Western Cape Government

Department of Environmental Affairs and Development Planning

Western Cape Integrated Waste Management Plan 2023-2027

March 2023

MINISTER'S FOREWORD

The Western Cape is recovering from a long and exhausting global COVID-19 pandemic. The pandemic impacted all aspects of society, including waste management. The Province is ready to take on the challenges and opportunities presented to us and remains committed to navigate the road ahead and move forward towards recovery.

The development of the Western Cape Integrated Waste Management Plan (WC IWMP) 2023-2027 has revealed several waste management challenges linked to the rapid increase in urbanisation, limited institutional capacity, financial sustainability, co-ordination and participation, stakeholder inclusivity, resource inefficiency and limited integrated waste management infrastructure. Littering, illegal dumping and inappropriate waste disposal practices remain a challenge, contributing to environmental degradation and climate change. It is now a requirement for all provinces to report on a quarterly basis at MinTech on the initiatives undertaken in addressing littering and illegal dumping. The current tough economic climate places added pressure on waste management, since financial resources to address waste management is becoming more constrained.

During the past five years, there has been continued commitment to ensure that governance of waste management is improved. This has been done through active engagements at the Waste Management Officers' Forum (WMOF), the district waste forums, and local government structure engagements such as the Joint District Metro Approach (JDMA), Municipal Infrastructure Grant (MIG), Integrated Development Plans (IDPs), Local Government Medium Term Expenditure Committee and the South African Local Government Association (SALGA), specifically to address waste services, budgeting and infrastructure requirements. These engagements continued throughout the pandemic, by using virtual platforms such as Microsoft Teams in conducting meetings and workshops.

Partnerships were also strengthened through the engagement with industry via the Western Cape Recycling Action Group (WCRAG), Industry Waste Management Forum (IWMF), GreenCape, academia and interest groups. These partnerships provided a good platform to improve planning and integration with respect to waste management. It has been really encouraging to see that alternative waste technologies are being explored, other than waste disposal. This bodes well for resource efficiency and the waste economy, thereby unlocking job creation opportunities. The business sector has a strong role to play in its Extended Producer Responsibility (EPR), in changing behaviour and building a resource-efficient society and the waste economy.

The National Waste Management Strategy (NWMS), 2020 provides guidance and outlines strategic pillars for waste management, which has been incorporated in the WCIWMP. The three strategic pillars of the NWMS are (1) Waste Minimisation (2) Effective and Sustainable Waste Services, and (3) Compliance, Enforcement and Awareness. The NWMS has identified the need for South Africa to shift towards a circular economy. In recent years, several regulations were promulgated to regulate extended producer responsibility to contribute to the transition to a circular economy.

In addressing waste management challenges, waste management services will need to be expanded by the provision of integrated waste management infrastructure to improve the recovery of waste material in unlocking the potential of this resource to drive the circular economy. A key element in building a resource-efficient society to unlock this potential is instilling the change in behaviour within all sectors of society through increased awareness, education and capacity-building. In creating an enabling environment for integrated waste management services, planning needs to be informed by accurate information and waste diversion targets. The successful implementation of the above relies on the allocation of adequate budgets that are informed by full-cost accounting and appropriate tariff-setting to meet compliance and regulatory obligations to sustain these services.

It is my pleasure to present this Integrated Waste Management Plan as the road map for the Western Cape up to 2027 and beyond, to deal with our waste management challenges and in finding solutions to build a resilient, sustainable, quality and an inclusive living environment and resource-efficient society through co-ordination, collaboration, partnerships and innovation.

Anton Bredell
MINISTER: LOCAL GOVERNMENT, ENVIRONMENTAL AFFAIRS AND DEVELOPMENT PLANNING

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ACRONYMS

C&D	Construction and Demolition
CoCT	City of Cape Town
CITP	Comprehensive Integrated Transport Plan
CKDM	Central Karoo District Municipality
CSIR	Council for Scientific and Industrial Research
CWDM	Cape Winelands District Municipality
DEA	Department of Environmental Affairs
DEA&DP	Department of Environmental Affairs and Development Planning
DFFE	Department of Forestry, Fisheries and the Environment
DSI	Department of Science and Innovation
DTPW	Department of Transport and Public Works
EPR	Extended Producer Responsibility
EPWP	Expanded Public Works Programme
GBV	Gender-based Violence
GDP	Gross Domestic Product
GDPR	Gross Domestic Product per Region
GHG	Green House Gas
GRDM	Garden Route District Municipality
HCRW	Health Care Risk Waste
IDP	Integrated Development Plan
IPWIS	Integrated Pollutant and Waste Information System
IWMF	Integrated Waste Management Forum
IWMF	Industry Waste Management Forum
IWMP	Integrated Waste Management Plan
JDMA	Joint District Metro Approach
LM	Local Municipality
MEA	Multilateral Environmental Agreement
MEC	Member of the Executive Council
MIG	Municipal Infrastructure Grant
MINMEC	Minister of Environmental Affairs and members of Provincial Executive Councils
MRF	Materials Recovery Facility
MTEF	Medium-Term Expenditure Framework
NDP	National Development Plan
NEMA	National Environmental Management Act, 107 of 1998
NEM: WA	National Environmental Management: Waste Act, 59 of 2008
NEM: WAA	National Environmental Management: Waste Amendment Act, 26 of 2014
NWMS	National Waste Management Strategy

ODM	Overberg District Municipality
PERO	Provincial Economic Review and Outlook
PSP	Provincial Strategic Plan
S@S	Separation at Source
SAWIS	South African Waste Information System
SDF	Spatial Development Framework
SDGs	Sustainable Development Goals
SMME	Small, Medium and Micro Enterprise Businesses
Stats SA	Statistics South Africa
VOCs	Volatile Organic Compounds
WCDM	West Coast District Municipality
WCMES	Western Cape Monitoring and Evaluation System
WCG	Western Cape Government
WCIWMP	Western Cape Integrated Waste Management Plan
WCRAG	Western Cape Recycling Action Group
WDF	Waste Disposal Facility
WISP	Western Cape Industrial Symbiosis Programme
WMF	Waste Management Facility
WML	Waste Management Licence
WMO	Waste Management Officer
YES Programme	Youth Environmental Service Programme

GLOSSARY

TERMS	DEFINITION
Buy-back centre	The place that allows residents, informal reclaimers and/or entrepreneurs to sell recyclables.
Circular economy	An economy that is restorative and regenerative by design and aims to keep products, components, and materials at their highest utility and value at all times, distinguishing between technical and biological cycles. This new economic model seeks to ultimately decouple global economic development from finite resource consumption. It enables key policy objectives such as generating economic growth, creating jobs, and reducing environmental impacts, including carbon emissions (DEFF, 2020).
Disposal	Means the burial, disposal, discharge, abandoning, dumping, placing or release of any waste into, or onto, any land (NEM: WA, 2008).
Drop-off facility	Facilities that provide residents with the convenient opportunity to dispose of waste, which they have not put out for collection, into containers for later removal by the municipality.
Extended Producer Responsibility	Means that a producer's responsibility for an identified product is extended to the post-consumer stage of an identified product's life cycle.
Free basic services	Free basic service is defined as the minimum amount of basic levels of services, provided on a day-to-day basis, sufficient to cover or cater for the basic needs of poor households. Various sector departments have set minimum standards outlining the basic amount of services or quantity to be supplied to the indigents concerning water, energy, sanitation and refuse removal. Free basic refuse removal levels of services/standards include: (a) on-site appropriate and regularly supervised disposals; (b) community transfer to central collection points; (c) organised transfer to central collection points and/or kerbside collection (in high density settlements); or (d) a combination of methods above.
Gender- responsive	Refers to a policy or program which fulfils two basic criteria: a) gender norms, roles, and relations are considered and b) measures are taken to actively reduce the harmful effects of gender norms, roles, and relations—including gender inequality (GPE and UNGEI, 2017).

Gender-sensitive	Refers to gender awareness and means that a policy or program recognizes the important effects of gender norms, roles, and relations. It is often contrasted with being gender-blind, which ignores differences in opportunities and resource allocation for women and men and gender norms, roles, and relations and often reinforces gender-based discrimination (GPE and UNGEI, 2017).
General waste	Waste that does not pose an immediate hazard or threat to health or to the environment, and includes: (a) domestic waste; (b) building and demolition waste; (c) business waste; (d) inert waste; or (e) any waste classified as non-hazardous waste in terms of the regulations made under section 69 of the Waste Act (59 of 2008), and includes non-hazardous substances, materials or objects within the business, domestic, inert or building and demolition wastes.
Regional Gross Domestic Product (GDPR)	GDPR at market prices equals the sum of gross value added by all industries at basic prices plus taxes on products minus subsidies on products in a region.
Hazardous waste	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.
Indigent	The term 'indigent' means 'lacking the necessities of life'. In a South African context, the Constitution provides a guide in this regard, leading to the view that the following goods and services are considered as necessities for an individual to survive: a) sufficient water b) basic sanitation c) refuse removal in denser settlements d) environmental health e) basic energy f) health care g) housing h) food and clothing Anyone who does not have access to these goods and services is considered indigent.
Industrial Symbiosis	Industrial Symbiosis (IS) is the exchange of materials or services between entities. Specifically, it involves the use of unused or residual resources of one company, by another. Resources could

	be materials, energy, water or services. These are called synergies. These synergies improve resource efficiency and economic, social and environmental benefits for the companies involved (GreenCape).
Integrated Waste Management	Employing several waste control and disposal methods, i.e. reducing, re-using, recycling, incinerating, and landfilling, to minimise the environmental impact of commercial and industrial waste streams.
Integrated Waste Management Plan	A plan prepared in terms of section 12 of the Waste Act (59 of 2008).
Materials recovery facility	A centre for the reception and transfer of materials recovered from the waste stream for recycling. Materials are sorted by type and treated.
Minimisation	The avoidance of the amount and toxicity of waste that is generated and, in the event, where the waste is generated, the reduction of the amount and toxicity of waste that is disposed (NEM: WA, 2008).
Municipal solid waste	Waste generated from residential and non-industrial commercial sources. It includes predominantly household waste (domestic waste) with sometimes the addition of commercial waste collected by a municipality within a given area. It includes either solid or semi-solid wastes and generally excludes industrial hazardous waste.
Polluter Pays Principle	All costs associated with waste management should, where possible, be borne by the waste generator.
Re-use	To utilise the whole, a portion of a specific part of any substance, material or object from the waste stream for a similar or different purpose without changing the form or properties of such substance, material or object (NEM: WAA, 2014).
Recovery	The controlled extraction of material or the retrieval of any substance, material or object from waste (NEM: WAA, 2014).
Recycle	A process where waste is reclaimed for further use, which process involves the separation of waste from a waste stream for further use and the processing of that separated material as a product or raw material (NEM: WA, 2008).
Refurbishment	The repair and reconditioning of products so that they can be returned to use for another life cycle. Refurbishment may be performed by the original manufacturer, or a third party qualified to perform the necessary parts replacement or repairs (DEFF, 2020).
Separation at source (s@s)	Separation at source is the separation of different types of post-consumer waste materials at the site where they are generated. S@S typically focuses on the separation of recyclables (and often

	further disaggregation into different types of recyclables), organic waste and solid waste. Selective collection of separated materials ensures that they do not contaminate each other and that waste to landfill is minimised.
Sustainable development	Sustainable development reflects a process that meets the needs of the present without compromising the ability of future generations to meet their own needs. Often called intergenerational equality, the idea is that we should share natural resources not just with people who are alive on the planet today but also with future generations of the Earth's inhabitants. While we can use a certain amount of the planet's resources, we should never entirely deplete a natural resource. Sustainable development requires people to rely as much as possible on renewable resources (the kind that can be replenished) by getting power from the sun rather than power from fossil fuels such as oil, coal, and natural gas, which take millions of years to form. Besides the careful stewardship of natural resources, sustainable development promotes the eradication of poverty and extreme income and wealth inequalities, the goal of full employment, the provision of access to quality and affordable basic services to all South Africans, and the fostering of a stable, safe and just society.
Swop shop	This refers to an exchange of recyclable material for goods that are basic needs. The material is valued through a point system, which can be redeemed for goods.
Transfer station	A facility that receives solid waste from collection vehicles and reloads that waste into larger vehicles for transfer to a waste management disposal facility.
Treatment	Means any method, technique or process that is designed to: (i) change the physical, biological or chemical character or composition of a waste or, (ii) remove, separate, concentrate or recover a hazardous or toxic component of a waste, or (iii) destroy or reduce the toxicity of waste, in order to minimise the impact of the waste on the environment prior to further use or disposal.
User Pays Principle	All costs associated with the use of a resource should be included in the price of goods and services developed from that resource.
Waste	Any substance, material or object, that is unwanted, rejected, abandoned, discarded or disposed of, by the holder of the substance, material or object, whether or not such substance, material or object can be reused, recycled or recovered. NEM:

	WAA (Act No. 26 of 2014). Once it is re-used, recycled or recovered the material ceases to be a waste.
Waste disposal facility (Landfill site)	Means any site or premises used for the accumulation of waste with the purpose of disposing of that waste at that site or on that premises (NEM: WA, 2008).
Waste management facility	A place, infrastructure, structure or containment of any kind, upon or at, a waste management activity takes place and includes a waste transfer station, container yard, landfill site, incinerator, a lagoon, recycling or a composting facility (NEM: WA, 2008).
Waste management hierarchy	The "hierarchy of waste management" is a priority sequence for managing waste, the most desirable option being to avoid waste in the first place. Where it is not possible to avoid waste completely, ways to reduce, re-use or recycle the unwanted material should be considered. If waste cannot be made useful, only then should it be collected, treated and disposed of (DEFF, 2020).
Waste management officer	Means a waste management officer designated in terms of section 10 of the Waste Act (NEM: WA, 2008).
Waste picker	Someone who collects re-usable and recyclable materials from residential and commercial waste bins, landfill sites and open spaces in order to revalue them and generate an income. (DEFF & DSI, 2020).
Waste picker integration	The creation of a formally planned recycling system that values and improves the present role of waste pickers, builds on the strengths of their existing system for collecting and revaluing materials, and includes waste pickers as key partners in its design, implementation, evaluation and revision. Waste picker integration requires changes in several spheres and includes the integration of waste pickers' work, as well as the political, economic, social, legal and environmental integration of waste pickers (DEFF & DSI, 2020).
Wastepreneur	Portmanteau blending the words "waste" and "entrepreneur".
Waste transfer facility	A facility that is used to accumulate and temporarily store waste before it is transported to a recycling, treatment or waste disposal facility.

EXECUTIVE SUMMARY

The National Environmental Management: Waste Act 59 of 2008, as amended (NEM: WA) requires that provincial governments and municipalities develop Integrated Waste Management Plans (IWMPs) to ensure proper waste management planning. The 3rd generation Western Cape IWMP 2023-2027 (WC IWMP) aims to provide strategic direction for waste management in the province over the short-, medium- and long-term.

The specific objectives of the WC IWMP are:

- to provide an analysis of the status of implementation of the 2nd generation IWMP 2017-2022;
- to provide an overview of the identified waste management gaps and needs in the province;
- to develop a set of goals, objectives, activities and targets that respond to the identified gaps and needs;
- to take cognisance of aspects relating to gender equality, human rights, socio-economic development, sustainability of waste services, environmental impacts to inform specific goals, objectives, activities and targets;
- to increase the level of leadership, governance, stewardship and participation in integrated waste management; and
- to enhance a resource efficient society through the development of focused and customised restorative and regenerative approaches for circularity potential.

The WC IWMP aligns with the global Sustainable Development Goals (SDGs), and various key national and provincial policies. The WC IWMP specifically aligns with the National Waste Management Strategy (NWMS), 2020, which promotes the waste management hierarchy and circular economy. Waste management linkages and cross-cutting issues such as climate change, sustainable consumption and production, job creation and poverty reduction, and health and environmental impacts are highlighted. A separate Gender Gap Analysis was undertaken, which identified the linkages between waste management and gender and human rights.

To obtain an understanding of the status quo of waste management in the province, a Situational Analysis was undertaken, which included an overview of demographic, economic and waste management aspects.

- Socio-economic profile

The Western Cape accounts for 11.9% of the estimated South African population of 60.6 million (Provincial Treasury, 2022). The population in the province comprises 49% males and 51 % females (StatsSA, 2020). Since 2017/18, the population growth rate declined from 1.6% to 1.4%, the lowest population growth rate in ten years, which can possibly be attributed to a below replacement fertility rate (2.04) between 2016 and 2021 (Provincial Treasury, 2022). Compared to the rest of South Africa, the Western Cape had the highest life expectancy for males (66.3 years) between 2016 and 2021, though women had a higher life expectancy than men in all provinces (Provincial Treasury, 2022). The province has a larger proportion of the elderly (6.8%) compared to the national average (6.1%) but has a smaller proportion of children (24.4% provincially compared to 29.6% nationally) (Provincial Treasury, 2020).

The Western Cape had a narrow unemployment rate of 27.5% in the second quarter of 2022 and the lowest expanded unemployment rate of 29% in South Africa (Provincial Treasury, 2022).

- Service levels

In the Western Cape 75.6 % of households had access to piped water inside dwellings, 96.6 % of households had access to electricity including a generator, 95.2 % had access to flush or chemical toilets and 87% had access to refuse removal at least once a week for the year 2021 (Provincial Treasury, 2022). According to Provincial Treasury (2022), between 2012 and 2021, the portion of dwellings with access to refuse removals at least once a week declined from 89.8% to 87%. However, the most recent waste management service levels indicated in municipal annual reports/IDPs indicate access to refuse removal services of 95.3% for the province.

