENERGY AND RESOURCE CONSUMPTION

The National Waste Management Strategy (NWMS) highlights the challenge of increased complexity of waste streams due to urbanisation and industrialisation. However, we need to note the current Waste Disposal Facility (WDF) licence conditions allow municipalities to co-dispose of both hazardous and general waste. Furthermore, increased consumption and direct activities (extract-make-use-dispose) result in unsustainable practices and increased waste generation. This results in increased resource exploitation beyond the recovery ability of ecological systems, with harmful consequences at all levels locally and globally. Globally, two out of every five people lack access to waste disposal facilities. Developed countries have policies to promote reduced waste and resource efficiency, while developing countries still face basic management challenges, such as illegal dumping, open burning and inadequate access to services (DFFE, 2021). Waste avoidance, reducing, reusing, recycling and recovery of waste has clear benefits over final disposal to landfill. In most instances it saves natural resources and energy; leads to reduced production costs associated with using recycled as opposed to virgin materials; reduces the costs of waste management; reduces environmental impacts, demand for landfill airspace and other costs associated with landfilling; and generates income and job creation opportunities for the unemployed and destitute.

The Western Cape, like the rest of South Africa, is extremely resource intensive. Current consumption patterns are not sustainable and are exceeding natural resource limits (WCG, 2013). Resource consumption, and the resulting waste generated is affected by several factors e.g. population growth, employment levels, economic development and urban growth. These factors affect the demand for goods and services, which in turn impact on waste generation. The production and transport of goods for distribution requires the use of natural resources and energy.

When these goods become waste, it is collected, treated, separated, recycled and transported to transfer stations, treatment plants or WDFs for final disposal, which has further environmental impacts. Population growth is increasing globally, so there are more people to produce waste. The population is projected to grow from approximately 6. 9 million in 2020 to 8.2 million by 2030 at an annual growth rate of 1.85% (WCG: DoH, Circular H102/2020), which will impact waste generation and municipal service provision. Population growth is also linked to high levels of urbanisation, which has implications for waste management since urbanisation is linked to

improved economic opportunities and a change in consumption patterns. Waste generated by urban populations is almost double that of their rural counterparts (DEA&DP, 2017).



Note: *The grey data points in Figure 1 (A)are average values inserted based on the previous data points.*

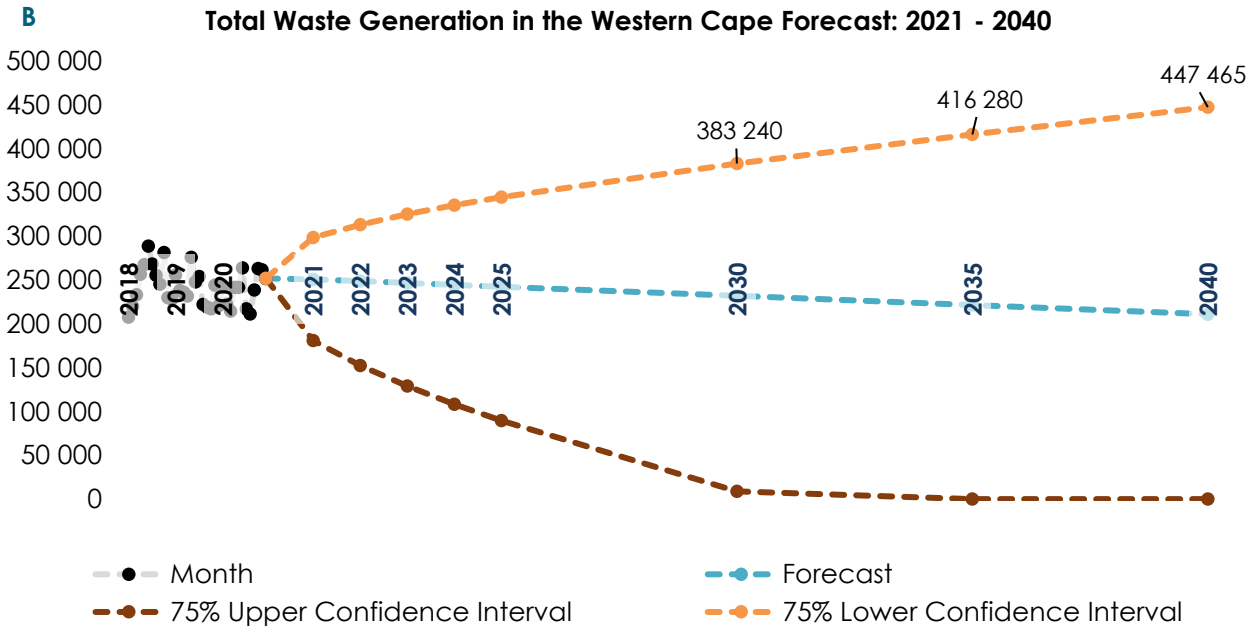


Figure 1: (A) Monthly waste generation for three years (2018-2020) and (B) forecast (2021-2040)

In South Africa, the higher the income, the greater the levels of consumption and waste generation. This is evident in the waste generation rates for the country reported for low-, middle- and high- income groups ranging from 0.41, 0.74 and 1.29kg/c/day respectively (DEA, n.d). **Figure 1(A)** shows the actual waste generation figures between 2018 to 2020 to ascertain whether waste generation is increasing or decreasing over time. Two data points were omitted from the figures and replaced with an average value instead for April and May 2020, these two data points would

have skewed the trendline significantly enough that the decrease in waste generation was at a faster rate. These two data points coincide with the initial lockdown of the country due to the pandemic. Figure 1(A) appears to indicate that the amount of waste generated per month has decreased by approximately 280 tonnes per month. **Figure 1(B)** shows the forecast based on Figure 1 (A)'s data. At the current rate at which waste generation is decreasing, we will see a reduction of waste generation by 12.5% (based on the average/ (2040 value). It must also be noted that continued urbanisation without economic transformation, could lead to persistent poverty (Jedwab & Vollrath, 2015), which may also impact consumption patterns, waste generation and reliance on social grant systems and services.

2.4 DRIVERS OF WASTE BENEFICIATION

2.4.1 Limited municipal landfill airspace

Although it is likely that the CoCT can handle current waste disposal rates, the limited municipal landfill airspace availability for surrounding local municipalities will more than likely result in increasing pressures for municipalities and see the movement of waste between municipalities (GreenCape, 2020).

Figure 2: Regional Waste Management Facilities

Stellenbosch Municipality has run out of landfill airspace and as one of the largest municipalities, it is currently transporting its waste to Vissershok CoCT. Although the municipality has invested in

expanding its existing Devon Valley landfill, this is only a temporary solution. The Municipality has made investment in both dry- and wet-waste diversion initiatives (GreenCape, 2020). **Figure 2** shows the estimated lifespan of the Western Cape's municipal landfills as of 2019, and the location of intended regional landfills.

There are currently 9 (nine) regional waste management facilities in various stages of operation within the Western Cape. The West Coast District WDF and Kalbaskraal within the CoCT, is in various stages of planning, The Cape Winelands District, Garden Route District are in the planning phases, Karwyderskraal in the Overberg, Vredenburg in the Saldanha Bay Municipality and Highlands WDF in Swartland Municipality are operational. The Central Karoo are in the initial stages of planning for their regional facility.

2.4.2 Growing cost of landfilling

The cost of landfill gate fees for disposal continues to be relatively low in South Africa and despite this, waste generators still regard landfilling as a costly overhead, especially in the Western Cape. Most municipalities and waste management services in the province rely heavily on landfills for the disposal of waste. The City of Cape Town (CoCT)'s gate fees are high and has been steadily increasing their fees since 2013, with expected increases in 2021. It should be noted that although the cost of landfilling in the CoCT metropolitan area is expected to increase by 11.5% and 13.50% over the next two years, the cost of refuse collection from households and businesses is expected to increase by only 6% over the same period. The National Department of Forestry, Fisheries and the Environment (DFFE) aims to implement mechanisms to fast track landfill diversion and the implementation of a landfill tax, which will increase overall disposal cost (GreenCape, 2020). Landfill disposal fees is a source of revenue generation for municipalities and it is thus important for municipalities to align disposal gate fees with the cost of managing waste disposal facilities.

In 2020, the Department of Local Government in the Western Cape and the French Development Agency (AFD) signed a Memorandum of Understanding and formalised investment in infrastructure in the province. The Sustainable Infrastructure Delivery and Funding Facility (SIDAFF) programme is made up of two phases, where municipalities are supported to identify catalytic infrastructure projects, which will then be taken from feasibility to bankability. Thereafter, the next step would be to look at the impact of these projects on the long-term finances of the municipality, which will support the project evaluation process and identify the most effective funding strategy options available to be considered by the municipality. The targeted municipalities include Drakenstein, Stellenbosch, Overstrand, Mossel Bay, Swartland, Breede Valley, George and Saldanha Bay municipalities for infrastructure development (Development, 2020).

2.5 EXTENDED PRODUCER RESPONSIBILITY (EPR)

The Extended Producer Responsibility (EPR) Regulations were developed and published in Government Gazette 43879 (Notice No. 1184) on 5 November 2020 for implementation. These regulations give effect to Sections 18 and 69 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) (NEMWA). They apply to the electrical and electronic equipment, lighting and paper, packaging and some single use product sectors. The EPR regulations outline a new approach to waste management in South Africa that will contribute significantly to the diversion of waste from landfill. This is an opportunity for municipalities to engage with the PROs for the construction of possible infrastructure towards diversion of these waste streams from WDFs.

The Minister of Environment, Forestry and Fisheries, Ms Barbara Creecy, has since postponed the implementation of the EPR Regulations to 5 May 2021 after stakeholders requested to make further inputs into the implementation process. The Minister then amended the Regulations and Notices, to allow additional time for the registration, development and submission of EPR schemes. Stakeholders (producers, manufacturers, importers, etc.) are now required to register with the DFFE before 5 November 2021.

2.6 WASTE LANDFILL RESTRICTIONS

2.6.1 Organic Waste 2027

The DFFE developed and promulgated the National Norms and Standards for Disposal of Waste to Landfill (Government Notice R636 of 2013) in 2013, to restrict and prohibit certain waste types from going to landfill, and these include abattoir waste, green waste and liquid waste. These Norms & Standards provide timelines for the restriction and prohibition of these waste types and requires 25% diversion of separated garden waste to take effect within 5 years, and 50% diversion within 10 years, i.e. from 2018 to 2023. With respect to liquid waste, the regulations state that waste which has an angle of repose less than 5 degrees or waste with a moisture content of less than 40%, had to be completely diverted from landfill by August 2019 due to leachate production (DEA&DP, Provincial Organic Waste Strategy, 2020). The Department of Environmental Affairs & Development Planning (DEA&DP) has taken a policy decision to institute and set a target of 50% organic waste diversion by 2022 and a full (100%) prohibition of organic waste disposed to landfill by 2027. The landfill restriction and prohibition on organics will also ensure that national waste diversion targets are met. The provincial position is therefore to maximize the Prevention Strategies and to increase the diversion rates of organic waste from landfills to opportunities that are value adding. Furthermore, all licenses issued by the department are being amended and municipalities are now obligated to submit Organic Waste Diversion Plans (DEA&DP, Provincial Organic Waste Strategy, 2020). Organic waste forms approximately 30% of the waste stream in the Western Cape and is a resource that has intrinsic economic value if separated properly and used either for compost,

nutrient extraction or as an energy source. This waste stream includes food waste, animal waste, paper and wood clippings; basically, anything that is naturally biodegradable. As the DEA&DP has started to write new conditions into waste management licenses, all existing WDFs, and new facilities alike, will have to start reducing its intake of organic waste in order to comply. Diverting organic waste from WDFs will save landfill airspace and reduce the amount of greenhouse gas emissions from landfills and protect the immediate environment (underground water source). The DEA&DP through the variation project, included the development of organic waste diversion plans to ensure municipalities initiate projects towards achieving the 50% diversion rate for December 2022. Please also see **Appendix 8.4, Waste Disposal Restrictions.**

2.6.2 Electronic Waste (E-waste) and Batteries

The National Norms and Standards for the Assessment of Waste for Landfill Disposal (R. 636 of 23 August 2013) provides a list of waste disposal prohibitions and restrictions on the disposal of waste to landfill at identified dates. This list required hazardous lamps to be banned in August 2016. However, as of August 2021, all other hazardous e-waste will be restricted. This will require municipalities to implement these disposal prohibitions and restrictions ensuring that e-waste is excluded from disposal to landfill.

This list will also require that all other batteries be restricted from landfill as of August 2021. As the demand for renewable energy generation is growing, so too will the demand for storage. Such growth will require solutions to future battery waste. The Minister of Environment, Forestry and Fisheries has withdrawn the call for the electrical and electronics industry to develop IndWMPs (GreenCape, 2020). The final EPR Regulations will be published and effected by the DFFE in May 2021 and allows producers to register within 6 months.

2.7 THE CORONAVIRUS DISEASE OF 2019 (COVID-19)

The COVID-19 outbreak was declared a Public Health Emergency of International Concern (PHEIC) on 30 January 2020 and a pandemic on 11 March 2020 (WHO, 2021). President Cyril Ramaphosa declared COVID-19 a state of disaster at the Union Buildings in Pretoria on March 15, 2020. Even before the current economic crisis, brought upon by COVID-19 pandemic, the Western Cape, along with the rest of South Africa, were struggling economically. The Western Cape has an open economy and is therefore vulnerable to external shocks. As a prime global tourism destination and centre of wine production in South Africa, the Western Cape economy is particularly vulnerable to lockdown restrictions pertaining to tourism and alcohol. The restrictions on travel and the prohibition on the distribution and sale of alcohol during the national "hard"

lockdown period impacted on the Province's tourism and wine industries and further deteriorated its economic outlook (Provincial Economic Review & Outlook, 2020).

During this crisis, municipalities still need to provide essential services such as water, sanitation, electricity and solid waste removal while at the same time accounting for growing streams of potentially infectious waste and protecting the lives all workers and the communities.

In response to the pandemic and as a supporting to the leading Department of Health, the Department conducted weekly COVID-19 waste stream meetings with municipal Waste Management Officers and provincial and municipal Environmental Health Practitioners (EHPs) to support, manage and combat the pandemic within municipalities and its communities, through strategic, tactical and practicable operational agendas. The Department drafted three circulars that outlined the "Protocol for the managing business and offices during the COVID-19 pandemic". The "Protocol for managing general household waste during the COVID-19 pandemic" and the "Guidelines for the management of waste at quarantine and isolation field facilities/centres" were also developed and distributed to key authorities via the circulars for further distribution to key sectors and users.

Municipalities experienced disruptions with waste collection services due to shortage of workers (contracting the virus and having entire teams of workers off for self-isolation), lack of safety at work, limited Personal Protective Equipment (PPE), repairs and maintenance to the vehicle fleet were severely impacted due to disruptions in the supply chain management process, resulting in limited fleet and plant to render services, safe handling of household waste where citizens fallen ill with the coronavirus, handling of increased quantities of healthcare waste, and securing safe management of waste from collection points to recycling or treatment facilities. All provinces are simultaneously instituting measures against COVID-19, to contain its spread and infection rate, while at the same time preventing risks to the environment and human health including those of waste workers caused by COVID-19-related waste. The current COVID-19 shutdown period has adversely affected waste pickers because buy-back centres, which are their point of sale where they sell their recyclables, were not operating due to the lockdown. It made it difficult for waste pickers to make a living (Media Advisory Handover of food parcels to homeless waste pickers, 2020). The North Gauteng High Court has dismissed an urgent application by Lawyers for Human Rights (LHR) on behalf of reclaimers and waste-pickers demanding recognition as essential service workers. Between 60,000 and 90,000 waste-pickers are responsible for collecting 80 to 90% of used packaging and paper that is recycled in South Africa, according to a study (Godfrey, L., Strydom, W. and Phukubye, R, 2016) by the Council for Scientific and Industrial Research (CSIR). According to the CSIR study, waste-pickers save municipalities up to R750 million in landfill costs annually, at no cost to local governments. During the "hard" lockdown, reclaimers had hoped for permission to continue working. (GroundUp, Covid-19: Court decision is a heavy blow to waste-pickers' hopes, 2020). The African Reclaimers Organisation (ARO) tried to classify reclaimers as essential services during this lockdown because of the amount of waste that was diverted from landfills and

collected from the streets (GroundUp, "Our entire livelihoods are coming to a standstill" says waste picker, 2020).

To make the municipal planning process inclusive of the public and relevant communities, municipalities have had to adapt to the way they conduct the public participation process during the pandemic to ensure the safety of all participating stakeholders. Municipalities made use of social media (WhatsApp groups) and online platforms such as Microsoft Teams, Skype and Zoom in the form of video conferencing, webinars and online meetings to conduct the public participation process and as part of the IDP process. Municipalities also made use of the traditional newspaper advertisements, making the report available at libraries and on the consultants' and municipal websites. Proof of all these public participation processes were included in the Municipal Integrated Waste Management Plans (IWMPs).

Healthcare waste comprises the waste generated by healthcare facilities, medical laboratories and biomedical research facilities. Improper treatment of this waste poses serious risks of disease transmission to waste pickers, waste workers, health workers, patients, and the community in general through exposure to infectious agents. Poor management of the waste emits harmful and deleterious contaminants into society. However, contamination of highly contagious agents such as the COVID-19 virus has created enormous instability in healthcare waste handling and subsequent recycling because of the volume of the waste generated and its contagious nature. The generation of healthcare solid waste has rapidly increased. The Department has made certain enhancements to the IPWIS to cater for the reporting of healthcare risk waste linked to COVID-19 and ensure that the COVID-19 generated and treated waste at various facilities could be accounted for. Additionally, the increase in the amount of personal protective equipment (PPE) used during the COVID-19 pandemic, compared to normal circumstances, has further contributed towards the increase in costs of healthcare solid waste. The Department also started monitoring the treatment capacity of facilities by analysing COVID-19 case data and IPWIS reported COVID-19 waste data. Please also refer to **Page 30, COVID-19 Health Care Risk Waste (HCRW) Treatment.**

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Photo by DEA&DP, Waste picker at Vaalkoppies Waste Management Facility

3. THE WASTE LANDSCAPE

3.1 INTRODUCTION

This section focuses on the state of waste management in the province, resulting from the driving forces and pressure points. Various pieces of waste legislation have been developed with the aim of reducing the impacts of waste on society and the environment, and on increasing the diversion of waste away from landfilling towards reuse, recycling, recovery and treatment. The 2016 National Pricing Strategy for Waste Management (NPSWM) is one economic instrument that has been introduced to reduce waste generation and increase the diversion of waste away from landfill. The strategy is a legislative requirement of the National Environmental Management Waste Amendment Act (Act No. 26 of 2014) and gives effect to the NWMS. Currently, the preferred instrument is EPR, where the producers of goods have a responsibility to safely manage those products after the end of useful life (DFFE, 2021). The ongoing COVID-19 pandemic has severely impacted on waste diversion initiatives in 2020. The limitations on commercial activities, mobility and manufacturing sector have significantly affected waste management. Waste management is critical to human development and health outcomes, especially during the COVID-19 pandemic. The invaluable service provided by the waste management sector ensures that the unusual heaps of waste that poses health risks and escalate the spread of COVID-19 is avoided. There have been some fluctuations on diversion rates across the province and based on reported diversion figures by municipalities and industry.

There has been a decline in waste management licence applications for the waste listed activities. The DEA&DP have started a waste management licence review process whereby all the redundant licences, due to the promulgation of the National Environmental Management: Waste Act, 2008 (NEMWA): National Norms and Standards for Storage of waste and respectively, for Grinding, Shredding and Bailing of waste, are now becoming applicable. The Department has informed the licence holders of the registration process of the Norms and Standards.

3.2 WASTE TYPES

The total amount of waste generated within the Western Cape is 3 million tonnes (T) per annum, on average. The National Environmental Management: Waste Act (59 of 2008): National Waste Information Regulations (hereafter referred to as the WIS regulations) divides waste into two main categories, as defined namely, Hazardous and General waste. All public and private entities who are regarded as waste holders by the WIS regulations, are required to report on general and/or hazardous waste via the Provincial Integrated Pollutant and Waste Information System (IPWIS). The IPWIS is aligned and submits reported information to the South African Waste Information System (SAWIS). Waste generators are responsible for the management of their own waste. This can either

be outsourced to private service providers, or to the local municipality on request. Both options will incur a service fee.

Figure 3 and **Figure 4** shows the waste generated for the 5 districts and the CoCT in the Province. Generally, the declared State of Disaster lockdown Risk Adjusted level 5 that was implemented at the end of March 2020 is reflected in the reduction of waste generated in all the districts in April and May 2020. After May 2020 the amount of waste generated increased once the lockdown regulations were relaxed and the risk levels adjusted downwards.

***Note**: **Figure 3** and **Figure 4** are separated for ease of viewing the information.*

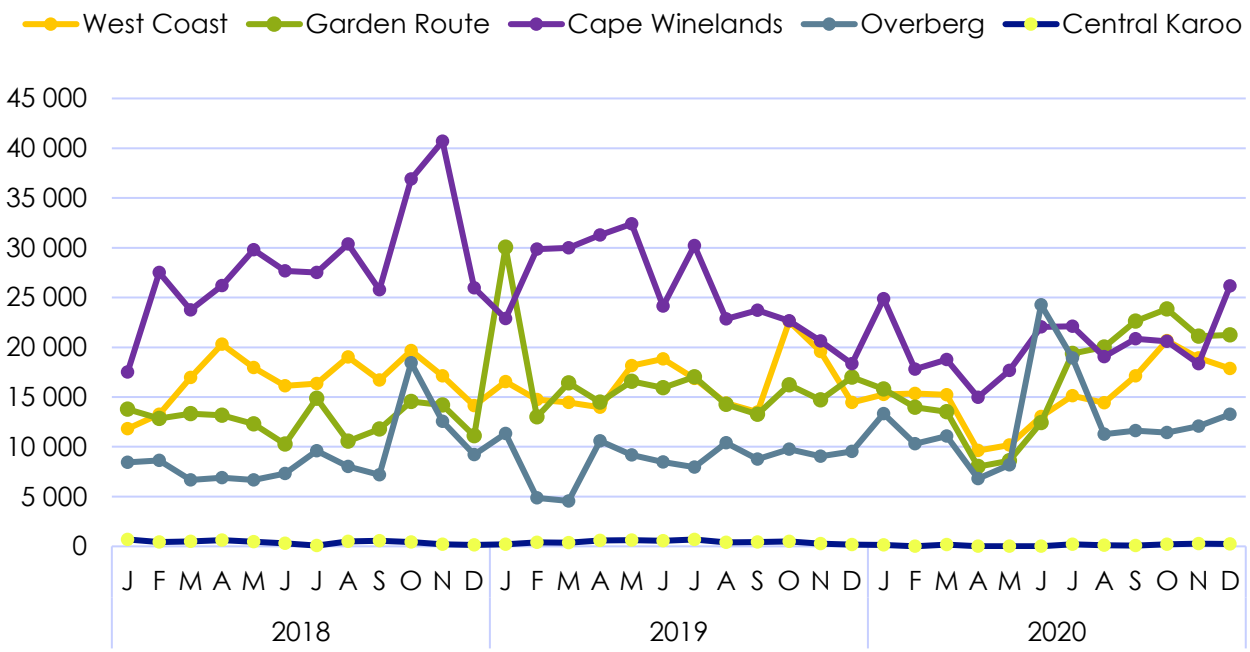

Figure 3: Waste generated in the District Municipalities 2018 – 2020

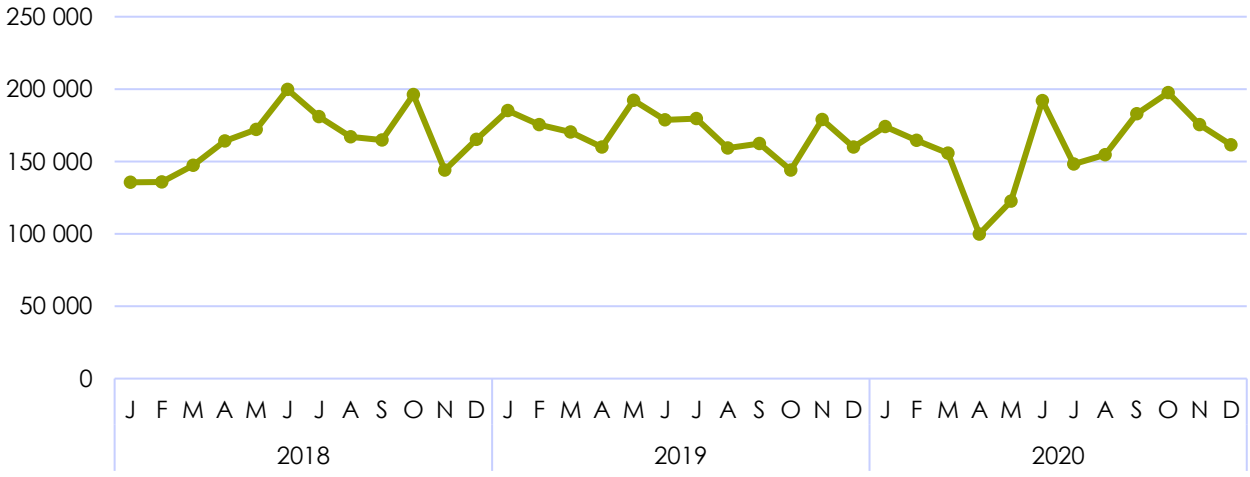

Figure 4: Waste generated in the City of Cape Town 2018 – 2020

When we compare the Hazardous and General waste types, we see in **Figure 5** that general waste accounts for approximately 90% of the waste that is generated within the Province. It is also evident that the amount of hazardous waste has decreased between 2018 and 2020. The overall waste generation in the Province has decreased due to the changes in the economy and the impact of the COVID-19 restrictions. The total amount of hazardous waste generated between 2018 to 2019 decreased by 4%, and 2019 to 2020, the decrease was 31% in hazardous waste generation.

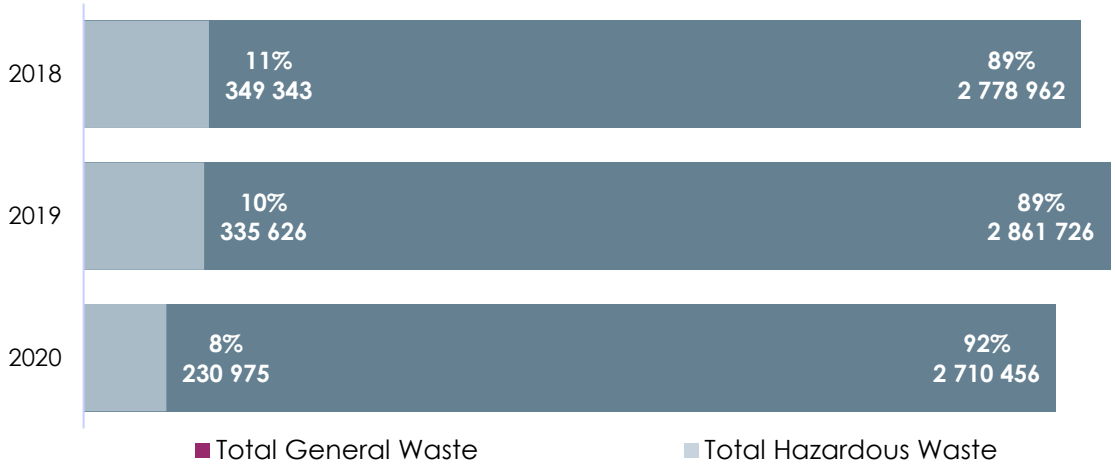

Figure 5: Total amount of General and Hazardous Waste Generation 2018 -2020

Table 1: Hazardous waste types generated in the Western Cape for 2018 - 2020

Waste Type	2018	2019	2020
Inorganic waste	117 267	111 751	25 541
Asbestos containing waste	8 163	9 161	11 432
Waste oils	30 285	32 275	18 931
Organic solvents without halogens and sulphur	76	248	227
Other organic waste without halogens or sulphur	119 981	117609	111 756
Tarry and bituminous waste	919	1 412	1 473
Mineral waste	5 097	171	376
Sewage sludge	47 541	48 788	45 806
Miscellaneous	19 719	13 831	14 888
Combined*	296	380	544

Note: ** The Combined waste type is the addition of all the waste types that each have a combined value less than 500 tonnes over 2018-2020.*

In **Table 1,** the hazardous waste generation in the Western Cape is mainly due to three (3) main waste types namely, inorganic, other organic waste without halogens or sulphur and sewage sludge waste. Other notable waste types are waste oils and miscellaneous waste which is generated at over 15 000T.

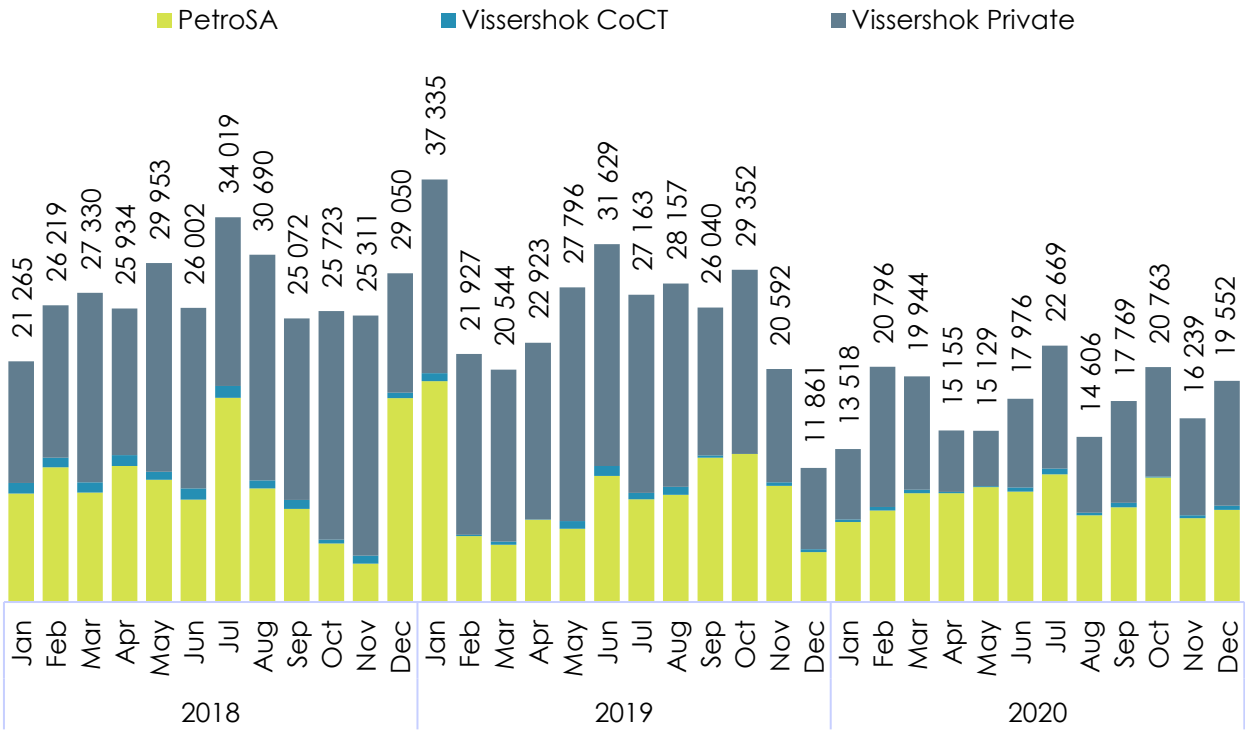

Figure 6: Hazardous Waste disposed at WDFs in the Western Cape 2018 – 2020

Another key observation in **Figure 6,** is that the private hazardous waste facilities dispose on average 98% of all hazardous waste over the 3 years as compared to Vissershok CoCT WDF. As the tariff for hazardous waste disposal is higher at the Vissershok CoCT facility, most entities dispose of their hazardous waste at the Vissershok Private facility.