- Provincial economy

The Western Cape economy has a service-oriented economy with a strong contribution from the Finance sector and a unique dependence on the tourism and wine industries (Provincial Treasury, 2022). The average estimated economic growth of the province (1.2%) was higher than the national (1%) growth rate between 2012 and 2021 (Provincial Treasury, 2022). The recession in 2020 (-6.2%) had a significant impact on the average growth rate of the Western Cape economy.

Overview of waste management

In the Western Cape, municipalities and industry are required to report waste disposal and diversion data on the provincial Integrated Pollutant and Waste Information System (IPWIS) on a monthly basis. The data is then uploaded to the national South African Waste Information System (SAWIS). There are however registered private and municipal facilities that consistently do not report to the IPWIS. Specifically, Beaufort West and Oudtshoorn (zero or low reporting between 2018-2021) municipalities are of concern due to the consistent low reporting rate of municipal facilities.

According to the IPWIS, most of the waste generated in the province is disposed of i.e. between 71% and 78% of waste was disposed of per year during 2018-2021 and 29% and 22% is diverted. A large portion of garden waste and construction and demolition(C&D) waste that enters WDFs is diverted, however only a small percentage of municipal waste that enters WDFs is diverted. Municipalities have undertaken several waste minimisation initiatives to support diversion. These include separation at source (S@S) initiatives e.g. split-bag systems, the establishment of materials recovery facilities (MRFs) as well as supporting swop shops and buy-back centres. The Department of Environmental Affairs and Development Planning (hereafter referred to as the "Department") has also undertaken several waste minimisation initiatives specifically aimed at providing waste minimisation training to a wide range of stakeholders including municipal officials and waste collection staff, Expanded Public Works Programme (EPWP) workers, private recyclers, and the youth working in waste management. In recent years, the Department has focussed on organic waste diversion initiatives to assist municipalities in meeting the provincial organic waste diversion targets of 50% diversion by 2022 and 100% diversion by 2027.

One of the key drivers for moving away from waste disposal, is the limited landfill airspace availability in municipalities, and the difficulty in locating and establishing new facilities. Since many of the existing WDFs will run out of airspace within the near future, municipalities will have to bear higher development and operational costs to increase available airspace in addition to maximising landfill diversion. Some municipalities are currently struggling to ensure that existing WDFs meet their Waste Management Licence (WML) conditions, which could lead to environmental and health impacts. In addition to WDFs, other key waste management infrastructure includes waste drop-off facilities, transfer stations, composting facilities and MRFs.

The NEM: WA requires the designation, in writing, of provincial and municipal waste management officers (WMOs) to coordinate waste management matters. 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 WMOs' Forum where feedback is provided on the issues emanating from the various District WMOs'

Forums. Currently, 26 of the 30 municipalities have designated WMOs. On occasion WMO posts become vacant due to resignations or retirements. The recruitment process can take a while to complete and this delays the filling of posts and subsequently the designation of WMOs. The Department also has a designated provincial WMO, who is the Director: Waste Management.

Although all municipalities have developed IWMPs in the past, currently only 17 municipalities have the latest generation of their IWMPs endorsed by the MEC. Municipalities within the Central Karoo District are being assisted by DFFE with funding to develop their IWMPs. Challenges include some municipalities having outdated IWMPs, which must be reviewed to ensure that they are still relevant and integrated with their respective Integrated Development Plans (IDPs). A further challenge is that there needs to be improved monitoring and reporting of the implementation plan to ensure that planned activities are implemented. Section 13 of the NEM: WA requires municipalities to report the implementation of activities on an annual basis. Many municipalities however do not report as per the requirements of the NEM: WA.

- Gaps and needs analysis

A gaps and needs analysis identified waste management gaps and needs in the province that need to be addressed to achieve the desired-end state for waste management. The identification of waste management gaps was from the following sources:

- An analysis of the extent of implementation of the WC IWMP 2017-2022;
- Situational Analysis;
- Gender Gap Analysis;
- Consultation and engagement with internal and external stakeholders.

Priority needs were formulated based on the gaps identified and are indicated below:

- Accurate and consistent (reliable) waste data from industry and municipalities.
- Targeted waste education and awareness programmes, which include various role-players.
- Improved access to waste collection services, specifically in underserviced areas.
- Improved promotion of prevention, reduction, re-use and recovery of waste to support a circular economy.
- Integrated waste management infrastructure for recovery, treatment and disposal and an increase in compliance with waste management legislation.
- Strengthened governance and partnerships and ensuring sustainable financial management.
- Respond to the needs of women and other vulnerable groups.

The prioritised needs above informed the development of strategic goals and objectives.

- Strategic goals and objectives

Four strategic goals were identified and align to the NWMS, 2020. Each goal has objectives, which will assist in meeting the goal. The strategic goals and objectives are indicated below:

- **Goal 1: Strengthened education, capacity, awareness and advocacy towards Integrated Waste Management.**

  - Objective 1: Create awareness and education of integrated waste management.

Expected outcome: Improved waste management and the prevention of pollution, litter and illegal dumping.

- **Goal 2: Improved integrated waste management planning and implementation for efficient waste services, technologies and infrastructure.**

  - Objective 1: Facilitate municipal integrated waste management planning;
  - Objective 2: Promote industry waste management and the circular economy;
  - Objective 3: Promote the establishment of integrated waste management infrastructure and services; and
  - Objective 4: Ensure timeous and reliable waste information reporting.

Expected Outcome: All citizens of the Western Cape live in clean communities and have access to well managed and financially sustainable waste services.

- **Goal 3: Effective and efficient utilisation of resources.**

  - Objective 1: Minimise the consumption of natural resources and promote circular economy principles;
  - Objective 2: Stimulate job creation within the waste economy; and
  - Objective 3: Increase waste diversion through reuse, recovery and recycling.

Expected outcome: The reduction of waste to landfill through increased re-use, recovery, recycling, refurbishment and alternative waste treatment, leading to increased economic opportunities for all.

- **Goal 4: Improved compliance with the environmental regulatory framework.**

  - Objective 1: Strengthen compliance and enforcement; and
  - Objective 2: Facilitate the rehabilitation of Waste Management Facilities.

  Expected outcome: Creating a culture of compliance with zero tolerance towards pollution, littering and illegal dumping.

Actions for implementation were identified to support the strategic goals and objectives and included in the Implementation Plan. Timeframes, responsibility and output indicators for each activity are included in the Implementation Plan. Activities will be monitored to ensure implementation and subsequent reporting.

1. INTRODUCTION

This report serves as the 3rd generation Western Cape Integrated Waste Management Plan for 2023-2027 (WC IWMP 2023-2027). The National Environmental Management: Waste Act 59 of 2008, as amended (NEM: WA) requires provincial governments and municipalities to develop IWMPs to ensure proper waste management planning. In the Western Cape, the Department of Environmental Affairs and Development Planning (DEA&DP), hereafter referred to as the "Department" is responsible for the development of the provincial IWMP. The primary aim of an IWMP is to integrate and optimise waste management planning by maximising efficiency, minimising associated environmental and financial costs and to improve the quality of life of citizens (DEA, no date). This is especially important given the current situation where there are many socio-economic challenges being experienced, such as low economic growth, high fuel and transport costs, inequality, poverty, high unemployment levels, housing shortages, high rates of informal settlement growth, load-shedding and high rates of crime and violence (including gender-based violence), and pressures and impacts linked to climate change. The global economic impacts associated with the war in Ukraine, and the social and economic disruptions of the COVID-19 pandemic have further exacerbated many of these issues. During the height of the COVID-19 pandemic, waste management budgets were required to be reprioritised for COVID-19 relief measures, which would have impacted waste management services. It is thus necessary to prioritise and optimise waste management within the current socio-economic context.

Although the Western Cape has made several improvements in terms of waste management, several challenges exist. Some notable waste management challenges include limited waste management infrastructure, low levels of compliance at several waste management facilities (WMFs), high levels of illegal dumping, limited landfill airspace, lack of budgets prioritised and allocated for waste management, shortage of experienced and qualified waste managers, low levels of governance, political interference, and escalating waste management costs including high transport costs. Waste management is closely linked with environmental pollution and climate change, since improper waste disposal contributes to surface and groundwater pollution and greenhouse gas (GHG) emissions. Overcoming these challenges requires an integrated approach to waste management. The nexus between waste management and water, food and energy security are areas of particular importance for integration and exploring opportunities.

The National Waste Management Strategy, 2020 (NWMS) notes that municipalities still favour a collection and disposal approach to waste management and that these municipalities find it difficult to implement an integrated waste management system as per the waste management hierarchy. The NWMS promotes the waste management hierarchy and circular economy as key principles for waste management, while focussing on socio-economic development which is equitable, inclusive, sustainable and environmentally sound. It aims to

address the role of vulnerable groups in the informal waste economy and to support and address the skills gap of women, youth and people with disabilities in the circular economy. The WC IWMP will be aligned to the NWMS as well as other key strategic documents, such as the WC Recovery Plan, which informed the desired-end state for integrated waste management in the province.

1.1. Scope of the WC IWMP

The WC IWMP covers the geographical area of the Western Cape Province of South Africa, which makes up 10.6% of the country's land surface and covers an area of approximately 129 462 km^2 (Figure 1). It is the fourth largest province in South Africa and is divided into one metropolitan municipality and five district municipalities, namely the City of Cape Town Metropolitan Municipality (CoCT), Cape Winelands District Municipality (CWDM), Central Karoo District Municipality (CKDM), Garden Route District Municipality (GRDM), Overberg District Municipality (ODM) and West Coast District Municipality (WCDM). District Municipalities are further subdivided into 24 local municipalities (Table 1). The CoCT accounts for approximately 66% of the province's population, and between 2018 to 2021 accounted for approximately 71%[1] of the total general waste in the Western Cape. The WC IWMP aims to provide strategic direction to municipalities and industry within the Western Cape and includes an implementation plan with waste management activities to be undertaken.

[1] Based on IPWIS dataset

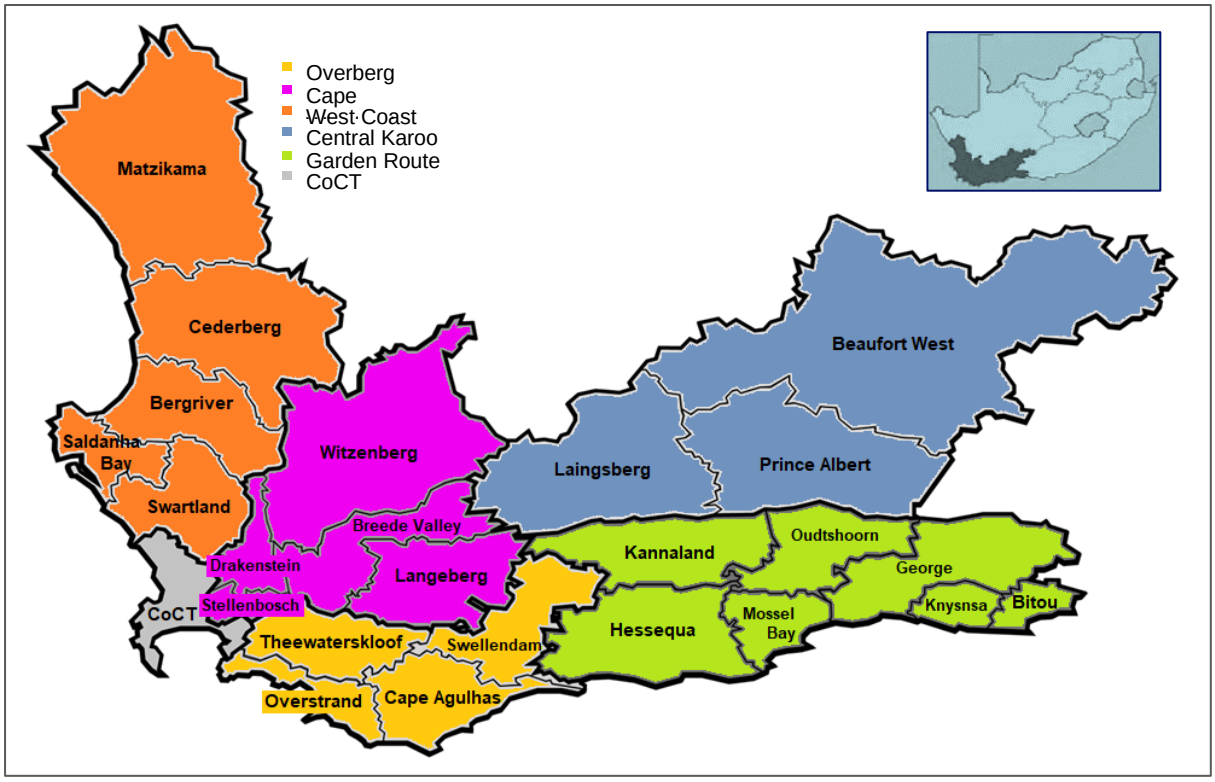


Figure 1: Map of the Western Cape

Table 1: Western Cape municipalities

DISTRICT/METROPOLITAN MUNICIPALITIES	LOCAL MUNICIPALITIES
Cape Winelands	Breede Valley, Drakenstein, Langeberg, Stellenbosch, Witzenberg
Garden Route	Bitou, George, Hessequa, Kannaland, Knysna, Mossel Bay, Oudtshoorn
West Coast	Bergrivier, Cederberg, Matzikama, Saldanha Bay, Swartland
Central Karoo	Beaufort West, Laingsburg, Prince Albert
Overberg	Cape Agulhas, Overstrand, Swellendam, Theewaterskloof
City of Cape Town	N/A

1.2. Background and Purpose of the Integrated Waste Management Plan

As the Western Cape aims to move away from "end-of-pipe" solutions, integrated waste management remains important and must be implemented by all. Integrated waste management incorporates the waste management hierarchy by considering direct impacts e.g. transportation, collection, treatment and disposal of waste, and indirect impacts e.g. use of waste materials and energy (Turner & Powell, 1991; Korhonen et al, 2004 in Seadon, 2006).

The 2nd generation Western Cape Integrated Waste Management Plan 2017-2022 (WC IWMP 2017-2022) aimed to provide strategic direction for integrated waste management over the short-, medium- and long-term to provincial government, local government, industry, commerce and civil society. Furthermore, it aimed to facilitate the implementation of the NEM: WA and the NWMS (2011/2020), to improve waste management in the province. As per the NEM: WA, IWMPs must be reported on annually to ensure implementation of activities. To ensure that IWMPs remain relevant, they should be reviewed ideally every 5 years in alignment with the municipal Integrated Development Plan (IDP) 5-year cycle.

The specific objectives of the WC IWMP 2023-2027 are:

- to provide an analysis of the status of implementation of the 2nd generation IWMP 2017-2022;
- to provide an overview of the identified waste management gaps and needs in the province;
- to develop a set of goals, objectives, activities and targets that respond to the identified gaps and needs;
- to take cognisance of aspects relating to gender equality, human rights, socio-economic development, sustainability of waste services, environmental impacts to inform specific goals, objectives, activities and targets;
- to increase the level of leadership, governance, stewardship and participation in integrated waste management; and
- to enhance a resource efficient society through the development of focused and customised restorative and regenerative approaches for circularity potential.

The Role of IWMPs in Environmental Planning:

The WC IWMP addresses certain environmental impacts and spatial aspects that will influence and inform other policy and planning instruments.

Environmental impacts related to waste management include air pollution, waste transportation, land fill gas emissions, littering and the burning of waste. Water sources and soil may also become polluted through the seepage of leachate from poorly constructed WDFs and through litter and illegal dumping. Furthermore, unmanaged waste can also be carried into the oceans and cause harm to marine life. These aspects must be considered in environmental impact reports, Environmental Management Frameworks (EMFs) and Strategic Environmental Assessments (SEAs), given their regional context that these instruments cover so that they respond to the goals and objectives contained in the WC IWMP.

Current and future planned waste management facilities are located spatially and will therefore need to be identified within Spatial Development Frameworks (SDFs). Consultation

through the establishment of intergovernmental steering committees is critical so that key spatial waste information can be aligned to various sector plans including the WC IWMP, district and municipal IWMPs.

1.3. Method and Approach

The DEA, now DFFE and DEA&DP's guidelines for the development of Integrated Waste Management Plans will be used to inform the approach of the WC IWMP 2023-2027.

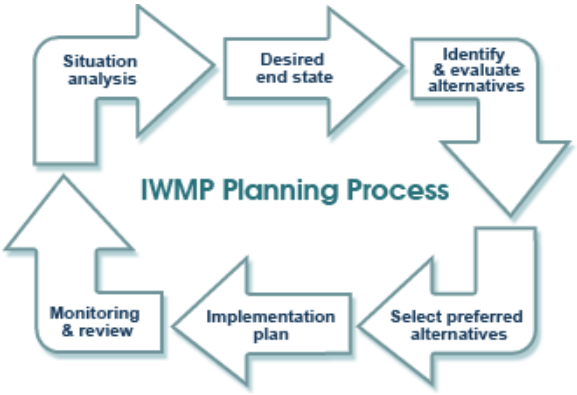
- Gender Mainstreaming and Human Rights Approach

  A Gender Gap Analysis of the WC IWMP 2017-2022 was undertaken to identify priorities and gaps, and to make recommendations based on the findings. These findings were incorporated in the IWMP review to ensure that identified activities are responsive to gender and human rights issues.

- Planning Process

  The IWMP planning process used during the development of the IWMP is as per the DEA IWMP guideline document. It encompasses the following –

  - **Situational Analysis**: The WC IWMP includes a Situational Analysis, which provides an overview of the socio-economic situation in the Western Cape and waste management information relating to e.g., generation and composition, diversion, disposal, compliance and institutional arrangements.



  - **Desired End-state:** The WC IWMP includes a vision for waste management in the province as well as strategic goals and objectives to achieve this vision. The desired end-state aligns to key policies including the global Sustainable Development Goals (SDGs), the National Development Plan 2030 (NDP), the NWMS (2020) and relevant provincial policies, strategies and strategic plans.

  - **Identifying, Evaluating and Selecting Alternatives:** The establishment of a project steering committee, working group and thorough public participation to identify, evaluate and select alternatives that respond to identified waste management gaps and needs.

- **Implementation Plan**: The WC IWMP includes an action plan with activities and timeframes.

- **Monitoring and Review:** The implementation of the WC IWMP must be reported on annually. This includes reporting to the national Department of Forestry, Fisheries and the Environment (DFFE), formerly the Department of Environment, Forestry and Fisheries (DEFF). The WC IWMP will be reviewed and updated every five years. A plan for reporting, review and monitoring is included in Section 7.

The development of the WC IWMP was undertaken in two phases as depicted in Figure 2. The 2021/22 financial year focused on the development of the Situational Analysis (Section 3) and Gender Gap Analysis, whereas the 2022/23 financial year was aimed at the development of the Implementation Plan, captured in Section 6.

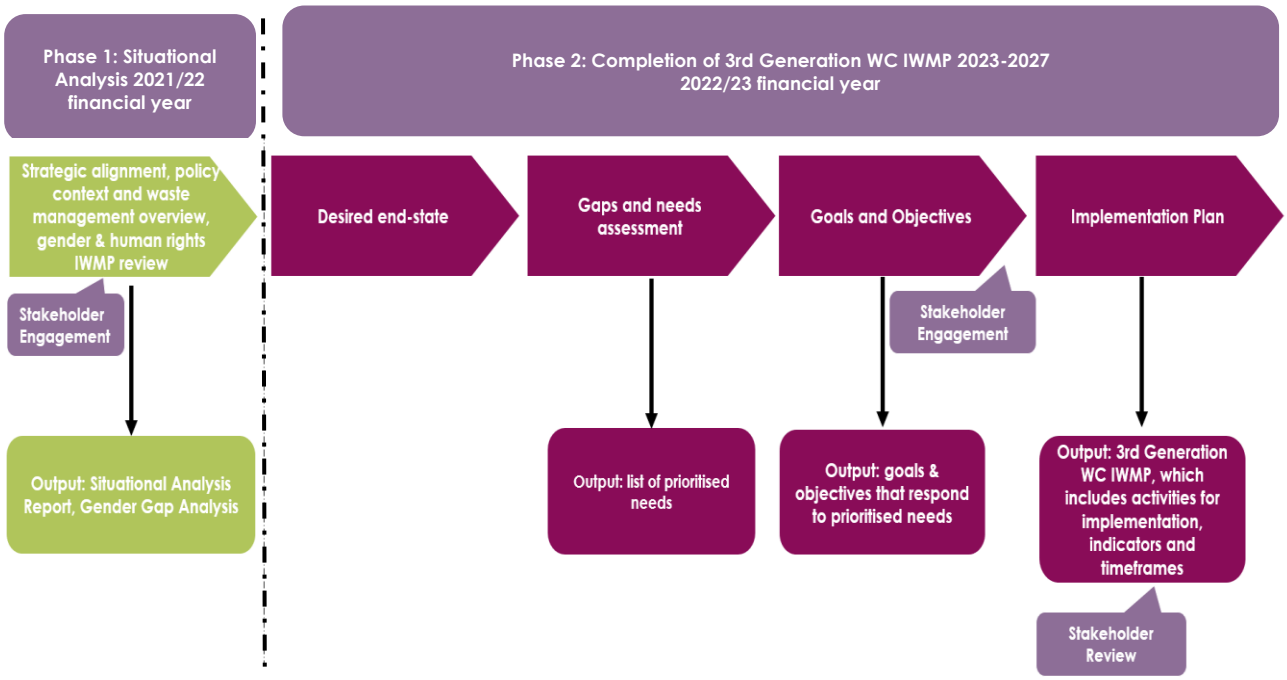


Figure 2: Integrated Waste Management Plan overview

1.4. Public Participation

Stakeholder engagement took place throughout the IWMP process (Appendix A). The public participation process is described below.

- The public were invited to register their interest and be kept informed of the IWMP process via e-mail, newspaper advertisement and the Departmental website.
- A database of stakeholders was compiled and updated throughout the process.
- The Situational Analysis was made available for public comment from 2 February to 7 March 2022.
- A public participation workshop was hosted on 23 February 2022. The Situational Analysis findings were presented, and waste management gaps and needs were identified. Due to the COVID-19 pandemic, the workshop was hosted via Microsoft (MS) Teams.
- The draft WC IWMP was made available for public comment from 20 September to 20 October 2022.
- Comments received were recorded in a Comments and Responses Table (Annexure: A).
- A public participation workshop was held on 7 October 2022 to obtain inputs on the draft WC IWMP.
- The draft WC IWMP and the executive summary, which was translated into English, Afrikaans and IsiXhosa, were made available for an additional commenting period from 11 November to 12 December 2022. No comments were received.
- A notice was published in the Provincial Gazette and in selected newspaper/s calling for comments on the draft WC IWMP and executive summaries on 11 November 2022.
- Hard copies of the draft WC IWMP and executive summaries were placed at the offices of municipal managers.
- Copies of the draft WC IWMP and executive summaries were published on the Department's website.
- The draft WC IWMP and executive summaries were made available electronically to Provincial Library Services for circulation to libraries across the province and, to all Municipalities to circulate to stakeholders.

1.5. Layout of the WC IWMP

The WC IWMP is divided in several sections as indicated below:

SECTION	OVERVIEW
1. Introduction	Provides a background to the WC IWMP, including method and approach undertaken.
2. Policy context informing the desired-end state for waste management	Provides an overview of the global, national and provincial policy that informs integrated waste management, including an overview of waste-related legislation.
3. Situational Analysis	Provides an overview of the socio- economic context and waste management in the Western Cape.
4. An analysis of the implementation of the WC IWMP 2017-2022	Provides feedback on the implementation of activities as indicated in the WC IWMP 2017-2022.
5. Gaps and Needs Analysis	Provides the consolidated gaps identified during the Situational Analysis and stakeholder engagement, and a list of priority needs based on the gaps.
6. Implementation Plan	Provides the strategic direction for waste management, which, is captured in the vision, mission, strategic goals and objectives, and the Implementation Plan.
7. Monitoring, Review and Reporting	Provides a plan for monitoring, reporting and review.

2. POLICY CONTEXT INFORMING THE DESIRED END-STATE FOR WASTE MANAGEMENT

The desired-end state for waste management is informed by various global, national and provincial level policies. Central themes for the WC IWMP are informed by the NWMS, 2020 and are provided in Sub-sections 2.1 and 2.2. Integrated waste management also has several environmental and socio-economic linkages, which are elaborated on in section 2.3.

2.1 The Waste Management Hierarchy

Waste generated must be collected and transported for waste recycling, re-use and recovery and disposal (Figure 3).The waste management hierarchy recognises that there is no single approach to managing all waste and ranks the various waste management options from most preferred to least preferred (Figure 3). The disposal of waste is considered the least preferred method, whereas waste reduction and prevention are most preferred.

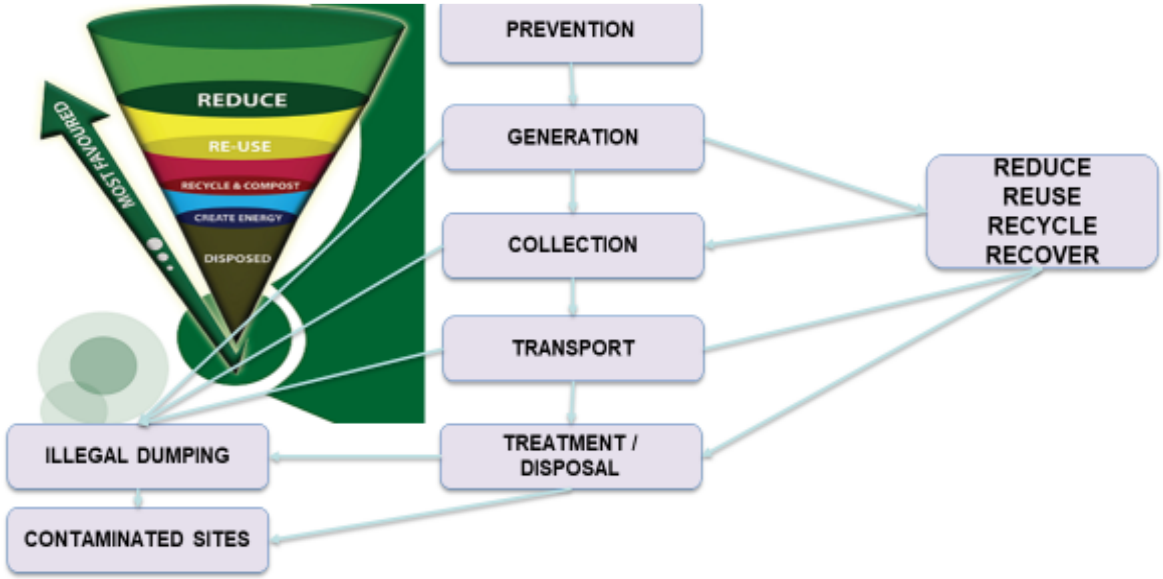


Figure 3: The waste management hierarchy (Source: DEFF, 2020)

Since prevention is the most preferred waste management option, it is a key aspect to the waste management hierarchy. The NWMS, 2020 highlights several factors which may hinder waste prevention.

- Lack of environmental awareness amongst consumers and producers with respect to product design, raw material selection, manufacture, use and end of life;
- Perception that products containing recycled or re-use content is inferior compared those produced from virgin materials;

- The convenience and low cost of landfilling as a waste management option;
- Lack of incentives to motivate waste prevention measures in manufacturing;
- Lack of data on waste streams; and
- Commercial pressure to shorten innovation and product development cycles.

The aforementioned issues need to be addressed to prioritise waste prevention. A shift towards a circular economy could provide benefits in terms of waste reduction, encouraging innovation and the design of products with a longer lifespan. The circular economy is expanded on further in 2.2.

2.2 The Circular Economy

Developing economies, such as South Africa can secure the benefits offered by the green economy by approaching economic growth from a sustainability perspective (Ntuli & Semelane, 2019). According to the DFFE (no date), the green economy refers to two inter-linked developmental outcomes for the South African economy:

- Growing economic activity, which leads to investment, jobs and competitiveness in the green industry sector, and
- A shift in the economy towards cleaner industries and sectors i.e., the circular economy (Figure 4).

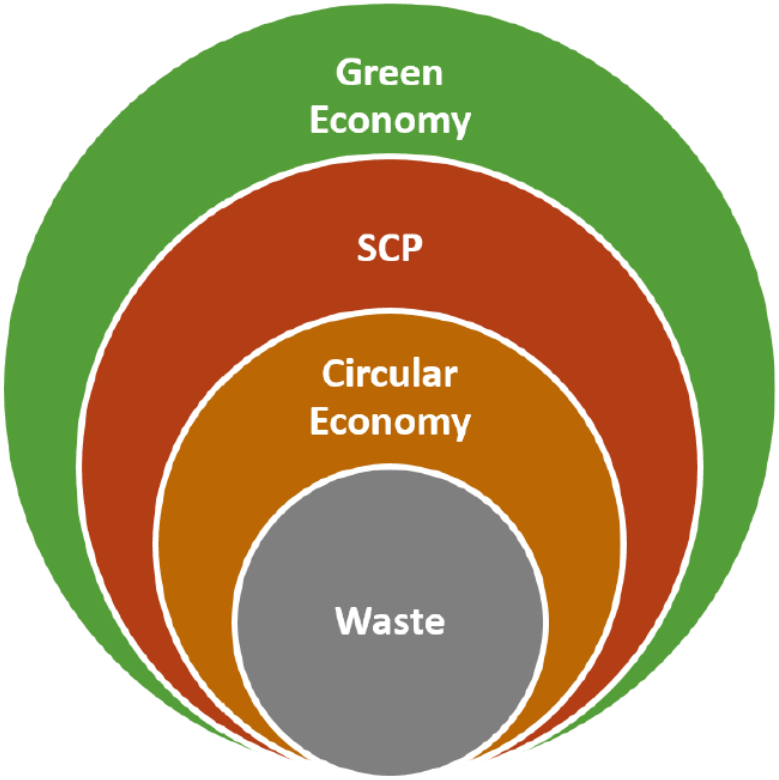


Figure 4: Relationship between waste, the circular and green economies and sustainable consumption and production (Source: DEFF, 2020)

In the current linear economy, raw materials are extracted, processed, manufactured, used by consumers and then disposed of. The circular economy contrasts the 'take-make-dispose' linear economic model and aims to decouple growth from consumption of finite resources (Ellen Macarthur Foundation, 2017) (Figure 5). Principles of the circular economy include designing out waste, keeping materials in use and regenerating natural systems (CSIR, 2021). A circular economy model minimises the need to extract virgin materials and emphasises the importance of building a secondary resources economy around the beneficiation of waste (DEA&DP, 2016).

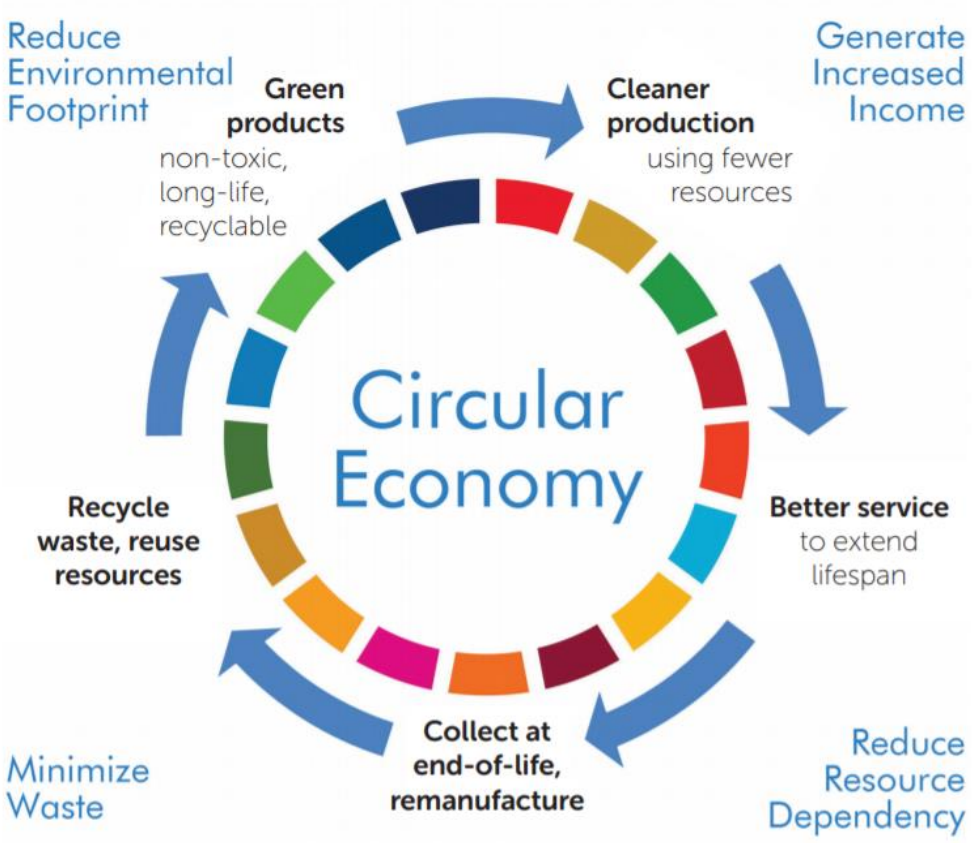


Figure 5: The circular economy model (Source: UNIDO, 2017)

The circulation of materials within the circular economy is depicted in Figure 6 as biological (left) and technical cycles (right).

The biological cycle incorporates the use of technology in which biodegradable materials are returned to the biosphere e.g., anaerobic digestion, composting and biogas recovery. Other key actions in the biological cycle include restoration and rehabilitation/remediation - e.g. composting used to improve/restore soil health, rehabilitation/remediation of landfills or degraded polluted land caused by waste.

The technical cycle entails keeping products and materials in circulation through processes such as re-use, repair, refurbishing and recycling.