3.3 WASTE DISPOSAL

The privately owned WDFs in the Western Cape are Mossel Bay (PetroSA), De Hoek and Riebeek West (PPC), Vredenburg (Exxaro) and Saldanha Bay (ArcelorMittal). The Vissershok (Averda Enviroserv) Private landfill operates as a commercial landfill receiving waste from businesses and municipalities. Municipalities and industry alike are required to report waste disposed and diverted to the online IPWIS. Municipalities use weighbridge reports and the Department's waste calculator to complete the online waste reports. The waste information in the sections below looks at the waste data reported to the IPWIS by various entities and focusing on waste disposal and diversion, in a municipal area. The amount of waste generated in the province is the sum of all disposal and recovery activities that are registered on the IPWIS.

The Department is constantly liaising with municipalities to ensure compliance to the WIS regulations and to provide an accurate account based on waste disposal and diversion. 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. The Department continued with the scheduled IPWIS waste information verifications and validations at identified waste management facilities, which took place during 2020 via desktop. These waste verifications focused on the 2020 calendar year being audited, and the waste information reported and submitted to the IPWIS for both general and hazardous waste, across various business sectors and waste activities. Where erroneous and anomalies were identified, these were highlighted to the entities and corrections we made to the submitted data.

There are limitations in terms of waste data submitted and readers are advised to refer to **Limitations on Waste Data (Page iii), when reading the section below.**

3.3.1 General waste

Municipalities in the Western Cape predominantly report on the disposal and diversion of municipal, commercial, industrial, construction and demolition and organic waste and may include additional waste types as in Annexure 3 of the WIS regulations. For various reasons and in some cases, municipalities agreed on a formal arrangement where some waste types are generated in one municipal area and then disposed at a private WDF in the same municipal area or a WDF in a different municipal area. This is internally referred to as transboundary movement of waste and this occurs specifically where Bergrivier Municipality disposes their waste at Vredenburg

(Saldanha Bay Municipality) and Highlands WDFs (Swartland Municipality). Other cases are where Theewaterskloof Municipality disposes their waste at Karwyderskraal (Overberg District Municipality) and George, Knysna, Mossel Bay and Bitou municipalities dispose at PetroSA (in Mossel Bay).

With the country in a national lockdown due to the COVID-19 outbreak, waste reclaimers suddenly and unexpectedly found themselves unable to put food on the table since economic activity was limited to selected food and health products or services only. Waste pickers ensures that valuable resources are available for reintroduction into the economy, while saving landfill airspace. In some instances, these informal waste reclaimers are the only people who recover recyclables in municipalities that do not have a two-bin collection system for separation at source (PlasticsSA, Plastics industry shows its support for waste pickers during covid-19 lockdown, 2020). **Table 2** shows that both disposal and diversion figures decreased between 2018 to 2020. South Africa, like most countries around the world, witnessed a decline in collection and recycling rates during 2020, compared to pre-COVID-19 rates. In addition, many recyclers were unable to operate at full capacity for several months during the past year due to social distancing norms. Other factors that adversely affected the plastic recycling activities include ongoing load shedding, water shortages and high labour costs which forced many operations to scale down, or even close their doors permanently (PlasticsSA, 2021). The consequences of the COVID-19 pandemic had a profound effect on the global, national and provincial economy. The pandemic resulted in an unprecedented societal and economic disruption with broad and deep socio-economic consequences. The pandemic resulted in several problems, including a demand-side crisis, an economy-wide firm-level liquidity crisis (and resulting solvency crisis), a decline in productivity and a disruption in global supply chains (Treasury, 2020). In 2020, 2 077 254T of general waste was reported as disposed in the Western Cape, in comparison to 2 189 128T (2019)[2] and 2 139 248 (2018).

Table 2: Western Cape data for 2018 - 2020

	2 018	2 019	2 020
[3]**Disposal**	2 139 248	2 189 128	2 077 254
[4]**Diversion**	843 518	674 214	617 567
[5]**Generation**	2 982 765	2 863 342	2 694 820

[2] This is the corrected disposal figure for 2019, although in the 2019 State of Waste Management report, 3 100 4 96T was reported as disposed in the Western Cape.

[3] Disposal of waste is reported to the IPWIS.

[4] Diversion of waste is reported to IPWIS via the treatment, recycling and recovery of waste.

[5] Generation is the sum of waste disposal and waste diversion.

Table 3 provides a breakdown of the waste streams disposed and diverted, along with diversion rates for the province. **The Western Cape currently has a 23% diversion rate for 2020.** The Department and municipalities have conducted waste characterisation studies within the province. **Thirty percent (30%) of municipal waste is categorised as either food or other organic waste in nature** and these studies when analysed, confirm that on average municipal waste has a 30% organic waste portion, and this conservative 30% assumption will be used to determine potential and overall organic waste for each municipal district, see **Figure 7** and **Table 4.**

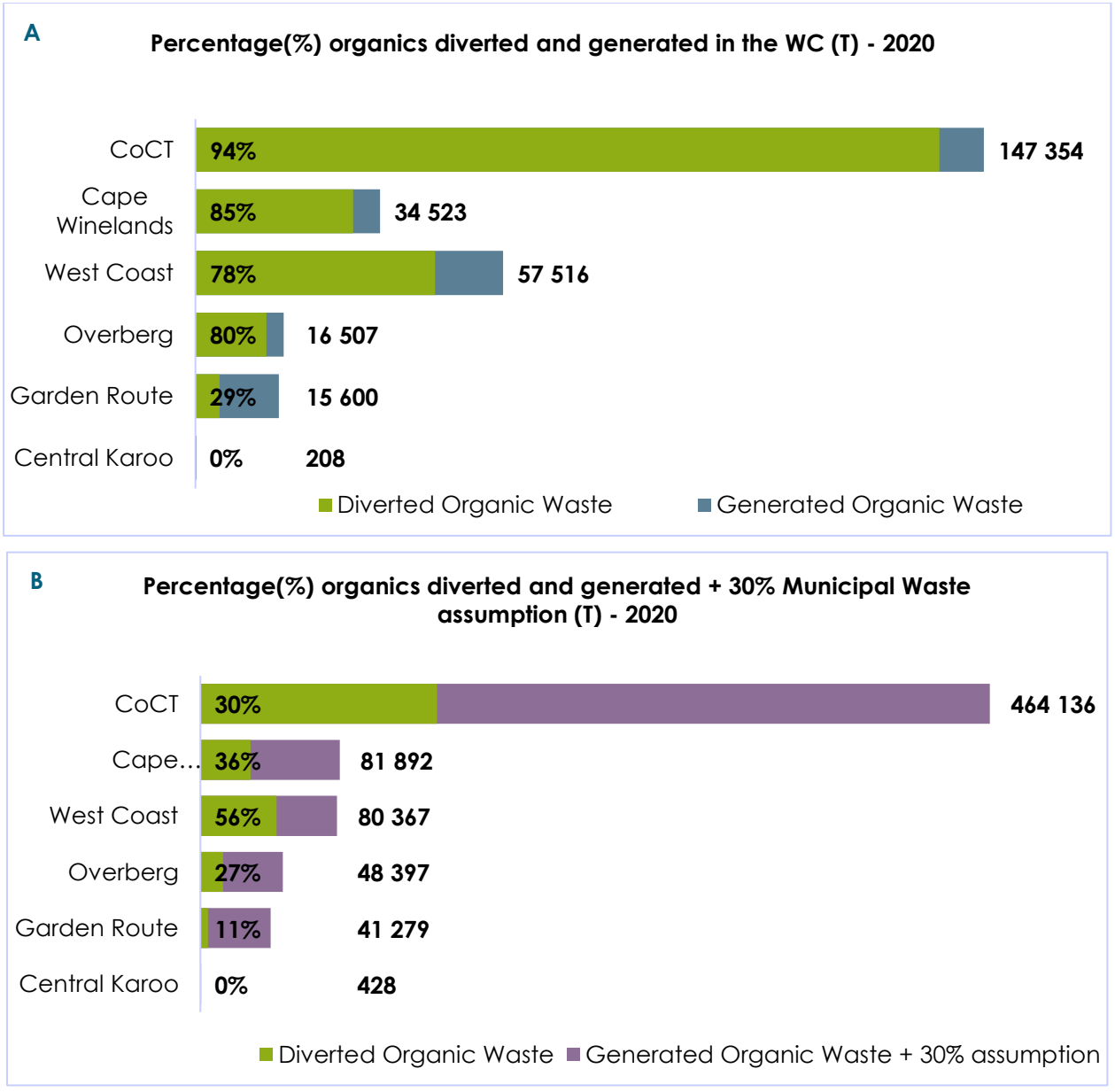

Figure 7: Current (A) and potential (B) Organic Waste diversion

Table 3: Waste Disposal and Diversion per District (T) – 2020

***Note**: The diversion rate (%) is based on the diversion of a specific waste type.*

DISTRICT	ACTIVITY	MUNICIPAL	COMM & INDUSTRIAL	ORGANICS	CONSTR & DEMOLITION	OTHER	TOTAL
West Coast	Total Disposed	76 168	3 045	12 720	24 969	0	116 902
	Total Diverted	4 065	0	44 796	23 828	6	72 696
	Diversion Rate per Waste Stream	5%	0%	78%	49%	100%	**38%**
City of Cape Town	Total Disposed	1 055 939	419 230	8 271	19 759	11 843	1 515 041
	Total Diverted	112 031	2 095	139 083	140 448	25 507	419 165
	Diversion Rate per Waste Stream	10%	0%	94%	88%	68%	**22%**
Overberg	Total Disposed	106 301	57	3 260	870	2 997	113 485
	Total Diverted	1 880	3	13 247	22 720	0	37 850
	Diversion Rate per Waste Stream	2%	5%	80%	96%	0%	**25%**
Garden Route	Total Disposed	85 597	1 539	11 062	34 953	0	133 152
	Total Diverted	10 177	0	4 538	428	4 886	20 029
	Diversion Rate per Waste Stream	11%	0%	29%	1%	100%	**13%**
Central Karoo	Total Disposed	735	35	208	480	0	1 457
	Total Diverted	0	0	0	0	0	0
	Diversion Rate per Waste Stream	0%	0%	0%	0%	0%	**0%**
Cape Winelands	Total Disposed	157 899	11 641	5 035	13 866	8 775	197 216
	Total Diverted	8 365	42	29 488	28 485	1 447	67 827
	Diversion Rate per Waste Stream	5%	0%	85%	67%	14%	**26%**

Table 4 aims to highlight the potential diversion that can take place in each of the municipal districts, relating to organic waste specifically.

Table 4: Western Cape Organic Waste Summary - 2020

DISTRICT	30% ASSUMPTION	DISPOSED ORGANIC WASTE	30% ASSUMPTION + ORGANIC WASTE DISPOSED	ACTUAL DIVERTED ORGANIC WASTE	POTENTIAL DIVERTED ORGANIC WASTE	% DISPOSED
Central Karoo	220	208	428	0	428	100%
Garden Route	25 679	11 062	36 742	4 538	41 279	89%
Overberg	31 890	3 260	35 151	13 247	48 397	73%
West Coast	22 850	12 720	35 570	44 796	80 367	44%
Cape Winelands	47 370	5 035	52 404	29 488	81 892	64%
CoCT	316 782	8 271	325 052	139 083	464 136	70%

Note: Based on the assumption that *thirty percent (30%) of municipal waste is categorised as either food or other organic waste in nature*.

3.3.1.1 West Coast District

In 2020, the total amount of waste generated within the West Coast district was 189 598T, of this 116 902T was disposed and 72 696T was diverted, thus a diversion rate of 38%. Matzikama Municipality has a very low reporting frequency for 2020. The Department has addressed the non-reporting concerns with the Municipality, but with little success. Therefore, it should be noted that the amount of waste disposed could be greater within this district**. Table 3** shows organic waste and construction and demolition waste make up the largest portions of the waste diverted within the West Coast district, amounting to 85% and 49% respectively. In comparison, the amount of waste types being disposed of is significant and an investigation into industries where the waste can be beneficiated toward, should be explored.

Utilising this conservative estimate of 30%, West Coast district has an opportunity to divert a further 22 850T from municipal waste and a further 12 720T from organic waste being disposed and thereby a total of 35 570T. This means that organic waste makes up 10% of what is disposed of at WDFs in the West Coast district. Although estimated at 10%, this figure is largely based on the local municipalities that have reported to the IPWIS, highlighting the non-reporting gap from the Matzikama Municipality regarding waste disposed and diverted.

3.3.1.2 Overberg District

There are four (4) municipalities in the Overberg district with Karwyderskraal WDF being administered by the District Municipality since April 2019. It should be noted that the waste analysis and waste reporting for Karwyderskraal WDF is therefore included in ODM's waste disposal and diversion data. In 2020, the ODM disposed 113 485T and they diverted 37 850T. The ODM disposed approximately the same as in 2019, with 90 649T and diversion also increased as 25 331T was diverted in 2019 and the increase in 2020 may be due to increased initiatives from the Municipality to divert waste.

Cape Agulhas Municipality disposed 29 761T in 2019 compared to 25 323T in 2020. The slight decrease can be due to the pandemic where some of their sites where not operational during March and June 2020. Theewaterskloof Municipality has not reported consistently and are taking strides to resolve their challenges. As seen in **Table 3**, the Overberg district diverted 80% and 96% respectively if we compare the amount of waste diversion per waste stream for organic and construction and demolition waste, which accounted for the largest section of waste diverted. No waste diversion has thus far been reported by Swellendam Municipality. Utilising this conservative estimate of 30%, Overberg district has an opportunity to divert a further 31 890T of waste being disposed, see

3.3.1.3 Central Karoo District

The Central Karoo district disposed of 1 457T of general waste in 2020, but excludes the waste disposed in Beaufort West Municipality as no reports were submitted to the IPWIS for 2020. No diversion has been reported for the district in 2020, with a gap in reporting from Beaufort West Municipality and its WDFs situated on the outskirts such as Nelspoort, Murraysburg, and Merweville. The local municipalities in the Central Karoo district has a low reporting and diversion rate, and is an indication that municipalities are heavily challenged in meeting their reporting obligations in terms of the IPWIS, mainly due to limited financial and human resources.

3.3.1.4 Cape Winelands District

A total of 197 216T general waste was disposed of, and 67 827T diverted in 2020 for the Cape Winelands district. This includes the general waste from Stellenbosch Municipality which was disposed at Vissershok (Averda Enviroserv). The municipality has made use of the private WDF since August 2019 due to its current landfill airspace constraints., The proportion of waste disposed and diverted is 74% and 26%, respectively. The Cape Winelands district disposed of 157 899T municipal waste and indicates that opportunities for household waste diversion is far from exhausted and salvaging of recoverable waste should be increased.

The percentage waste disposed for industrial, commercial, construction and demolition waste in relation to municipal waste, is quite minute. This may be attributed to minimal construction activity in the area during this period or re-use of construction and demolition waste for use as crushed rubble for road construction or cover material. Based on the data at hand, the latter may be true as 67% of Construction and Demolition waste stream was diverted. The Cape Winelands district's diversion rate reported for 2020 is 26%. In 2018 it was (22%) and 2019 (30%) respectively. The difference and fluctuation in diversion rates and increased values for 2019, can be attributed to missing diversion data for the 2020 calendar year for Stellenbosch Municipality and is likely due to the effects from the hard COVID-19 lockdowns experienced and the reduced activity associated with the informal reclamation sector. During this period, the Stellenbosch Municipality had challenges with their service provider contract ending and the subsequent sourcing of a new service provider to manage their waste recovery on site. The waste quantities reported by this municipality forms a large part of the total waste diversion in the district and the municipality has embarked on aggressive waste recovery due to landfill airspace capacity constraints, however Stellenbosch Municipality have not reported on waste diversion since February 2020. There is a chance to divert a further 21% of organic waste from the municipal waste disposed, as in **Table 4** aims to highlight the potential diversion that can take place in each of the municipal districts, relating to organic waste specifically.

Table 4 At this stage its unknown whether the data is available, and reporting will be backdated or whether there are gaps or no data available for reporting due to a lack of dedicated staff to capture and record data onto the IPWIS. Langeberg Municipality has also seen some challenges with the vandalising of waste management facilities such as damage (burning) of their Ashton Materials Recovery Facility and weighbridge and subsequent permanent closure of the facility in 2020.

3.3.1.5 Garden Route District

During 2020, 133 152T of general waste was disposed and 20 029 diverted in the Garden route district. Waste disposal has fluctuated over the past three (3) years from 149 519T in 2018 compared to 173 697 T in 2019. There has been a significant increase in waste diversion for every year in the past three (3) years of 4% to 7% to 13%, despite poor to no reporting on waste diversion by some municipalities in the district. Hessequa, Kannaland, Knysna and Oudtshoorn Municipalities have not reported on waste diversion. Mossel Bay Municipality had the highest diversion rate at 18% for 2020. Utilising this conservative estimate of 30%, the district could also divert a further 21% of their organics as per **Table** 4 aims to highlight the potential diversion that can take place in each of the municipal districts, relating to organic waste specifically.

Table 4George, Mossel Bay, Bitou and Knysna Municipalities dispose general waste at PetroSA. It must be noted that PetroSA is within the geographical boundaries of the Mossel Bay Municipality and therefore also contributed to this total through disposal of general waste that was generated on the plant. Mossel Bay Municipality is the only municipality in this district that has been consistent in their reporting and have been making concerted collaboration efforts. One example is automating their gate control and waste calculator spreadsheets (estimation tool) and the verification of their data presented at the quarterly WC WMOF. Bitou and Knysna municipalities utilises the Ukhana Group site, a private waste disposal facility located in the Bitou Municipality to dispose of construction and demolition waste. It should therefore be noted that the total waste quantity reported for the GRDM also include waste privately disposed at waste management facilities such as the Ukhana Group and PetroSA.

3.3.1.6 City of Cape Town

The reporting frequency for waste management facilities within the CCT Metro is at 100% for the 2020 calendar year. In **Table 3,** the City has diverted a significant amount of organic and construction and demolition waste amounting to 94% and 88% respectively. Currently the City has a diversion rate of 24%. **Table 4** aims to highlight the potential diversion that can take place in each of the municipal districts, relating to organic waste specifically. It **Table 4** aims to highlight the potential diversion that can take place in each of the municipal districts, relating to organic waste specifically.

Table 4 indicates that the City has an opportunity to divert 316 782T of the organic waste portion from municipal waste and a further 8271T of organic waste, bringing the total organic waste that can be diverted to other industries (utilising the conservative estimate of 30%) to just over 325 052T. This would then mean that 30% of organic waste is diverted from landfills in the City.

3.3.2 Hazardous waste

The National Environmental Management: Waste Amendment Act 26 of 2014, 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 waste disposal activities registered on the IPWIS and 47 registrations deal with general waste disposal and are spread ubiquitously throughout the province. There are three (3) sites registered on the IPWIS for Hazardous Waste disposal and located in the City of Cape Town and Mossel Bay, namely Vissershok CoCT, the privately owned Vissershok (Averda Enviroserv) and PetroSA in Mossel Bay.

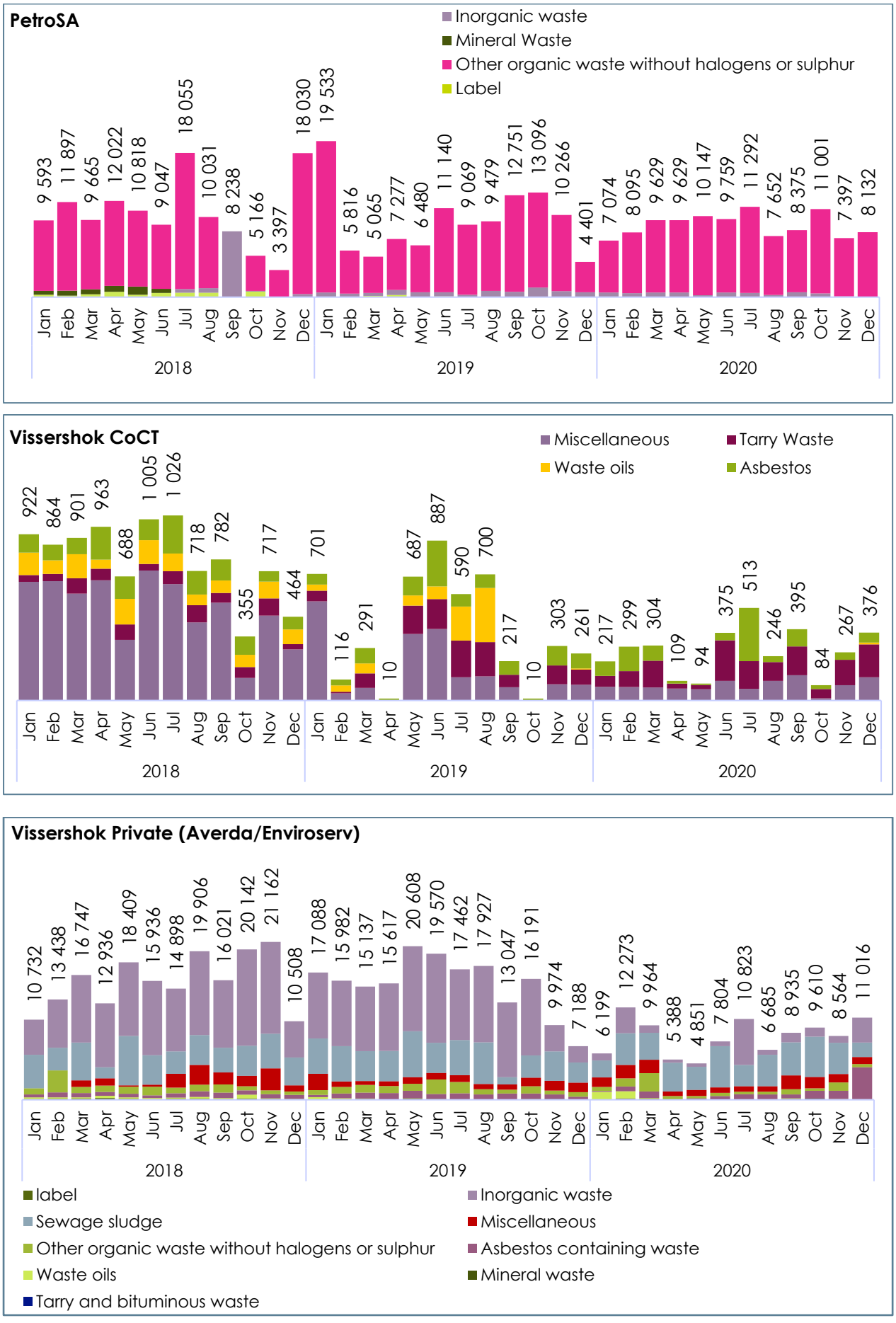

Figure 8: Disposal at Hazardous WDFs 2018 – 2020

***Note**: The graphs above are represented as **Figure 8**. These stacked graphs present hazardous waste disposed at the three (3) hazardous WDFs. Note: ** The Combined waste type is the addition of all the waste types where the totals per year amount to less than 500 tonnes per waste type.*

3.3.2.1 PetroSA

In **Figure 8** most of the waste being disposed at PetroSA is categorised as "Other organic waste without halogens or sulphur", as hazardous waste emanates from the bacteriological and lime treated digested sewage sludge. This waste stream is also called biological sludge once it has gone through the treatment process. The high values observed in Jul'18, Dec'18 and Jan'19 could be the result of stockpiled sludge that required drying to meet the requirements where no waste above 40% (liquid constitution) can enter the landfill and most likely due to the prohibitions coming into effect. Routine maintenance was conducted during September 2018 and every 3 years at the plant due to the build-up of biological sludge materials. Other organic waste without halogens or sulphur, constitutes over 90% of the waste disposed and averaging 8800T per month.

3.3.2.2 Vissershok CoCT Hazardous WDF

Vissershok CoCT hazardous WDF only accounts for 2% of all hazardous waste disposed and has a different waste profile compared to the other two hazardous WDFs. The major waste streams are miscellaneous, waste oils and tarry and asbestos waste. The trends observed when looking at the timeline shows that miscellaneous waste has sharply decreased after January 2019. The reason for the decrease has been the waste identification and characterised that has improved at the landfill site. Waste oils after September 2019 have also declined sharply due to the liquid waste ban at landfills in the province forcing hazardous waste generators to find alternative solutions to treat or beneficiate liquid waste types. The Rose Foundation is a non-profit organisation that assists generators of waste oils to easily find and beneficiate the waste oils so that it can be recovered and recycled at facilities within Cape Town. Throughout the three years, tarry and asbestos waste have been consistently generated and disposed of at the site at an average rate of roughly 90T per month.

3.3.2.3 Vissershok (Averda/Enviroserv) WDF

Vissershok (Averda/Enviroserv) WDF disposes 2 main waste types, i.e. Inorganic waste and sewage sludge. There has been a decrease (31%) in hazardous waste disposed between 2019 to 2020 can largely be attributed to two major factors within 2020, namely the decrease in the generation of solid inorganic waste and the onset of the COVID-19 pandemic with subsequent lockdown regulations. The pandemic has negatively influenced all sectors of the economy, decreasing manufacturing and production and thus waste that is generated. The average amount of sewage per month is 3948T per month and it is evident that the amounts generated per month is stable.

Hazardous waste diversion within the Western Cape is primarily constituted of waste oils diverted by two (2) entities, see **Figure 9**. The amount of waste oils diverted increased between 2018 and 2019 but decreased in 2020. This decrease is likely due to the pandemic affecting business and industry operations. When hazardous waste diversion is compared to the hazardous WDFs in the City of Cape Town and Vissershok CoCT in **Figure 8**, it indicates that since 2019, the amount of waste oils being disposed has decreased significantly.

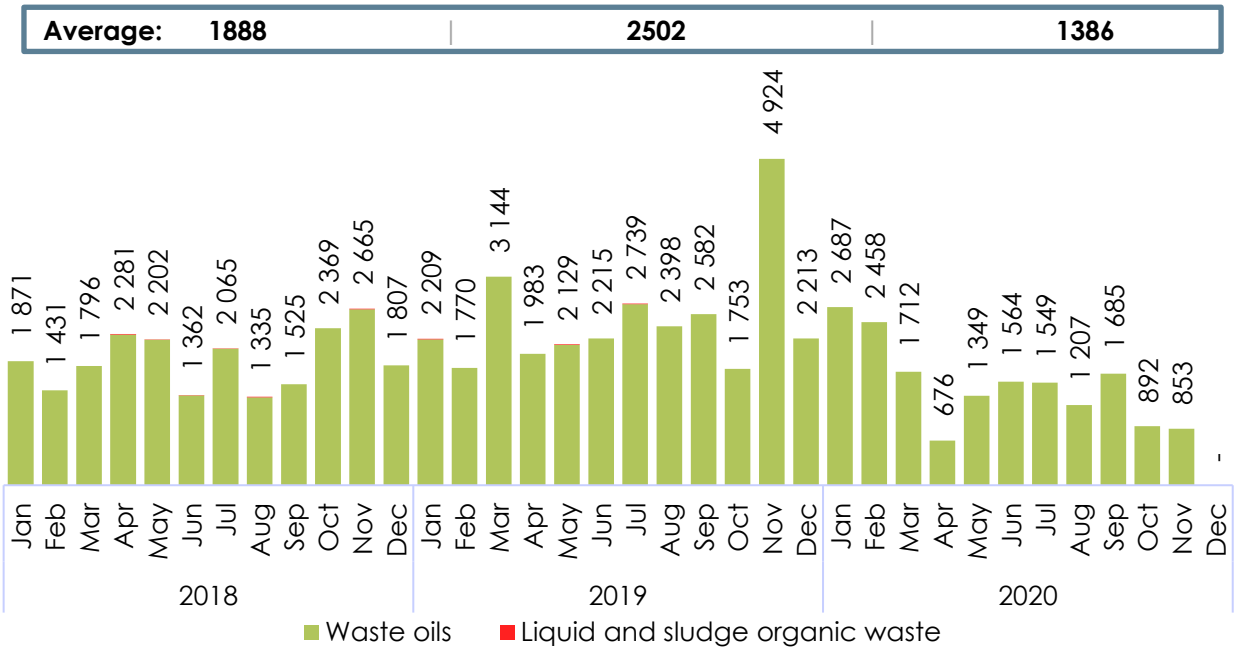

Figure 9: Waste diverted from Hazardous WDFs for 2018 - 2020.

3.4 HEALTH CARE RISK WASTE DURING COVID-19

3.4.1 COVID-19 Health Care Risk Waste (HCRW) Treatment

The COVID-19 pandemic brought about its own challenges pertaining to hazardous waste generation. With the surge in infection cases occurring during 2020, the impact of the potential generation in HCRW and the treatment thereof, had to be understood. One of the concerns was with the onset of cases, the treatment facilities would not be able to effectively manage and treat the influx of HCRW materials and thus cause a crisis whereby HCRW would be stored for inappropriate amounts of time. To understand the impact the surge would have on the treatment facilities, it was important to understand what the capacity was of each of the treatment facilities. **Table 5** indicates the following treatment sites who manage and treat healthcare risk waste in the Western Cape.

The combined treatment capacity is depicted in **Figure 10** as a red line and being able to treat 42 tonnes/day. The total amount treated per month fluctuates based on the number of days within

a month and the treatment capacity calculations are based on daily rates. To establish a threshold for monitoring purposes, it was established that 80% of the treatment capacity, illustrated by the red line (green shaded area) would be used to alert Waste Management Officers (WMOs) of a potential crisis.

Table 5: Treatment capacity at HCRW facilities in the Western Cape

TREATMENT FACILITY	TREATMENT CAPACITY TONNES/DAY
Averda Killarney	24
Averda George	12
Compass	12
BCL Medical Waste	6
TOTAL	**54**

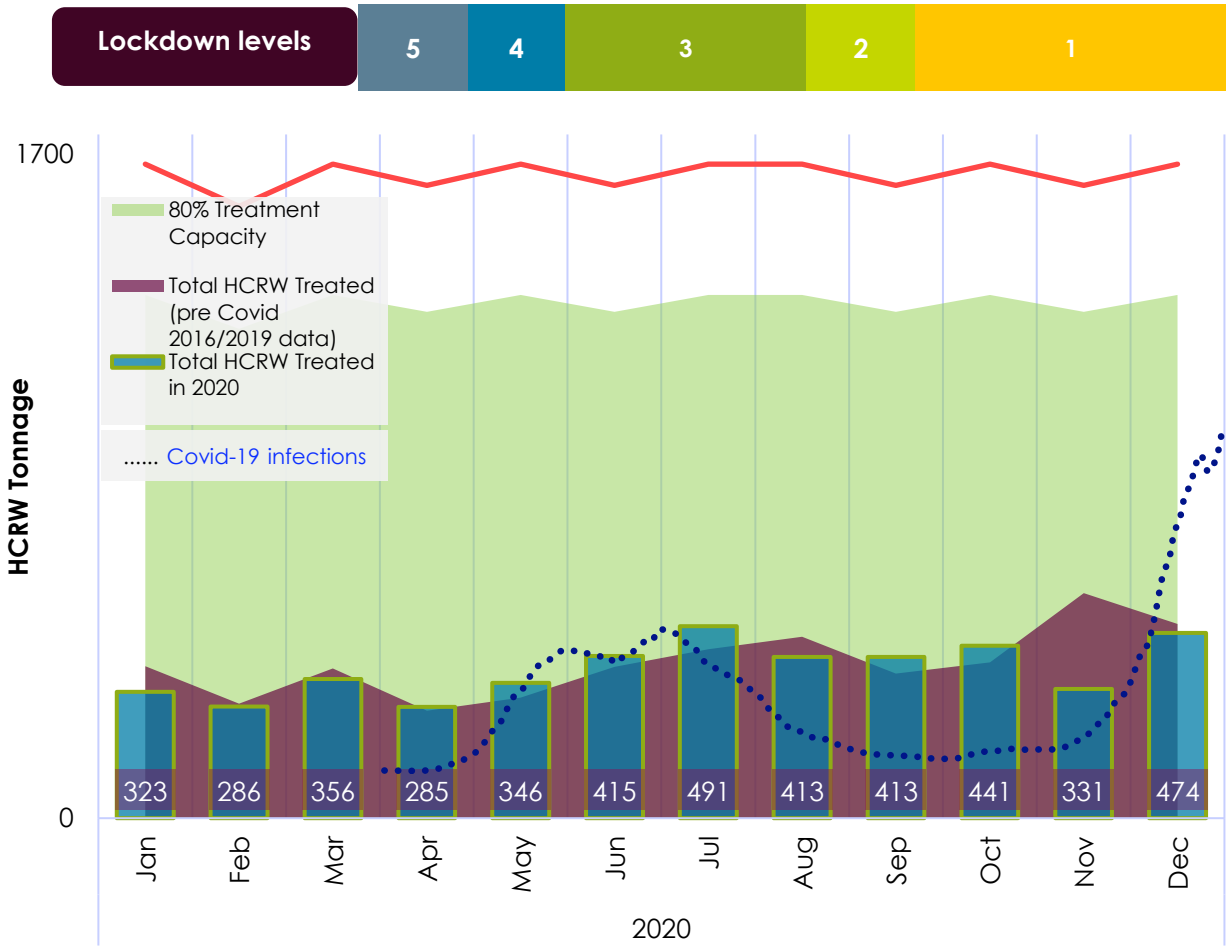

Figure 10: HCRW treatment and capacity during COVID-19

Furthermore, pre- COVID-19 treatment data was used to established what the status quo was so that it could be determined whether values that were observed were indeed within the normal

range for each facility combined (grey shaded area). The yellow bars represent the monthly combined treatment values observed. Finally, when overlaid with the number of cases observed on a 2-week rolling basis, the full picture can be observed. Some key observations from this analysis and monitoring is that the treatment facilities have been coping with the amount of COVID-19 waste within the province. It is evident that lockdown reduced the amount of alternate hospital and clinic procedures thus assisting in the reduction of healthcare risk waste not associated with COVID-19 infections. Some interesting observations is that the treatment capacity has been largely followed by the previous year despite the COVID-19 pandemic.

Figure 10 shows treated HCRW compared to the combined treatment capacity for the Province and contrasted against the COVID-19 infection cases, during the implementation of the State of Disaster. The monitoring of the treatment capacity with respect to the pandemic is still ongoing within the Province.

3.4.2 COVID-19 Health Care Risk Waste (HCRW) Generation

It is difficult to establish a rate at which COVID-19 HCRW is being generated within the province. Various assumptions were made to determine the rate as the difficulty lies in the differences in datasets that are provided to the Department. The initial lockdown presented a unique opportunity to ascertain whether a rate could be established, and hospitalisations were reduced due to factors associated with irresponsible behaviour (e.g. drunk driving). Using May to August 2020 as the sample dataset (**Table 6**), an estimate of approximately **18kg COVID-19 HCRW/# infected persons/2 weeks** (rounded up) can be assumed.

Table 6: The amount of people infected with COVID-19 at 2-week intervals to determine the amount HCRW generated from patients

FROM	TO	#INFECTED PERSONS	TONNES TREATED/MONTH	HCRW TREATED PER WEEK	KG OF HCRW/ #INFECTED PERSONS/ 2 WEEKS
01 May 2020	15 May 2020	10 550	346	173	16
15 May 2020	31 May 2020	30 679		173	6
31 May 2020	15 Jun 2020	15 025	415	207	14
15 Jun 2020	30 Jun 2020	18 951		207	11
30 Jun 2020	15 Jul 2020	14 619	491	246	17
15 Jul 2020	31 Jul 2020	10 419		246	24
31 Jul 2020	15 Aug 2020	5 435	413	207	38
Average					**18**

3.5 MUNICIPAL WASTE COLLECTION AND REFUSE REMOVAL SERVICE

Municipalities are responsible for ensuring a refuse removal service is provided to the communities they serve as specified in Schedule 5b: South Africa Constitution Act No. 108 of 1996. The National Domestic Waste Collection Standards, 2013 provide standards for waste collection with the aim to redress past imbalances. The Standards state that equitable collection services must be provided to all households within the jurisdiction of the municipality. However, where this is impractical e.g. in the case of long travelling distances between towns, the Municipality, through its by-laws, must allow for more feasible and alternative ways to handle the waste.

Municipalities in the province provide a weekly door-to-door service to communities. In the case of informal areas, residents take their waste to communal skips, which are then emptied by the municipality. Most often, in rural areas, where waste collection is not feasible for municipalities, communities and farmers take their waste to a waste Drop-off facility (DoF) and/or WDF. Service levels vary between municipalities (the average waste removal service level is 95.4%) and seen in **Table 7** where there has been some improvement in the waste service levels compared to the previous years. Please also see the **Western Cape Waste Removal Tariffs – 2020** on **Page 86.**

Table 7: Waste Service levels per municipality

MUNICIPALITY	BASIC REFUSE REMOVAL % (2017/2018 ANNUAL REPORTS)	BASIC REFUSE REMOVAL % (2018/2019 ANNUAL REPORTS AND LATEST IWMPS)
Beaufort West	100	100
Bergrivier	100	100
Bitou	95	88.6
Breede Valley	67	100
Cape Agulhas	100	100
Cederberg	100	100
City of Cape Town	99.9	99.2
Drakenstein	100	100
George	100	93.3
Hessequa	91	74.4
Kannaland	66	79.2
Knysna	94	93.1
Laingsburg	100	100
Langeberg	79	100
Matzikama	100	100
Mossel Bay	98.2	87.2

MUNICIPALITY	BASIC REFUSE REMOVAL % (2017/2018 ANNUAL REPORTS)	BASIC REFUSE REMOVAL % (2018/2019 ANNUAL REPORTS AND LATEST IWMPS)
Oudtshoorn	100	87.4
Overstrand	100	100
Prince Albert	100	100
Saldanha Bay	78	96.5
Stellenbosch	71	93.7
Swartland	83	100
Swellendam	88	87
Theewaterskloof	100	100
Witzenberg	100	100

Due to the level of unemployment and poverty within municipal areas, there are both households and citizens who are unable to access or pay for basic services; this grouping is referred to as "indigent". Municipalities are required to develop, adopt and implement indigent policies to ensure that the indigent can have access to the services included in the Free Basic Service (FBS) programme. They must develop an indigent policy, to list its implementation plan, its criteria for indigent assessment, its approach to indigent management, as well as the methods it will employ to engage communities about FBS. A register must be kept of all residents deemed as indigent and municipalities are also responsible for drawing on the support of appropriate implementation providers. It is the municipality's responsibility to monitor and track the effective implementation of FBS as per Schedule 4b: South Africa Constitution Act No. 108 of 1996. (Government D. o., 2005)

The provision of a basic refuse removal service to poor (indigent) households is also highlighted in the National Policy for the Provision of Basic Refuse Removal Services to Indigent Households (DEA, 2011). The policy provides for different service levels from low to high density settlements. A combination of kerbside collection and the transfer of waste to central collection points is indicated for medium to high density settlements as in the case of informal settlements (DEA, 2011). In order to fund waste services for poorer communities, municipalities must declare areas where households would qualify for free or lower charges. The funding of waste services for poorer communities can come from internal resources i.e. through cross-subsidisation from non-residential or wealthier households or externally through equitable share funds (National Waste Collection Standards (Gazette No. 33935), 2011).

The National Domestic Waste Collection Standards support the right to an environment that is not harmful to health and well-being through the uniform provision of waste collection services (DEA, 2011). The standards also address aspects of waste collection and collection vehicles, drop-off centres for recyclables, health and safety, communication and awareness creation, including complaints handling and customer service standards for kerbside collection (DEA, National Policy

for the Provision of Basic Refuse and Removal Services to Indigent Households (Gazette No 34385), 2011).

3.6 MUNICIPAL INTEGRATED WASTE MANAGEMENT PLANS

The NEMWA (herein after referred to as the Waste Act) requires all spheres of government responsible for waste management to prepare Integrated Waste Management Plans (IWMPs). DEA&DP is responsible for developing the Provincial IWMP. IWMPs are sector plans of the Integrated Development Plan (IDPs) and must be integrated and incorporated therein. As sector plans of the IDP, IWMPs also follow a 5-year cycle. Since IWMPs only became a mandatory requirement at a later stage (when compared to IDPs) and municipalities developed their IWMPs at various stages, the 5-year IDP and IWMP cycles for many municipalities are not aligned. In terms of incorporation of the IWMP into IDPs, this is done to varying degrees. In some cases, the entire IWMPs are annexed to the IDP and are therefore not fully integrated into the IDP. To ensure integration, projects within the implementation plan of the approved IWMP must be included within the IDP to ensure budget allocation and implementation.

Municipalities must submit their IWMPs to the provincial Minister of Local Government, Environmental Affairs and Development Planning, Member of the Executive Council (MEC) for endorsement. The IWMPs are submitted to the Directorate: Waste Management for assessment. Only those IWMPs meeting the minimum assessment criteria are endorsed by the MEC. It is essential that all IWMPs undergo a public participation process to ensure stakeholder input. Public participation may include making the IWMP available to the public via placing it at community facilities, such as libraries or on the municipality's website, but this should not be regarded as the only method of public consultation. Public meetings are also used to obtain input into the IWMP. Since the IWMP is a sector plan of the municipal IDP, the public participation processes may run concurrently. Stakeholders for public participation, may include the general public, ward councilors, rate payers' associations, industry and industry associations, waste recyclers, and government departments that impact waste management, including economic development, housing and transport, amongst others. Public participation has been a challenge for many municipalities during the COVID-19 lockdown period, where gatherings and accessibility to infrastructure were restricted, such as the closure of public libraries and mobility restrictions. Public participation therefore had to take place via online platforms such as Microsoft Teams and Zoom.

The development of an IWMP does not however ensure proper waste management planning, since implementation of the plan is key. It is important that financial and human resources are allocated for projects and activities listed in the IWMP. It is thus essential that IWMPs are council approved and aligned to the municipal IDPs to ensure accountability for implementation and annual reporting. Furthermore, Municipalities are required to report on the implementation of the

IWMPs in their Annual reports as per Section 13 of NEMWA. This however is not happening across all Municipalities as detailed information on the progress of implementing their IWMPs is lacking in most Annual reports.

An overview of the development of IWMPs per district is provided below.

3.6.1 Overberg District Municipality

All municipalities in the Overberg District have IWMPs, however not all of these have been endorsed by the MEC. Some of the IWMPs did not meet the minimum requirements of the Waste Act. Overstrand Municipality have developed its 5th generation IWMP and Cape Agulhas Municipality are currently in the process of reviewing and updating their 3rd generation IWMP. Theewaterskloof Municipality would also need to review their IWMP, since the current IWMP expired in 2019. Although municipalities are reporting on waste management in their Annual Reports, reporting of the IWMP implementation for most of the municipalities is not occurring in terms of the requirements of section 13 of the Waste Act.

3.6.2 City of Cape Town

The CoCT has developed an IWMP which was submitted to the Department for endorsement by the MEC. The City's 3rd generation IWMP expires in 2022.

3.6.3 Garden Route District Municipality

Municipalities in the Garden Route District have 3rd generation IWMPs and have been endorsed by the MEC during 2020. Although municipalities are reporting on waste management in their Annual Reports, reporting of the IWMP implementation for most of the municipalities is not occurring in terms of the requirements of section 13 of the Waste Act.

3.6.4 Central Karoo District Municipality

Beaufort West Municipality is the only municipality in the Central Karoo district that has submitted a 3rd generation IWMP to the Department. Its plan was developed with the assistance of the national department who appointed a service provider. The plan has since been assessed and endorsed by the MEC. Prince Albert and Laingsburg municipalities also need to review its IWMPs as its plans expired 2019/2020.

3.6.5 Cape Winelands District Municipality

Breede Valley Municipality has a 4th generation IWMP (2020 - 2025) in place, which was submitted for endorsement by the MEC. Cape Winelands District Municipality's (CWDM) 3rd generation IWMP

dated August (2015 - 2020) and the municipality is currently developing its 4th generation plan, which will be finalised in 2021. Although Langeberg Municipality's 3rd generation IWMP (2017 - 2022) is not outdated, the municipality is also developing its 4th generation plan, which will be concluded in 2021. Stellenbosch Municipality has a 3rd generation IWMP (2017 - 2022) in place and Drakenstein Municipality's 3rd generation IWMP (2014 - 2019) needs to be reviewed as it is outdated. Witzenberg Municipality has a 2nd generation IWMP (2010 - 2015) that is outdated but the municipality is currently developing its 3rd generation IWMP, which will be completed in 2021.

3.6.6 West Coast District Municipality

Bergrivier Municipality has a 4th generation IWMP (2019 - 2023), which was submitted to the Department for assessment and endorsement by the MEC. West Coast District Municipality (WCDM) needs to draft a 3rd generation IWMP as its 2nd generation IWMP (2011 - 2016) needs to be reviewed. Matzikama (2019 - 2024), Cederberg (2016 - 2020), Saldanha Bay (2016 - 2021) and Swartland (2016 - 2021) municipalities have 3rd generation IWMPs.

Table 8: Municipal IWMPs assessed and endorsed during the 2020

MUNICIPALITY	INCORPORATED THE IWMP INTO THE IDP?	REPORTING ANNUALLY ON IWMP?	ENDORSED IWMP?	IS THE IWMP COUNCIL APPROVED?
Garden Route District	Yes	No	Yes	Council Approved, received by DEA&DP
Mossel Bay	Yes	No	Yes	Council Approved, received by DEA&DP
Hessequa	Yes	No	Yes	Council Approved, received by DEA&DP
Kannaland	Yes	No	Yes	No, proof of Council approval, not received by DEA&DP.
Oudtshoorn	Yes	No	Yes	Council Approved, received by DEA&DP

MUNICIPALITY	INCORPORATED THE IWMP INTO THE IDP?	REPORTING ANNUALLY ON IWMP?	ENDORSED IWMP?	IS THE IWMP COUNCIL APPROVED?
Knysna	Yes	No	Yes	Council Approved, received by DEA&DP
Bitou	Yes	No	Yes	Council Approved, received by DEA&DP
George	Yes	No	Yes	Council Approved, received by DEA&DP
Overstrand	Partly	Yes	Yes	Council Approved, received by DEA&DP
Beaufort West	Partly	No	Yes	Council Approved, received by DEA&DP
Breede Valley	Yes	Yes	No	Council Approved, received by DEA&DP

3.7 WESTERN CAPE INTEGRATED WASTE MANAGEMENT PLAN (WC IWMP)

The Western Cape Integrated Waste Management Plan (WC IWMP) for 2017 – 2022 is aligned to the National Waste Management Strategy (NWMS, 2011) and has linkages to several key policies, e.g. the National Development Plan 2030 (NDP) and the Provincial Strategic Plan 2014 - 2019 (PSP). The aim of the WC IWMP is to provide strategic direction to improve integrated waste management practices within municipalities, industry and civil society. When developing IWMPs, municipalities must ensure alignment with the WC IWMP which provides overarching waste management goals for the province and lists several waste management activities for Provincial and Local Government, Private sector, Industry, Non-profit organisations and government agencies, Educational institutions and consumers to undertake to undertake over the 2017 - 2022 period. See **Appendix 8.2 Western Cape Integrated Waste Management Plan (2017 – 2022)** which highlights the key deliverables to be undertaken for the plan during 2020.

3.8 WASTE MINIMISATION

The NWMS highlights waste minimisation as a key strategic pillar, with focus being placed on minimising the impact of waste and especially plastic packaging in our coasts, in our coastal waters, rivers, wetlands and our human settlement environments, by amongst others, diverting waste away from landfill; increasing re-use, recycling, recovery and alternative waste treatment; and maximising the role of the waste sector in the circular economy.

The circular economy is an approach to minimising the environmental impact of economic activity by reusing and recycling processed materials to minimise: (a) the need to extract raw materials from the environment; (b) the need to dispose of waste, and (c) keeping materials in the system for as long as possible. The circular economy is built on innovation and the adoption of new approaches and techniques in product design, production, packaging and use – industrial symbiosis, for instance, is a way of preventing waste in industrial production by redirecting waste from one production process to serve as raw material inputs for another production process (DFFE, 2020).

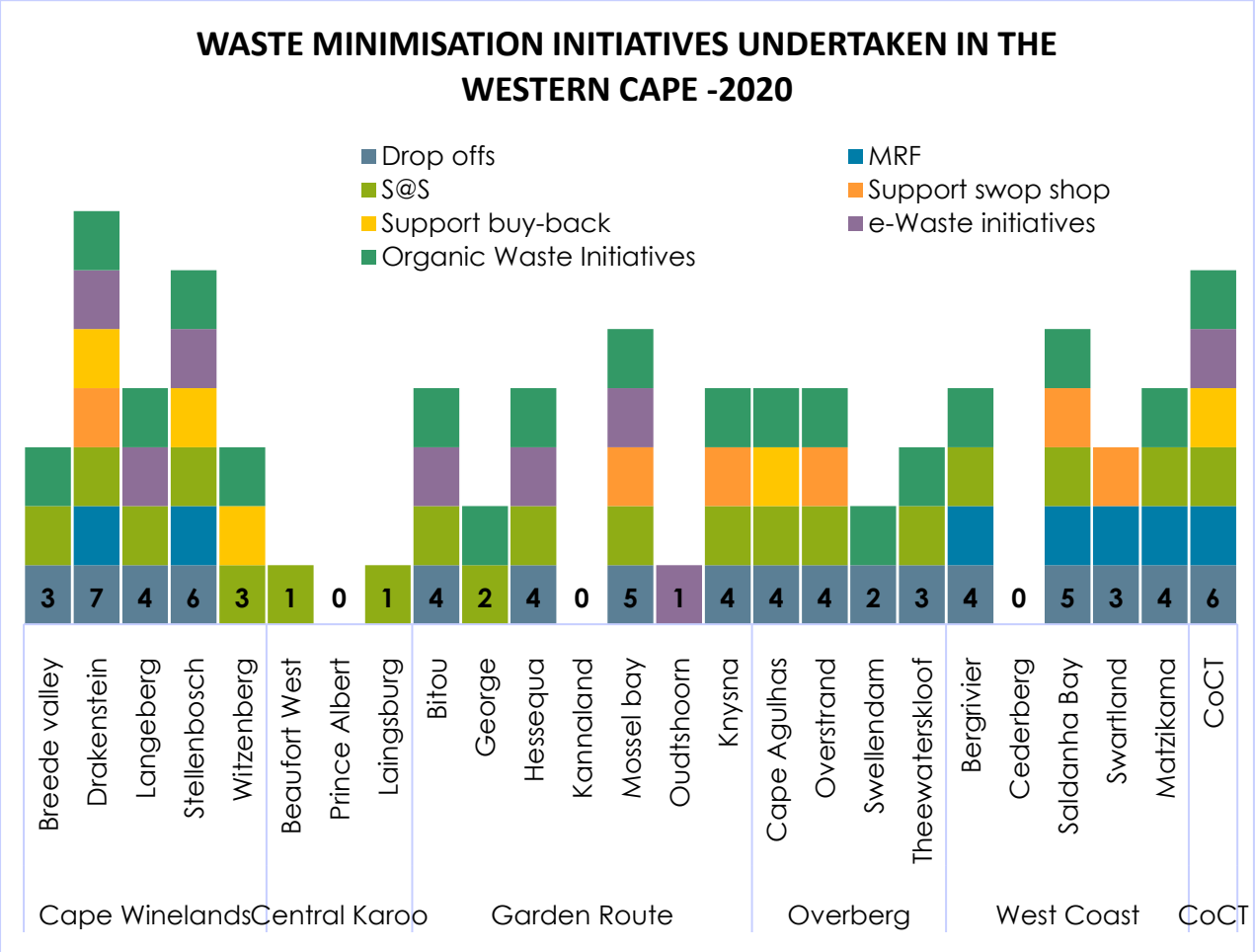

Figure 11: Municipal Waste Minimisation Initiatives for 2020

The strategy further mentions two key focus areas namely waste prevention and managing waste as a resource (DFFE, 2020). Many recycling operations in the province and at municipalities were suspended during the COVID-19 lockdown, Alert levels 4 and 5. This meant that limited waste diversion took place at municipalities and in the private sector as most people could not venture outside due to the social distancing requirements and various business operation restrictions. In many cases, large quantities of recyclable material were sent to WDFs and, in some instances, stockpiled. The lockdown also curtailed markets as processing operations were also prevented from operating. The impacts were subsequently very severe on the waste economy in the Western Cape resulting in job and income losses for recycling within the Small, Medium and Micro-Sized Enterprises (SMME's) and waste pickers (wastepreneurs). This further resulted in businesses closing as they could not operate under such stringent conditions any longer.

The province assisted in a DFFE-led programme with the provisioning of relief stipends for those waste pickers **(see 5.3, Departmental COVID-19 responses and interventions)** who had valid identity documents and cellular phones. Unfortunately, this initiative side-lined those most vulnerable because some had no access to cell phones or who were foreign nationals. The Department and municipalities also participated in a second phase of the DFFE support programme by assisting with the documenting and verification of waste pickers in the Western Cape. **Figure 11** displays the number of waste minimisation initiatives implemented per local municipality and **Table 9** shows the diversion rate per local municipality, where the Overberg and Garden Route district municipalities increased their waste diversion efforts.

Table 9: Diversion and rate per District Municipality 2018-2020

DISTRICT	TOTAL YEARLY DIVERSION			DIVERSION RATE COMPARISON		
	2018	2019	2020	2018	2019	2020
West Coast	89 341	78 362	72696	45%	40%	38%
CoCT	647 518	467 228	419 165	33%	23%	22%
Overberg	18 567	13 827	37 850	17%	13%	25%
Garden Route	6 396	12 860	20 029	4%	6%	13%
Central Karoo	100	56	0	2%	1%	0%
Cape Winelands	74 582	94 105	67 827	22%	30%	26%

3.9 TYRE INDUSTRY WASTE MANAGEMENT PLAN (INDWMP)

The Council of Scientific and Industrial Research (CSIR) published the first draft of the tyre plan for comments by 17 April 2020 but due to the COVID-19 pandemic no public hearings were held. A representative from the Western Cape's Democratic Alliance (DA) requested written feedback

on the status of the tyre plan drafted by the CSIR in September 2020. The DFFE Minister's response was that the CSIR would conclude the fourth (4th) draft of the Tyre IndWMP by 31 December 2020 and that the public participation process as well as the finalisation of the plan was anticipated for 31 March 2021.

3.10 MUNICIPAL WASTE MANAGEMENT INFRASTRUCTURE

The DFFE promulgated the National Norms and Standard for Disposal of Waste to Landfill in 2013, which specified the limitations for construction and operation of new WDFs, including new waste disposal cells. Many of the existing WDFs will run out of landfill airspace within the near future, meaning that municipalities that are mandated to manage waste will have to bear higher development and operational costs. Of the twenty-five (25) municipalities, twenty-two (22) have less than five years of airspace remaining (GreenCape, 2020).

Regionalization and regional cooperation initiatives are important for municipalities to work towards sharing infrastructure and waste services, which reduces individual responsibility to comply with waste management licences. Therefore, regional WDFs have been planned, licenced and are in various stages of being established, due to financial resources and models. The operational regional facilities are Karwyderskraal in Hermanus and Highlands WDF in Malmesbury. The Vissershok CoCT and Vissershok (Averda/Enviroserv) WDFs are regional hazardous waste facilities. The current PetroSA WDF is serving as a temporary regional facility for the Garden Route District (Mossel Bay, George, Knysna and Bitou Municipalities). The proposed regional facilities are for Cape Winelands District in Breede Valley, Garden Route District in Mossel Bay and West Coast District in Matzikama are still to be established. Central Karoo District is in the process to conduct a feasibility study to determine the viability of regional cooperation.

The only operational waste facilities, that have been constructed in accordance with the National Norms and Standard for Disposal of Waste to Landfill, 2013 or the Minimum Requirements for Waste Disposal by Landfill (DWAF, 1998) are:

- Karwyderskraal WDF
- Highlands WDF
- Vissershok CoCT WDF
- Vissershok (Averda/Enviroserv) WDF
- Vredenburg WDF
- Petro SA (only for general waste and certain municipalities in Garden Route District Municipal) Regional WDF
- Coastal Park WDF
- Bellville South WDF

Some Materials Recovery Facilities (MRFs) have been constructed, to divert waste from disposal facilities, thereby reducing consumption of landfill airspace and to facilitate recycling of waste

throughout the Western Cape. There is limited waste management infrastructure at municipalities as per the Departmental Infrastructure Study developed in 2016. The development of Organic Waste Diversion Plans (OWDPs) necessitates the need to prioritise the relevant waste management infrastructure within municipalities.

3.11 LICENCING OF WASTE MANAGEMENT FACILITIES

Chapter 5 of the NEMWA was amended and makes provision for the licensing authority to issue a waste management license upon receipt of an application with the associated Basic Assessment/Scoping or Environmental Impact Reporting processes. The licensing process is governed by the National Environmental Management Act (NEMA): Environmental Impact Assessment Regulations, 2014, as amended (Government Notice (GN) No. R. 982 of 4 December 2014).

Table 10: Waste Management Licences issued during 2020

Municipality	Application Type	Licence Holder	Date of Issue	Type of WMF
Cape Agulhas	Variation	Cape Agulhas	08/01/2020	WDF
Swartland	Variation	Swartland	09/01/2020	WDF
Knysna	Treatment	Knysna	20/01/2020	GRF
Swartland	Treatment	Deli-Co Meat Wholesalers	06/02/2020	Treatment
Swartland	Variation	Labelle Street Properties	17/06/2020	Treatment
Langeberg	Variation	Langeberg	07/09/2020	WDF
Saldanha Bay	Variation	Saldanha Bay Vredenburg Expansion Decommissioning	08/09/2020	WDF
City of Cape Town	Variation	Tiger Brands Decommissioning	18/09/2020	Historic WDF
Witzenberg	Variation	Brenn-O-Kem (Pty) Ltd	25/09/2020	Treatment
Drakenstein	Variation	Wellington WDF	18/11/2020	WDF

Activities that require a waste license are listed in GN No. 921 of 29 November 2013, as amended. Nine waste management licences were issued for the period 1 January 2020 to 31 October 2020, see **Table 10**. Eight (8) waste management licences (WMLs) were amendments (variations) of valid WMLs. In addition, there was two WMLs applications for the treatment of waste. Challenges for most facilities revolve around the available landfill airspace as well as funds which need to be allocated for the maintenance of operations and funds for internal and external audits. Very few of the WDFs have submitted OWDPs in 2020, since the OWDPs were written into waste licencing authorisations in 2018 and 2019.The initial baseline was associated with organic waste diversion from landfill in 2018, with a 50% diversion by 2022, and 100% by 2027.

3.12 CONDITIONS OF WASTE MANAGEMENT FACILITIES

A few WDFs are exceptionally well managed within Western Cape and have achieved high compliance rating status indicators. Other WDFs have lower compliance rating status indicators as the facilities were established prior to the publication and adoption of the DWAF Minimum Requirements for Waste Disposal by Landfill. It is important to note that waste management projects that require significant amounts of effort and funds linked to capital and operational expenditure, require adequate time to be completed and as a phased approach.