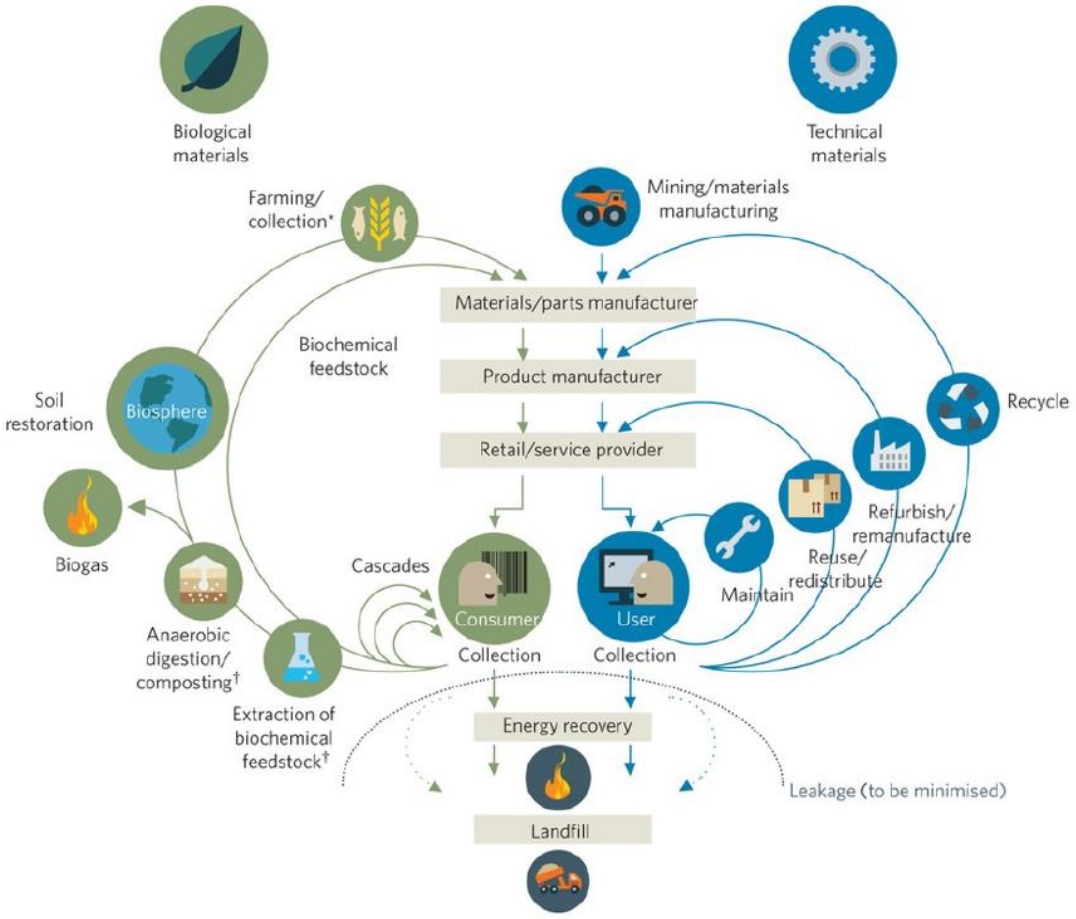


Figure 6: Biological and technical cycles of the circular economy (Source: Ellen Macarthur Foundation, 2019)

The NEM: WA promotes the circular economy and has a provision for Extended Producer Responsibility (EPR), with the aim of reducing waste through minimisation, re-use and recycling. EPR is the commitment made by a producer to facilitate a reverse collection mechanism and recycling of end-of-life, post-consumer waste. The objective is to circle it back into the system to recover resources embedded in the waste.

The Department aims to assist national government with the implementation of EPR in the province and to stimulate and provide support to the sectors involved with implementation.

2.3 Cross-cutting Issues and Waste Management Linkages

The WC IWMP considers several waste management linkages and cross-cutting issues. Waste management touches on all aspects of sustainable development i.e., environment, society and economy, and is therefore associated with a range of global issues linked to climate change, public health, poverty, food security, resource efficiency, production and consumption (ECD Monrec, 2018). These cross-cutting issues align with the issues identified in

the global Sustainable Development Goals (SDGs) and national and provincial policy. An overview of some of the identified cross-cutting issues and waste management linkages is provided as follows:

2.3.1 Climate Change

Methane (CH_4) is a key Green House Gas (GHGs) generated by solid waste disposal-related activities. Carbon Dioxide (CO_2) emissions are also linked to the sector through associated activities, including transportation to waste facilities and energy use at facilities. CH_4 is a potent GHG and has a global warming potential 25 times greater than CO_2 (US EPA, no date), however it is considered a short-lived GHG, which means that it disappears more rapidly from the atmosphere. Reducing CH_4 through activity changes would therefore realise quick reductions in emissions contributing to global climate emission reductions.

According to UNEP, all waste management practices generate GHGs either directly (emissions from the process itself) or indirectly, via energy consumption (UNEP, 2010). Sources of GHG emissions during solid waste management practices include emissions from incineration, composting, anaerobic digestion and mechanical biological treatment; however, landfilling has been identified as a major source of CH_4 emissions compared to other waste management practices (UNEP, 2010). It is therefore necessary to prioritise the waste management hierarchy and limit disposal of waste to landfill and instead focus on waste avoidance, re-use and recycling.

The 2050 Emissions Pathway Analysis for the Western Cape: 2018 Baseline GHG Emissions Profile indicates that the waste sector (comprising solid waste and wastewater treatment) contributed to approximately 5% of the GHG emissions in the province during 2018 [2](DEA&DP, 2022). The Western Cape Climate Change Response Strategy (draft July 2022) Climate Action Pathway, Objective 2 aims for the "transitioning in an equitable and inclusive manner to net zero emissions by 2050". Recognising the link between waste and GHG emissions, it includes a target of zero organic waste to landfill by 2027.

Since the breakdown of organic waste is responsible for CH_4 production, it is a key waste type requiring attention. Organic waste currently accounts for a large portion of waste generated in the province and is estimated to be 35% of the municipal fraction (Anders & Coetzee, 2022). The Department has already put organic waste diversion targets in place i.e., 50% reduction of organic waste to landfill by 2022, and a total ban by 2027. These targets along with other measures such as capacity building, license conditions and municipal organic waste diversion plans, could assist municipalities in reaching significant waste diversion for this waste stream.

[2] One of the challenges in completing the waste GHG exercise was data gaps in terms of some of the solid waste disposal facilities in the Western Cape and some big gaps in terms of wastewater data. The contribution from this sector may be greater than the 5% currently estimated for waste.

2.3.2 Sustainable Consumption and Production

In South Africa, the economy is historically carbon- and resource- intensive (Ntuli & Semelane, 2019). While consumption is a driver of economic growth, it directly creates environmental pressures from the use of goods and services (EEA, 2012). Consumption is closely linked with waste generation, i.e., the more people consume, the more waste they generate. The shift to a circular economy model may assist in achieving more sustainable consumption and production (SCP). SCP aims to decouple economic growth from environmental degradation, increase resource efficiency and promote sustainable lifestyles (UNEP, no date). UNEP (2015) lists the following key principles for SCP:

- "Improving the quality of life without increasing environmental degradation and without compromising the resource needs of future generations.
- Decoupling economic growth from environmental degradation by (1) Reducing material/energy intensity of current economic activities and reducing emissions and waste from extraction, production, consumption and disposal. (2) Promoting a shift of consumption patterns towards groups of goods and services with lower energy and material intensity without compromising quality of life.
- Applying life cycle thinking which considers the impacts from all life-cycle stages of the production and consumption process.
- Guarding against the re-bound effect, where efficiency gains are cancelled out by resulting increases in consumption."

Ntuli & Semelane (2019) list several best practices for SCP, which include multi-stakeholder engagement, punitive measures, financial incentives, voluntary green labelling, corporate reporting and public procurement.

One of the key industries requiring focus in South Africa is the food industry. Inefficiencies in South Africa's food chain, resulted in a total cost of edible food waste of R61.5 billion during 2011 (GreenCape, 2020). According to the WWF (2017), a third of all the food produced (31 million tonnes) annually in South Africa ends up at landfills and fruits, vegetables and cereals account for 70% of this wastage, which mainly occurs early in the food supply chain. WWF (2017) estimates the cost of energy (both diesel and electricity) wasted as a result of food waste at R1 billion and the associated water wasted would fill over 600 000 Olympic swimming pools. South Africa committed to Sustainable Development Goal 12, Target 12.3, which aims to halve global food waste by 2030 from the retail and consumer levels and is obligated to reduce food losses along production and supply chains, including post-harvest losses (WWF, 2017). Reducing food loss will improve food security and has financial benefits as well as societal benefits if surplus food is donated to those in need.

Power outages or load-shedding is another threat to food security in South Africa as it results in food wastage and leads to increased food prices as the food industry tries to offset the costs of alternatives to the energy crisis. The load-shedding crisis began in 2008 and has worsened since, resulting in longer hours of power interruption (Olajuyin & Mago, 2022). Olajuyin & Mago (2022) conducted a study to investigate how load-shedding affects the performance of Small, Medium, and Micro Enterprises (SMMEs) in the food industry in South Africa. The food industry relies heavily on electricity and load-shedding damages food stocked in refrigerators resulting in compromised customer service quality (Olajuyin & Mago, 2022). Studies have emphasised the importance of a reliable electricity supply for businesses to run efficiently and contribute to economic growth and poverty alleviation (Olajuyin & Mago, 2022). Businesses have adopted alternative power sources such as backup generators and adjusted their operations around the planned load-shedding in order to keep their businesses running. Load-shedding increases costs due to, repairs of damaged equipment and/ or electrical appliances and the purchase of alternative sources of power (Olajuyin & Mago, 2022). It affects the quality of food items leading to loss of clientele due to poor service and the delay of order deliveries (Olajuyin & Mago, 2022). This results in food wastage as the food is condemned and disposed of or the food prices are too high for consumers to afford as the businesses must pay for the costly alternative power solutions.

According to Dlamini *et al*. (2023), over 21% of South African households had inadequate access to food in 2017 in comparison to the 11.8% of the United States of America, a high-income country. As a result, food insecurity is South Africa's leading health and nutrition issue, where households do not have access to adequate food due to limited money or other resources (Dlamini *et al*., 2023). According to Dlamini *et al*. (2023), a survey conducted by the National Income Dynamics Study-Coronavirus Rapid Mobile (NIDS-CRAM) found that in March 2021, about 35% of the South African population did not have money to buy food. The South African annual consumer price inflation decreased from 7,2% in December 2022 to 6,9% in January 2023 and the main contributors this were the food and non-alcoholic beverages; housing and utilities; transport; and miscellaneous goods and services (StatsSA, 2023).

2.3.3 Job Creation and Poverty Reduction

South Africa is faced with rising levels of unemployment and poverty, which has contributed to it being one of the most unequal countries (Blaauw et al., 2016). In response to the slow economic growth due to the COVID-19 pandemic, during which many people lost their jobs, National Government formulated the South Africa Economic Reconstruction and Recovery Plan. The Western Cape Growth for Jobs Strategic Framework and the Draft Growth for Jobs Strategic Plan seek to achieve break-out economic growth to drive sufficient employment and opportunity.

Economic growth is key to alleviating poverty and improving quality of life of people in developing countries (DFID, 2015). The waste sector has been identified as an economic sector

that can significantly contribute towards social and economic development (Godfrey et al., 2014). It is estimated that the value of waste lost to the country's economy through landfilling is more than R17 billion per annum (CSIR, no date). Moving waste up the hierarchy i.e., away from landfilling and towards avoidance, re-use, recovery and recycling, is not only beneficial for the environment, but provides social and economic opportunities (Godfrey et al., 2014). According to GAIA (2021), disposal and incineration create significantly fewer jobs than repair and recycling.

During 2016, the waste economy contributed R24.3 billion to the South African GDP (DEA, 2017). DEA, 2017 estimates that the waste sector includes between 60 000 - 90 000 informal waste pickers and 35 000 formal waste jobs. It has been found that despite the positive contribution of waste pickers to society in terms of waste recycling, they remain on the margins of poverty (Viljoen et al., 2016). The DFFE and the Department of Science and Innovation have developed a Waste Picker Integration Guideline aimed at ensuring the income, conditions, job security, position in the value chain and dignity of waste pickers are improved.

2.3.4 Health and Environmental Impacts

Poor waste management and illegal dumping result in environmental impacts such as air, water and soil pollution, which in turn impact human health. Illegally dumped waste and litter often end up in the stormwater system and eventually makes its way to the river system. Rivers are further impacted when solid waste and fats are disposed of into the sewer system, causing blockages and resulting in spills and overflows.

Plastic pollution is another concern which is linked to poor waste management practices. The durability of plastic along with its low manufacturing costs, are some of the reasons why it is so favourable. The low cost of plastic, however, means that it is often mass produced and manufactured for single-use purposes (Bucci et al., 2020). Unmanaged plastic waste is carried into rivers, wetlands, streams, and oceans by wind or flowing water (SETAC, 2019). Plastics physically harm wildlife when they ingest it or become entangled in it. When plastics fragment, they form microplastics (less than 5mm long). Microplastics are also manufactured in the form of pellets, scrubbers (as used in cosmetics) and abrasives (synthetic-sand blasting) (Bouwman et al., 2018). Contaminants, found in microplastics are transferred to marine organisms by ingestion, inhalation, and through their skin e.g., polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), petroleum hydrocarbons, organochlorine pesticides, polybrominated diphenyl ethers, alkylphenols, and bisphenol A (BPA) (Matahlon & Hill, 2014). In addition to the negative impacts on the marine environment, microplastics may also contaminate soils, sediments and freshwater (de Souza Machado et al., 2017).

Waste collection and waste treatment methods also negatively impact the environment. During the collection and transportation of waste, trucks release emissions into the air. Meanwhile, communities living within proximity of dumping sites or poorly managed Waste

Disposal Facilities (WDFs) may be impacted by nuisances such as dust, odour and pests. Leachate emanating from the waste body may also contaminate water sources and soil. Other waste disposal measures such as incineration release potential emissions include dioxins and furans in flue gas, which are harmful to human health (Mukherjee et al., 2016). Similarly, harmful emissions including nitrogen oxides, sulphur dioxide, volatile organic compounds (VOCs), carbon monoxide, and particle matter are released into the air when waste is burned (US EPA, 2016). Waste burning is sometimes undertaken by waste pickers on landfills to get to the valuable waste materials such as metals.

Awareness-raising targeted at communities must include linkages between waste and human health. Recognising the links between the environment and human health aligns with the One Health approach of the Province, which aims to achieve optimal health and well-being. One Health can be described as a collaborative, multisectoral, and trans-disciplinary approach, which recognises the interconnections between people, animals, plants and their shared environment (University of Pretoria, no date).

In addition, compliance and enforcement is also important in combatting illegal dumping and ensuring that WDFs are compliant with their WMLs.

2.3.5 Gender and Human Rights

Poor waste management and pollution may have negative impacts on the rights of citizens. Gender mainstreaming and human rights approaches to waste management ensures that the needs of all vulnerable groups are taken into consideration as outlined in the National Environmental Management Act (107 of 1998) and the NWMS. Furthermore, the Constitution provides that everyone has a right to a healthy environment and to have their environment protected. The proper management and disposal of waste is thus essential in preventing impacts that may infringe on the rights of citizens. As previously mentioned, the waste sector has been identified as a key sector for economic growth and job creation. Given the high levels of inequality (including gender inequality) in the country, it is important that everyone has equal opportunity to access the benefits of the waste economy and not be discriminated against based on e.g. gender, disability, sexual orientation and race.

A Gender Gap Analysis was undertaken for the WC IWMP 2017-2022. The report examined the differences between men and women with respect to waste management perceptions, behaviour, needs and preferences, health impacts as well as employment in the informal and formal waste economies. The report also highlighted several considerations with respect to other vulnerable groups i.e., people with disabilities' exclusion from employment opportunities, concerning levels of youth unemployment and the exclusion of those with mobility issues from waste management and recycling practices. An analysis of the gaps relating to gender and human rights were identified. Recommendations were made to inform the development of

the WC IWMP 2023-2027, which must be considered when developing activities for implementation:

- Engage with and improve the participation of women, youth and other vulnerable groups in decision-making and policy formulation.
- Focus on strengthening vulnerable group/ women's organisations in the waste sector, with the aim to build their organisational, leadership and business management skills.
- Align the WC IWMP with the SDG goals specifically SDG 12, which deals with Sustainable Consumption and Production and SDG 5, which deals with Gender Equality.
- Ensure the IWMP uses gender-sensitive language and considers the diverse gender roles and needs.
- Monitor the implementation of the plan to ensure gender responsiveness and gender mainstreaming is achieved.
- Tackle illegal dumping and littering as well as improve compliance at waste management facilities, as not doing so negatively impacts the rights of citizens.
- Provide support to waste pickers about their health, safety, security, dignity, and overall well-being.
- Improve employment and networking opportunities for women, youth and persons with disabilities.
- Use capacity-building to encourage the promotion of women to leadership positions in the various spheres of government.
- Identify projects /outcomes that are gender-specific / vulnerable-group specific.
- Allocate budgets specifically to address gender and vulnerable- group inequalities.
- Include gender mainstreaming requirements in capacity-building training aimed at municipalities and the private sector.

The WC IWMP aligns with several policies, legislation, frameworks, charters and international conventions. The aforementioned focus primarily on environmental sustainability, economic growth, poverty alleviation and equality, including human rights and gender equality. These themes have linkages to waste management. The province aspires to having a waste management system, which focuses on waste avoidance, re-use and recycling rather than disposal, where there is growth in the waste economy and that every citizen in the province has access to sustainable and equitable waste services.