With the promulgation of the NEMWA, the DEA&DP became the Licensing Authority for WDFs, for general waste disposal. The conditions of authorisation previously issued by the DWAF for the WDFs were evaluated by this Department and were deemed to be outdated, under the current legislation. The varied permits therefore have new conditions for the operations of the WDF, these conditions are written into the revised authorizations in order to protect the environment.

During 2020, the Department continued with routine audits at various WDFs to determine the level of compliance. Many WDFs that were established under the previous legislative frameworks, were automatically at a lower level of environmental compliance in relation to the current legislative framework requirements. Some WDFs need additional infrastructure to become compliant and to accommodate the expected future waste management and disposal demands. However, in consideration of the NEMWA National Norms and Standards for Disposal of Waste to Landfill, 2013, which provides limits for the disposal of liquid waste and garden refuse, this Department has been encouraging the establishment of alternative waste management technologies in the Western Cape, to move towards sustainable waste management.

3.13 ALTERNATIVE WASTE MANAGEMENT TREATMENT TECHNOLOGIES

Alternative Waste Management Treatment Technologies (AWMTT) transform waste into a valuable resource and will usually be sensitive to both the nature and the amount of waste that requires

treatment. There is a heavy reliance on landfilling as a technology option in both the South African private and public waste sectors. The private sector is introducing (to some degree) alternative technology solutions, while municipalities still rely very heavily on landfilling as the primary (default) solution for the management of waste. When considering the assumption that thirty percent (30%) of municipal waste is made up of organic waste **(See Section 3.31, Page 19)** in the Western Cape and collected predominantly by municipalities, it is surprising that biological treatment (e.g. composting, anaerobic digestion) is not utilised more extensively in the province. Large quantities of waste biomass are being generated by industry, but thermal and biological technologies remain under-utilised.

To bridge the gap, the Department developed a tool to encourage the diversion of various waste types. The tool requires waste data from the estimated mass or tonnage of various waste types at 5-year intervals and projects it for 20 years, using the base year specified in the tool. These figures are estimates and are dependent on how municipalities are managed and the growth of the economy. Ultimately, the tool illustrates how waste tonnage will grow over 20 years. Insufficient waste tonnages might hinder a municipality to consider and initiate a technology type at the base year, but there may be enough waste generated over a 20-year period. This will then allow municipalities to plan for waste diversion currently, and for the future.

To utilize the AWMTT tool, municipalities require waste data from their municipal waste characterisation studies, annual waste tonnage managed and associated data to capture seasonal variation. Waste streams which are of significance are garden/green waste, construction and demolition waste, organic waste (food waste and abattoir waste), plastic, glass, paper and metal volumes are required for the waste characterisation studies conducted. The AWMTT tool is limited to the input of diversion targets due to the expected poor source separation efforts resulting in contamination of waste streams. With the information as a planning tool, more waste could be diverted during implementation of a specific waste treatment technology. Municipalities could also specify the population size, to provide a more accurate estimation of the waste growth over the next 20 years.

Due to the COVID-19 pandemic restrictions, the DEA&DP staff presented the technical use of the tool virtually. Presentations and physical demonstrations of the AWMTT tool for municipal use were therefore restricted, which may have affected or delayed the targeted outcome of sharing the details with all the proposed municipalities. As the lockdown restrictions were lifted throughout 2020, more virtual demonstrative sessions were held.

3.14 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) levels at WDFs are determined by selecting

measuring points in and around the waste body for the measurement of methane gas concentration.

Due to the COVID-19 pandemic, it was not possible to perform Departmental audits during the period of 26 March 2020 to 5 June 2020. As such, the time periods represented are not the standard quarters normally allocated for the year. The measuring probe was lowered into the hole for detection of gas. The concentration of oxygen (O_2) by volume of air (%), along with the value of carbon dioxide (CO_2), hydrogen sulphide (H_2S) (in parts per million (ppm)) and CH_4 (% volume in this case), as detected by the device, was recorded and illustrated in **Table 11**. The table indicates both the maximum CH_4 values, if detected during the gas monitoring exercise, as well as the average of the four points monitored.

Measuring points were selected in and around the waste body for the measurement of CH_4 concentrations. The Department normally measures four points on the waste body and the measuring points were determined by establishing where older waste was disposed of, particularly in areas where the decomposition of the solid waste has already begun. These points were also identified by observing obvious possible pathways for the gas to be released from the waste body such as cracks or eroded areas. At each measuring point a hole was dug with a spade, up to a depth of not more than 150mm or where the waste body allows, depending on the thickness and hardness of the surface. At facilities where the percentage methane is above 5% at any monitoring point, there is a risk of explosion and fire. Sources of ignition should be avoided, such as smoking or fires at the landfill. Municipalities must also check for the ingress of water at the affected facility, as this facilitates the decomposition process, resulting in methane production from the anaerobic decomposition of the organic waste stream.

Table 11: Landfill gas monitoring results - 2020

QUARTER	FACILITY	TYPE	DATE	MAX. CH4 (BY VOLUME) LEVEL DETECTED
JANUARY - MARCH 2020	**De Doorns**	WDF	22-Jan-20	0%
	Gansbaai	WDF	24-Jan-20	0.175%(avg); 0.3%(max)
	Suurbraak	WDF	10-Feb-20	0%
	Uitsig	WDF	10-Feb-20	0%
	Louis Fourie	WDF	11-Feb-20	0%

QUARTER	FACILITY	TYPE	DATE	MAX. CH4 (BY VOLUME) LEVEL DETECTED
	De Rust	WDF	19-Feb-20	0%
	Dysselsdorp	WDF	19-Feb-20	0%
	Coastal Park	WDF	25-Feb-20	0.7% (avg); 2.3% (max)
APRIL - JUNE 2020	**Darling**	WDF	29-Jun-20	0%
	Moorreesburg	WDF	29-Jun-20	0%
JULY - SEPTEMBER 2020	**Wellington**	WDF	3-Jul-20	8.35% (avg); 11.5% (max)
	Worcester	WDF	8-Jul-20	0%
	Barrydale	WDF	22-Jul-20	0%
	Belville South	WDF	13-Aug-20	13.75% (avg); 55% (max)
	Waterkloof	WDF	13-Aug-20	0%
	McGregor	WDF	12-Aug-20	0%
	Ashton	WDF	12-Aug-20	0%
	Bonnievale	WDF	12-Aug-20	0%
	Citrusdal	WDF	19-Aug-20	0%
	Elands Bay	WDF	20-Aug-20	0%
	Bredasdorp	WDF	1-Sep-20	0%
	Murraysburg	WDF	15-Sep-20	0%
	Devon Valley	WDF	21-Sep-20	0%
OCTOBER - DECEMBER 2020	**Laingsburg**	WDF	1-Oct-20	0%
	Ladismith	WDF	1-Oct-20	0%

QUARTER	FACILITY	TYPE	DATE	MAX. CH4 (BY VOLUME) LEVEL DETECTED
	Lamberts Bay	WDF	7-Oct-20	0%
	Vredendal	WDF	8-Oct-20	0%
	Wolseley	WDF	13-Oct-20	0%
	Grootkop	WDF	21-Oct-20	0%
	Uniondale	WDF	23-Oct-20	0%
	Strandfontein Berm	WDF	15-Dec-20	0%

Table 11 indicates one exceedance of the upper explosive limit for one of the points measured at the Bellville South WDF. Another high maximum value detected included one of the monitoring points at Wellington WDF. It should be noted, that on average, both the Bellville South and Wellington WDF monitoring results was still within the upper and lower explosive limits.

Therefore, Drakenstein Municipality and the City of Cape Town are both urged to investigate measures to mitigate their CH_4 concentrations on the waste bodies where these exceedances where noted.

Photo by DEA&DP, Vredenburg Materials Recovery Facility

4. IMPACTS

4.1 INTRODUCTION

Increasing population growth and expansion of urban areas is placing greater pressure on municipalities to provide waste collection services. In areas such as Swellendam Municipality, waste collection is already low, and population growth may exacerbate this further. Poor waste collection means that residents will have to find other means to dispose of their waste. This often results in illegal dumping of waste, which is costly for the municipalities to clean up. Money used for clean-up costs could have been utilised more beneficially such as the development of waste infrastructure. Besides the cost implications, illegal dumping of waste has negative health and environmental impacts and is visually unappealing.

4.2 INCREASING WASTE GENERATION

The impacts of increasing waste generation are substantial, and the cumulative effects are likely to have a noticeable impact. Increasing waste generations places pressures on land available for disposal and the need to identify new disposal sites can also lead to the transformation of natural habitats and the loss of biodiversity. Poorly managed WDFS can cause contamination to groundwater resources and pollution. Air pollution due to dust and windblown litter at WDFs and emissions such as methane gas from landfill increase with the increasing waste generation and increasing waste generation requires additional resources to keep up with the increasing demands for wate collection and disposal services. As mentioned earlier, poor service provision may result in encouraging a culture of illegal waste dumping and therefore necessitates the need for municipalities to maintain and improve service delivery in all waste producing sectors.

4.3 LAND USE

Municipalities responsible for landfill sites have been faced with buffer zone reduction requests to free up land for both formal and informal housing projects. This Department has facilitated the authorisation of the requested buffer zone reductions and assisted internal municipal struggles, as a balance must be found to protect the environment and the needs of the people, who in this case is migrating closer to waste facilities that may have an impact on their health and exposure to potential nuisance conditions. At the same time the need to provide housing to people must also be considered, and these decisions have a direct impact on the management and compliance status of the respective waste disposal facilities.

4.4 WASTE RELATED COMPLAINTS

The Department received and investigated waste related complaints during 2020. **Figure 12** and **Figure 13** illustrates that most complaints were associated with WMFs and illegally established private WMFs within the City of Cape Town. No complaints were recorded in the Overberg District and very few complaints were recorded in the Cape Winelands, Central Karoo, Garden Route and West Coast municipal district areas. Illegal dumping related complaints seems to have decreased since 2019 as compared with 2020.

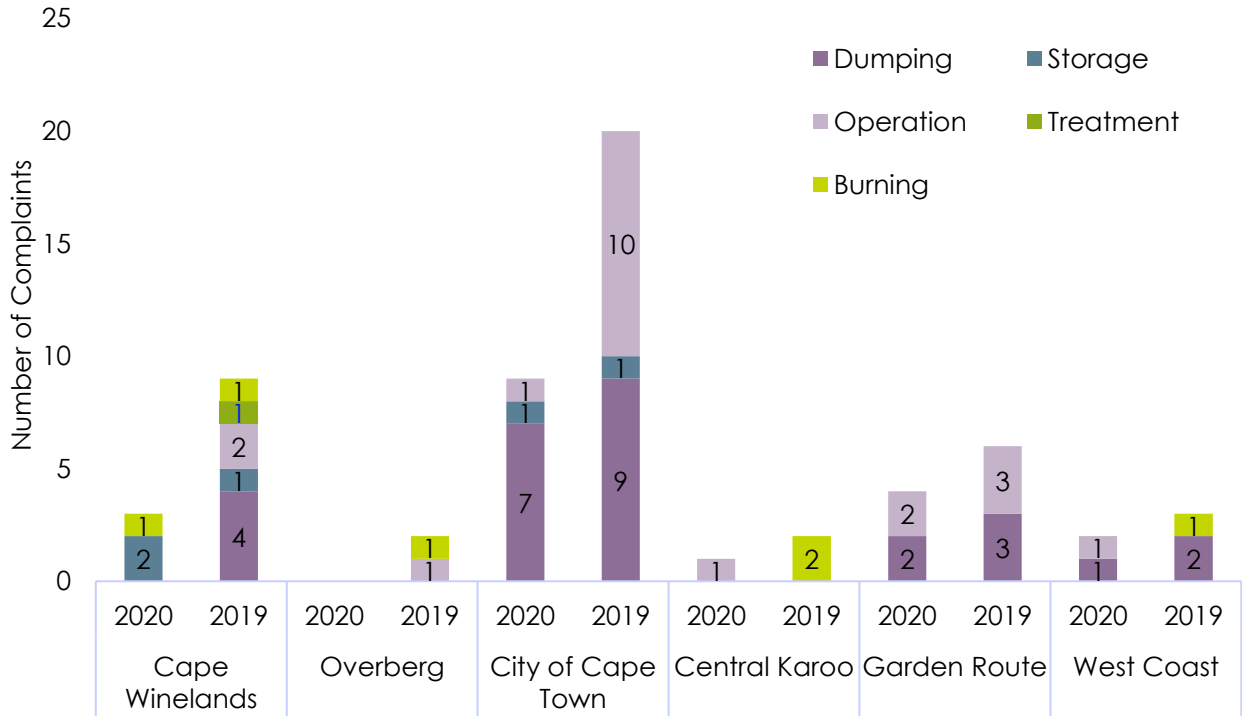

Figure 12: Waste Related Complaints per District in 2019 – 2020

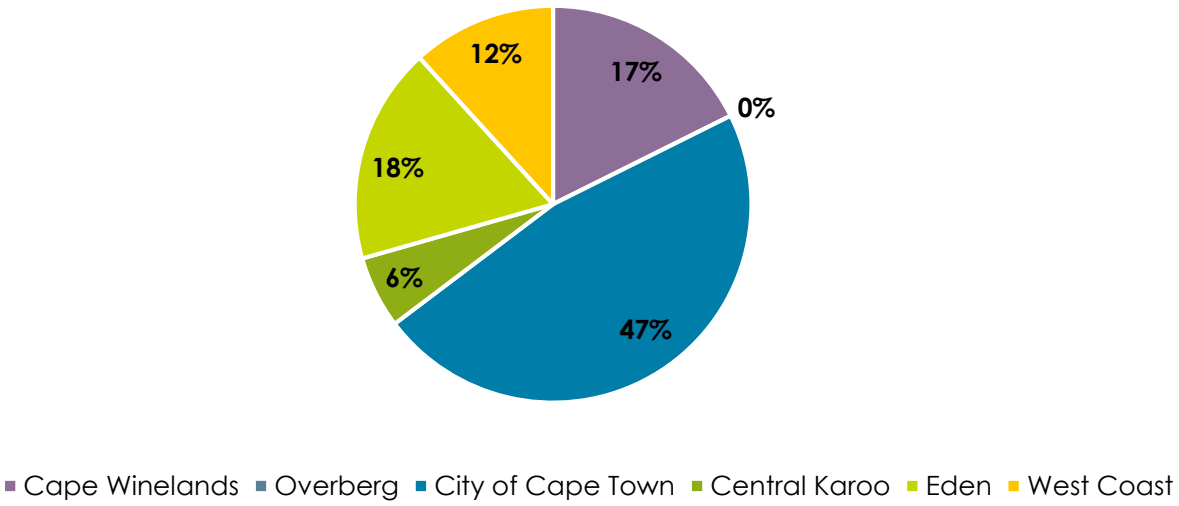

Figure 13: Waste related complaints per Municipal District in 2020

4.5 ENVIRONMENTAL & ECONOMIC IMPACTS

4.5.1 Plastic Pollution

Plastics are inexpensive, lightweight and durable materials, which can be readily moulded into a variety of products that find use in a wide range of applications. Plastics are found in containers and packaging (e.g., soft drink bottles, lids, shampoo bottles). They are also found in durable (e.g., appliances, furniture) and non-durable goods (e.g., diapers, trash bags, cups and utensils, medical devices). The plastics economy makes a significant contribution to the GDP of many countries through the support it provides to the manufacturing and other related sectors. However, when they reach end of life, most plastic materials affect the terrestrial and marine environment, causing harm to fauna and flora.

As plastic production and use have surged, so too has plastic pollution, and with it the amount of plastic in the ocean, which could already be as high as 150 million metric tons. From coral reefs to deep sea trenches and from remote islands to the poles, plastic alters habitats, harms wildlife, and can damage ecosystem function and services. More than 800 species are already known to be affected by marine plastic pollution, including all sea turtle species, more than 40 per cent of cetacean species, and 44 per cent of marine bird species. Plastic waste is entering the ocean at a rate of about 11 million metric tons a year, where it is harming marine life and damaging habitats. "Breaking the Plastic Wave," a global analysis using first-of-its kind modelling, shows that we can cut annual flows of plastic into the ocean by about 80% in the next 20 years by applying existing solutions and technologies. No single solution can achieve this goal; rather, we break the plastic wave only by taking immediate, ambitious, and concerted actions (Breaking the Plastic Wave, 2020).

Plastics are increasingly considered as one of the problematic waste streams that are occupying landfill sites, illegal dumps, rivers and ultimately, oceans with dire consequences for aquatic life. Packaging constitutes the largest component of single-use plastic waste that is generated in South Africa. The generation of single-use plastic waste in South Africa is likely to increase with projected increases in population growth and urban expansion. The growing middle class is creating large consumer markets for plastic goods, especially single-use packaging products. The sprawling informal economy has given rise to non-compliant single use plastic carrier bags that easily find their way into the waste stream (DFFE, Plastic Pollution is a problem, n.d.).

The effects of plastic pollution on the environment has put an immense pressure on brand owners and retailers to align with local and global agreements that seek to divert waste from landfills and the environment, including supporting the supply and demand of recycled material. As mentioned previously, the management costs of disposal are raising up the price in the Western Cape and more so, the CoCT area. The Western Cape generated between 138 278 and 162 138 tonnes of plastics in 2019.

PlasticsSA launched the South African Alliance to end Plastic Pollution in the Environment. This is a campaign that includes several key stakeholders representing the local plastics value chain. The campaign members commit themselves to joining forces and collaborate to work towards the prevention and elimination of plastics in the environment. The priority focus for the alliance will be tackling problematic "single use" packaging (GreenCape, 2020).

The South African Plastics Pact was launched in January 2020, and was the 5th pact internationally to be established, and the first on the African continent. The Pact's development was led by World Wide Fund for Nature (WWF-SA) with the support of the South African Plastics Recycling Organisation (SAPRO) and the UK-based Waste & Resources Action Programme (WRAP), alongside national government support from the Department of Forestry, Fisheries and the Environment (DFFE), and with GreenCape as the secretariat of the Pact. A roadmap will be established detailing the actions that will be undertaken from 2020-2025, in order to achieve the targets, set by the Pact for their members to commit to. The targets are as follows: 1. Eliminating problematic, unnecessary or single-use plastic packaging through re-design, innovation or alternative delivery models; 2. Ensuring that 100% of plastic packaging is reusable, recyclable or compostable; 3. Effectively recycling 70% of plastic packaging; and 4. Ensuring a 30% average on recycled content across all plastic packaging.

4.6 THE IMPACT OF COVID-19 ON THE WASTE SECTOR AND MUNICIPALITIES

Maintaining the delivery of basic urban service including waste collection and management is becoming a growing challenge to cities grappling with the fallout from COVID-19. Population growth, urbanization, and economic development all exacerbate these challenges. Given the high costs of sustainable solid waste management, government departments are increasingly partnering with the private sector through public-private partnerships to find sustainable solutions. Certain inadequacies such as mismanaged WDFS and insufficient tariffs exacerbate the problems associated with integrated waste management and affects health, climate and often leads to further dependence on the informal waste sector. The waste sector's health impacts in ordinary times are more devastating than that of COVID-19 to date (COVID-19's Impact on the Waste Sector, 2020). According to the World Health Organization, there have been 371,166 global fatalities attributed to COVID-19 as of June 1, 2020.

The livelihoods of informal workers who depend on the sector and have been heavily affected by the lockdown. The pandemic has also highlighted the highly unsafe conditions they work under, which is no different during normal operations (COVID-19's Impact on the Waste Sector, 2020). Government focus has been on the collection and transport of waste away from public. Recycling of plastic and other products has slowed substantially. While the immediate driver for the slowdown is the perceived risk of COVID-19 transmission, other key factors include supply chain disruptions and reductions of manufacturing and commercial activity. Due to the current

pandemic, governments and their constituents are sensitive to downside risks from the health sector, including negative economic impacts and loss of life. Efforts to control COVID-19 infection have highlighted the critical need to sustainably manage the environmental impacts of human activity (COVID-19's Impact on the Waste Sector, 2020).

Many municipalities already have a strained cash flow; COVID-19 will exacerbate current circumstance and have a significant negative impact on municipal revenues. In the wake of COVID-19, municipalities were expected to provide additional services to communities during the lockdown. As announced by the President, additional funding of R20 billion will be made available to municipalities to provide emergency water supply, to sanitize public transport facilities and to support vulnerable communities. In terms of the Regulations issued under the Disaster Management Act in March 2020, municipalities are required to revise their IDPs and budgets by prioritising programmes and projects aimed at containing the spread of COVID-19. These revised budgets had to be submitted to the national Cooperative Governance and Traditional Affairs (CoGTA) before the end of May 2020. However, Lockdown regulations do not permit municipalities to convene any public meetings, including any IDP community and public consultation processes. Eighty eight percent (88%) reported redirecting funds towards their COVID-19 responses. As expected, significant budget cuts to administrative functions occurred. However, funding has also been redirected away from municipal services functions such as road, electricity and water services, infrastructure operation and maintenance, solid waste management and emergency services. It is commonly known that one of the most significant challenges for South African and especially Western Cape municipalities are ageing infrastructure and the lack of proper operation and maintenance thereof. The redirection of funding from already poorly and underfunded operational and maintenance operations can be expected to increase service failures.

Since the onset of the COVID-19 pandemic, several infections and deaths of municipal workers have occurred. Unions have expressed their dissatisfaction with the health and safety precautions municipalities have been implementing to safeguard the health of its essential and frontline service employees. In Stellenbosch municipality, eleven (11) employees and councillors have tested positive for Covid-19 (Department of Planning, 2020). Solid waste management and refuse removal services seem to be an area of increasing contention for municipal staff. For example, on 12 June 2020 refuse collection and sewage-related services in George, Western Cape have been severely affected by striking municipal workers demanding Covid-19 related danger compensation. The motivation in favour of additional compensation is that COVID-19 infections present an extra financial burden for these workers as their salaries often do not permit them to be members of medical aid schemes. Also, on 17 June 2020, Unions warned of possible mass action by municipal workers in the City of Cape Town due to their members' frustration with late or non-payment of salaries.

As a result of the pandemic, the municipalities' administration, the provided municipal services, and the ways in which those services are delivered may need to change and adapt to the "new

normal". Innovation and flexibility from all stakeholders will be a crucial requirement. Municipalities should be guided through a post-COVID-19 transition to continue to serve their communities, minimise negative economic impacts and maximise their economic recovery (Department of Planning, 2020).

Photo by DEA&DP, Stellenbosch Materials Recovery Facility

5. RESPONSES

5.1 INTRODUCTION

This section provides a brief overview of legislation and regulations that govern the waste management sector. Various platforms have also been established by the Department to raise awareness and encourage open discussion by involving stakeholders regarding the legislative changes that affect municipalities and industry in the waste management environment.

5.2 LEGISLATION & POLICY RESPONSES

5.2.1 Waste Management regulatory context

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. DFFE is the overarching authority for waste management in South Africa and is the licensing authority for hazardous waste treatment activities. 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 DEA&DP have developed a model integrated waste management model by-law, to support local municipalities to compile local waste management by-laws. Also see Section 5.4.2 for progress on the model by-law. Local municipalities can choose to regulate how waste is managed within their municipal boundaries through the promulgation of waste-specific by-laws. These by-laws often provide obligations for both waste generators those entities want to secure and provide waste services to go through a process of accreditation and reporting obligations. CoCT's by-law (as amended) requires that any person intending to perform recycling, reuse or recovery activities, or the sorting of waste, must be accredited before commencing activities. Accreditation requires the submission and approval of an integrated waste management plan to the City of Cape Town (GreenCape, 2020).

5.2.2 Legislative changes coming to fruition

5.2.2.1 Scheduled landfill restrictions (2019- 2021) (R.636 of August 2013)

The national norms and standard for the assessment of waste for landfill disposal (R.636 of 23 August 2013) provides directives for the disposal of waste to landfill. Included in these norms and standards is a list of wastes that cannot be disposed of at landfill. The following waste streams will be banned from landfilling as of 23 August 2021:

- Persistent organic pollutant pesticides listed under the Stockholm Convention;
- Batteries other than lead acid;
- Hazardous e-waste other than lamps;
- Brine as defined; and
- Macro-encapsulation of waste as defined.

5.2.2.2 Norms and Standards for Separation at Source

To meet its target of achieving a minimum of 50% of households separating at source by 2023, the DFFE's Chemical and Waste Operation Phakisa will develop and promulgate national norms and standards for separation at source. This initiative also intends on include separation at source into municipal IWMPs and, as a minimum, in all waste management by-laws for South Africa's metros, including the CoCT metropolitan area. Proposed date of implementation is the latter half of 2021.

5.2.2.3 Draft norms and standards for organic waste composting (GN 1135 of 2019)

The DFFE is in the process of updating the draft national norms and standards for organic waste composting. These draft norms and standards are expected to exempt organic waste composting facilities that process more than 10T of organic waste a day from needing a waste management licence as required. The draft norms and standards are only applicable to compostable organic waste, which excludes infectious, poisonous, health care and hazardous organic wastes (GreenCape, 2020).

5.2.3 Provincial Government Engagements

5.2.3.1 Western Cape Industry Waste Management Forum (WC IWMF)

The Department hosted its 6th Western Cape Industry Waste Management Forum in October 2020 via a Microsoft Teams Webinar. The focus area for this forum was on the impact of the COVID-19 pandemic on industry and the EPR scheme for paper, packaging and some single use products. The Department hosted various industries who presented the impact of COVID-19 on industries linked to waste management and operations. The South African Plastics Recycling Organisation (SAPRO) who represented industry focused on the impacts on production, health and safety, waste generation, storage and service providers. SAPRO, presentation focused on the challenges and opportunities in the plastics recycling sector. The Paper and Packaging EPR Scheme presentation was provided by Circular Vision, an environmental consultancy who focused on the EPR regulations and indicated that a well-functioning EPR system must be based on objectives that aim to reduce waste from landfill and should incentivise producers to re-design their products and create a circular economy.

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

The Department hosted the Western Cape Waste Management Officer's Forum (WC IWMOF), which takes place thrice a year in various municipal areas, with local and district municipal officials, and invited guest speakers to enlighten the group about new innovations and technologies in waste management. The WC IWMOF meetings were held virtually with the stakeholders to highlight issues of concern, to discuss challenges faced by municipalities and provide an opportunity for municipal officials to share and coordinate waste management interventions and practices. The success of the forum is dependent on the five (5) District Municipalities and the CoCT's participation and support, thereby affording the municipalities and Department the opportunity to discuss and provide solutions, mechanisms to improve waste management and convey feedback from national meetings attended by DEA&DP representatives.

5.2.3.3 Western Cape Recycling Action Group (WCRAG)

The Western Cape Recycling Action Group (WCRAG) has conducted regular quarterly sessions since 2011 to address issues pertinent to the growth of recycling in the province and where various collaborative initiatives have been well supported by recycling industry bodies and other role players. The purpose of the WCRAG is to create a platform that supports the growth of the waste economy, job creation and to develop models for cooperation amongst various role-players to implement effective recycling in municipalities. The themes identified for 2020 were women in waste, waste pickers, SMME support, integration initiatives and industry feedback.

5.2.4 Western Cape Government response to landfill airspace challenges

There are privately owned and operated landfills in the province, however, only Vissershok (Averda/Enviroserv) private landfill (located next to Vissershok CoCT), operates as a commercial landfill receiving waste from businesses and municipalities. The regional waste management facility sites for the, Kalbaskraal WDF in the CoCT and CWDM in Breede Valley are at advanced stages of planning. The GRDM WDF will commence construction in 2021 once financial support has been obtained. Cederberg & Matzikama Municipalities have opted not to proceed with the agreement due to financial constraints, even though WCDM already purchased the land earmarked for the regional facility.

Karwyderskraal WDF in ODM is operating and receives waste from Overstrand and Theewaterskloof municipalities, with the possibility of Swellendam and Cape Agulhas municipalities joining in future. This facility has capacity to service all the municipalities in the ODM, but due to financial and human resource constraints at municipalities, the shift to direct waste to this regional waste facility by road transport has been delayed. The Vredenburg WDF in Saldanha

Bay Municipality and Highlands WDF in Swartland Municipality are operational, and both are receiving waste from the Bergrivier Municipality.

The Department's vision is to promote the move towards regional cooperation and all future IWMFs that are authorised should be geared towards creating a cohesive network towards regionalisation. The IWMFs need to enable supply and demand for crushed construction and demolition waste, shred garden refuse and compost or digest shredded garden refuse with organic or biodegradable waste that is separated from general household waste types, such as plastics, metals and glass. WDFs may negatively impact the environment with odorous emissions, windblown litter and dust, contaminated runoff, leachate and landfill gas. However, those impacts will be localised. Instead of having many small WMFs or poorly managed WDFs all over the Western Cape. Fewer large WMFs can be better managed by means of regional cooperation. Sharing municipal capital expenditure among municipalities can expedite the construction project life cycle for waste infrastructural requirements in the Western Cape. One of the challenges of regionalisation of WMFs is that some municipalities must haul waste over longer distances, compared to other municipalities. The consideration of hauling waste over the existing railway infrastructure needs to be considered in the medium to long term.

5.2.5 Western Cape Government Strategy for the diversion of organic waste

The development of the Western Province Organic Waste Strategy in 2019 was necessitated in order to identify key actions to meet provincially set landfill organic waste diversion targets of 50% of organic waste from going to landfill by 2022, and 100% prohibition of organic waste to landfill by 2027. These actions include interventions in four key areas namely: waste preventions strategies; strategies to secure the supply of organics from the waste stream; strategies that support the development of organic waste recovery and strategies to promote the beneficiation of organic waste. The strategy also promotes strengthening partnerships between municipalities and the private sector. Municipalities will be required to draft diversion plans with set annual targets and identify the means to meet those targets. The ban will put pressure on waste management companies and the municipality alike to manage organic waste better.

An organic waste workshop was hosted in the CWDM in October 2020 to establish a regional network for cooperation on various aspects of organic waste diversion and, promote alternative technologies and systems to all stakeholders in the region. The DEA&DP is also promoting the accurate capturing of more granular organic waste information in municipalities.

There are linkages regarding the Organic Waste Strategy, the organic waste restrictions and organic waste data presented previously in this report. Please refer to **Table 3** and **Table 4** aims to highlight the potential diversion that can take place in each of the municipal districts, relating to organic waste specifically.