2.4 Global Vision for Sustainable Development

2.4.1 Sustainable Development Goals

The SDGs comprise of 17 goals that were adopted by the United Nation member states in 2015 with the aim to end poverty, improve health and education, reduce inequality, spur economic growth and tackle environmental issues. The key SDG to which the WC IWMP is aligned to is **SDG 12: Ensure sustainable consumption and production**. However, many of the other goals are also relevant to waste management. Additional SDGs that the WC IWMP is aligned to include:

- SDG 1: End poverty in all its forms.
- SDG 2: No hunger.
- SDG 3: Ensure healthy lives and promote well-being for all at all ages.
- SDG 5: Achieve gender equality and empower all women and girls.
- SDG 6: Ensure access to water and sanitation for all.
- SDG 7: Ensure access to affordable, reliable, sustainable and modern energy.
- SDG 8: Promote inclusive and sustainable economic growth, employment and decent work for all.
- SDG 9: Build resilient infrastructure, promote sustainable industrialisation and foster innovation.
- SDG 11: Make cities inclusive, safe, resilient and sustainable.
- SDG 13: Take urgent action to combat climate change and its impacts.

2.4.2 Multilateral Environmental Agreements (MEAs)

South Africa is signatory to several international MEAs relating to waste. The international conventions as indicated below ensure waste is managed within a life-cycle approach, to reduce harmful impacts.

MULTILATERAL ENVIRONMENTAL AGREEMENT	DESCRIPTION
Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, 22 March 1989.	Regulates the transboundary movement (import and export) of hazardous waste.
Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, 10 September 1998.	Aims to facilitate informed decision-making by countries regarding the trade in hazardous chemicals.

Stockholm Convention on Persistent Organic Pollutants, Stockholm 22 May 2001.	Aims to protect human health and the environment from persistent organic pollutants
Resolution to "end plastic pollution: towards an international legally binding instrument (expected finalisation 2024)	Recognition that urgent international action is needed by developing an international legally binding instrument on plastic pollution, including in the marine environment (DFFE, 2022)

2.4.3 International Framework for Gender Equality

There are numerous international and regional treaties, policies and conventions that promote human rights and equality. An overview of the international and regional gender framework is provided in Figure 7.

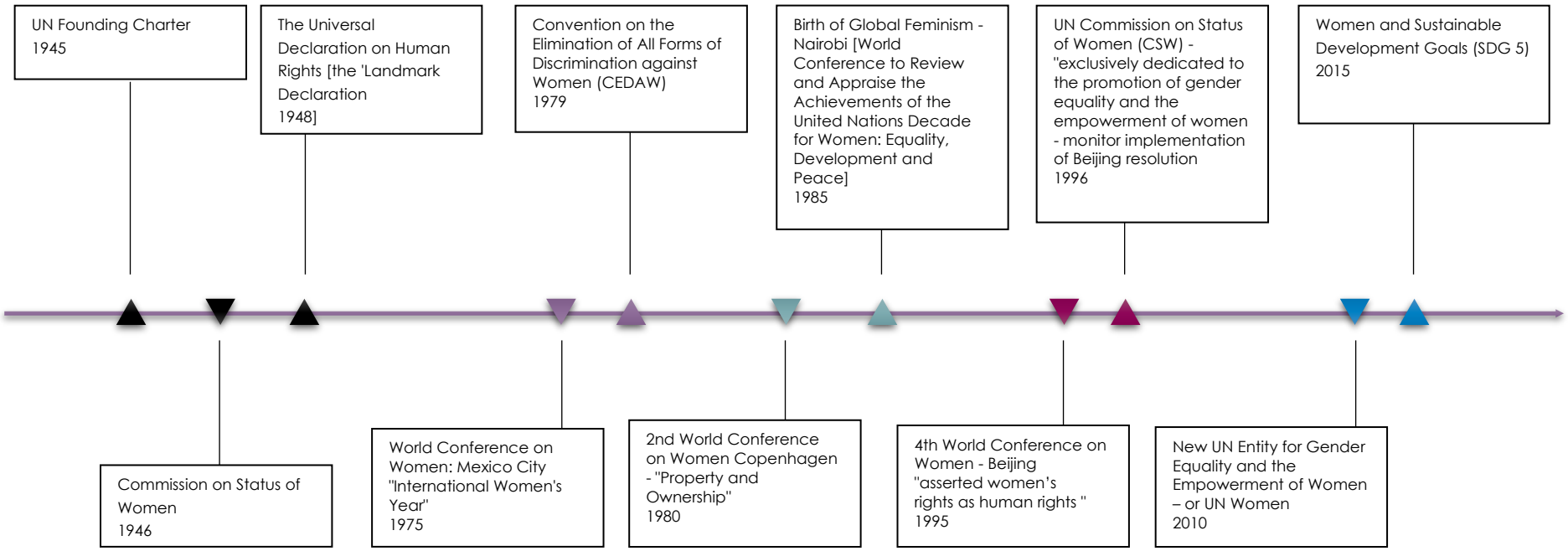


Figure 7: Gender policy development timeline (Source: adapted from DEA&DP, 2020)

2.5 National Policy

2.5.1 The Constitution

The South African Constitution Act (No. 108 of 1996) is the supreme law of the land. The environmental right is set out in Section 24 of the Constitution's Bill of Rights which states that: Everyone has the right:

a) to an environment that is not harmful to their health or well-being; and
b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that-
   I. prevent pollution and ecological degradation;
   II. promote conservation; and
   III. secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

2.5.2 National Development Plan 2030 (NDP)

The NDP maps out the vision of the country with the key objective to reduce poverty and inequality in South Africa by 2030, by creating jobs, addressing spatial transformation, the expansion of infrastructure and building environmental sustainability and resilience. The NDP specifically recognises the need to focus on gender equality, the youth and people with disabilities as transversal issues cutting across all its overarching goals. It outlines an approach to waste management which includes investment in consumer awareness, green product design, recycling infrastructure and waste-to-energy projects, which would result in significant strides to becoming a zero-waste society.

2.5.3 National Waste Management Strategy, 2020

The NWMS places emphasis on the waste management hierarchy and moving towards a circular economy. The three strategic pillars identified are waste minimisation, effective and sustainable waste services and compliance, enforcement and awareness. The NWMS has the following outcomes:

- Prevent waste, and where waste cannot be prevented ensure 40% of waste diverted within 5 years; 55% within 10 years; and at least 70% within 15 years leading to zero waste going to landfill;
- all citizens live in clean communities with waste services that are well managed and financially sustainable;
- and mainstreaming of waste awareness and a culture of compliance resulting in zero tolerance of pollution, litter and illegal dumping.

The NWMS specifically focuses on vulnerable groups by:

- Addressing the role of vulnerable groups, waste pickers and the informal sector and supporting women, youth and people living with disabilities in the circular economy; and
- Addressing the skills gap within the sector with a special focus on women, youth and people living with disabilities.

2.5.4 National Gender Equality Framework

The Constitution of South Africa and the NDP promotes equality for all citizens, including gender equality. In addition to the above, gender specific policy has been developed in South Africa with and aim to achieve gender equality within government, civil society and the private sector and to ensure that resources are allocated for this purpose.

South Africa's National Policy Framework for Women Empowerment and Gender Equality (National Gender Policy Framework) - aims to ensure that achieving gender equality is the focus of transformation in South Africa, within all structures, institutions, policies, procedures, practices and programmes of government, its agencies and parastatals, civil society and the private sector. It states that to achieve a racist-free, sexist-free society, a paradigm shift is required regarding resource allocation and how people relate to each other.

Public Sector 8 Principle Plan for Heads of Departments on Women's Empowerment and Gender Equality (DPSA, 2007) - includes eight (8) Guiding Principles for Public Service Departments with the purpose of building a commitment for Gender-sensitive mainstreaming in the Public Service. These gendered-positioned principles are imperative when engaging with, and developing policy (DEA&DP, 2020). Principle 5 refers to "Gender Mainstreaming" and requires that gender perspectives are included in all work of the Department.

Framework on Gender Responsive Planning, Budgeting, Monitoring, Evaluation and Auditing - the Framework focuses on closing the gap between plans and budgets by mainstreaming gender throughout the planning, budgeting, monitoring, evaluation and auditing phases. By doing so, it aims to achieve a more sustainable, comprehensive and multi-sectoral approach to gender mainstreaming within the country's planning, monitoring and evaluation and public financing systems.

2.5.5 Sanitary Dignity Framework, 2019

Seeks to address challenges linked to sanitary dignity interventions by proposing acceptable national norms and standards in respect of the provision of sanitary dignity to indigent persons. The Frameworks states that indigent persons must be educated on the safe disposal of sanitary products and that sanitary products must be disposed of in a manner that avoids direct human contact and with minimum environmental pollution. The Framework provides measures for the appropriate management of sanitary waste.

2.6 Provincial Policy

A summary of the applicable provincial policies, strategies and strategic plans to which the WC IWMP aligns is provided:

OneCape 2040	The OneCape 2040 aims to transition from an unsustainable carbon-intensive resource-use society to sustainable, low carbon resource use to ensure that the Western Cape Province is recognised as the leader and innovator in the Green Economy. The province supports local government and the private sector to improve the recovery of waste material and beneficial use thereof.
Green Economy Strategy Framework, 2013	The Strategy has a vision to "position the Western Cape as the lowest carbon province in South Africa and the leading green economic hub of the African Continent". It aims to grow the commercial waste economy in partnership between public and private sectors as a major source of green jobs. To achieve this, innovation in identifying waste materials, enabling an environment to support the waste economy and develop a market by establishing a province-wide waste exchange to support the expansion and creation of new waste enterprises by improving the knowledge of waste resources.
Western Cape Infrastructure Framework, 2013	Aims to align the planning, delivery and management of infrastructure, provided by all stakeholders (national government, provincial government, local government, parastatals and the private sector), to the strategic agenda and vision for the province. Provides that waste avoidance is a priority to reduce cost and impact of solid waste, which has minimal specific infrastructure requirements. Waste infrastructure requirements in terms of meeting national targets and achieving efficiencies may include MRFs, waste-to-energy infrastructure, regional waste facilities and waste-on-rail.
Provincial Strategic Plan 2019-2024 (PSP)	The Plan sets out the WCG's vision and strategic priorities. Five Vision-inspired priorities have been identified, namely growth and jobs, empowering people, mobility and spatial transformation, safe and cohesive communities, and lastly innovation and culture. The PSP has several cross-cutting themes such as gender, youth, climate change resilience and food security.

Living Cape: A Human Settlements Framework, 2017	The aim of the Framework is to improve the quality of human settlements. . A key objective of the is to shift the focus from housing delivery to the development of integrated human settlements that enable the sustainable development of communities. This requires alignment of state investments, such as land, social infrastructure and networked infrastructure. The focus of integration efforts must be to create functional and sustainable cities, towns and neighbourhoods.
Western Cape Recovery Plan, 2021	COVID-19 has had a negative impact on the Western Cape economy, and the livelihoods and well-being of people. The Plan was developed in response to these negative impacts. It aligns to and prioritises PSP interventions in light of the greater social and economic challenges, and reduced fiscal resources associated with the pandemic. The Plan is based on key themes, which includes jobs, safety and wellbeing, as a means to achieve dignity.
Western Cape Growth for Jobs Strategy Framework and the Draft Growth for Jobs Plan	The Growth for Jobs (G4J) Strategic Framework and Strategy has its **vision** for the economy in the Western Cape as one that achieves **break-out economic growth** in order to drive sufficient employment and opportunity, and which is **sustainable, resilient, diverse and thriving, generating confidence, hope and prosperity for all**.
Provincial Spatial Development Framework, 2014	This Plan addresses the lingering spatial inequalities that persist because of the country's apartheid legacy, unsustainable resource consumption and disposal. It identifies regional planning initiatives to address specific economic, social, natural or unique features in a specific area. Three urban and two rural priority areas have been identified. The feasibility into regionalisation of waste management services in the regional planning areas would need to be explored.
Western Cape Climate Change Response Strategy: Vision 2050 (2022)	The Western Cape Climate Change Response Strategy: Vision 2050 describes a future that the Western Cape province will strive towards. The vision is to be a net zero emissions and climate resilient province by 2050, built on an equitable and inclusive economy and society that thrives despite the shocks and stresses posed by climate change. Four guiding objectives, aligned to the aspiration expressed in the vision, give structure to the response strategy, including: 1) responding to the climate emergency; 2) transitioning in an equitable and inclusive manner to net zero emissions by 2050; 3) reducing climate risks and increasing resilience; and

	4) enabling a Just Transition through public sector, private sector and civil society collaboration. Integrated waste management, as one of the four main sectors responsible for GHG emissions, plays a key role in implementing actions that will support the reduction in GHG emissions.
Provincial Organic Waste Strategy, 2020	The vision is to assist in the creation of a circular economy where organic waste is not wasted within the entire value chain and is instead largely prevented or beneficiated to reduce the amounts going to landfill and the major impact on climate change. The Strategy includes interventions being implemented by the private sector and other agencies with an aim of forming synergies to create a fully integrated strategy with good collaborative networks amongst all stakeholders. These interventions include Voluntary Agreements as one mechanism to reduce food waste and loss by utilizing sector body initiatives (e.g., Industry Waste Management Plans). The strategy also identifies possible policy instruments that can be applied by various organs of state to meet the 50% and 100% organic waste bans for 2022 and 2027 respectively. Good information management, public and private sector awareness, and private sector buy-in are required to achieve the 100% organic waste reduction by 2027 as set out by the Organic Waste Strategy.
4th Edition Western Cape Environmental Implementation Plan, 2020 (EIP)	The EIP is a legal requirement as per the NEMA and must be prepared by certain national departments and every provincial department responsible for environmental affairs. The purpose is to coordinate environmental policies, plans, programmes and decisions, and to secure the protection of the environment across South Africa as a whole. The EIP further seeks to align the Environmental Sector priorities and long-term strategies as identified in the NDP 2030. This aligns to the key and priority mandates of the WCG and links directly to the vision of an environmentally sustainability, resilient and low carbon economy, to be achieved through addressing urban and rural transformation, improving infrastructure and building environmental sustainability and resilience. Compliance with identified outcomes to be achieved are reported on annually.
Department of Environmental Affairs and Development Planning (DEA&DP) Strategic Plan, 2020-2025	The DEA&DP Strategic Plan has identified waste management as 1 of its six key strategic focus areas. It envisions a sustainable and resilient environment that enables an inclusive and transformative spatial economy. It provides the following 5-year targets for waste management: • 50% of waste diverted from landfill.

	● 5 districts received departmental SMME support interventions to create jobs and to promote the waste economy. ● 95% of households with access to basic refuse removal services. ● 85% of waste facility owners submitting compliance audits. ● 80% of municipalities with by-laws aligned to NEM: WA. ● 90% of municipalities with 3rd generation IWMPs.
Western Cape Air Quality Management Plan, 2021	Aims to ensure the effective and consistent implementation of sustainable air quality management practices, by all spheres of government, relevant stakeholders and civil society to progressively achieve and efficiently maintain clean and healthy air in the Western Cape.

2.7 Overview of Environmental and Waste Legislation

A summary applicable waste legislation is provided:

ACT/REGULATION	DESCRIPTION	SUMMARY OF IMPACTS
The Constitution of South Africa of 1996, as amended	The Constitution is the supreme law of the land. It contains the Bill of Rights, which enshrines the rights of all South Africans.	Section 24 provides all citizens of South Africa to the right to an environment that is not harmful to their health and well-being and to have the environment protected through legislation and other measures. Sets out principles for co-operative governance, to which all spheres of government must adhere to. National, provincial and local governments are seen as distinctive, interdependent and interrelated.
National Environmental Management Act 107 of 1998, as amended	Statutory framework to enforce Section 24 of the Constitution.	Provides several principles applicable to waste management i.e., life-cycle approach, producer responsibility, precautionary principle and the polluter pays principle. Requires the equitable access to environmental resources, benefits and services to meet basic human needs and ensure human well-being. States that the vital role of women and youth in environmental management and development must be recognised and their full participation therein must be promoted.

National Environmental Management: Waste Act 59 of 2008, as amended	Governing Act for waste management which aims to reform the law regarding waste management to protect health and the environment.	Provides reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development. The Act covers a range of issues in integrated waste management including, the requirements for a National Waste Management Strategy, the need for and composition of Integrated Waste Management Plans for organs of state, as well as Industry Waste Management Plans. Key definitions for waste, the licensing of activities and addressing contaminated land are also covered by the Act.
National Domestic Waste Collection Standards (GN 21 of 2011)	Provides standards relating to the collection of general waste.	Distinguishes between the levels of service relating to waste collection whilst emphasising that equitable waste collection services must be provided to all households within the jurisdiction of the Municipality.
National Waste Information Regulations (GN 625 of 2012)	Aims to regulate the collection of data and information to fulfil the objectives of the Nation Waste Information System as set out in section 61 of the NEM: WA.	Specify registration and reporting requirements to the South African Waste Information System.
Waste Classification and Management Regulations (GN 634 of 2013)	Aims to regulate the classification and management of waste in a manner that supports and implements the provision of the NEM: WA.	Provides a mechanism and procedure for the listing of waste management activities that do not require a Waste Management License. Prescribes requirements for; disposal to landfill, timeframes for management of certain wastes and general duties of

		waste generators, transporters and managers.
Norms and Standards for the Assessment of Waste for Landfill (GN 635 of 2013)	Prescribe the requirements for the assessment of waste prior to disposal at landfill.	Provides a standard assessment methodology for waste prior to disposal at landfill and advises on the total and leachable concentration limits.
National Norms and Standards for Disposal of Waste to Landfill (GN 636 of 2013)	Prescribe the requirements for the disposal of waste to landfill.	Provides detail on the different classes of landfills, the containment barrier requirements and the types of waste acceptable at the different classes of landfill. It further stipulates waste disposal restrictions and provides timeframes by which listed waste types would not be allowed on landfills.
National Pricing Strategy for Waste Management (GN 904 of 2016)	Aims to provide the basis and guiding methodology or methodologies for setting waste management charges in South Africa to increase diversion from landfill and encourage reduction, reuse and recycling of waste.	Identifies and details three economic instruments for waste management namely; downstream instruments, upstream instruments and subsidy-based instruments.
Extended Producer Responsibility (GN 1184 of 2020)	Aims to provide the framework for the development, implementation, monitoring and evaluation of extended producer responsibility schemes by producers in terms of section 18 of the NEM: WA.	To facilitate the effective and efficient management of identified end of life products and to encourage and enable the implementation of circular economy initiatives. Details and the roles and responsibilities of producers as well as the minimum requirements and criteria for EPR schemes.
Amendment of the regulations and Notices	Provides updates to the Extended Producer Responsibility (GN 1184 of 2020) regulations.	Provides updates to definitions and amendments to regulations pertaining to the

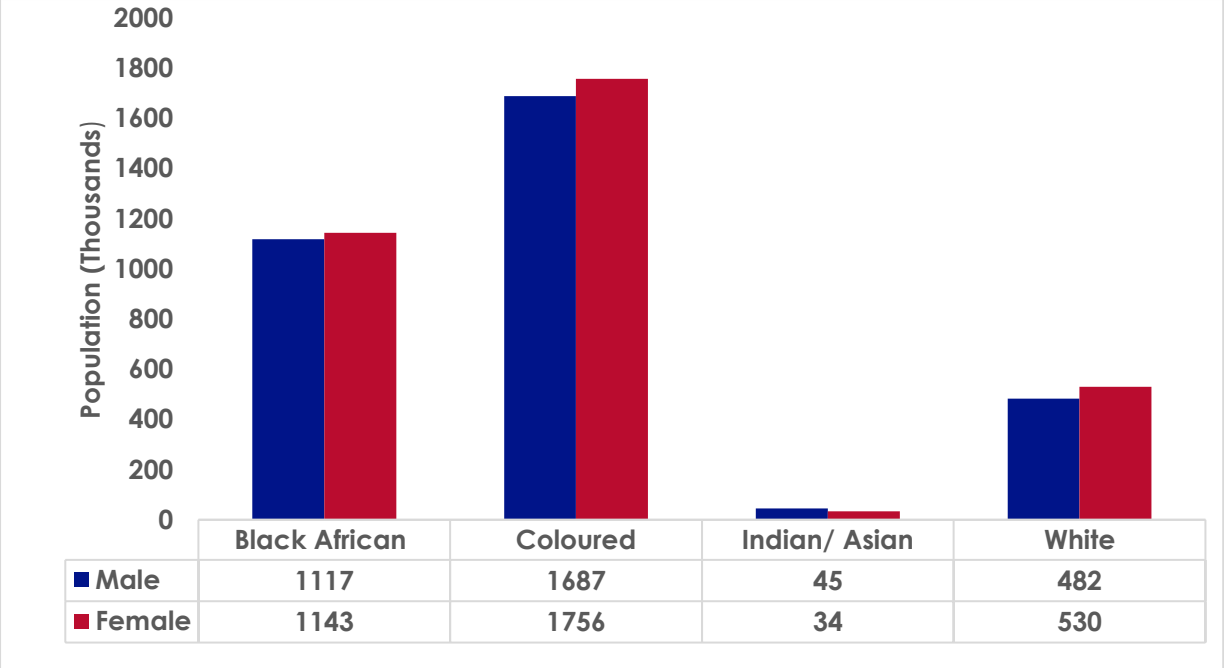
regarding Extended Producer Responsibility (GN 20 of 2021)		EPR schemes as well as their effective date.
National Norms and Standards for Organic Waste Composting (GN 561 of 2021)	Provides a uniform approach for controlling the composting of organic waste.	Aims to reduce the environmental impacts of composting and to ensure that the best practicable environmental option is implemented.
Carbon Tax Act 15 of 2019	Provides the imposition of tax on the CO_2 equivalent of GHG emissions.	Gives effect to the polluter-pays principle and aims to ensure that associated costs are considered in future production, consumption and investment decisions. The aim is to reduce GHG emissions.
Integrated Coastal Management Act 24 of 2008	Regulates human activities that take place on the coast with the aim to achieve its conservation and sustainable use.	One of the aims is to control dumping at sea, pollution in the coastal zone, inappropriate development of the coastal environment and other adverse effects on the coastal environment.
Constitution of the Western Cape Act 1 of 1998	It is subject to the national Constitution, it is the highest law in the Western Cape.	Chapter 10 contains the principles, which include the protection of the environment for the benefit of present and future generations.

3 SITUATIONAL ANALYSIS

3.1 Socio-economic Profile

Waste generation is influenced by socio-economic factors such as population growth, employment levels, economic development and urbanisation. As more people move from rural to urban areas for economic opportunities, the greater their participation in the economy, which in turn leads to an increase in their material consumption. An increase in consumption may result in an increase in waste generated by households, leading to a demand for waste services. Decision-makers need to collect data on these socio-economic factors for planning purposes and to determine current and future waste quantities.

The Western Cape accounts for 11.9% of the estimated South African total population of 60.6 million (Provincial Treasury, 2022). The population in the province comprises 49% males and 51% females (StatsSA, 2020). According to the household survey conducted by StatsSA (2019), 51% of the population in the province is classified as Coloured. Meanwhile 33% and 15% of the population are classified as Black African and White, respectively. Only 1% of the population is Indian or Asian (Figure 8).



	Black African	Coloured	Indian/ Asian	White
Male	1117	1687	45	482
Female	1143	1756	34	530

Figure 8: Population by population group and sex (thousands) (Source: StatsSA 2019)

From 2017/18, the population growth rate declined from 1.6% to 1.4%, the lowest population growth rate in ten years; the reduction in population growth can possibly be attributed to a below replacement fertility rate (2.04) between 2016 and 2021 (Provincial Treasury, 2022). Net in-migration from other provinces is an important determinant of population growth in the

Western Cape; between 2016 and 2021, the province gained 292 325 citizens as a result (Provincial Treasury, 2022). Over that period, net in-migration contributed to 46.8% of population growth in the province (Provincial Treasury, 2022).

The provincial Department of Health (WCG: DoH, Circular H102/ 2020) published population estimates that have been projected to 2030, which are based on the StatsSA 2019 mid-year population estimates (Figure 9). The population is projected to grow from approximately 6. 9 million in 2020 to 8.2 million by the year 2030 at an annual growth rate of 1.85% (WCG: DoH, Circular H102/ 2020). The growth in population could affect the overall waste generated in the province, and will likely have implications for the provision of waste collection and other services.

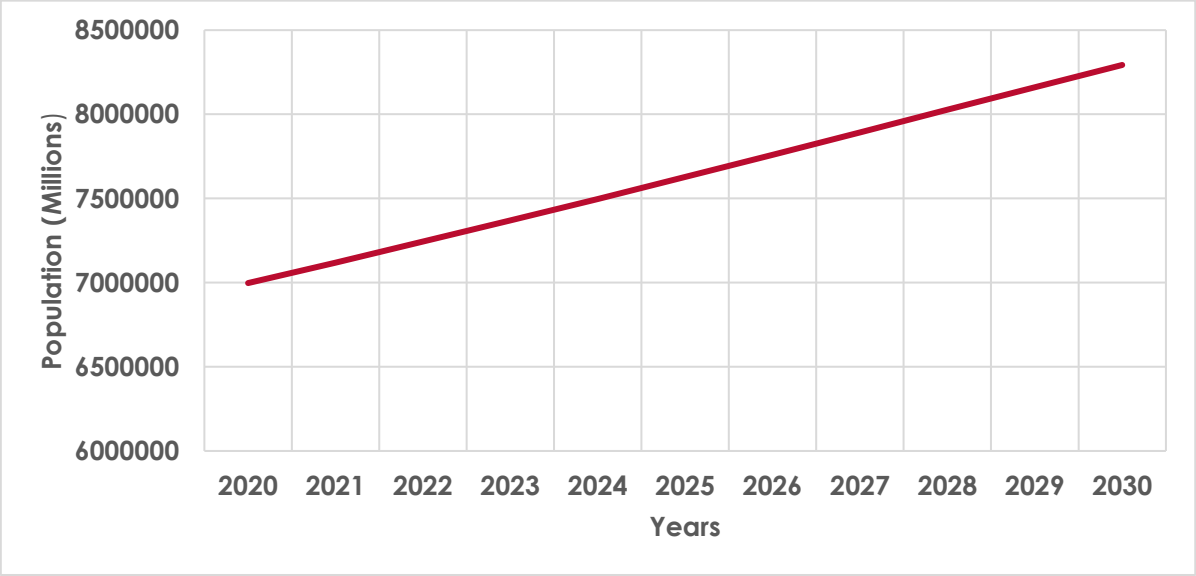


Figure 9: Population projections for the Western Cape (2020-2030) (Source: WCG: DOH, 2020)

Compared to the rest of South Africa, the Western Cape had the highest life expectancy for males (66.3 years) between 2016 and 2021, though females had a higher life expectancy than males in all provinces (Provincial Treasury, 2022).

The population composition according to age cohort is shown in Table 2. The dependency ratio is 45.3%. The dependency ratio indicates the percentage of children (age 0 - 14) and the elderly (age 65+) who are dependent on the workforce (age 15 - 64). A high dependency ratio implies greater pressure on social systems and the delivery of basic services (SEP-CoCT, 2020).

Table 2: Age Cohorts for the Western Cape

CATEGORY	AGE	NUMBER
Children	0-14 Years	1 710 772
Working Age	15-64 Years	4 820 973
Aged	65+ Years	473 997
Dependency ratio	**45.3%**	

Source: (StatsSA, 2020)

The province has a larger proportion of the elderly (6.8%) compared to the national average (6.1%) but has a smaller proportion of children (24.4% provincially compared to 29.6% nationally) (Provincial Treasury, 2020). A higher proportion of the working-age population provides opportunities for increased productivity, but the high unemployment rate adds pressure to the demand for public goods and social relief services and opportunities for development (Provincial Treasury, 2020).

3.1.1 Employment

The Western Cape had a narrow unemployment rate of 27.5% in the second quarter of 2022 and the lowest expanded unemployment rate of 29% in South Africa (Provincial Treasury, 2022). Narrow unemployment refers to the situation where unemployed individuals are searching for work, whereas expanded unemployment refers to those unemployed individuals who are not searching for work (Provincial Treasury, 2020). In the second quarter of 2022, employment levels in the Western Cape were 8.1% lower than the pre-pandemic level with only the Manufacturing (10.6%), Transport (3.3 %) and Finance (1%) sectors having higher than pre-pandemic employment levels (Provincial Treasury, 2022).

The composition of the Western Cape labour force is indicated in Table 3. During Quarter 1 of 2022, those classified as Coloured made up the highest portion of the population employed at 46.6% and more men (53.8%) than women (46.2%) were employed.

Table 3: Narrow labour force composition in the Western Cape

	2017Q1		2022Q1		Change	
	Number ('000s)	Share (%)	Number ('000s)	Share (%)	Number ('000s)	(%)
Narrow Labour Force	**3 066**	**100.0**	**3 072**	**100.0**	**6**	**0.2%**
By Race						
African	1 130	36.9%	1 104	37.0%	(25)	(2.3%)
Coloured	1 463	47.7%	1 405	46.6%	(572)	(3.9%)
White	452	14.8%	553	15.4%	100	22.2%
By Gender						
Male	1 646	53.7%	1 652	53.8%	6	0.4%
Female	1 420	46.3%	1 420	46.2%	(0)	(0.0%)
By Age						
Youth	1 352	44.1%	1 299	42.3%	(53)	(3.9%)
Older age	1 714	55.9%	1 773	57.7%	58	3.4%
By Education						
Less than Secondary	1 560	50.9%	1 322	43.0%	(238)	(15.3%)
Secondary	963	31.4%	1 127	36.7%	163	17.0%
Tertiary	509	16.6%	593	19.3%	84	16.5%

Source: Provincial Treasury, 2022

3.1.2 Household Income

Household income declined by 0.25% on average between 2015 to 2019 with an average annual household income growth of 1.4% that slowed to 1% (Provincial Treasury, 2020). As household income declines, the inequality gap increases, which cannot be breached without economic growth. Inequality is measured using the Gini coefficient, a statistical measure that ranges between 0 and 1, with 0 representing completely equal distribution of income (Provincial Treasury, 2020). Therefore, the more unequal the distribution of income, the higher the Gini coefficient. Between 2012 and 2020, income inequality increased in the Western Cape (0.25 points) and among all municipal districts (Provincial Treasury, 2022).

3.1.3 Housing and Informal Settlements

A growing number of people, unable to afford formal housing opportunities, live in informal areas and / or informal housing. According to the Republic of South Africa (2022), 17.3% of households in the province reside in informal dwellings. The Western Cape had 374 994 informal dwellings in 2021 and between 2012 and 2021, the portion of informal and traditional to total dwellings in the Western Cape increased to 19.2 % but the rest of South Africa declined by 2.71 to 16.9 % (Provincial Treasury, 2022). This is due to a higher growth of informal settlements in the Western Cape (Provincial Treasury, 2022). According to the Provincial Treasury (2022), between

2013 and 2022, the total registered housing demand in the Western Cape increased by 236 745 or 67% to 585 677 and in 2022, the largest portion of housing demand was in the Cape Metro (348 881 or 59.6%).

Rapid urbanisation, natural population growth and migration, failure of the housing market, labour market dynamics and historical social, spatial and economic exclusionary practices have contributed to the development of informal settlements in the province (DHS, 2016). Informal settlements are associated with certain risks and vulnerabilities such as climate change, xenophobia, HIV, GBV, crime and unemployment (DHS, 2016). Informal settlements are also characterised by lack of infrastructure and basic service provision. In terms of waste management and collection services, due to the narrow streets and topography of informal settlements, conventional waste collection services are not necessarily a viable option. Alternative options such as the use of waste collection skips, which allow residents to drop off their waste, are often utilised by municipalities. Consideration should however be given to factors such as capacity of skips, height of skips (to ensure that children are able to reach) as well as distance from households e.g., crime in informal settlements or household responsibilities may result in women not wanting to walk far distances to drop off their waste.

3.1.4 Municipal Services

In the Western Cape 75.6 % of households had access to piped water inside dwellings, 96.6 % of households had access to electricity including a generator, 95.2 % had access to flush or chemical toilets and 87% had access to refuse removal at least once a week for the year 2021 (Provincial Treasury, 2022). According to the Provincial Treasury (2022), between 2012 and 2021, the portion of dwellings with access to refuse removals at least once a week declined from 89.8% to 87%. However, the most recent waste management service levels indicated in municipal annual reports/IDPs indicate access to refuse removal services of 95.3% for the province. These figures most likely reflect the percentage of formal dwellings that are serviced, more focus needs to be placed on informal settlements and unserviced areas/stands in the province.

3.1.5 Overview of the Western Cape Economy

The Western Cape was one of three provinces that increased its contribution (0.2 percentage points) to national GDP over the past decade including Gauteng (0.7 percentage points) and the Northern Cape (0.1 percentage points) (Provincial Treasury, 2022). It was the third largest regional economy in South Africa in 2021 and accounted for 14.2% of the national economy, behind Gauteng (35.2%) and KwaZulu-Natal (16.2%) (Provincial Treasury, 2022). The province's GDP growth rate and GDP capita over the 2012-2021 period is indicated in (Figure 10).

The Western Cape economy has a service-oriented economy with a strong contribution from the Finance sector and a unique dependence on the Tourism and Wine industries (Provincial Treasury, 2022). The average estimated economic growth of the Province (1.2%) was higher than the National (1%) growth rate between 2012 and 2021 (Provincial Treasury, 2022). The recession in 2020 (-6.2%) had a huge impact on the average growth of the Western Cape economy (Figure 10).