Table 4See **Page 22** and **23** to view the organic waste disposed and diverted per district, as well as the opportunities for further organic diversion. Organic waste is a broad stream that exists in various forms and volumes, ranging from small inconsistent household volumes that are mixed and highly contaminated, to large industrial and/or agricultural volumes of consistent, homogeneous and uncontaminated streams. Separating organics from the waste system has the potential to unlock the quality and quantity of valuable dry recyclables that otherwise would have been contaminated (GreenCape, 2020).

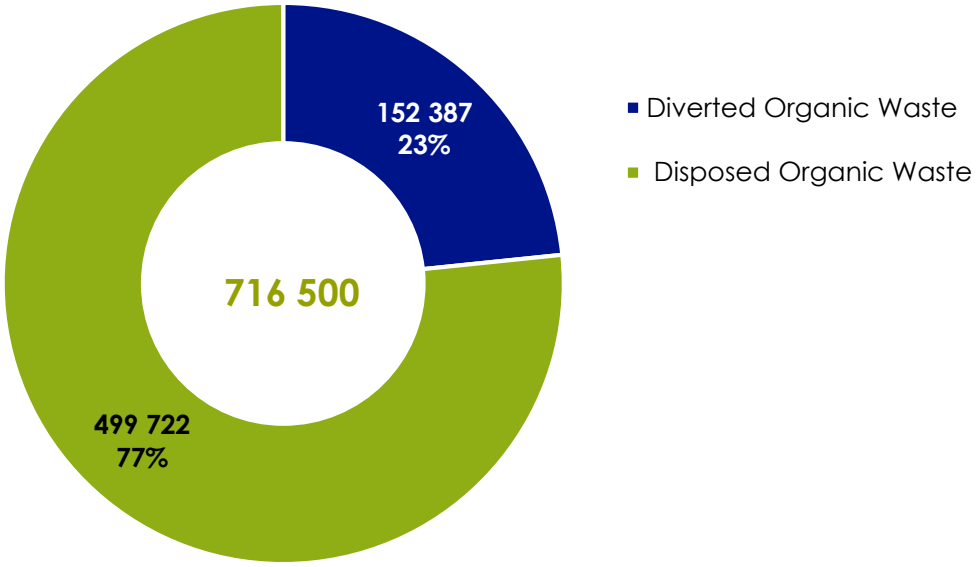

Figure 14: Diversion potential for organic waste (+30% assumption) in the Western Cape (T) in 2020

In 2020, the Western Cape Province has the potential to divert more organic waste as seen in Figure 14 and to be read with 3.3.1. Although this is a commendable achievement, there are still more organics that can be diverted from municipal waste. Through waste characterisation studies, (an internal analysis) it is evident that the amount of organic waste within the general waste portion can vary between 21% to 50%. A conservative estimate of 30% can be applied to determine the portion of organic waste from general waste. The total amount of organic waste generated using the 30% general waste assumption is estimated to be 716 500T.

5.2.6 Municipalities invest in organic waste value-add

The CoCT has budgeted ~R848 million over the next five years to establish a Mechanical Biological Treatment facility. The details of the facility have yet to be confirmed or made public, but if implemented it is likely to be processing several hundred tonnes a day of municipal solid waste. The mechanical biological treatment facility usually results in recyclables being extracted, and biogas being utilised. The by-products from the process may be made available to private sector solutions for value add. The Stellenbosch Municipality is developing an organic waste transfer and

pre-processing facility. The intention is to separately collect, store and transfer public and private sector organics for beneficiation (GreenCape, 2020).

5.3 DEPARTMENTAL COVID-19 RESPONSES AND INTERVENTIONS

5.3.1 Waste Picker Relief Program

The lockdown Alert level 5 on the 26 March 2020 severely impacted on the recycling businesses of Small Medium and Micro Enterprises (SMME's) as well as waste pickers in the Western Cape due to the restriction of movement and temporary closure of businesses. The DFFE, together with the packaging industry, and the waste reclaimers associations assisted thousands of waste pickers across the country including SMME's in the Western Province. The initiative provided waste pickers with electronic food vouchers sent to their individual cell phones to be redeemed at specific retailers instead of having to distribute food parcels to all the Provinces. DEA&DP was tasked to provide a database of names and contact details to the DFFE to distribute the electronic food vouchers for waste pickers and SMME's. **Table 12** represents the Departmental responsibilities linked to the program.

Following this initiative, the DFFE initiated the Waste Picker relief program which was approved on 28 May 2020.The DFFE is also working with the Government Information Technology Officers' Council (GITO) to develop an online application system to register waste pickers in the country and has adopted a SASSA system tailor made to the DFFE specifications for the issuing of PPE and the availability of a stipend via the South African Post Office. This initiative called on the support of all spheres of government, recycling industry and SMME's.

Table 12: DEA&DP responsibilities

ITEMS	RESPONSIBILITIES	STATUS
Data Verification	Collate and verify data submitted by 24 local municipalities and PRO's;	Completed.
	Eliminate duplication;	Completed.
	Capture and maintain register with correct and certified waste picker information;	Ongoing.
	Submit database to the DFFE for record keeping purposes;	Submitted to the DFFE.

ITEMS	RESPONSIBILITIES	STATUS
Payments of Stipends	Review online applications with verified lists and certified ID's submitted by municipalities;	Online training with the DFFE conducted.
	Lodge queries with the DFFE;	Effect online registration once the online system is operational.
	Approve payments;	No payments processed.
	Provide feedback to municipalities and issues with the PRO's report to the DFFE;	
Dispensing of PPE	Provide updated list of verified beneficiaries to the DFFE;	No PPE dispensed.
	Obtain copy of PPE dispensed;	
	Conduct verification of PPE dispensed and received by Municipalities and NGO's linked to PRO's;	
	Provide feedback to the DFFE;	
Health & Safety training	Post training support - Facilitate information and online resource sharing;	No training has commenced.
	Maintain a database of all PPE & health and safety training	

5.3.1.1 COVID-19 Waste Worker Survey

The Western Cape Government: Waste Management Directorate used a survey to gain a better understanding of the COVID-19 infections among waste workers operating throughout the province. The survey was distributed monthly to all Waste Management Officers (WMO) for completion. Information was gathered since early June 2020. The survey revealed that waste worker infections were reasonably low, except for the City of Cape Town which at one time recorded 43 infections. In most cases, numbers continued to decrease, and fewer infections were recorded. The survey further highlighted that the waste worker infections formed a very low percentage (0-8%) of the total infections in an area.

Over the months, many recoveries and a few fatalities were reported. However, it is important to note that the sources of transmission were mostly through private contact (outside of work), with

very few cases were contacted through work colleagues. Limited waste operation disruptions were experienced, while most reporting municipalities noted that their operations were unaffected, especially as the overall COVID-19 cases started to decline. Generally, all reporting municipalities provide PPE, conducted risk assessments on their waste workers and had contingency plans in place in the event of a COVID-19 related disruption. The continued feedback from WMOs on the status of waste workers has allowed the Department to provide the necessary guidance and input, but also highlighted the positive efforts of the municipalities to keep their workers as safe as possible. Municipalities also instituted "bubbles" to ensure that workers are not being exposed, by dividing staff in various groups to minimise infection and in some instances, staff were directed to go to the identified sites to avoid contact.

5.3.2 IPWIS Waste Reporting of COVID-19 related HCRW

To facilitate and encourage health care waste reporting to the IPWIS during the pandemic, the Department effected system enhancements to the IPWIS, allowing stakeholders to report on waste emanating from COVID-19. The system change did not omit the current HCRW being produced by various medical entities in the Western Cape but rather allowed for further segregation of COVID-19 related waste being reported to the IPWIS and is currently ongoing. To negate any confusion linked to the COVID-19 reporting, the Department and the Department of Health engaged the medical fraternities pertaining to the new IPWIS changes and ensured a smooth format to record and capture the waste emanating from the pandemic.

5.3.3 Departmental Protocols developed for COVID-19

The DEA&DP compiled several COVID-19 waste related protocols and guides for the Western Cape. These documents were developed in consultation with key stakeholders and distributed to all 30 municipalities and other relevant agencies. These protocols consist of the following:

- Managing COVID-19 Household General Waste;
- Managing businesses and offices during COVID-19 and
- Guidelines for the management of waste generated at quarantine and isolation facilities in response to the COVID-19 Pandemic.

5.4 COMPLIANCE AND ENFORCEMENT

5.4.1 Waste Management Officers (WMO's)

The designation, in writing, of waste management officers (WMOs) at metro, district and local municipal levels are a requirement of the Waste Act. WMOs are responsible for coordinating waste

management within their municipalities. To improve the governance of waste management in the province, the Department maintains regular contact with WMOs e.g. through the establishment of a Provincial Waste Management Officers' Forum (WMOF) where feedback is provided on the issues emanating from the various Regional Waste Management Officer Forums. During 2020, the WMOs were contacted to obtain information for the Sewage Sludge and Waste Collection and Transportation Status Quo Reports. In these instances, the information needed was required from various sections/departments within the municipalities. WMOs also ensure integrated waste management planning by coordinating and implementing projects identified within the IWMPs.

As per the Waste Act, each municipality authorised to carry out waste management services by the Municipal Structures Act, 1998 (Act No. 117 of 1998), must designate in writing a waste management officer from its administration to be responsible for co-ordinating matters pertaining to waste management in that municipality. Please also see **Appendix 8.3, Table 24** for a list of WMOs. The functions of a WMO are as follows:

- Policy development and ensuring the Municipality has an Integrated Waste Management By-law aligned to the Waste Act;
- Financial Planning and Management including oversight of operational and capital budgets and ensuring the municipality has cost-reflective tariffs;
- Ensuring the development, monitoring, implementation and reporting of Integrated Waste Management Plans;
- Capturing and reporting of waste management information;
- Infrastructure development including the development of waste management facilities to facilitate the diversion of waste from landfill;
- Ensure the delivery of basic and free basic waste collection services to all communities and businesses;
- Carry out performance management and oversight of staff;
- Procurement and maintenance of assets including vehicles;
- Supply chain management in line with the Municipal Finance Management Act 56 of 2003, (MFMA) including the drafting of tender specifications;
- Building capacity within the Waste Division.

5.4.2 Model Integrated Waste Management By-Law

The Department's Model Integrated Waste Management Draft By-law was sent by the Minister to all municipalities via their relevant mayors, municipal managers and WMOs. The aim was for municipalities to align and update their current By-laws or draft new By-laws. **Figure 15** reflects the current alignment process of the municipal By-laws and this also indicating where no shift in alignment has taken place yet, due to various reasons. It goes without saying that more attention

and liaison needs to take place with those municipalities where no By-laws has been drafted at all and identify the necessary assistance and support that is required to initiate the drafting process.

Langeberg, Prince Albert, Laingsburg and Matzikama municipalities does not have By-laws. The Prince Albert and Matzikama municipalities received support from the Department of Local Government [DoLG] with the compilation of their respective By-laws. DEA&DP provided comment on Langeberg and Laingsburg municipalities By-laws. Stellenbosch Municipality appointed a consultant to draft their By-law. The By-law was placed before Council and circulated for public comment for the period 14 September 2020 until 14 October 2020. The public was notified with an advertisement that was placed in the media "Die Burger" and on the Municipal website. No comments and objections were received. The By-law was adopted by Council and to be published in the Provincial Gazette.

DEA&DP will aid municipalities with development and/or alignment of By-laws with the assistance of the Department of Local Government. Targets were set by WCG to foster good waste governance and municipalities are encouraged to publish waste related By-laws and to ensure that existing By-laws are aligned to the NEMWA.

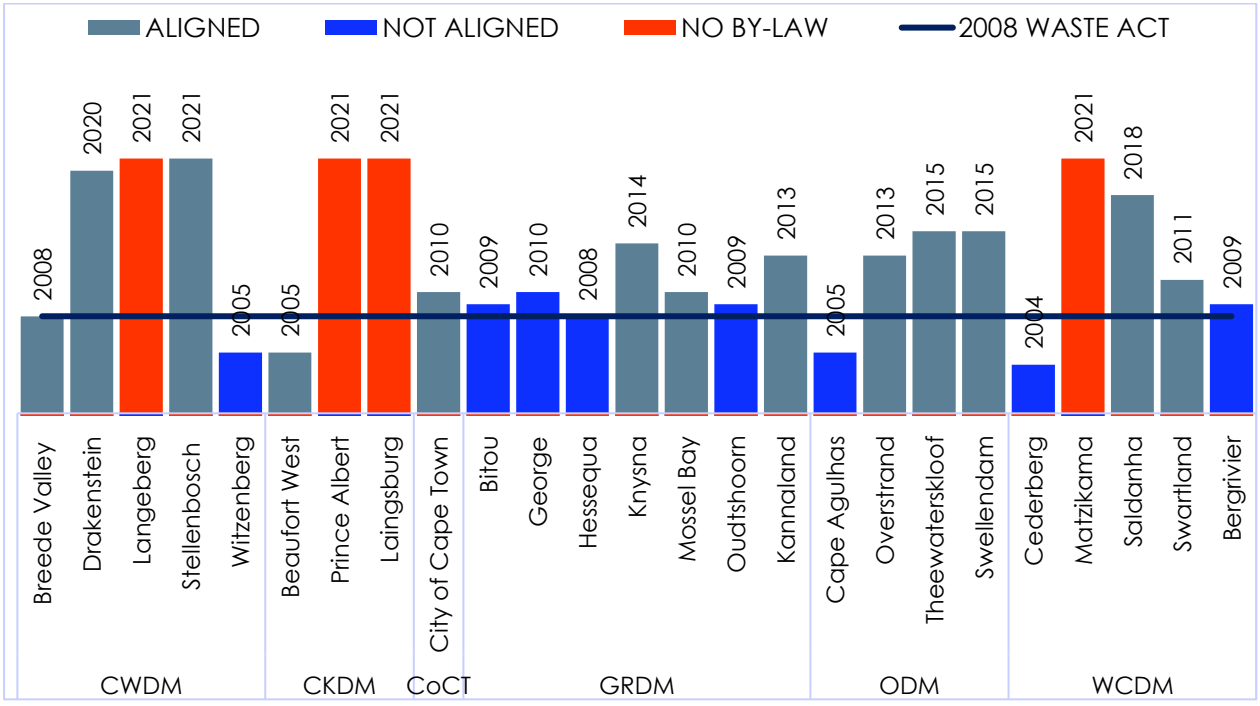

Figure 15: Model Integrated Waste Management By-Law Status

Note: *Most municipal by-laws were outdated and therefore not aligned to the Waste Act.*

DEA&DP will aid municipalities with development and/or alignment of By-laws with the assistance of the Department of Local Government. Targets were set by WCG to foster good waste governance and municipalities are encouraged to publish waste related By-laws and to ensure that existing By-laws are aligned to the NEMWA.

5.4.3 Compliance Inspections

The Department audited seventy-two (72) WMFs, which are all authorised for compliance with their respective WMLs (Section 31K of the NEMA). The Department and the Directorate Environmental Law Enforcement were actively involved in the auditing of Health Care Risk Waste facilities during the COVID-19 lockdown period to ensure compliance with the Provincial Health Care Risk Waste Management Regulations.

The outcome from the Departmental audits conducted from January till March 2020 were based on an average methodology, where all conditions were weighted equally. Naturally, this average methodology was weighted by default. Most conditions of authorisations issued to WDF in relation to the licences, are administrative conditions. From April to December 2020, an adjusted weighted methodology was taken by the Department to determine the level of compliance whilst considering environmental impacts, which addressed the issues associated with an average methodology which allowed administrative conditions to weigh heavily towards the compliance level of WMFs.

This adjusted weighted methodology of determining the compliance rating of the facility has limited the weight of the various categories to 10% for administration and 90% for operations and monitoring. The weight allocated for operations and monitoring, varies according to the type of the waste management facility audited. The special conditions identified, carried a weight that could increase the compliance rating of the WMF, if those conditions are complied with. Conversely, if those conditions are not complied with, the compliance rating of the WMF will decrease. In this way, this Department has identified conditions of authorisation which are of importance. Furthermore, 30% was allocated for special operational conditions for all WMF types, including WDF, Compost Facility (CF), Refuse Transfer Station (RTS) or Materials Recovery Facility (MRF) and Anaerobic Digestion (AD). Waste Drop-off Facilities fall into the RTS or MRF facility type. The detailed weight allocation of the categories of conditions audited are specified in **Table 13.**

The reasons for the percentages, in consideration of the environmental context, are explained below:

- **WDF**: Unlined General WDFs pose a risk of causing environmental pollution. Some negative impacts have been mitigated due the installation of the Class B liner containment barrier at other WDFs. The potential for environmental pollution still needs to be monitored.
- **CF**: Some negative impacts have been mitigated due the installation of a liner containment barrier or in situ clay materials. The potential for environmental pollution still needs to be monitored.
- **RTS**, **MRF & AD:** Many negative impacts were mitigated due to the operations of the WMFs, and the structures present at the WMFs.

Table 13: The Weighted Categories

Weight Category (A, O, SO, M)	Category Weight (Adjusted)			
	WDF	CF	RTS or MRF	AD
1) Administration (A)	**10%**	**10%**	**10%**	**10%**
2) Operations	**50%**	**60%**	**70%**	**70%**
2.1) General Operations (O)	20%	30%	40%	40%
2.2) Special Operations (SO): - Compaction & Covering - Nuisances - Prevention of Fires & Waste Burning - Permissible Waste - Environmental Management Programme - Environmental Assessment Reports - Fence and Gate Control - Runoff Water Management	30%	30%	30%	30%
3) Monitoring (M)- Groundwater - Landfill Gas - Airspace - Internal & External Audits - Waste Diversion, Recovery & Recycling (Organic & Other Waste)	**40%**	**30%**	**20%**	**20%**

The compliance levels were assessed according to the criteria displayed in **Table 14** and the results of the compliance audits conducted by the Department.

Table 14: WMFs Compliance Status Indicators

COMPLIANCE RATING CRITERIA	STATUS INDICATOR		REQUIRED ACTION	NO.	%
84.5 ≤ X ≤ 100%	**Compliant**	X	Minor Improvements	9	11%
64.5% ≤ X < 84.5%	**Partially Compliant**	X	Improvements	21	14%
X < 64.5%	**Non-Compliant**	X	Major Improvements	42	74%
Total No. of audits				**72**	**100%**

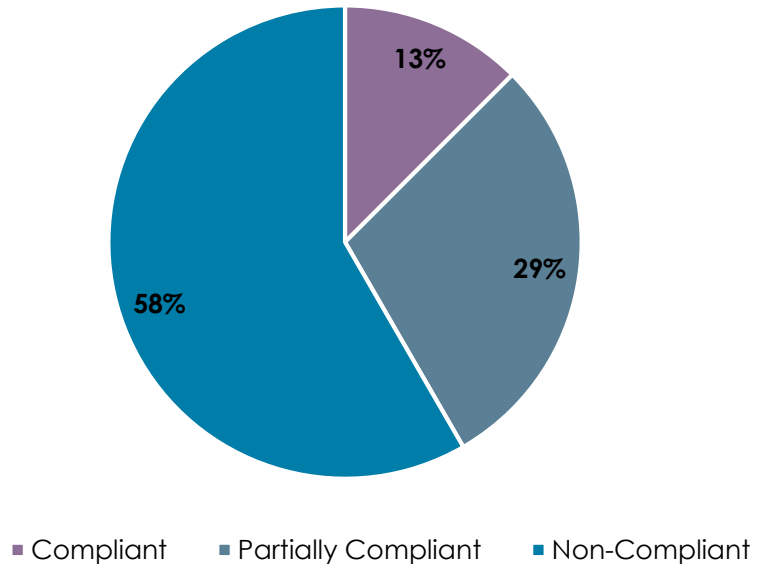

Figure 16: Compliance Status of Waste Management Facilities Audited

Figure 16 and **Figure 17** illustrates that 58% of WMFs audited had a non-compliant status, 29% partially compliant and 13% had a compliant status. The data indicates that the lowest percentage of non-compliant WMFs audited and the highest percentage of partially compliant WMFs were recorded in 2020. The shift in compliance may be due to municipalities improving their compliance levels, the new weighted compliance methodology implemented, and the awareness created by the Department about the environmental compliance.

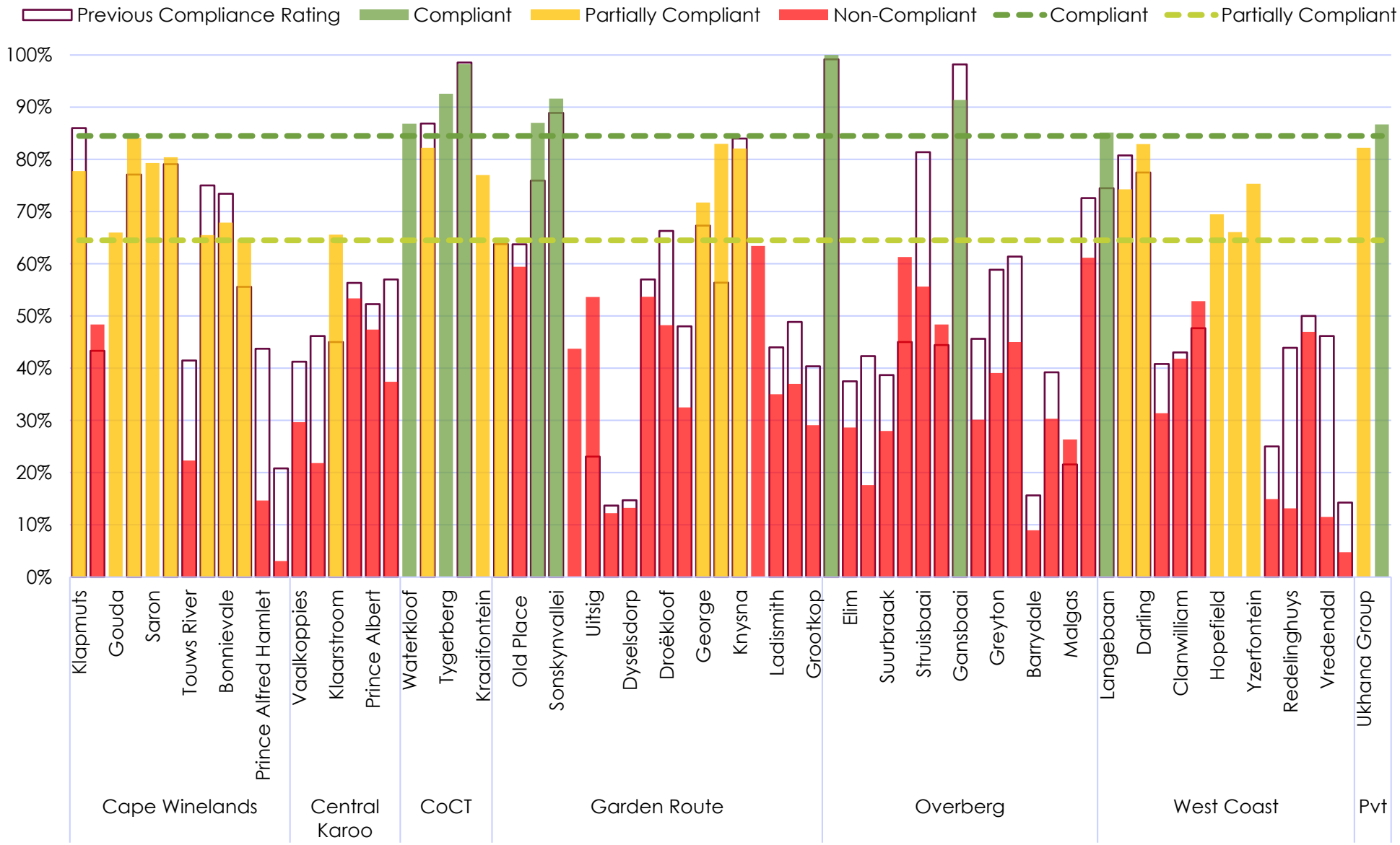

Figure 17: WMFs audited for 2020

Table 15: Average compliance levels per District - 2020

DISTRICT MUNICIPALITY	AUDITS	%	AVERAGE COMPLIANCE
Cape Winelands	12	16.67%	56.17%
City of Cape Town	5	6.94%	87.38%
Central Karoo	6	8.33%	42.54%
Garden Route	18	25.00%	53.42%
Overberg	12	16.67%	43.82%
West Coast	14	19.44%	47.90%
Private	2	2.78%	84.47%
District Municipal Facility	3	4.17%	48.77%
Average Compliance Level	**72**	**100.00%**	**53.33%**

Of the audits that were undertaken, the average compliance levels per district were provided in the table below. Most of the district municipalities had averages that fell into the non-compliant range of up to 65%. In **Table 15**, the City of Cape Town achieved an average that fell into the compliant range of above 85%. The types of WMFs audited also have some effect on the compliance level results as most often. WDFs have the most negative environmental impacts and were also the most frequently audited type of WMF. The table below provided the types of WMFs audited by the Department in 2020.

Table 16: Waste Management Facility types audited - 2020

FACILITY TYPES AUDITED	NO.	%	AVERAGE COMPLIANCE
Waste Disposal Facilities	57	79.17%	46.55%
Drop-off Facilities	3	4.17%	71.60%
Recycling Facilities	2	2.78%	64.08%
Waste/Refuse Transfer Stations	5	6.94%	84.31%
Materials Recovery Facilities	5	6.94%	84.30%
Anaerobic Digestion Facilities	0	0.00%	-
Compost Facilities	0	0.00%	-
Total	**72**	**100.00%**	**-**

Table 16 represent the types of WMFs audited and indicates the type of facility relative to the compliance level results, as most often, WDFs have the most negative environmental impacts and were also the most frequently audited type of WMF. The table below provided the types of WMFs audited by the Department in 2020.

RTSs and MRFs are temporary sorting and storage facilities where waste is not disposed of on a permanent basis and these facilities, therefore, have higher audit compliance rate averages due to the smaller operations and limited conditions for compliance.

WDFs have more operational challenges and the authorizations are more detailed and require more conditions such as special operating and water monitoring conditions to comply with. Access control at these larger facilities is also a challenge, therefore management of MRF's and RTS facilities are less complicated to manage and its possible for more of these facilities to fall into the higher compliance ranges. Compliance at RTS, MRF and WDFs have operational challenges due to:

- Previously legislative framework had less consequences for the disposal of waste, where historically, the costs associated with waste management was not expensive and the current impacts associated with new legislation have huge financial implications for facility owners;
- The promulgation of the NEMWA has impacted largely on funding and resources dedicated to the implementation and delegated functions associated with waste management. WDFs have not been upgraded to comply with the current legislative requirements as the changes in the legislative requirements would result in municipalities spending significant resources on the CAPEX and OPEX;
- RTSs and MRFs that only process specific waste stream and not the residual waste which can't be recycled or reused, still must be disposed at a WDF. Most municipalities need to dispose of waste as the recycling and reuse markets are not sustainable and the services of waste revolve around WDFs more than RTSs and MRFs.

5.5 CAPACITY BUILDING AND AWARENESS CAMPAIGNS

5.5.1 Women in Waste

The role of women in the waste value chain has been highlighted through awareness campaigns such as the Women in Waste seminars the DEA&DP has held in 2019 and 2020, respectively. These types of campaigns acknowledge the leadership roles played by women in product responsibility organisations (PRO's), waste research, Waste Management Officers (WMO's) women entrepreneurs, and informal waste collectors and contributes to empowering women whose level of participation and role varies throughout the Province.

The 2020 seminar opening keynote address by Acting Deputy Director General, Mamogale Musekene at the DFFE stated that ***"We need to ensure that the empowerment of women is clearly articulated in our policies. Analyses shows that the bulk of burden of unemployment is carried by women."*** The focus on gender analysis as per the quarterly labour force survey derived from Statistics SA (Stats SA) revealed that the provincial WMOs designated as per the Waste Act, shows 5/9 WMOs are women, which exceeds 50%. However, the general labour force of the country reflects 30.1%, which is the official unemployment rate. The 2013 report conducted by the Department of Science and Technology (DST) in terms of the work force in the waste sector, reflects in the private sector, 37.8% are women and the municipal sector, 32.1% represent women.

The following are actions that can be taken forward in the Province:

- The Western Cape Government's (WCG) role in the compilation of gender-based information in the value chain;
- Implementing gender mainstreaming in all waste related environmental programmes;
- Working with industry to ensure gender mainstreaming and the empowerment of women is incorporated into entrepreneur support programmes;
- Communicating effectively to allow for networking opportunities among fraternities;
- Utilizing current platforms to create awareness and implement gender mainstreaming measures to address gender discrimination and abuse.

5.5.2 2Wise2Waste Programme

The waste collection and recovery in WCG buildings has decreased for the period April to August 2020 with no figures recorded for the month of April. The drop in disposal and recycling figures was attributed to the COVID-19 lockdown restrictions implemented at the end of March 2020 and resulted in WCG officials to work remotely from home resulting in buildings left unoccupied.

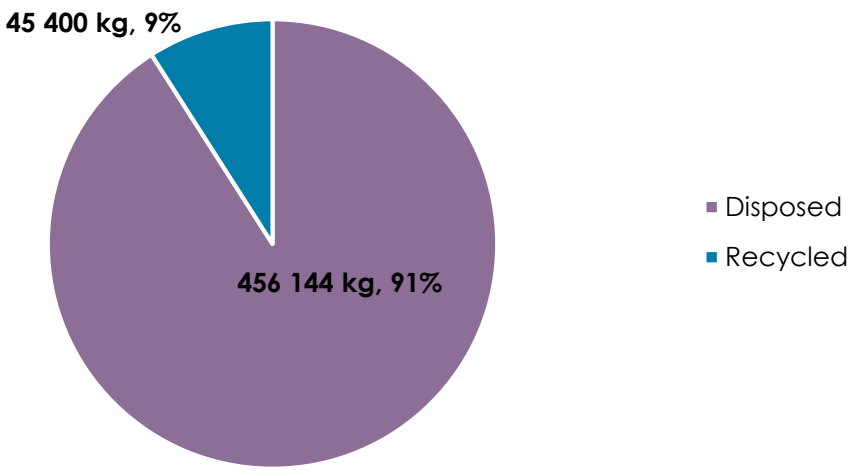

Figure 18: Disposal and Recycling in WCG buildings - 2020

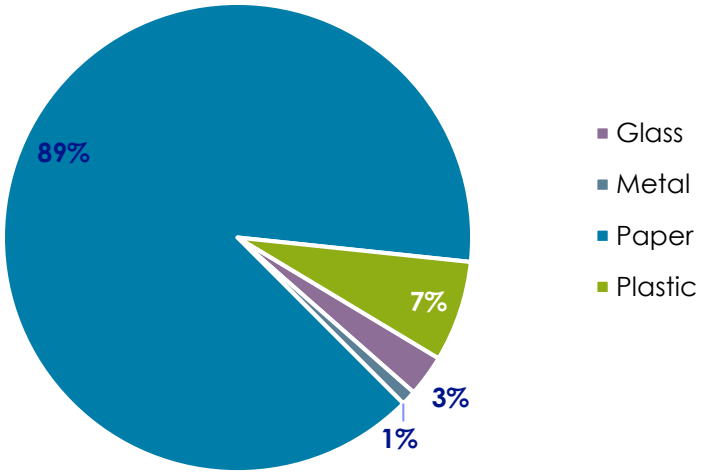

Figure 19: Breakdown of recovered materials in WCG buildings - 2020

In **Figure 18**, an estimated 456 144 kg's of waste has been disposed and 45 400 kg's of waste recycled for the period January to December 2020. Compared to the 2019 figures, an estimated 71 191 kg's waste was recovered for recycling, while 581 365 kg's was disposed. **Figure 19** represents the categories of waste for recycling, the majority of which is paper totalling 89%.