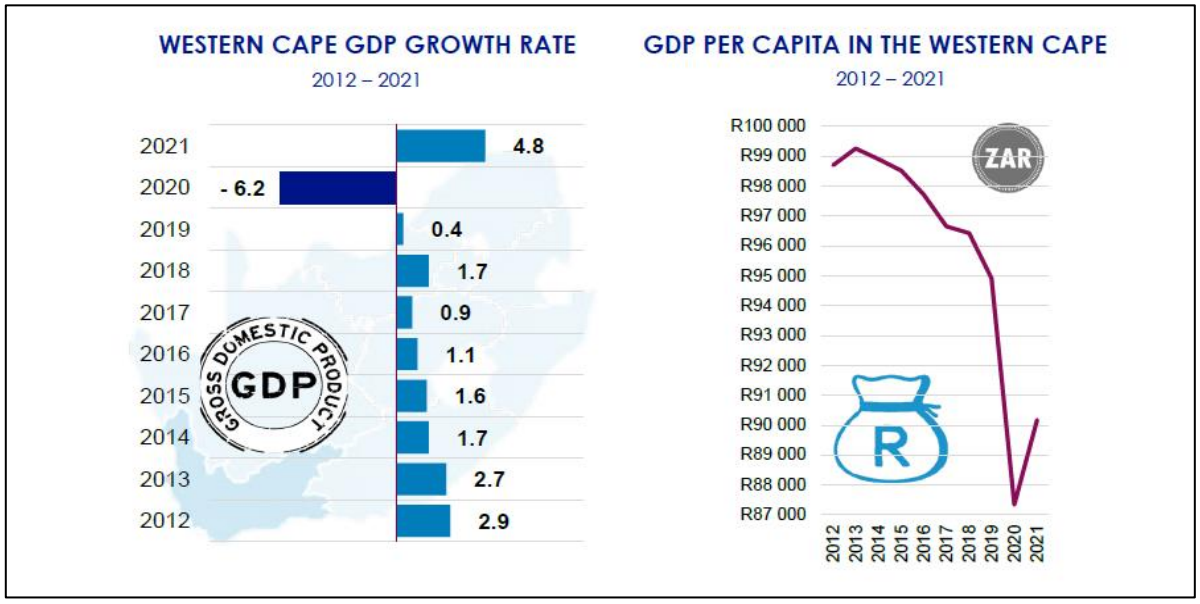


Figure 10: Western Cape economic growth performance 2012-2021 (Source Provincial Treasury, 2022)

The Agricultural sector (44.9%) performed better than all other sectors in the province between 2012 and 2021 and this is attributed to the sector's significant growth in exports (Figure 11). This growth took place despite the severe drought between 2015 and 2019 as well as the alcohol-related COVID-19 measures that affected the wine industry in 2020, which reportedly lost R300 million per week during level 5 lockdown measures (Provincial Treasury, 2022).

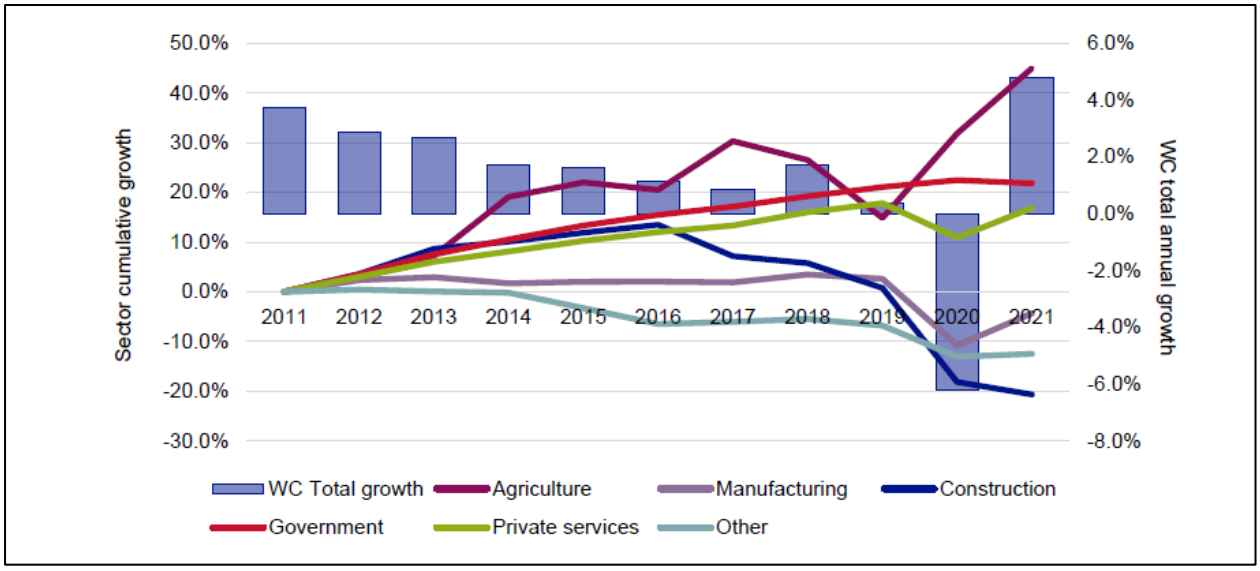


Figure 11: Sector contribution of the Western Cape economy, 2019 (Source: Provincial Treasury, 2022)

3.2 Overview of Waste Management in the Western Cape

Within an integrated waste management system, there are various system elements, which include generation and separation, collection, transfer and transport, treatment and disposal, reduction, re-use, recycling and recovery as indicated in Figure 12. Most municipalities in the Western Cape currently still focus on disposal, which does not align with the waste management hierarchy. Several municipalities do however undertake separation, recycling and recovery.

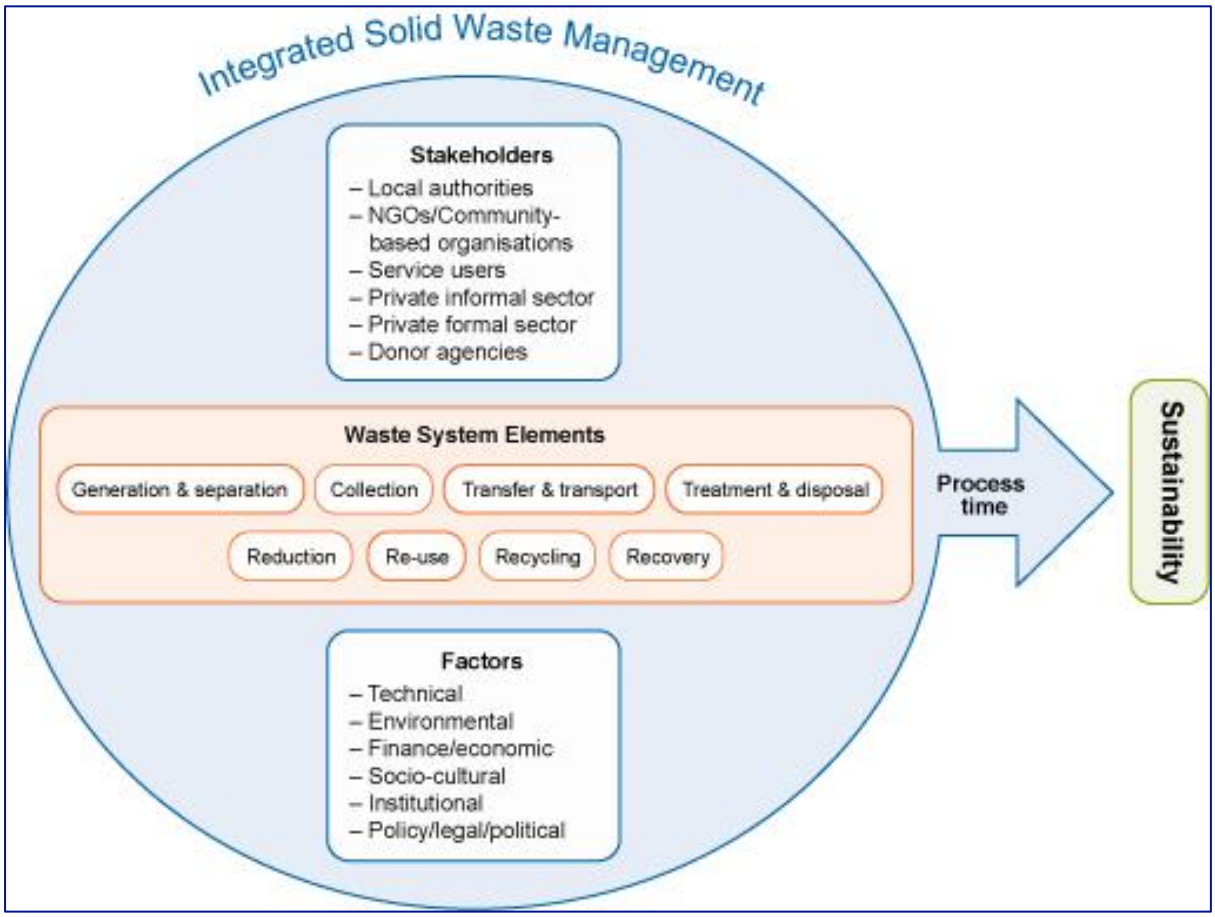


Figure 12: The integrated solid waste management system

The status quo of waste management will be discussed as follows:

- Role of Provincial Government
- Waste Data
- Waste Generation
- Collection, Transfer and Transport
- Refuse Removal Levels
- Treatment and Disposal

- Waste Minimisation
- Waste Minimisation Initiatives to Support Diversion
- Waste Management Infrastructure
- Governance
- Waste Jobs

3.2.1 Role of Provincial Government

The NEM: WA requires that provincial departments responsible for waste management develop IWMPs. According to the National Waste Management Strategy, 2020, the primary functions of provincial IWMPs are:

- to plan and guide public and private investment in regional waste management facilities;
- to address waste management issues that are specific to the provincial, economic, social and environmental profile; and
- to support municipalities by providing guidelines for the monitoring, reporting and evaluation of IWMPs.

Provincial governments also have several other functions pertaining to waste management. Within the Department, the following key functions are undertaken:

- **Integrated waste management planning and information management:** working with municipalities and industry to improve how waste is managed and reported in the Western Cape.
- **Regulating waste management facilities (WMFs):** Technical assistance to municipalities is provided with the aim to improve the construction, management and operation of WMFs in the Western Cape.
- **Policy and waste minimisation:** working with municipalities, industry and the community to promote waste minimisation through awareness campaigns, interventions and capacity building in the Western Cape. Facilitation, development and implementation of waste management policies which will minimise waste and reduce its environmental impacts as well as stimulate the waste economy and job creation.

The Department responsible for waste management in the Western Cape is the Department of Environmental Affairs and Development Planning (DEA&DP). The Directorate: Waste Management is located within the Chief Directorate: Environmental Quality (Figure 13).

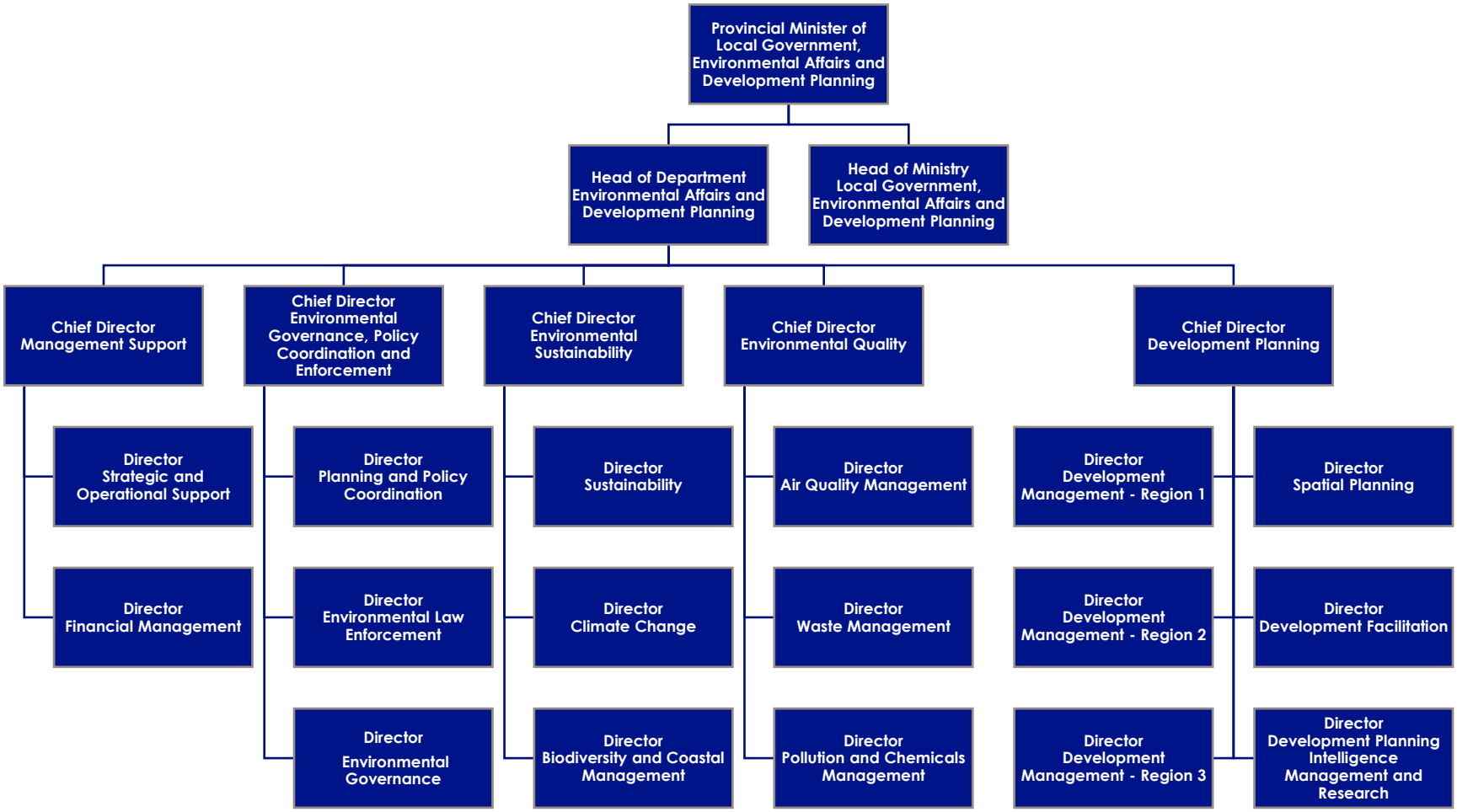


Figure 13: Organisational structure of the Department of Environmental Affairs and Development Planning

3.2.2 Waste Data

The National Waste Information Regulations, 2012, require generators of waste that meet the threshold, to register and report their waste data to Integrated Pollutant and Waste Information System (IPWIS). Accurate waste information is essential for waste management planning and to provide an understanding of the quantities and types of waste being generated, disposed of, and diverted. Municipalities and industry in the province are required to report waste disposal and diversion data on the provincial IPWIS on a monthly basis. The data is then uploaded to the national South African Waste Information System (SAWIS). In cases where WMFs do not have weighbridges to ensure accurate reporting, the Department's estimation technique, namely the Waste Calculator and the Gate Control Sheet is used for the recording of data.

To ensure there is a good understanding of waste management data in the province, it is important that all the relevant facilities report their waste quantities. However, some registered private and municipal facilities are not reporting to the IPWIS (Table 4 and Table 5). Beaufort West and Oudtshoorn municipalities are of concern due to the consistent low reporting rate of municipal facilities (Table 5). Matzikama and Knysna municipalities have low reporting rates in recent years. Low reporting rates could likely be attributed to staff shortages, especially at municipalities. Reporting frequency for private facilities is affected when private facilities, which have closed do not notify the Department that they are no longer operating and are thus no longer required to report to the IPWIS.

In addition, reporting to the system is often not done accurately. To ensure accuracy of the data reported, the Department undertakes verification of the data received (Box 1).

Box 1: Ensuring Accuracy of Reported Data

To ensure accuracy of the data reported to the IPWIS, the Department undertakes annual data verifications of waste data submitted by municipal and private facilities to the IPWIS. During 2020 and 2021, the Department continued with the scheduled verifications on the MS Teams virtual platform. Facilities may be randomly selected as part of routine data quality assurance by the Department or may be selected where data anomalies have been displayed, where data looks questionable and where reporting is inconsistent. The most recent data verifications focused on the 2020 calendar year for both general and hazardous waste, across various business sectors and waste activities. Verified facilities were provided with feedback where erroneous and anomalous data were identified. These facilities were requested to review the data for the verified year and make corrections to the submitted data where applicable.

Table 4: IPWIS reporting rate for private facilities

IPWIS REPORTING RATE FOR PRIVATE FACILITIES	2018	2019	2020	2021
West Coast	100%	100%	98%	100%
CoCT	95%	95%	91%	97%
Overberg	100%	100%	100%	100%
Garden Route	100%	100%	100%	100%
Central Karoo	0%	0%	0%	0%
Cape Winelands	0%	0%	0%	0%

Table 5: IPWIS reporting rate for municipal facilities

IPWIS REPORTING RATE FOR MUNICIPAL FACILITIES					
District	LOCAL MUN.	2 018	2 019	2 020	2 021
West Coast	Swartland	75%	100%	100%	100%
	Bergrivier	92%	100%	100%	100%
	Cederberg	63%	100%	98%	100%
	Saldanha Bay	100%	100%	100%	100%
	Matzikama	69%	61%	23%	14%
CoCT	City of Cape Town	88%	88%	90%	100%
Overberg	Cape Agulhas	100%	100%	100%	100%
	Overstrand	86%	76%	85%	88%
	Swellendam	100%	100%	100%	100%
	Theewaterskloof	96%	100%	97%	79%
Garden Route	Oudtshoorn	0%	0%	0%	0%
	Kannaland	100%	100%	100%	83%
	George	50%	54%	96%	100%
	Mossel Bay	67%	67%	100%	100%
	Bitou	0%	100%	92%	100%
	Knysna	97%	75%	31%	8%
	Hessequa	92%	99%	94%	96%
Central Karoo	Laingsburg	100%	100%	100%	100%
	Prince Albert	100%	100%	58%	100%
	Beaufort West	35%	22%	0%	7%
Cape Winelands	Drakenstein	100%	100%	100%	100%
	Langeberg	100%	100%	97%	92%
	Breede Valley	67%	67%	89%	58%
	Stellenbosch	67%	67%	67%	81%
	Witzenberg	75%	100%	100%	69%

3.2.2.1 Data Limitations

The waste generation, disposal and diversion data presented in the WC IWMP was extracted from the IPWIS. The following data limitations are noted:

- Municipal general waste data should be considered with a degree of caution due to inconsistencies in definitions, data collection methodologies (e.g., some municipalities use weighbridges which are considered accurate, and others use Waste Calculator estimations), data corrections made by the IPWIS and completeness of data.
- Tonnages for general waste disposed of and as reported by municipalities on the IPWIS, is mostly based on estimation of the total quantity of municipal solid waste disposed of 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 of.
- The percentage of waste diverted is calculated using the waste diversion total (recycled, recovered and treated) divided by the sum of waste generated as reported on IPWIS.
- Data collection at municipalities is initially captured by gate controllers at the WDFs. The data is then recaptured by data capturers, for which the accuracy could not always be verified, and this data was used.
- Given the variations in the data accuracy of the different waste types, it is not possible to assign an overall level of accuracy to the calculated tonnages of general and hazardous waste disposed of.
- 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 might change once verification by the Department takes place.
- To compile the information for the WC IWMP, a final waste data extract was undertaken on 13 November 2022, however data is subject to change due to completion of outstanding reports and revision of data. The data extract provided only includes data up until the end of 2021, which is the latest data verified by the Department.