5.5.3 Health Care Waste Inspectors

The execution of the Western Cape Health Care Waste Management Act (HCWMA) is to manage health care risk waste in the province. With the onset of the COVID-19 pandemic, numerous inspections were conducted by health care waste inspectors and the Department of Health. These inspections took place at medical facilities such as hospitals, clinics, Quarantine and Isolation (Q&I) centres and waste treatment facilities, etc. In some cases, municipal designated health care waste inspectors formed part of the inspection teams with the DEA&DP staff. The Department developed the policy to appoint "inspectors" to adequately manage and perform inspections, relevant to the inherent risks linked to health care waste. The appointment of new health care waste inspectors was limited in 2020.

5.5.4 Separation at Source (S@S)

Many municipalities have implemented several initiatives to minimise waste as seen in **Figure 20.** Currently 94% of municipalities have at this stage implemented either pilots or extended roll outs of the split bag separation at source recycling initiatives. In some cases, municipalities implemented a host of initiatives to divert waste, but it has not translated to effective waste diversion percentages during the review period. The following factors played a role in poor diversion figures:

- Poor recording and reporting on waste diversion by the municipality;

- The closure of recycling facilities and resultant poor markets during the heavy lockdown periods of the pandemic;
- Low participation rates caused by ineffective awareness and educations strategies targeted towards households;
- Many recycling enterprises could not absorb the lack of income during the pandemic and subsequently permanently seized their operations. This in many cases had a knock-on effect to their supply chain as well.

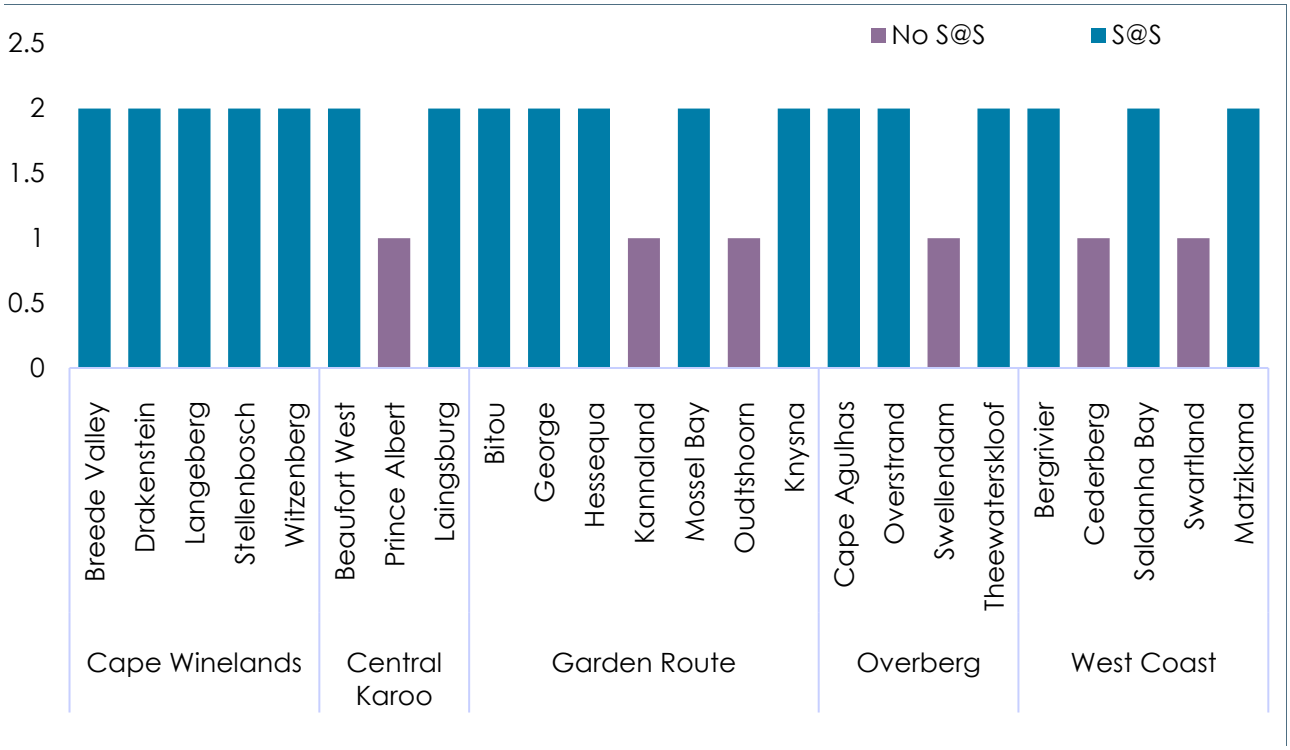

Figure 20: Municipal Separation @ Source Initiatives – 2020

Across the various Districts, it is noted that Cape Winelands and Garden Route District municipalities are implementing the most waste minimisation initiatives and in **Table 9** (**Page 40)** , there is an increase in waste diversion since 2019 and with the COVID-19 pandemic, by the Overberg and Garden Route District municipalities.

5.5.4.1 Plastics

South Africa has a well-established plastic collection and recycling industry. Its input recycling rate of 42% is one of the best performing input recycling rates in the world. Furthermore, which is crucially relevant, most of South Africa's plastic recycling activities take place within South African borders, with only 2% of plastic recycling conducted outside the country. The Western Cape generated between 138 278 and 162 138 tonnes of plastics in 2019 (GreenCape, 2020).

Significant strides have been made by government to address the plastic bag problem by amending the plastic bag regulations. WCG focused its energy on researching strategies to create more awareness on plastic waste to compliment efforts by government and the private sector to reduce the impacts of plastics on the environment.

South Africa's ~1.88 million tonne a year polymer market is dominated by 81% of virgin material with 18% consisting of recyclate. This indicates a high dependency on virgin polymers. The final focus of the major plastic recyclers is to manufacture virgin replacement. As such there is an opportunity for technology providers to assist the major plastic recyclers with quality increase and assurance solutions to increase the marketability of their recyclate. It is expected that the end-market demand will be further driven by the launch of South Africa's local Plastics Pact and the potential implementation of Paper and Packaging EPR, which incentivises the use of recyclate and disincentives the use of virgin materials. China's Green Sword Programme resulted in the banning of certain waste imports into China. Although this may have direct negative impacts on the paper and cardboard market for South Africa, the plastic industry has been less hard hit. This is because 94% of plastic recycling is done locally. There has been an increase in the number of recyclers, where the province experienced an increase from 25 to 33 recyclers during 2020 (GreenCape, 2020).

The Department conducted a short survey on plastic bag usage was sent to staff and the results highlighted that bags are often forgotten at home and therefore the purchase of a bag is compulsory to transport groceries. Reusable bags are procured and reused many times and when not reused for grocery shopping, it was used as a waste bin and therefore find it necessary to buy new plastic bags. Data was gathered on bags offered by retailers by visiting approximately 200 shops in a local mall. Most were found to only offered plastics bags, although there were a few that offered alternatives (e.g. paper, material, etc.) as well. Majority of the stores offered plastic bags freely, which may need to be addressed in order to curb unnecessary use. Only a handful had awareness messaging and practices that encouraged consumers to make use of reusable bags. Based on the findings, a way forward is required to address the need for greater awareness on the issue of plastic pollution amongst consumers and need for maximising the value of plastic bags utilised. The Department has also embarked on a project to address the poor management of waste in informal settlements as a further intervention to deal with the mismanagement of plastics in the environment. A codesign methodology and informal settlement waste planning tool have been developed to assist municipalities implement effective waste management services in informal areas.

5.5.5 Integrated Waste Management Workshops

The Department hosted two webinars with waste management officers using Microsoft Teams, i.e. Regional Cooperation in Waste Management and Extended Producer Responsibility. The aim of the webinars was to build and strengthen integrated waste management capacity among

municipal WMOs and other municipal officials. The discussion points on the two webinar topics are as follows:

- Regional cooperation in waste management
    - Transportation is the biggest cost-driver;
    - Different governance mechanisms and platforms are used, e.g. regional WMO forums;
    - Service-level agreements and municipal by-laws, MOAs and district coordinating forums.
- Extended Producer Responsibility
    - Multiple contractual agreements with local governments can be difficult;
    - COVID – 19 has influenced recovery and recycling rates e.g. glass;
    - Funding is critical for Producer responsibility organisation (PROs) and producers and could result in switching to different materials because of EPR fees.

5.6 DEPARTMENTAL SUPPORT TO MUNICIPALITIES AND INDUSTRY

5.6.1 Waste Collection and Transport Status Quo

The purpose of the study was to obtain an improved understanding of waste collection and transport practices being undertaken by municipalities and to identify areas where efficiency and effectiveness could be improved. A key benefit of an efficient waste collection system is the potential for cost savings.

An efficient waste collection and transportation system also means that vehicles are used optimally leading to reduced air emissions, noise pollution and heavy loading of vehicles on roads. It was found that although most municipalities across the province offer a good level of service, operational efficiency could be improved, thereby reducing time and costs. In **Figure 21**, a notable issue is that some municipalities are operating with aged vehicles. Breakdowns along with lengthy turnaround times for repairs are also often a challenge. In terms of vehicle routing and scheduling, this is often done using practical experience rather than using mathematical modelling or route planning software, which may lead to inefficiencies.

Recommendations provided included considering leasing of vehicles if there is no budget to replace old vehicles and developing vehicle maintenance and replacement plans to ensure proactive planning for vehicle maintenance and replacement. Municipalities should also investigate the possibility of doing in-house repairs, which could assist in reducing long turnaround times for vehicle maintenance and repairs. Efficiency studies such as route optimisation studies may be used to determine the most cost-effective route a vehicle can use to deliver an efficient service. Good record-keeping and ensuring that collection vehicles are fitted with GPS tracking devices is useful in providing data for optimisation studies. Municipalities should also evaluate

training requirements of waste collection staff that could assist in improving efficiency e.g. driver behaviour training to reduce fuel costs and breakdowns.

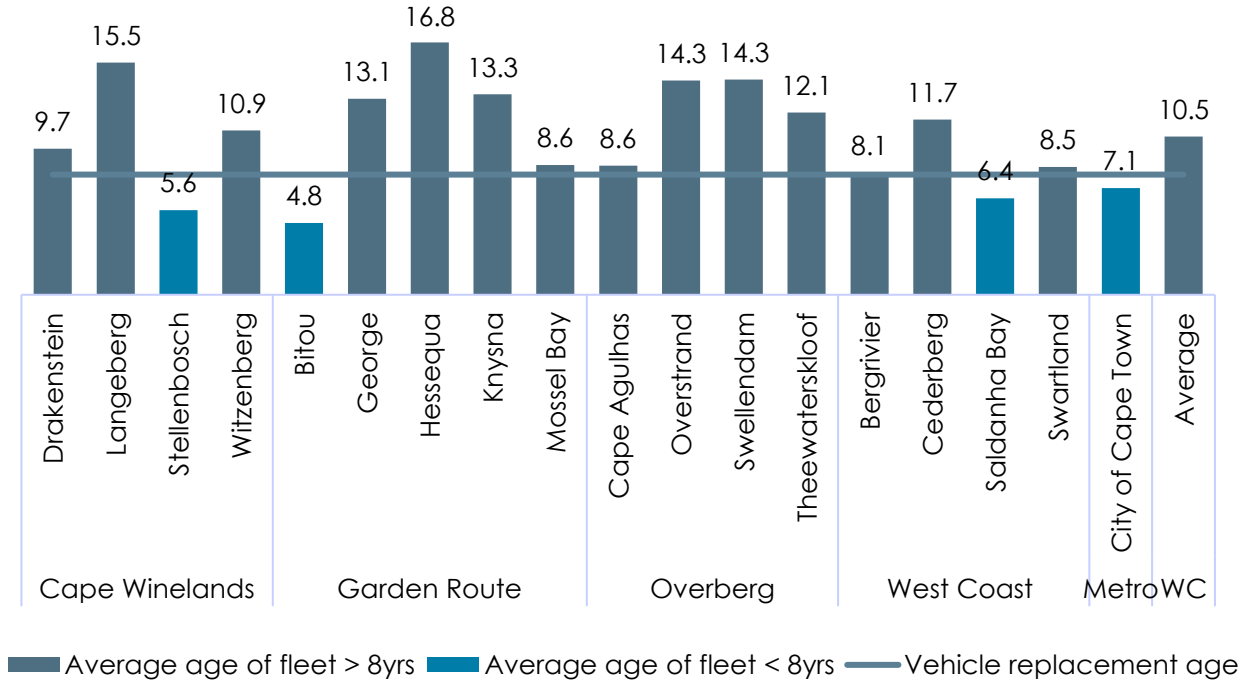

Figure 21: Average age of waste collection fleet (years)

5.6.2 Sewage Sludge Status Quo

As proposed in the WC IWMP (2017-2022) and in support of the Provincial Organic Waste Strategy (2020), the Department formulated a Sewage Sludge Status Quo for the Province. The project is aligned to Goal 2 of the WC IWMP i.e. Improved integrated waste management planning and implementation for efficient waste services and infrastructure and aims to give effect to Goal 3, Objective 1 of the WC IWMP 2017 - 2022, which aims to "Minimise the consumption of natural resources". Specific outcomes of the project were to gain an understanding of how sewage sludge is managed in the Province; look at current applications like disposal and beneficiation, and lastly to determine the challenges and opportunities with respect to this waste stream. Municipalities were requested to complete a questionnaire and provide feedback on how their sewage sludge is managed. To ensure responses were gained from the Municipalities, the questionnaire was sent via the Director and Provincial WMO's office to Municipal Managers. Eighty percent (80%) of municipalities provided responses to the questionnaire. Analysis of the feedback gained indicated that there are various infrastructural and operational challenges that municipalities, as owners of the WWTWs, face. Many of which can have a direct or indirect impact on how sewage sludge is currently managed.

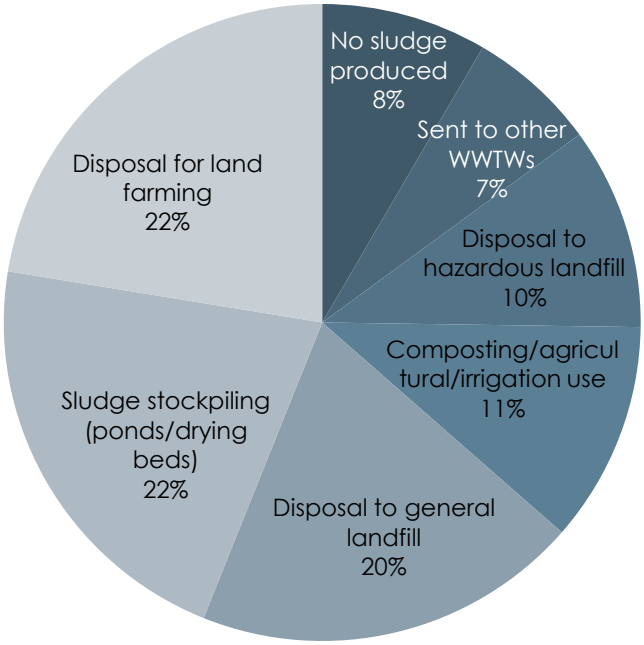

Figure 22: Sewage sludge Management options at WWTWs in the Western Cape

Figure 22 shows a breakdown of how Wastewater Treatment Works (WWTWs) dispose of their sewage sludge by land farming (22%) or to general (20%) or hazardous landfills (10%). Twenty-two percent (22%) of WWTWs currently stockpile sewage sludge while eleven percent (11%) using their sewage sludge for composting/agricultural/irrigation use. Municipalities are encouraged to get their treated sewage sludge tested and compare microbiological parameters (faecal coliforms, helminth ova), physical and stability parameters (pH, TS, VS, VFA) as well as chemical characteristics (nutrients, metals, organic pollutants). These parameters determine sludge utilisation based on the microbiological content, stability as well as organic and inorganic pollutants.

There are municipalities that have been successful in implementing localised solutions and these will be highlighted and shared to stimulate some thought and more importantly, action into better usage of this resource. There is a need to stimulate business interest in sewage sludge as landfill airspace is declining across the Province and more beneficiation options need to be considered and implemented where possible.

5.6.3 Waste Avoidance, Recycling and Recovery

The NWMS provides targets of 40% of waste diverted from landfill within 5 years; 55% within 10 years; and at least 70% within 15 years leading to Zero-Waste going to landfill (DFFE, 2020). Key focus areas consist of food loss and waste and diverting organic waste from landfill through composting and the recovery of energy to reach national targets. National interventions therefore look at preventing food waste by developing and implementing strategies, improve consumer awareness

and developing guidelines, norms and standards and implementing organic waste technologies in local government IWMPs.

5.6.4 Green Economy Project

The WCG recognises the valuable contribution the waste sector makes towards the growth of the Green Economy in the Western Cape. It also recognises that SMMEs play a significant role in diverting waste from landfill sites for reuse, recycling and beneficiation, and has the potential to grow even further should a nurturing environment exist for these enterprises to flourish. This approach is supported by various academic studies that argue that government should encourage and support the development of markets for recyclable materials inclusive of providing financial and infrastructural support to recycling companies. While small and micro enterprises are key drivers of economic growth and job creation in South Africa, their prioritization together with the need to develop local economies are often not reflected in the allocation of municipal related contracts.

The Department supported 35 small and micro waste entrepreneurs for a period of 3 years by providing entrepreneurial skills training and support which included business diagnostics and mentorship, business plan development and marketing support and compliance promotion. While mentorship and industry support are ongoing, it was evident that access to quality recyclables through municipal waste management systems was not common practice in the Western Cape. Subsequently the Department is in the process of developing a waste services procurement guide for municipalities to encourage them to integrate these small and micro waste entrepreneurs into municipal waste service delivery models. The mentorship and support are ongoing and annual waste enterprise support initiatives are planned through the WCRAG.

5.7 COST OF WASTE MANAGEMENT SERVICES

The Directorate: Waste Management forms part of the Chief Directorate: Environmental Quality and one of the focus areas is to develop and implement waste management plans, give effect to 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.

Together with the cost for projects, total cost of Waste Management to the Provincial Government **is R20 574 397.72, an approximate 4% decrease** from 2019. See **Table 17** for a breakdown of costs.

Table 17: Cost of Provincial Waste Management Services - 2020

TYPE OF EXPENDITURE	AMOUNTS (R')
Compensation of employees	R 19 327 255.67
Goods and services	R 990 954.05
Payments for Financial Assets	R1 273.39
Machinery and equipment	R 256 188.00
GRAND TOTAL	**R 20 574 397.72**

Photo by DEA&DP, Devon Valley waste Management Facility

6. DISCUSSION AND CONCLUSION

Population growth and migration into the Western Cape is a driver that influences the amount of waste that is generated and the demand for waste and sanitation services. It is estimated that 88% of projected population growth will be in the Greater Cape Metropolitan Region. Between 2018 and 2020, the total amount of waste generated within the Western Cape averaged 3 million tonnes. Waste diversion will be driven to reduce waste going to landfill and be made available for reuse, recycling, repurposing and beneficiation. The availability of waste as a secondary resource will promote the waste economy and create jobs.

Waste service levels vary between municipalities and there has been some improvement compared to the previous years and despite a high population growth and rapid urbanization. However, the increasing cost of providing waste management services, shortages in the air space available for WDFs and the increasing amount of waste being generated are all concerns that need to be addressed by the province and municipalities.

The province has a shortage of landfill airspace and securing available land for new WMFs is difficult, as there is increasing competition for land. Other challenges include the prohibitive cost containment barriers for WMFs, as prescribed by the National Norms and Standards for Disposal of Waste to Landfill (2013). Integrated waste management infrastructure is not recognised as bulk infrastructure and, therefore, limited funds have been allocated for new developments, resulting in service delivery backlogs and limited landfill airspace. In addition, very little Municipal Infrastructure Grant (MIG) funding is allocated for integrated waste management infrastructure.

Integrated waste management is only effective if it's viewed as in integrated activity and involves the planning and development of Integrated Waste Management Plans, thereby implementing the waste hierarchy. The review and effective monitoring of municipal IWMPs to ensure implementation must be done in alignment with the actions and targets as outlined in the WC IWMP. The WC IWMP (2017 -2022) guides waste management in the province and the Department will review the plan in 2021 and municipalities are encouraged to partake in the process.

Regional cooperation initiatives are considered as potential solutions to airspace shortages, as these are important for municipalities to work towards sharing infrastructure and waste services, which reduces individual responsibility to comply with waste management licences. Therefore, regional WDFs have been planned, licenced and are in various stages of being established, due to financial resources and models.

The province has made progress in moving up the waste management hierarchy with respect to general waste and can be attributed to the recent changes in waste legislation, policies and plans; more waste facilities looking at waste beneficiation and the value of waste as a resource; awareness raising campaigns and conscious consumerism, as well as the active and growing informal sector. The reduction of the environmental impacts of waste managed through diversion

and the utilisation of waste as secondary resource will ensure a cleaner and healthier environment for communities and will stimulate the waste economy and create jobs. The interaction with municipalities in the Western Cape is crucial for the success of the interventions, which include technical assistance and active municipal support. Waste diversion will reduce waste going to landfill, and waste can be made available for reuse, recycling and beneficiation, which can reduce the impact of waste management on the environment. However, there is still a long way to go to improve compliance at municipal waste management facilities, to divert more waste streams, to improve waste collection services, and to increase enforcement in order to protect human health and the environment.

7. OFFICIAL SIGN OFF

I, Director: Waste Management, hereby approve the State of Waste Management report for 2020.

Saliem Haider

Digitally signed by Saliem Haider
Date: 2022.03.24 16:31:05 +02'00'

Director: Waste Management

Photo by Erik Mclean on Unsplash, Published on April 5, 2020

8. APPENDICES

8.1 WESTERN CAPE WASTE REMOVAL TARIFFS – 2020

Please see the Municipal waste removal tariffs in the Western Cape for 2020.

Table 18: CoCT refuse removal tariffs - 2020

MUNICIPALITIES	PLACE	VOLUME	FREQUENCY/WEEK	TARIFF 2018/2019	TARIFF 2019/2020	TARIFF 2020/2021
CoCT	Property owner with property valued from R1 up to and including R100 000 (100% rebate)	240L bin	1	145.26	152.2	157.8
	Property value between R100 001 up to and including R150 000 (75% rebate)			108.84	114.3	
	Property value between R150 001 up to and including R350 000 (50% rebate)			72		
	*Property value between R300 001 up to and including R350 000 (50% rebate)				76.2	78.9
	Property value between R350 001 up to and including R400 000 (25% rebate)			36		
	*Property value between R350 001 up to and including R500 000 (25% rebate				38.2	39.5
	Hostels, Flats, Retirement villages - excluding Single Residential		3		457.3	473.33
	Residential and non-residential	85L bin	1	Free	Free	Free

Note: * indicates wording changes in the tariff table.

Table 19: Cape Winelands DM refuse removal tariffs - 2020

MUNICIPALITIES	PLACE	VOLUME	FREQUENCY/WEEK	TARIFF 2018/2019	TARIFF 2019/2020	TARIFF 2020/2021
DRAKENSTEIN		240L bin	1	2825.37	3240	3492.72
			2	7558.58	7560	8149.68
			3	12883.31	11760	12677.28
			5		21720	234145.16
		770L bin	1	9512.89	10540.8	11362.98
			2			
			3			
WITZENBERG	Res. Prop. ≤ 100 000	2 refuse bags or less		179.9	181.42	192.3
	Res. prop > 100 000 ≤ 150 000			193.7	195.37	207.09
	Res. prop > 150 000 ≤ 200 000			207.5	209.33	221.89
	Res. Prop > 200 000 ≤ 500 000			221.4	223.33	236.68
	Res. prop > 500 000 ≤ 800 000			240.8	242.83	257.39
	Res. prop > 800 000 ≤ 1 000 000			249	251.19	266.26
	Res. prop > 1 000 000			276.7	279.1	295.85
	Other properties	240L bin	1	349.11	348.88	369.81
			2	698.21	697.76	739.62
			3	1047.32	4046.63	1109.43
		770L bin	1	837.86	837.86	887.55
			2	1675.71	1674.61	1775.09
			3	2513.57	2511.92	2662.64
STELLENBOSCH	Indigent household (250 m²) and max. value R200 000	3 closed bags	1	116.73	140.08	205.11
	Basic residential collection	3 closed bags or 240L bin	1	151.13	181.35	205.11
	Hostels, flats, old age/retirement villages	Blue lid 240L bin	3	536.23	590.34	727.78
	Business and commercial	3 standard refuse bags or 240L bin	1	178.74	214.49	242.59
		3 standard refuse bags or 240L bin		536.23	643.47	727.78
		240L bin		893.69	214.49	242.59
	Restaurant (food waste only)		5	439.6	527.52	596.63
BREEDE VALLEY	household/Flat	240L bin or 3 Black bags	1	190	202	214
	Hostels			157	166.75	176.83

MUNICIPALITIES	PLACE	VOLUME	FREQUENCY/WEEK	TARIFF 2018/2019	TARIFF 2019/2020	TARIFF 2020/2021
	Residential homes used for home industries/businesses or career practices			241	255.92	271.33
	Commercial		1	3480	3690	3912
			2	6960	7380	7823
			3	10440	11070	11735
			4	13920	14760	15646
			5	17400	18450	19557
			6		457.5 (Sat)	485 (Sat)
			7		610 (Sun)	647 (Sun)
	Sport clubs, educational (crèche's, schools and colleges), institutions and old age homes, churches		1	1280	1365	1450
			2	2560	2715	2880
			3	3840	4080	4325
			4	5120	5430	5760
			5	6400	6792	7200
			6		2022 (Sat)	2150 (Sat)
			7		2700 (Sun)	
	Municipal (departmental)			2295	2433	2580
LANGEBERG	**General**: informal housing and indigent tariff		1, 2 or 3	137.38	153.87	160.79
	General: bulk removal and perishable products			1087.61	1218.12	1272.94
	Mega industries: Langeberg & Ashton foods			19810.3	22187.54	23185.98
	Langeberg & Ashton foods			15565.25	17433.09	18217.58
	Fruits packers			2041.64	2286.63	2389.53
	Parmalat			5065.65	7598.48	7940.41
	All wine cellars			1908.07	2137.03	2233.2
	Small cheese factories			1908.07	2137.03	2233.2
	Moreson			1373.82	1538.68	1607.92
	Sport ground			124.03	153.87	160.79
	Rejected material: Robertson Abattoir					
	Robertson Abattoir (manure)					
	Excull					
	Bonnievale abattoir					
	Delgado fishery					

MUNICIPALITIES	PLACE	VOLUME	FREQUENCY/WEEK	TARIFF 2018/2019	TARIFF 2019/2020	TARIFF 2020/2021
	Parmalat					
	Municipal departments		1	137.38	153.87	160.79
			2 or 3	553.36	461.61	482.38

Table 20: Central Karoo DM refuse removal tariffs - 2020

MUNICIPALITIES	PLACE/TYPE OF WASTE	VOLUME	FREQUENCY/WEEK	TARIFF 2018/2019	TARIFF 2019/2020	TARIFF 2020/2021
LAINGSBURG	Household			96	120	138
	Businesses and offices			449	565	649
	Garden refuse			158.4	200	230
	Compost bins				200	230
		Garbage bags		2.7	3.3	3.8
PRINCE ALBERT	Household				186.33	
	Businesses				84.62	
	Guesthouses				103.6	
BEAUFORT WEST	Businesses				800 per year	872 per year
	Household				760.60 per year	829.05 per year

Table 21: Garden Route DM refuse removal tariffs -2020

MUNICIPALITIES	PLACE	VOLUME	FREQUENCY/WEEK	TARIFF 2018/2019	TARIFF 2019/2020	TARIFF 2020/2021
MOSSEL BAY	Households, crèches, churches	1 bag	1	**190.31**	218.54	229.54
	Old age home, hospitals, clinics and schools				109.42	114.77
GEORGE	Hotels, hospitals	2*240L bin	3	1198.85	1306.75	1454.32
	Guest houses	7 black refuse bags or 240L bin	1	311.95	340.03	378.43
	Caravan parks	240L bin	1 a week/site	15.43	16.82	18.72
	Industries	2*240L bin	1	623.9	680.06	756.86
	Schools / school hostels	2*240L bin	3	1198.85	1306.75	1454.32
		Bulk (1700 litre)	3	2892.97	3153.34	3509.43
	Churches and church halls	7 black refuse bags or 240L bin		311.95	340.03	378.43
	Holiday chalets	240L bin	1 a week/chalet	63.6	69.32	77.15

MUNICIPALITIES	PLACE	VOLUME	FREQUENCY/WEEK	TARIFF 2018/2019	TARIFF 2019/2020	TARIFF 2020/2021
	Uniondale / Haarlem: Res.	7 black refuse bags	1	55.55	60.55	67.39
	Uniondale / Haarlem: Bus.	Refuse bags	2	119.03	129.74	144.39
	To all vacant Erven			165.69	180.6	201
	Botanical Garden	240L bin	1	311.95	340.03	378.43
	Residences, flats	7 black refuse bags or 240L bin	1	190.56	207.71	231.16
BITOU	Domestic/ churches/crèches	110L bin	1	2865	3027	3198
			2	5728	6052	6394
	Domestic	240L bin	1			
			2			
	Group housing			2731	2885	3048
	Business/ commercial	110L bin	1	3960	4184	4420
			2	7811	8252	8718
			3	11717	12379	13078
			Daily removal	19528	20631	21797
		240L bin	1			
			2			
			3			
			Daily removal			
	PDI Areas	110L bin	1		1954	2064
		240L bin	1			
	Garden refuse	Up to half load		482	509	538
		Full Load		969	1024	1082
		Plastic Bag		228	241	255
		Up to half Load - Sub-economic		2865		
KNYSNA	Accommodation	170L bin	1	1 880	2189.06	2451.75
	Commercial			10 553		
	Light Industry			1 259		
	Government: general			1 095		
	Government: schools			931		
	Private: Domestic			509		
	School/education			807		
	Sport Organisation			961		
	Church			11	100%	100%
	Domestic residential			1 123	1238.89	1988%
	Old age homes			2 238		

MUNICIPALITIES	PLACE	VOLUME	FREQUENCY/WEEK	TARIFF 2018/2019	TARIFF 2019/2020	TARIFF 2020/2021
	Business and other properties	1 wheelie bin per premises		2 105	2189.06	2451.75
		2-3 wheelie bin per premises		12 595	13102.36	14674.65
		4-5 wheelie bin per premises		25 191	26207.19	29352.05
		6-7 wheelie bin per premises		37 786	39309.55	44026.7
		8-9 wheelie bin per premises		50 382	52414.38	58704.1
		10-11 wheelie bin per premises		62,977	65517.97	73380.13
		12-13 wheelie bin per premises		75 574	78621.57	88056.16
		14-15 wheelie bin per premises		88 170	91727.62	102734.94
		16-18 wheelie bin per premises		113 361	117933.58	132085.61
		19- 20 wheelie bin per premises		125 956	131037.18	146761.64
		21-28 wheelie bin per premises		176 339	183451.55	205465.74
		29-30 wheelie bin per premises		188 935	196555.15	220141.77
		31-47 wheelie bin per premises		191 036	198740.52	222589.38
		48-49 wheelie bin per premises		312 810	325426.64	364477.84
KANNALAND	Residential	4 Black bags	1	190.74	219.32	236.86
	Small Businesses	7 Black bags		236.16	271.59	293.32
	Hotels B&B's and self-Catering			238.39	274.15	296.08
	Old Age Homes and Frail Care centres			190.71	219.32	236.87
	Residential and Small Business		1/fortnight	99.56	114.5	123.66
HESSEQUA	Garden Refuse				376	433
	Black Bags				29	34
	Garbage can				400	460

MUNICIPALITIES	PLACE	VOLUME	FREQUENCY/WEEK	TARIFF 2018/2019	TARIFF 2019/2020	TARIFF 2020/2021
OUDTSHOORN	Residential				1769	1866.74
	Business per 85dm³				2412.63	2545.33
	Garden refuse by owner					
	Garden refuse by Contractor				70	75
	Building Rubble removed by owner					
	Building Rubble removed by Contractor				70	75
	Building Rubble removed by Municipality				690	730
	Removal and Cleaning of refuse after function				2750	2910

Table 22: Overberg DM refuse removal tariffs - 2020

MUNICIPALITIES	PLACE	VOLUME	FREQUENCY/WEEK	TARIFF 2018/2019	TARIFF 2019/2020	TARIFF 2020/2021
OVERSTRAND	Household		1	164.34	174.2	
THEEWATERSKLOOF	Domestic refuse and sport clubs	3 standard refuse bags/ wheel bin	1		206.4	220.9
	Catering premises	standard container	3		807.3	863.9
	Non- catering premises and hospitals	standard container	2		553.3	592.1
		Bulky refuse except industries	1		2223.5	2379.2
			2		4446.9	4758.2
			3		6670.3	7137.3
			4		8893.7	9516.3
			5		11117.1	1895.3
			Special Removals on weekends (Sun & Sat)		2816.7	3013.9
CAPE AGULHAS	Residential			138	189.75	203.55
SWELLENDAM	Agricultural properties		Removal service per service per month	74.06		91.43
	Industries			433.76	465.75	575
	Residential			148.3	161.65	185

MUNICIPALITIES	PLACE	VOLUME	FREQUENCY/WEEK	TARIFF 2018/2019	TARIFF 2019/2020	TARIFF 2020/2021
	Deviant/consent consumers/small businesses			179	195.11	224.38
	Cafes/supermarkets/grocery/ liquor stores/hotels			306.81	334.42	984.59
	Hotels/hospitals/clinics				241	277.14
	Medium big businesses				3050.15	3507.68
	Large businesses (malls)/large industrial businesses				9323.39	10721.9

Table 23: West Coast DM refuse removal tariffs - 2020

MUNICIPALITIES	PLACE	VOLUME	FREQUENCY/WEEK	TARIFF 2018/2019	TARIFF 2019/2020	TARIFF 2020/2021
SWARTLAND	Household/business	Black bags or 240L bin/ (2*85L drum)		130.78	155	151.24
SALDANHA BAY	Single residential sites, small holdings & residential accommodation businesses	240L bin	1	193.83	204	213.18
	Business and industrial premises	240L bin	1	198	209	218.41
			2	299.13	315	329.18
			3	394.96	416	434.72
		6 m³ skip		1795.48	1889	1974
	Special and Expired food removals	240L bin		394.96	416	600
	Removal and disposal of cats			10.43	11	40
	Removal and disposal of dogs			20.87	22	47
	Removal of larger animals			156.35	165	550
	Amusement parks, circuses and similar entertainment businesses	240L bin		394.96	416	435
		6 m³ skip		1885.13	1984	2074
		240L bin		118.78	125	131

MUNICIPALITIES	PLACE	VOLUME	FREQUENCY/WEEK	TARIFF 2018/2019	TARIFF 2019/2020	TARIFF 2020/2021
	Schools, churches, and charity events	6 m³ skip		565.83	596	623
	Building rubble	6 m³ skip		1795.48	1889	1975
MATZIKAMA	Residential/small offices/hair saloon		1	159.34	169.06	182.66
	Churches/schools /residences/old age home			220	231	249.48
	home stores			500	526	568.08
	Previous DMA Management Area			71	75	81
	hospital				9038	9761.04
CEDERBERG	Basic charge: Households		1	94.22	99.87	105.87
	Businesses		1	104.98	111.28	117.96
			2	178.3	204.28	216.53
			3	271.78	311.38	330.06
			4	368.59	422.29	447.63
			> 4	468.75	537.04	569.26
	Schools			179.48	190.25	201.66
	Hospital			268.51	284.63	301.7
	School residences				284.63	301.7
	Church and halls			90.46	95.89	101.64
	Nursery schools				95.89	101.64
	Old age homes				563.16	569.95
BERGRIVIER	Household		1	214	245	260
	Businesses	2 bags	1	748	864	916
	Garden refuse	By cargo or part thereof		191	220	233
		Garbage bag per pack of 25		43	51	54
		Rubble by cargo or part thereof		395	456	483

8.2 WESTERN CAPE INTEGRATED WASTE MANAGEMENT PLAN (2017 – 2022)

GOAL 1: STRENGTHENED EDUCATION, CAPACITY AND ADVOCACY TOWARDS INTEGRATED WASTE MANAGEMENT

OBJECTIVES	OUTPUT INDICATOR	ACTIVITY	TIMEFRAMES			RESPONSIBILITY	PROJECT DESCRIPTION (1 APR 2017 - 31 MAR 2018)	PROJECTS FOR 2017/2018 (1 APR 2017 - 31 MAR 2018)			PROJECT DESCRIPTION (1 APR 2018 - 31 MAR 2019)	PROJECTS FOR 2018/2019 (1 APR 2018 - 31 MAR 2019)			PROJECT DESCRIPTION (1 APR 2019 - 31 MAR 2020)	PROJECTS FOR 2019/2020 (1 APR 2019 - 31 MAR 2020)			PROJECT DESCRIPTION (1 APR 2020 - 31 MAR 2021)	PROJECTS FOR 2020/2021 (1 APR 2020 - 31 MAR 2021)		
			2017 - 2022	2022 - 2027	2027 - 2032			TOTAL PROJECT BUDGET	PROJECT STATUS	EXPENDITURE		TOTAL PROJECT BUDGET	PROJECT PROGRESS	ACTUAL EXPENDITURE		TOTAL PROJECT BUDGET	PROJECT PROGRESS	ACTUAL EXPENDITURE		TOTAL PROJECT BUDGET	PROJECT PROGRESS	ACTUAL EXPENDITURE
OBJECTIVE 1: FACILITATE CONSUMER AND INDUSTRY RESPONSIBILITY IN INTEGRATED WASTE	ENGAGEMENTS ON INTEGRATED WASTE MANAGEMENT RESPONSIBILITY.	USE VARIOUS PLATFORMS TO PROMOTE RESPONSIBLE INTEGRATED WASTE MANAGEMENT.	X	X	X	DEA&DP/Industry/ DEA/consumers	Industry Waste Forum - 2017/09/06	R8 500	Completed	R4 950	Industry Waste Forum - "Beneficiation of waste", 19 September 2018	R9 500	Completed	R5 613	Industry Waste Forum - Alternatives to Waste Disposal	R7 800	Completed	R6 696	Industry Waste Forum - "Covid-19 Impact on Industry Waste Management	No - funds allocated to COVID-19 pandemic	Completed	No - funds allocated to COVID-19 pandemic
							IWMOF	R15 000	Completed	R13 050	IWMOF	R30 000	Completed	R21 830	IWMOF	R40 000	Completed	R29110	Virtual meeting (3)	No - funds allocated to COVID-19 pandemic	Completed	No - funds allocated to COVID-19 pandemic
							No GMC Competition held	N/A	N/A	N/A	GMC was not held this year as the decision was taken to host every second year.	N/A	N/A	N/A	GMC Competition - final year host by DEFF.	R 0 as operational costs were in effect	Completed	R13, 015.78 (S&T Accommodation, Toll fees, GG costs used from operational budget)	New Evaluation	N/A	N/A	N/A
							GMC Competition - no review performed	N/A	N/A	N/A	GMC Competition - no review performed	N/A	N/A	N/A	2) GMC Competition - no review performed	N/A	N/A	N/A	A new evaluation programme develo	No cost	Completed	No cost

GOAL 1: STRENGTHENED EDUCATION, CAPACITY AND ADVOCACY TOWARDS INTEGRATED WASTE MANAGEMENT

																	ped since GMC no longer exists.			
						Draft Waste By-law	No cost	Ongoing	No cost	Draft waste By-law	No cost	Ongoing	No cost	Model by law promoted for use by municipalities. BY Law workshop held at Waste Forum	R0	Ongoing	R6290	Model by law promoted for use by municipalities	No cost	Ongoing	No cost
	AN INDUSTRY REWARDS RECOGNITION PROGRAMME ON INTEGRATED WASTE MANAGEMENT.	ROLL OUT AN INDUSTRY REWARDS RECOGNITION PROGRAMME ON INTEGRATED WASTE MANAGEMENT.	X	X	X	DEA&DP	No projects have been initiated.	N/A	N/A	N/A	No projects have been initiated.	N/A	N/A	N/A	1) No projects have been initiated.	N/A	N/A	N/A	No projects have been initiated.	N/A	N/A	N/A
	2WISE2WASTE AWARENESS AND TRAINING ENGAGEMENTS.	IMPLEMENT INTERNAL 2WISE2WASTE AWARENESS AND TRAINING.	X	X	X	DEA&DP	Completed 5 Waste Minimisation Training sessions with cleaning contractors	R33 000	Completed	R4 500	Completed 4 Waste Minimisation Training sessions with cleaning contractors.	R26 818	Completed	R30 745	Completed 4 waste minimisation training sessions with cleaning contractors	R26 000	Completed	R26 000	Completed 4 waste minimisation training sessions with cleaning contractors	R26000	Completed	R16374
OBJECTIVE 2: PROMOTE	A WASTE EDUCATION AND AWARENESS STRATEGY.	DEVELOP A WASTE EDUCATION AND AWARENESS STRATEGY FOR THE PROVINCE.	X			DEA&DP	Departmental Waste Awareness Strategy	No cost	Completed	No cost	Municipal Waste Awareness stakeholder engagement - 6 September 2018.	R3 800	Completed	R3 800	No projects have been initiated	N/A	N/A	N/A	No projects have been initiated	N/A	N/A	N/A

GOAL 1: STRENGTHENED EDUCATION, CAPACITY AND ADVOCACY TOWARDS INTEGRATED WASTE MANAGEMENT

	COLLABORATIONS WITH EDUCATION AND TRAINING INSTITUTIONS.	MAINSTREAM INTEGRATED WASTE MANAGEMENT IN SCHOOLS AND TRAINING INSTITUTIONS.	X			DEA&DP/Western Cape Department of Education (WCED)/Basic and Higher Education Departments (National).	No request from the Western Cape Education Department to conduct WAME training. The material became DEA&DP property and was rolled out to schools. 2 WAME workshops were held in Mossel Bay and Oudtshoorn respectively.	R37000	Completed	Mossel Bay (S&T, accommodation: R10 880. George (S&T, accommodation: R5680)	No projects have been initiated	N/A	N/A	N/A	No projects have been initiated	N/A	N/A	N/A	No projects have been initiated	N/A	N/A	N/A
OBJECTIVE 3: BUILD AND STRENGTHEN WASTE	TRAINING SESSIONS CONDUCTED ON SPECIFIC WASTE MANAGEMENT ASPECTS (E.G. 5-DAY IWM WORKSHOP).	FACILITATE CAPACITY-BUILDING IN MUNICIPALITIES ON SPECIFIC WASTE MANAGEMENT ASPECTS SUCH AS: FULL-COST ACCOUNTING AND ALTERNATIVE REVENUE SOURCES/CO-FUNDING; AUDITING AND OPERATION OF WMFS; PLANNING FOR INFORMALITY; LONG-TERM FINANCIAL	X	X	X	DEA&DP/South African Local Government Association (SALGA)/DEA/tertiary institutions/Institute of waste management/industry	Waste Characterisation workshop - Mossel Bay – 26 July 2017	R6 500	Completed	R4 000	Waste Characterisation workshop - (Grabouw - 21 August 2018.	R13 498	Completed	R1 819	Conducted waste characterisation training with Prince Albert Municipality	Operational budget	Completed	R4 135	No projects have been initiated.	N/A	N/A	N/A
							Waste Characterisation workshop - Worcester - 28 February 2018	R4 500	Completed	R4 400	No projects have been initiated.	N/A	N/A	N/A	No projects have been initiated.	N/A	N/A	N/A	No projects have been initiated.	N/A	N/A	N/A

GOAL 1: STRENGTHENED EDUCATION, CAPACITY AND ADVOCACY TOWARDS INTEGRATED WASTE MANAGEMENT

		PLANNING; WASTE LICENSING PROCESS; WASTE MANAGEMENT PLANNING AND INFORMATION MANAGEMENT; MANAGEMENT OF SPECIFIC WASTE STREAMS; WASTE CHARACTERISATION; RECOVERY AND USE OF WASTE MATERIAL AS A RESOURCE;WASTE MINIMISATION; AND ENTREPRENEURIAL TRAINING ETC.					Conducted Waste Calculator training in the Garden Route DM with gate controllers.	No cost	Completed	No cost	Conducted Waste Calculator training in the West Coast, Overberg & Garden Route DM with gate controllers.	R10 644.50	Completed	R10 644.50	Conducted Waste Calculator training sessions with Cape Winelands District and Bergrivier Municipality.	R9 025.04	Completed	R9 025.04	Assistance with waste reporting was completed with Overberg District Municipality and the local municipalities Cape Agulhas, Bitou, George and Stellenbosch.	Allocated funds assigned to Covid-19	Completed	Allocated funds assigned to Covid-19
							Conduct an IPWIS Capacity building session with stakeholders	R21 090	Completed	R21 090	Conduct an IPWIS Capacity building session with stakeholders	R24 569	Completed	R24 569	Conduct an IPWIS Capacity building session with stakeholders	R17 500	Completed	R17 500	Conduct an IPWIS Capacity building session with stakeholders	R19 000 - Allocated funds assigned to Covid-19	Completed	R19 000 - Allocated funds assigned to Covid-19
							Actual training conducted Licensing process and operations at waste management	Operational Budget	Ongoing requests based	Operational Budget	No training conducted	Operational Budget	Ongoing requests based	Operational Budget	No training conducted	N/A	N/A	N/A	No training conducted	N/A	N/A	N/A

GOAL 1: STRENGTHENED EDUCATION, CAPACITY AND ADVOCACY TOWARDS INTEGRATED WASTE MANAGEMENT

							facilities. last in 2016 November																	
							No projects have been initiated.	N/A	N/A	N/A	Separation of waste at source workshop held 7 September 2018 & 28 Feb 2019 CoCT & Mossel Bay	R14 000	Completed	R10 800	No other projects initiated	N/A	N/A	N/A	No other projects initiated	N/A	N/A	N/A
							No projects have been initiated.	N/A	N/A	N/A	No projects have been initiated.	N/A	N/A	N/A	Integrated Waste Management Capacity-building workshop - Stellenbosch (17, 18 October 2021)	R13 800	Completed	R11 950	Integrated Waste Management Capacity-building workshop (webinar on EPR and regional cooperation)	No cost	Completed	No cost
		ADDRESS SKILLS DEVELOPMENT ON INTEGRATED WASTE MANAGEMENT.	X			DEA&DP/SALGA /Institute of Waste Management/Training institutions/municipalities/ industry	Conducted waste minimisation training with 26 municipal staff in Beaufort West and	R35 234	Completed	R6 130	Conducted waste minimisation training with 80 municipal staff in Swellendam	R34 000	Completed	R25 431	Arbour clean up - Beaufort West; Clanwilliam; Drakenstein; YES, group	R23000	Completed	R21000	No Waste Minimisation support done as budget was	R15 000	N/A	Budget surrendered

GOAL 1: STRENGTHENED EDUCATION, CAPACITY AND ADVOCACY TOWARDS INTEGRATED WASTE MANAGEMENT

							21 municipal staff in the Kannaland area.				Municipality, 52 informal workers in Drakenstein Municipality, 109 YES programme workers of Cape Nature and 11 informal workers from the iThemba Labantu project.				Cape Nature, George				surrendered.			
	MINIMUM APPOINTMENT CRITERIA FOR MUNICIPAL WASTE MANAGEMENT OFFICIALS.	INITIATE THE ESTABLISHMENT OF MINIMUM APPOINTMENT CRITERIA FOR MUNICIPAL WASTE MANAGEMENT OFFICIALS.			X	DEA&DP/SALGA /Institute of Waste Management/ municipalities	No projects have been initiated.	N/A	N/A	N/A	No projects have been initiated.	N/A	N/A	N/A	Development the minimum criteria for the appointment of waste managers	No cost	Completed	No cost	No projects have been initiated.	N/A	N/A	N/A

GOAL 2: IMPROVED INTEGRATED WASTE MANAGEMENT PLANNING AND IMPLEMENTATION FOR EFFICIENT WASTE SERVICES AND INFRASTRUCTURE

OBJECTIVES	OUTPUT INDICATOR	ACTIVITY	TIMEFRAMES			RESPONSIBILITY	PROJECT DESCRIPTION (1 APR 2017 - 31 MAR 2018)	PROJECTS FOR 2017/2018 (1 APR 2017 - 31 MAR 2018)			PROJECT DESCRIPTION (1 APR 2018 - 31 MAR 2019)	PROJECTS FOR 2018/2019 (1 APR 2018 - 31 MAR 2019)			PROJECT DESCRIPTION (1 APR 2019 - 31 MAR 2020)	PROJECTS FOR 2019/2020 (1 APR 2019 - 31 MAR 2020)			PROJECT DESCRIPTION (1 APR 2020 - 31 MAR 2021)	PROJECTS FOR 2020/2021 (1 APR 2020 - 31 MAR 2021)		
			2017 - 2022	2022 - 2027	2027 - 2032			TOTAL PROJECT BUDGET	PROJECT STATUS	ACTUAL EXPENDITURE		TOTAL PROJECT BUDGET	PROJECT PROGRESS	ACTUAL EXPENDITURE		TOTAL PROJECT BUDGET	PROJECT STATUS	ACTUAL EXPENDITURE		TOTAL PROJECT BUDGET	PROJECT PROGRESS	ACTUAL EXPENDITURE
OBJECTI	ASSESSED AND ENDORSED	SUPPORT MUNICIPALITIES WITH	X	X	X	DEA&DP/ municipalities	No municipalities were assisted with	N/A	N/A	N/A	Initiated discussions with Central	No cost	Completed	No cost	Provided comments on the draft	No cost	Completed	No cost	Provided comments on the following	No cost	Completed	No cost

GOAL 2: IMPROVED INTEGRATED WASTE MANAGEMENT PLANNING AND IMPLEMENTATION FOR EFFICIENT WASTE SERVICES AND INFRASTRUCTURE

	MUNICIPAL IWMPS.	REGARD TO IWMPS.					the development of their IWMPs in the 2018 calendar year.				Karoo District, Beaufort West Municipality, Prince Albert Municipality and Laingsburg Municipality regarding the development of their 3rd generation IWMPs				Situational Analysis Reports and draft IWMPs for Garden Route District (3rd generation), Bitou(3rd generation), Oudtshoorn(3rd generation), Knysna(3rd generation), George(3rd generation), Kannaland(3rd generation), Mossel Bay(3rd generation), Hessequa(3rd generation),				Status Quo Reports: Cape Winelands District (4th generation), Langeberg (updated 3rd generation), Witzenberg (3rd generation) Provided comments on the following draft 3rd generation IWMPs: Drakenstein, Stellenbosch			

GOAL 2: IMPROVED INTEGRATED WASTE MANAGEMENT PLANNING AND IMPLEMENTATION FOR EFFICIENT WASTE SERVICES AND INFRASTRUCTURE																							
		ASSESS MUNICIPAL IWMPS.	X	X	X	DEA&DP/ municipalities	Assessed the following municipal IWMPs:	No cost	Completed	No cost	Assessed the following municipal IWMPs: Matzikama Local Municipality, Cape Winelands District Municipality; Overberg District Municipality; Theewaterskloof Local Municipality	No cost	Completed	No cost	No IWMPs were endorsed during the 2019/20 financial year	N/A	N/A	N/A	Endorsed the following municipal IWMPs: Garden Route District (3rd generation), Bitou(3rd generation), Oudtshoorn(3rd generation), Knysna(3rd generation), George(3rd generation), Kannaland(3rd generation), Mossel Bay(3rd generation), Hessequa(3rd generation), Overstrand(5th generation) and Beaufort West(3rd generation)	No cost	Completed	No cost
	REVIEWED MUNICIPAL ANNUAL REPORTS.	MONITOR THE IMPLEMENTATION OF MUNICIPAL IWMPS.	X	X	X	DEA&DP/ municipalities	Commented on the Langeberg Annual Report	No cost	Completed	No cost	Commented on the Langeberg Annual Report	No cost	Completed	No cost	Commented on the Langeberg Annual Report	No cost	Completed	No cost	Commented on the Langeberg and Overstrand Annual Reports	No cost	Completed	No cost

GOAL 2: IMPROVED INTEGRATED WASTE MANAGEMENT PLANNING AND IMPLEMENTATION FOR EFFICIENT WASTE SERVICES AND INFRASTRUCTURE

OBJECTIVE 2: PROMOTE INDUSTRY WASTE MANAGEMENT PLANNING	ENGAGEMENTS WITH INDUSTRY AND INDUSTRY BODIES REGARDING WASTE MANAGEMENT PLANNING.	ENCOURAGE INDUSTRY WASTE MANAGEMENT PLANNING IN TARGETED INDUSTRY SECTORS.	X	X	X	DEA&DP/industry	The department provided comments on DEAs industry waste management plans. The Department /Province did not request Industry to develop Industry WM Plans going further because of the changes to the NEMWA	No cost	Completed	No cost	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	ENGAGEMENTS WITH GREENCAPE AND THE NATIONAL CLEANER PRODUCTION CENTRE.	ENGAGE WITH GREENCAPE AND NATIONAL CLEANER PRODUCTION CENTRE TO MAXIMISE SUPPORT TO HAZARDOUS WASTE GENERATORS BY LOOKING AT SUITABLE ALTERNATIVES.	X	X	X	DEA&DP/ GreenCape/ National Cleaner Production Centre	Alternative Waste Treatment technologies decision making tool was initiated - developed by GreenCape.	Departmental funding (Sustainability)(Transfer)	Ongoing	Departmental funding (Sustainability) (Transfer) R497560	Funds were transferred from Directorate Sustainability however it was forfeited Internally more funds available - put tender out. R300000 was not used. DEADP discussed the tool. Improved the tool internally.	R300 000	Work completed internally	Operational Budget	Tool was rolled out to the municipalities at the waste forums and virtual meetings	No cost	Completed	No cost	Tool rolled out to municipalities virtual meetings	No cost	Completed	No cost
	A STATUS QUO REPORT ON E-WASTE	DEVELOP A STATUS QUO ON E-WASTE.	X			DEA&DP	Developed an E-Waste Status Quo report - March 2018.	No cost	Completed	No cost	No projects have been initiated.	N/A	N/A	N/A	No projects have been initiated.	N/A	N/A	N/A	No projects have been initiated.	N/A	N/A	N/A

GOAL 2: IMPROVED INTEGRATED WASTE MANAGEMENT PLANNING AND IMPLEMENTATION FOR EFFICIENT WASTE SERVICES AND INFRASTRUCTURE

	MANAGEMENT.																			
	GUIDELINES ON HAZARDOUS WASTE MANAGEMENT.	DEVELOP A GUIDELINE ON THE BENEFICIATION OF TREATED SEWAGE SLUDGE.	X			DEA&DP	No projects have been initiated.	N/A	N/A	N/A	No projects have been initiated.	N/A	N/A	N/A	No projects have been initiated.	N/A	N/A	N/A	Developed the Sewage Sludge Status Quo Report 2020/21	No cost	Completed	No cost
		DEVELOP A GUIDELINE FOR E-WASTE MANAGEMENT.	X			DEA&DP	No projects have been initiated.	N/A	N/A	N/A	No projects have been initiated.	N/A	N/A	N/A	No projects have been initiated.	N/A	N/A	N/A	No projects have been initiated.	N/A	N/A	N/A
	A STATUS QUO REPORT ON SAFE DISPOSAL AND MANAGEMENT OF WASTE CHEMICALS, CONTAINERS AND PACKAGING.	ASSESS THE STATUS OF CHEMICAL (PESTICIDES, HERBICIDES, SCHOOL CHEMICALS) DISPOSAL AND MANAGEMENT OF CONTAINERS AND PACKAGING.	X			DEA&DP/ municipalities/ DOA/WCED Western Cape (WC) Department of Agriculture/WCED	No projects have been initiated.	N/A	N/A	N/A	No projects have been initiated.	N/A	N/A	N/A	No projects have been initiated.	N/A	N/A	N/A	No projects have been initiated.	N/A	N/A	N/A
OBJECTIVE 3: PROMOTE THE	ENGAGEMENTS WITH KEY STAKEHOLDERS WITH REGARD TO THE PRIORITISATION, FUNDING AND ESTABLISHMENT OF INTEGRAT	FACILITATE THE PRIORITISATION, ESTABLISHMENT AND MONITORING OF INTEGRATED WASTE MANAGEMENT INFRASTRUCTURE AND SERVICES.	X			DEA&DP/ municipalities /private sector/ WC Department of Health / WC Department of Transport and Public Works (DTPW)	No projects have been initiated.	N/A	N/A	N/A	No Projects initiated	N/A	N/A	N/A	No Projects initiated	N/A	N/A	N/A	No Projects initiated	N/A	N/A	N/A

GOAL 2: IMPROVED INTEGRATED WASTE MANAGEMENT PLANNING AND IMPLEMENTATION FOR EFFICIENT WASTE SERVICES AND INFRASTRUCTURE																					
	ED WASTE MANAGEMENT INFRASTRUCTURE AND SERVICES.	FACILITATE FUNDING FOR THE ESTABLISHMENT OF INTEGRATED WASTE MANAGEMENT INFRASTRUCTURE AND SERVICES.	X	X	X	DEA&DP/ municipalities/ private sector/ WC Department of Health	DEA&DP facilitates the allocation of MIG funding for waste management infrastructure projects. carry over from 2016 Caledon WTS, Saldanha Bay Vredenburg Landfill	No cost	Ongoing	No cost	Witzenberg MRF Ceres project motivation and MIG representation	No cost	Operational Budget	No cost	Langeberg MRF, Oudtshoorn Landfill	No cost	Operational Budget	No cost	Supported the motivation for Yellow fleet for Cape Agulhas from MIG funds	No cost	Completed	No cost
		FACILITATE REGIONAL/FUNCTIONAL AREA PLANNING OF INTEGRATED WASTE MANAGEMENT INFRASTRUCTURE AND SERVICES.	X	X	X	DEA&DP/ municipalities/ private sector	The DEA&DP facilitated the proposed establishment of the Garden Route, West Coast, Overberg and Cape Winelands Districts, City of Cape Town' Regional WDFs - infrastructure study	Operational Budget	Ongoing	Operational Budget	Eddie Hanekom involvement - throughout - Garden Route - Interwaste was going to do the management and build cells and operate the facility, funding model worked out the operations and construction was outsourced – COVID-19, private sector partner withdrew due to financial	Operational budget	Ongoing	Operational Budget	Eddie Hanekom involvement - throughout - Garden Route - Interwaste was going to do the management and build cells and operate the facility, funding model worked out the operations and construction was outsourced – COVID-19, private sector partner withdrew due to financial	Operational Budget	Ongoing	Operational Budget	COVID-19, private sector partner withdrew due to financial constraints capital - go to the bank to get funds to fund tenders put out for evaluation of operations and construction, West Coast, City of Cape Town, Cape Winelands, Overberg ongoing discussions and negotiations	Operational Budget	Ongoing	Operational Budget

GOAL 2: IMPROVED INTEGRATED WASTE MANAGEMENT PLANNING AND IMPLEMENTATION FOR EFFICIENT WASTE SERVICES AND INFRASTRUCTURE

											constraints capital - go to the bank to get funds to fund . West Coast, Cape Winelands, City of Cape Town ongoing administrative processes				constraints capital - go to the bank to get funds to fund. West Coast, City of Cape Town, Cape Winelands, Overberg ongoing discussion and planning							
	ENGAGEMENTS WITH MUNICIPALITIES WHICH HAVE LOW LEVELS OF WASTE REMOVAL SERVICES.	MONITOR THE PROVISION OF MUNICIPAL WASTE REMOVAL SERVICES.	X	X	X	DEA&DP/ municipalities	Obtained basic refuse removal data from DoLG	No cost	Ongoing	No cost	Obtained basic refuse removal data from 2017/18 municipal annual reports	No cost	Ongoing	No cost	Obtained basic refuse removal data from 2018/19 municipal annual reports	No cost	Ongoing	No cost	Obtained basic refuse removal data from 2019/20 municipal annual reports 2) Complied a waste collection and transport Status Quo Report for municipalities	No	Ongoing	No

GOAL 2: IMPROVED INTEGRATED WASTE MANAGEMENT PLANNING AND IMPLEMENTATION FOR EFFICIENT WASTE SERVICES AND INFRASTRUCTURE

		FACILITATE DISCUSSIONS WITH THE DEPARTMENT OF HUMAN SETTLEMENTS (DOHS) REGARDING FUNDING FOR WASTE MANAGEMENT INFRASTRUCTURE IN PUBLIC HOUSING PROJECTS.	X	X	X	DEA&DP/WC DoHS/ municipalities	DEA&DP engaged with the Department of Human Settlements.	No cost	Ongoing	No cost	No further engagements were held	N/A	N/A	N/A	No further engagements were held	N/A	N/A	N/A	No further engagements were held	N/A	N/A	N/A
OBJECTIVE 4: ENSURE EFFECTIVE AND EFFICIENT WASTE INFORMATION MANAGEMENT.	QUARTERLY REPORTS ON WASTE REGISTRATION AND REPORTING.	ENSURE THAT THE REGULATED COMMUNITY IS REGISTERED AND REPORTS TO IPWIS.	X	X	X	DEA&DP	Municipalities are required to submit monthly reports to IPWIS, and all registrations are captured on IPWIS. DEA&DP submits quarterly data reports to the National DEA, via the South African Waste Information System (SAWIS).	R417 499	Ongoing	R417 499	Municipalities are required to submit monthly reports to IPWIS, and all registrations are captured on IPWIS. DEA&DP submits quarterly data reports to the National DEA, via the South African Waste Information System (SAWIS).	R833 333	Ongoing	R833 333	Municipalities are required to submit monthly reports to IPWIS, and all registrations are captured on IPWIS. DEA&DP submits quarterly data reports to the National DEA, via the South African Waste Information System (SAWIS).	R600 000	Ongoing	R600 000	Municipalities are required to submit monthly reports to IPWIS, and all registrations are captured on IPWIS. DEA&DP submits quarterly data reports to the National DEA, via the South African Waste Information System (SAWIS).	R620 000	Ongoing	R620 000
	VERIFICATION OF REPORTED WASTE INFORMATION.	ENSURE REPORTED INFORMATION IS ACCURATE AND CREDIBLE.	X	X	X	DEA&DP	The Department conducted 24 waste data verifications (audits) for 2018.	R15 152	Completed	R15 152	The Department conducted 24 waste data verifications (audits) for 2019.	R28 372	Completed	R28 372	The Department conducted 24 waste data verifications (audits) for 2019.	R46 872	Completed	R46 872	The Department conducted 17 desktop waste data verifications	No cost - Allocated funds assigned to Covid-19	Completed	No cost - Allocated funds assigned to Covid-19

GOAL 2: IMPROVED INTEGRATED WASTE MANAGEMENT PLANNING AND IMPLEMENTATION FOR EFFICIENT WASTE SERVICES AND INFRASTRUCTURE

																	(audits) for 2020.			
AN ANNUAL STATE OF WASTE REPORT.	ASSESS, INTERPRET AND DISSEMINATE WASTE MANAGEMENT INFORMATION.	X	X	X	DEA&DP	Developed an Annual State of Waste report for March 2017 and initiated the drafting of the SoWR for 2018.	No cost	Completed	No cost	Complete SoW Report 2018	No cost	Completed	No cost	Completed an Annual State of Waste Management Report 2019	No cost	Completed	No cost	No report was developed for 2020/21. The Annual State of Waste Management report 2020 is a deliverable for 2021/22.	No cost	n/a	No cost
AN ENHANCED IPWIS SYSTEM.	MAINTAIN AND ENHANCE IPWIS.	X	X	X	DEA&DP/Centre for e-Innovation / municipalities	The Complaints module was designed in IPWIS and is aligned to the business processes of the Department.	R417 499	Completed	R417 499	IPWIS Maintenance and Support was conducted.	R833 333	Completed	R833 333	IPWIS Maintenance and Support was conducted. Reworked administration changes for the IPWIS, improved excel extracts from the system for SAWIS, waste diversion headings for PowerBi.	R600 000	Completed	R600 000	IPWIS Maintenance and Support was conducted. Development of the PowerBi schema, additional functionality developed for COVID-19, upgrade of Java 8, administrative functions enhanced.	R620 000	Completed	R620 000

GOAL 3: EFFECTIVE AND EFFICIENT UTILISATION OF RESOURCES

OBJECTIVES	OUTPUT INDICATOR	ACTIVITY	TIMEFRAMES			RESPONSIBILITY	PROJECT DESCRIPTION (1 APR 2017 - 31 MAR 2018)	PROJECTS FOR 2017/2018 (1 APR 2017 - 31 MAR 2018)			PROJECT DESCRIPTION (1 APR 2018 - 31 MAR 2019)	PROJECTS FOR 2018/2019 (1 APR 2018 - 31 MAR 2019)			PROJECT DESCRIPTION (1 APR 2019 - 31 MAR 2020)	PROJECTS FOR 2019/2020 (1 APR 2019 - 31 MAR 2020)			PROJECT DESCRIPTION (1 APR 2020 - 31 MAR 2021)	PROJECTS FOR 2020/2021 (1 APR 2020 - 31 MAR 2021)		
			2017 - 2022	2022 - 2027	2027 - 2032			TOTAL PROJECT BUDGET	PROJECT STATUS	ACTUAL EXPENDITURE		TOTAL PROJECT BUDGET	PROJECT PROGRESS	ACTUAL EXPENDITURE		TOTAL PROJECT BUDGET	PROJECT STATUS	ACTUAL EXPENDITURE		TOTAL PROJECT BUDGET	PROJECT PROGRESS	ACTUAL EXPENDITURE
OBJECTIVE 1: MINIMISE THE CONSUMPTION OF NATURAL RESOURCES.	A GUIDELINE FOR USING WASTE AS A RESOURCE.	COMPILE A GUIDELINE FOR MUNICIPAL CONSTRUCTION AND DEMOLITION WASTE.	X			DEA&DP	Developed a Construction and Demolition Waste Management Guideline for Municipalities - March 2018	No cost	Completed	No cost	No projects have been initiated.	N/A	N/A	N/A	No projects have been initiated.	N/A	N/A	N/A	No projects have been initiated.	N/A	N/A	N/A
		COMPILE A GUIDELINE ON BEST PRACTICE FOR THE MANAGEMENT OF GREEN/ORGANIC WASTE.	X			DEA&DP	Hosted 2 workshops to promote the guideline for Abattoir Waste in the CCT and West Coast District.	R52 846	Completed	R4 208	Host 2 workshops on the development of generic Organic Waste diversion plans for municipalities in the Garden Route and Cape Winelands Districts.	R45 000	Completed	R40 834	No projects have been initiated.	N/A	N/A	N/A	Host 1 Organic waste intervention	N/A	N/A	N/A

GOAL 3: EFFECTIVE AND EFFICIENT UTILISATION OF RESOURCES

	SPECIFICATIONS FOR RECYCLED CONSTRUCTION AND DEMOLITION WASTE AGGREGATE.	ENGAGE WITH INDUSTRY AND PARTNERS ON THE DEVELOPMENT OF SPECIFICATIONS FOR RECYCLED CONSTRUCTION AND DEMOLITION WASTE AGGREGATE.	X			DEA&DP/ City of Cape Town (CCT)/ DTPW Works/	Attended meetings with the Recovered Materials Committee (RECMAT)	Operational Budget	Completed	Operational Budget	Attended meetings with the Recovered Materials Committee (RECMAT)	Operational Budget	Completed	Operational Budget	No projects have been initiated.	N/A	N/A	N/A	No projects have been initiated.	N/A	N/A	N/A
	ENGAGEMENTS WITH TARGETED SECTORS.	ADVOCATE THE USE OF WASTE AS A SECONDARY MATERIAL E.G. INDUSTRIAL SYMBIOSIS.	X			DEA&DP/DEA/industry sectors/ WC Department of Economic Development and Tourism (DEDAT)/ GreenCape	No projects have been initiated however Green Cape is rolling out Industrial symbiosis project	N/A	N/A	N/A	No projects have been initiated however Green Cape is rolling out Industrial symbiosis project and sustainable management of Eco industrial parks	N/A	N/A	N/A	No projects have been initiated however Green Cape is rolling out Industrial symbiosis project and sustainable management of Eco industrial parks	N/A	N/A	N/A	No projects have been initiated however Green Cape is rolling out Industrial symbiosis project and sustainable management of Eco industrial parks	N/A	N/A	N/A
OBJECTIVE 2: STIMULATE JOB CREATION	A BUSINESS CASE FOR THE WASTE ECONOMY.	ASSIST WITH THE DEVELOPMENT OF PROJECTS FOR THE WASTE ECONOMY BUSINESS CASES.	X			DEA&DP/DEA/Industry sectors/ DEDAT/GreenCape	No projects have been initiated.	N/A	N/A	N/A	No projects have been initiated.	N/A	N/A	N/A	No projects have been initiated.	N/A	N/A	N/A	No projects have been initiated.	N/A	N/A	N/A
	ENGAGEMENTS WITH SMME'S IN ORDER TO PROVIDE ENTREPRENEURIAL SUPPORT.	PROVIDE ENTREPRENEURIAL SUPPORT TO SMME'S TO IMPROVE WASTE REUSE, RECOVERY	X	X	X	DEA&DP/DEDAT /GreenCape	Provided support to 10 SMME's in the Garden Route District	R486 660	Completed	R169 800	Ongoing mentoring and support provided to existing 35 SMME beneficiaries	No cost	Completed	No cost	Ongoing mentoring and support provided to existing 35 SMMEs beneficiaries	No cost	Completed	No cost	Support to 35 existing SMMEs beneficiaries	N/A	N/A	N/A

GOAL 3: EFFECTIVE AND EFFICIENT UTILISATION OF RESOURCES

		AND/OR RECYCLING.					Provided support to 10 SMME's in the West Coast and Cape Winelands Districts.				Consultant developed Tool for SMME's and Completed business analysis for each SMME	R405 000	Completed	R382 000	No projects have been initiated.	N/A	N/A	N/A	Consultant developed a waste management procurement guide with specifications for the inclusion of SMMEs in waste management services.	R500 000	Completed	R495 527
	ENGAGEMENTS WITH TARGETED SECTORS REGARDING ALTERNATIVE WASTE TREATMENT.	STIMULATE THE WASTE ECONOMY THROUGH THE PROMOTION OF ALTERNATIVE WASTE TREATMENT TECHNOLOGIES.	X	X	X	DEA&DP/DEDAT/ GreenCape/ private sector or industry	No projects initiated	N/A	N/A	N/A	No projects only the role out of the Alternative waste treatment technologies tool at the IWMOF	No cost	Completed	No cost	No projects only the role out of the Alternative waste treatment technologies tool at the IWMOF	No cost	Completed	No cost	No projects initiated	N/A	N/A	N/A
OBJECTIVE 3: INCREASE WASTE DIVERSION THROUGH REUSE.	WASTE DIVERSION TARGETS SET FOR DIFFERENT WASTE STREAMS. 50% DIVERSION OF ORGANIC WASTE BY 2022. 100% DIVERSION OF ORGANIC WASTE BY 2027. 20% DIVERSION OF RECYCLABLES BY 2019 (NATIONAL MTSF	SET WASTE DIVERSION TARGETS THROUGH STAKEHOLDER ENGAGEMENTS, SPECIFICALLY, ON THESE WASTE STREAMS: CONSTRUCTION AND DEMOLITION WASTE, PACKAGING WASTE, E-WASTE, HOUSEHOLD HAZARDOUS WASTE	X	X	X	DEA&DP	Targets set in the varied waste management licences for organic waste diversion plans	No cost	Completed	No cost	Targets set in the varied waste management licences for organic waste diversion plans	No cost	Completed	No cost	Letters sent to municipalities, meetings with municipal officials and Municipal Managers authorization varied	No cost	Ongoing	No cost	Letters sent to municipalities, meetings with municipal officials and Municipal Managers authorization varied	No cost	Ongoing	No cost
															Hosted 1 workshop on the restriction and prohibition of organic waste to landfill in the west coast, 27 Nov 2019.	R 33 000	Completed	R7400	Hosted 1 workshop on Finding Regional Solutions for OW Management: Cape Winelands District on 28 Oct 2020	R49 000	Completed	No budget spent. Budget surrender as we Completed workshop online.

GOAL 3: EFFECTIVE AND EFFICIENT UTILISATION OF RESOURCES

	OUTCOME 10 TARGET).														Development of a Provincial Organic Waste Strategy for the Western Cape	R33 000	Completed	R7400	No projects implemented	N/A	N/A	N/A

GOAL 4: EFFECTIVE AND EFFICIENT UTILISATION OF RESOURCES

OBJECTIVES	OUTPUT INDICATOR	ACTIVITY	TIMEFRAMES			RESPONSIBILITY	PROJECTS FOR 2017/2018 (1 APR 2017 - 31 MAR 2018)				PROJECTS FOR 2018/2019 (1 APR 2018 - 31 MAR 2019)				PROJECTS FOR 2019/2020 (1 APR 2019 - 31 MAR 2020)				PROJECTS FOR 2020/2021 (1 APR 2020 - 31 MAR 2021)			
			2017 - 2022	2022 - 2027	2027 - 2032		PROJECT DESCRIPTION (1 APR 2017 - 31 MAR 2018)	TOTAL PROJECT BUDGET	PROJECT STATUS	ACTUAL EXPENDITURE	PROJECT DESCRIPTION (1 APR 2018 - 31 MAR 2019)	TOTAL PROJECT BUDGET	PROJECT PROGRESS	ACTUAL EXPENDITURE	PROJECT DESCRIPTION (1 APR 2019 - 31 MAR 2020)	TOTAL PROJECT BUDGET	PROJECT STATUS	ACTUAL EXPENDITURE	PROJECT DESCRIPTION (1 APR 2020 - 31 MAR 2021)	TOTAL PROJECT BUDGET	PROJECT PROGRESS	ACTUAL EXPENDITURE
OBJECTIVE 1: STRENGTHEN Compliance MONITORING AND	COMPLIANCE REPORTS FOR TARGETED INDUSTRIES. (FACILITIES)	CONDUCT TARGETED COMPLIANCE PROMOTION ACTIVITIES.	x	x	x	DEA&DP	No projects have been initiated.	N/A	N/A	N/A	No projects have been initiated.	N/A	N/A	N/A	Completed Compliance and promotion site visits to Indigo, Plascon and Biovac companies.	R500	Completed	R139	Assessed Tygerberg Hospital HCRW management plan	No cost	Completed	No cost
							(72) Compliance visits conducted, and reports drafted.	Operational budget - R222380	Completed	Operational budget - R242 537	(73) Compliance visits conducted, and reports drafted	Operational budget - R227 500	Completed	Operational budget - R208173	Completed Compliance and promotion site visits to Indigo, Plascon and Biovac companies.	R139	Completed	Actual budget - R182 959	(72) Compliance visits conducted, and reports drafted	Operational budget - R120 800	Completed	Actual budget - R79 881

GOAL 4: EFFECTIVE AND EFFICIENT UTILISATION OF RESOURCES

														(72) Compliance visits conducted and reports drafted						
A NUMBER OF ENFORCEMENT ACTIONS CONDUCTED.	ENFORCE Compliance WITH WASTE LEGISLATION.	x	x	x	DEA&DP/MUNICIPALITIES	(28) Complaints were dealt with by DEA&DP.		Completed		(17) Complaints were dealt with by DEA&DP		Completed		(24) Complaints were dealt with by DEADP		Completed		(28) Complaints were dealt with by DEADP		Completed
UPDATED WASTE LICENSING STANDARD OPERATING PROCEDURE(S).	UPDATE AND MAINTAIN WASTE LICENSING STANDARD OPERATING PROCEDURE(S).	x	x	x	DEA&DP	Updated waste licensing standard operating procedure(s).		Completed		Completed		Completed		Completed	Operational budget - R199 988	Completed		Completed		Completed
UPDATED WASTE LICENSING AUDIT PROTOCOL.	UPDATE THE WASTE LICENSING AUDIT PROTOCOL.	x	x	x	DEA&DP	Updated waste licensing audit protocol.		Completed		N/A		Completed		Updated waste licensing audit protocol.		Completed		Updated waste licensing audit protocol.		Completed
AUDIT REPORTS OF REGULATED WASTE MANAGEMENT FACILITIES.	AUDIT REGULATED WASTE MANAGEMENT FACILITIES.	x	x	x	DEA&DP/MUNICIPALITIES/Industry	Seventy-two (72) audit reports drafted of regulated waste management facilities.		Completed		Seventy-three (73) audit reports drafted of regulated waste management facilities.		Completed		Seventy-two (72) audits conducted at licenced waste management facilities and reports drafted				Seventy-two (72) audits conducted at licenced waste management facilities and reports drafted		
WASTE MANAGEMENT FACILITY LICENSES WITH DIVERSION TARGETS.	USE WASTE MANAGEMENT LICENSES TO SET DIVERSION TARGETS	x	x	x	DEA&DP	The first objective of the Variation Project which was initiated		Completed		The Department reviewed 88 existing operational		Completed		Variation of licences Ongoing basis also remove redundant		Completed		Variation of licences Ongoing basis also remove redundant		Completed

GOAL 4: EFFECTIVE AND EFFICIENT UTILISATION OF RESOURCES

	SPECIFICALLY, DIVERSION TARGETS	FOR WASTE STREAMS.					by the DEA&DP in 2017, was to achieve the National and Provincial waste diversion and waste information targets. The second objective was to remove redundant waste permit and licence conditions the DEA&DP are achieving these objectives through non-substantive variations to existing authorisations to ensure that diversion targets are included, and redundant conditions are removed and replaced.				waste management permits and licences in order to align the authorisations with current waste legislation, remove redundant conditions and to include the new conditions.				conditions and renewal dates				conditions and renewal dates			

GOAL 4: EFFECTIVE AND EFFICIENT UTILISATION OF RESOURCES

	GAS MONITORING REPORTS.	MONITOR LANDFILL GAS AT WASTE DISPOSAL FACILITIES AND ADVISE ON LANDFILL GAS MANAGEMENT.	x	x	x	DEA&DP/municipalities/industry	Gas (32) monitoring reports		Completed		Gas (32) monitoring reports		Completed		Gas (32) monitoring reports		Completed		Gas (32) monitoring reports		Completed	
	VARIED/AMENDED WASTE MANAGEMENT FACILITY AUTHORISATIONS. (EXPIRY DATES, FREQUENCY OF AUDITS, REDUNDANT CONDITIONS)	IDENTIFY WASTE MANAGEMENT FACILITY AUTHORISATIONS, WHICH NEED TO BE VARIED / AMENDED.	x	x	x	DEA&DP	Variation of licences Ongoing basis also remove redundant conditions and renewal dates		Completed		Variation of licences Ongoing basis also remove redundant conditions and renewal dates		Completed		Variation of licences Ongoing basis also remove redundant conditions and renewal dates		Completed		Variation of licences Ongoing basis also remove redundant conditions and renewal dates		Completed	
OBJECTIVE 2: REMEDIATE AND REHABILITATE	A NUMBER OF INDUSTRIES ENGAGED WITH AND MONITORED FOR COMPLIANCE TO PART 8 OF CHAPTER 4 OF NEMWA.	ENGAGE AND MONITOR INDUSTRY FOR Compliance TO PART 8 OF CHAPTER 4 OF THE NEMWA.	x	x	x	DEA&DP	1) No projects have been initiated.	N/A	N/A	N/A	No projects have been initiated.	N/A	N/A	N/A	No projects have been initiated.	N/A	N/A	N/A	No projects have been initiated.	N/A	N/A	N/A
	AN ASSESSMENT REPORT OF CONTAMINATED LAND IN THE WESTERN CAPE.	CONDUCT AN ASSESSMENT OF CONTAMINATED LAND IN THE WESTERN CAPE.	x			DEA&DP	The Department has a database of contaminated land cases.	No cost	Ongoing	No cost	The Department has a database of contaminated land cases.	No cost	Ongoing	No cost	The Department has a database of contaminated land cases.	No cost	Ongoing	No cost	The Department has a database of contaminated land cases.	No cost	Ongoing	No cost

GOAL 4: EFFECTIVE AND EFFICIENT UTILISATION OF RESOURCES

	A BUSINESS CASE FOR THE MANAGEMENT OF CONTAMINATED LAND IN THE WESTERN CAPE.	BUILD A BUSINESS CASE FOR THE MANAGEMENT OF CONTAMINATED LAND IN THE WESTERN CAPE.	x			Not a licencing project was not allocated contaminated land part 8 NEMWA	No projects have been initiated.	N/A	N/A	N/A	No projects have been initiated.	N/A	N/A	N/A	No projects have been initiated.	N/A	N/A	N/A	Busy developing a guideline (internally) for the management of contaminated land. Completed phase 1 of the Guideline,	No cost	Ongoing	No cost
OBJECTIVE 3: FACILITATE THE DEVELOPMENT OF WASTE POLICY INSTRUMENTS	A NUMBER OF WASTE-RELATED NORMS AND STANDARDS DEVELOPED.	DEVELOP WASTE-RELATED NORMS AND STANDARDS FOR WASTE MANAGEMENT FACILITIES AND SERVICES.	X	X	X	DEA&DP	Initiate the development of a model waste bylaw for municipalities	No cost	Ongoing	No cost	By laws - awaited vetting process after the by-laws were developed.	No cost	Ongoing	No cost	By-Laws officially vetted and Completed in this financial year.	No cost	Completed	No cost	No projects have been initiated.	N/A	N/A	N/A
	A NUMBER OF WASTE STREAM GUIDELINES DEVELOPED.	DEVELOP WASTE STREAM GUIDELINES E.G. HOUSEHOLD HAZARDOUS WASTE GUIDELINE.	X	X	X	DEA&DP	No projects have been initiated.	N/A	N/A	N/A	Developed the household hazardous waste status quo report	No cost	Completed	No cost	Developed the household hazardous waste guideline for municipalities	No cost	Completed	No cost	No projects have been initiated.	N/A	N/A	N/A
							Hosted 2 workshops to promote the guideline for Abattoir Waste in the CCT and the West Coast District.	R52 846	Completed	R4 208	No projects have been initiated.	N/A	N/A	N/A	No projects have been initiated.	N/A	N/A	N/A	No projects have been initiated.	N/A	N/A	N/A

GOAL 4: EFFECTIVE AND EFFICIENT UTILISATION OF RESOURCES

							No projects have been initiated.	N/A	N/A	N/A	3) Host 2 workshops on the development of generic Organic Waste diversion plans for municipalities in the Garden Route and West Coast District.	R45 000	Completed	R40 834	No projects have been initiated.	N/A	N/A	N/A	No projects have been initiated.	N/A	N/A	N/A
							Hosted a Green Waste Management Stakeholder engagement - 8 March 2018.	11200	Completed	6000	No projects have been initiated.	N/A	N/A	N/A	No projects have been initiated.	N/A	N/A	No budget	No projects have been initiated.	N/A	N/A	N/A
	A GUIDELINE FOR THE REGIONALISATION OF WASTE MANAGEMENT INFRASTRUCTURE AND SERVICES.	COMPILE A GUIDELINE ON THE REGIONALISATION OF WASTE MANAGEMENT INFRASTRUCTURE AND SERVICES.	X			DEA&DP	No projects have been initiated	N/A	N/A	N/A	No projects have been initiated	N/A	N/A	N/A	No projects have been initiated	N/A	N/A	N/A	No projects have been initiated	N/A	N/A	N/A
	ENGAGEMENTS WITH STAKEHOLDERS TO INFLUENCE THE DEVELOPMENT OF A RISK-BASED METHODOLOGY FOR WASTE MANAGEMENT FACILITIES.	FACILITATE THE DEVELOPMENT OF A RISK-BASED METHODOLOGY FOR WASTE MANAGEMENT FACILITIES TO INFORM THE DEVELOPMENT OF NORMS AND	X	X	X	DEA&DP	Engagements with stakeholders to influence the development of a risk-based methodology for WMFs.	Operational Budget	Ongoing	Operational Budget	Engagements with stakeholders to influence the development of a risk-based methodology for WMFs.	Operational Budget	Ongoing	Operational Budget	No projects have been initiated.	N/A	N/A	N/A	No projects have been initiated.	N/A	N/A	N/A

GOAL 4: EFFECTIVE AND EFFICIENT UTILISATION OF RESOURCES

		STANDARDS.																			
OBJECTIVE 4: PROMOTE	A NUMBER OF INDUSTRY WASTE MANAGEMENT PLANS DEVELOPED IN TARGETED SECTORS.	PROMOTE THE DEVELOPMENT OF INDUSTRY WASTE MANAGEMENT PLANS IN TARGETED INDUSTRY SECTORS.	X	X	X	DEA&DP	No projects have been initiated.	N/A	N/A	N/A	No projects have been initiated.	N/A	N/A	N/A	No projects have been initiated.	N/A	N/A	N/A	No projects have been initiated.	N/A	N/A	N/A

8.3 LIST OF WASTE MANAGEMENT OFFICERS

Table 24: List of Waste Management Officers (WMO)

	COMPLIANCE	NO	AREA/ MUNICIPALITY	DESIGNATED	FULL NAMES	SURNAME
Province	**0%**	1	Western Cape (DEA&DP)	Y	Eddie	Hanekom
Cape Winelands District Municipality	**100%**	2	Cape Winelands District	Y	Christo	Swart
		3	Drakenstein	Y	Thys	Serfontein
		4	Stellenbosch	Y	Clayton	Hendricks
		5	Langeberg	Y	Glenn	Slingers
		6	Breede Valley	Y	Jaco	Steyn
		7	Witzenberg	Y	Johnny	Jacobs
Central Karoo District Municipality	**100%**	8	Central Karoo District	Y	Leon	Crafford
		9	Laingsburg	Y	Johan	Mouton
		10	Prince Albert	Y	Ashley	America
		11	Beaufort West	Y	Vuyokasi	Ruiters
Garden Route District Municipality	**75%**	12	Garden Route District	Y	Morton	Hubbe
		13	Kannaland	N	Reginald	Timmie
		14	Oudtshoorn	N	Rodwell	Witbooi
		15	George	Y	Janine	Fernold
		16	Knysna	Y	Randall	Bower
		17	Bitou	Y	Douglas	Baartman
		18	Hessequa	Y	Ruschan	Manho

	COMPLIANCE	NO	AREA/ MUNICIPALITY	DESIGNATED	FULL NAMES	SURNAME
		19	Mossel Bay	Y	Nombuyiselo	Majola
Overberg District Municipality	**100%**	20	Overberg District	Y	Francois	Kotze
		21	Overstrand	Y	Craig	Mitchell
		22	Swellendam	Y	Johan	van Niekerk
		23	Theewaterskloof	Y	Hegans	Marthinus
		24	Cape Agulhas	Y	Walter	Linnert
West Coast District Municipality	**83%**	25	West Coast District	Y	Nico	de Jongh
		26	Swartland	Y	Peter	Marais
		27	Saldanha	Y	David	Wright
		28	Bergrivier	Y	Jaco	Breunissen
		29	Cederberg	Y	Jacob	Klaase
		30	Matzikama	N	Vacant	Vacant
Metropolitan Municipality	**100%**	31	City of Cape Town	Y	Rustim	Keraan

8.4 WASTE DISPOSAL RESTRICTIONS

The following prohibitions and restrictions on the disposal of waste to landfill comes into effect after the timeframes indicated for each waste from the date of the Regulations coming into operation-

Table 25: Waste Disposal Restrictions

WASTE PROHIBITED OR RESTRICTED IN TERMS OF DISPOSAL	COMPLIANCE TIMEFRAME
Waste which, in the conditions of a landfill, is explosive, corrosive, oxidizing (according to SANS 10234 or SANS10228).	Immediate
Waste with a pH value of <6 or >12.	Immediate
Flammable waste with a closed cup flashpoint lower than 61° Celsius.	Immediate
Reactive waste that may react with water, air, acids or components of the waste, or that could generate unacceptable amounts of toxic gases within the landfill.	Immediate
Waste compressed gases (according to SANS 10234 or SANS 10228).	Immediate
Untreated Healthcare Risk Waste (HCRW).	Immediate
i. POPs pesticides listed under the Stockholm Convention. ii. Other waste pesticides.	Eight (8) years Four (4) years
Lead acid batteries.	Immediate
Other batteries.	Eight (8) years
Re-usable, recoverable or recyclable used lubricating mineral oils, as well as oil filters, but excluding other oil containing wastes. Immediate.	Four (4) years
Re-usable, recoverable or recyclable used or spent solvents.	Five (5) years
PCB containing wastes (>50 mg/kg or 50 ppm).	Five (5) years
Hazardous Waste Electric and Electronic Equipment (WEEE) - Lamps.	Three (3) years
Hazardous Waste Electric and Electronic Equipment (WEEE) - Other.	Eight (8) years

Waste tyres: Whole.	Immediate
Waste tyres: Quartered.	Five (5) years
Liquid waste i. Waste which has an angle of repose of less than 5 degrees, or becomes free flowing at or below 60 °C or when it is transported, or is not generally capable of being picked up by a spade or shovel; or ii. Waste with a moisture content of >40% or that liberates moisture under pressure in landfill conditions, and which has not been stabilised by treatment.	Six (6) years
Hazardous waste with a calorific value of: i. 25 MJ/kg. ii. > 20 MJ/kg. ii. > 10 MJ/kg. v. > 6% TOC.	Four (4) years Six (6) years Twelve (12) years Fifteen (15) years
Brine or waste with a high salt content (TDS > 5%), and a leachable concentration for TDS of more than 100 000 mg/l.	Eight (8) years
Disposal of garden waste: i. 25% diversion from the baseline at a particular landfill of separated garden waste. ii. 50% diversion from the baseline at a particular landfill of separated garden waste	Five (5) years Ten (10) years
Infectious animal carcasses and animal waste.	Immediate

Photo by DEA&DP, Elim Waste Management Facility

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