3.2.3 Waste Generation

Waste generation figures are determined by adding the waste disposal and waste diversion figures reported to the IPWIS. Waste is broadly categorised in two main categories i.e., general or hazardous, based on the risk it poses. General waste includes waste that does not pose an immediate hazard or threat to health or to the environment. Whereas hazardous waste contains organic or inorganic elements or compounds that may, owing to the inherent physical, chemical or toxicological properties of that waste, have a detrimental impact on health or the environment.

3.2.3.1 General Waste

The year-on-year generation of general waste in the province between 2018-2021 is indicated in Figure 14. Between 2018 and 2020, the total tonnes of general waste generated decreased per annum, with an increase in the total amount of general waste generated from 2020 to 2021. The sharp decline in general waste generated between 2019 and 2020 is most likely due to lockdown measures implemented in response to the COVID-19 pandemic. The lockdown measures would have led to a slowdown in the production and manufacturing of goods for local consumption and export. The impact of job losses and reduced income on consumer spending as a consequence of lockdown measures and restrictions would have likely further reduced consumption and in turn the amount of waste generated as clearly depicted in Figure 14 for the year 2020.

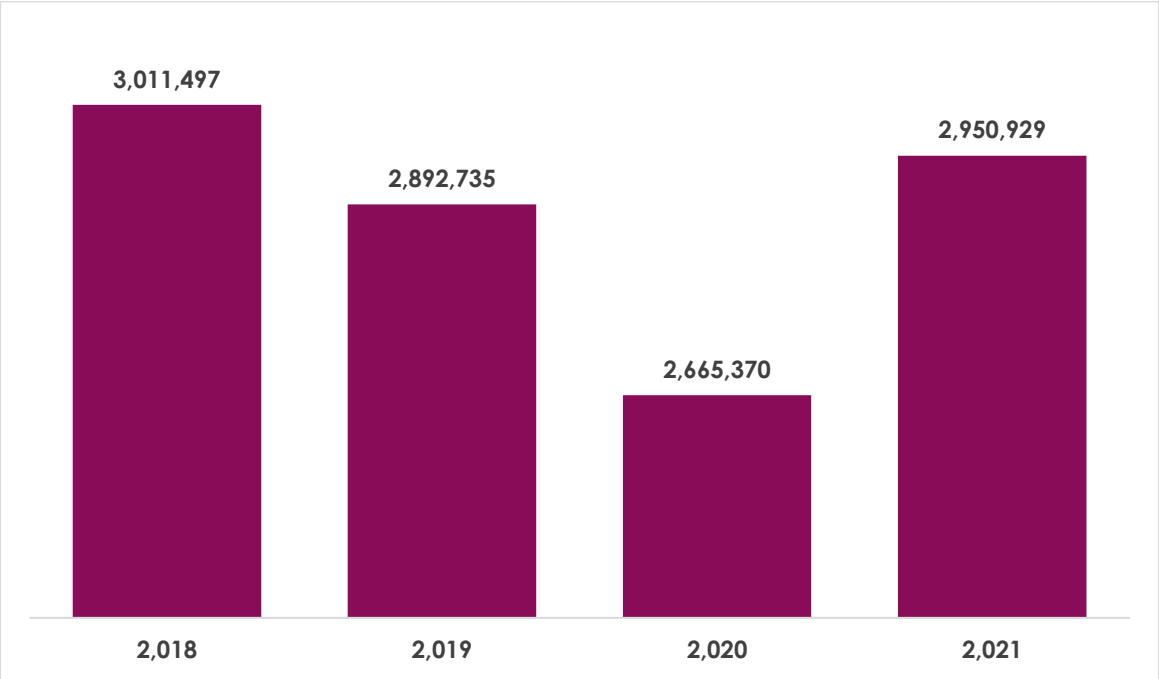


Figure 14: Total general waste generated 2018-2021 in the Western Cape (tonnes)

During the 2018-2021 period, the CoCT accounted for approximately 71% of the general waste generated in the province (Figure 15). This is expected since it is the economic hub of the province and is where most of the province's population reside. In comparison, the Central Karoo District, which is the least populated district only contributed 0.1% of the total general waste generated in the province over the same period.

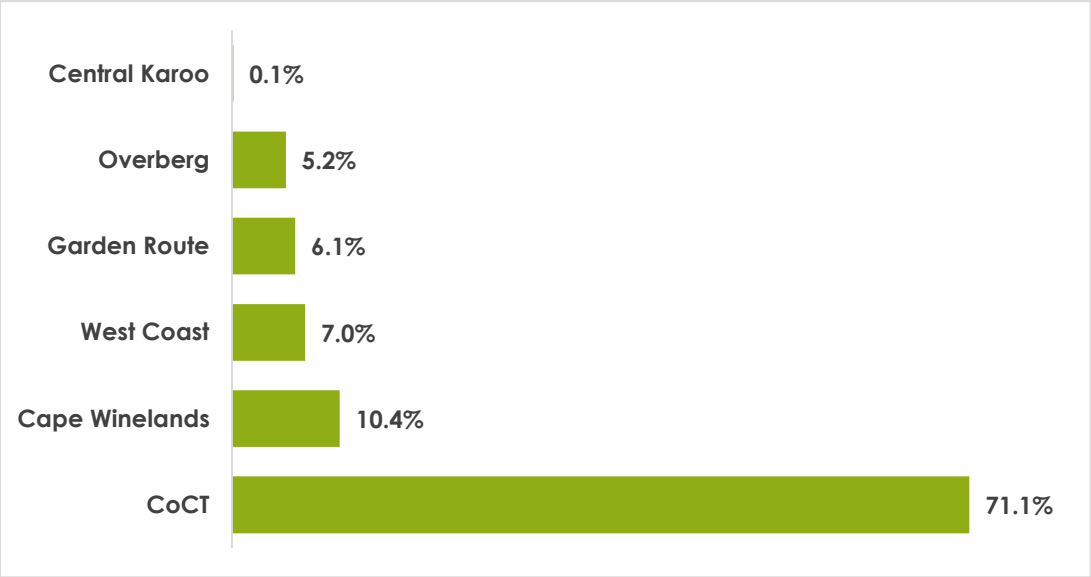


Figure 15: Proportion of general waste generated per district (2018-2021)

General waste is captured in Figure 16 under five main categories, namely:

- **Municipal waste:** Waste from households including e.g., organic waste (food waste and garden waste), plastics, paper, metals, construction and demolition (C&D) waste, household hazardous waste, sanitary waste.
- **Commercial and industrial waste:** General waste from commerce and industry.
- **Organics:** Mostly refers to garden/green waste collected from split-bag systems or dropped off at municipal waste drop-off facilities.
- **Construction and demolition waste:** Waste from construction and demolition processes that has been dropped off at a municipal waste drop-off facility and collected during clean-up operations of illegally dumped waste.
- **Other:** Other general waste that does not fit in the aforementioned categories.

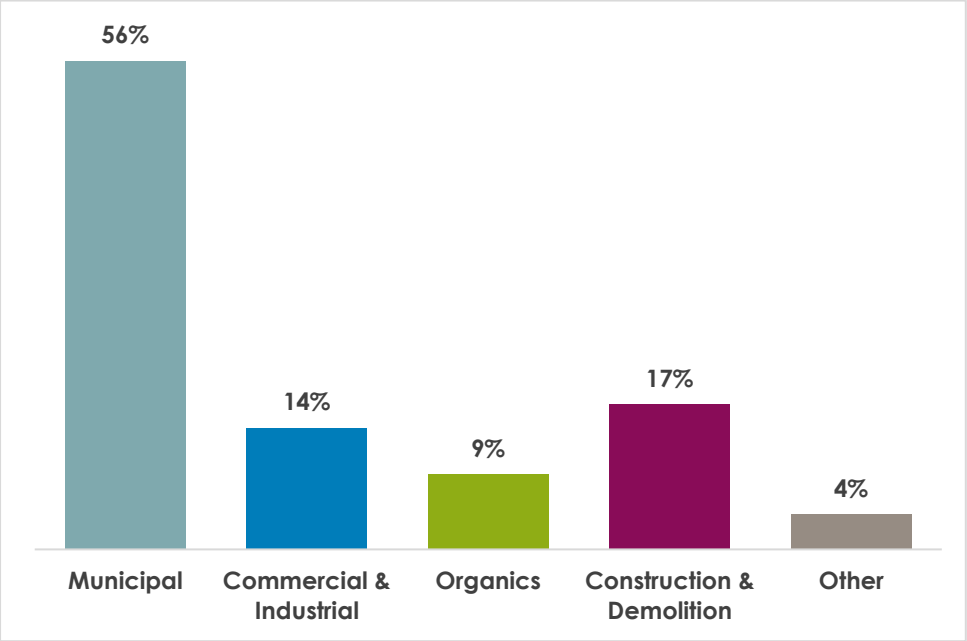


Figure 16: Composition of general waste generated between 2018-2021

As per Figure 16, municipal waste makes up the largest percentage of general waste generated in the province. To obtain an understanding of the composition of municipal waste, various waste characterisation studies have been undertaken within municipalities. The results of several waste characterisation studies undertaken between 2012 and 2021 are indicated in Figure 17. Organic waste (Food waste (28.9%) plus garden waste (6.3%)) represents the largest portion of waste generated i.e. approximately 35% of municipal waste generated. Glass, plastic and paper also make up a large portion of the waste generated. Meanwhile, household chemicals make up the smallest portion of municipal waste generated.

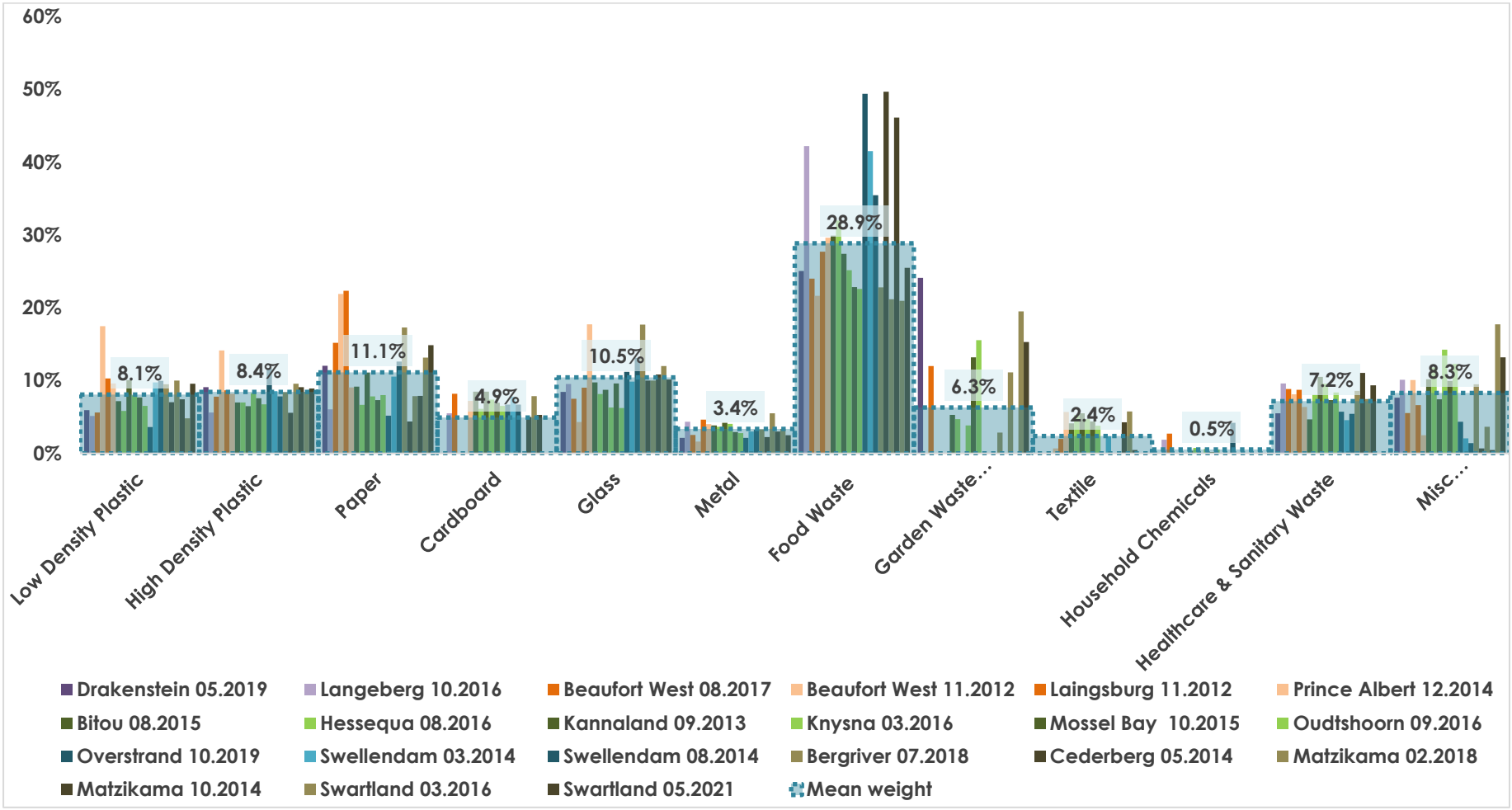


Figure 17: Composition of municipal waste in the Western Cape (Source: Anders & Coetzee, 2022)

Based on the waste generated in the province during recent years (2018-2021), a forecast was undertaken and indicates that general waste generated in the province will decline over time (Figure 18). The data used in the forecast includes 2020 and 2021, and the projections must therefore be considered with caution. The aforementioned years were affected by COVID-19 lockdowns, which resulted in the lower waste generation figures.

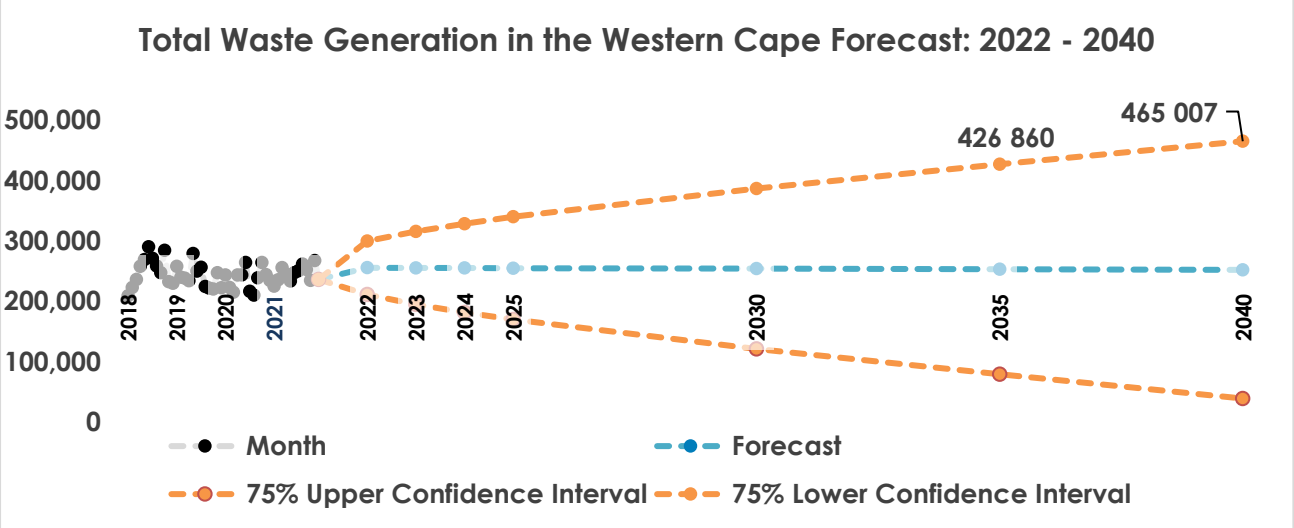


Figure 18: General waste generated in the Western Cape 2022-2040

3.2.3.2 Hazardous Waste

There was a slight decrease in the tonnes of hazardous waste generated between 2018 and 2019, and a sharp decline in hazardous waste generated during 2020 and 2021 (Figure 19). The decline in hazardous waste generated is most likely linked to the lockdown restrictions put in place to curb the spread of COVID-19, and the further economic downturn caused by various economic factors, which would have slowed down production and manufacturing.

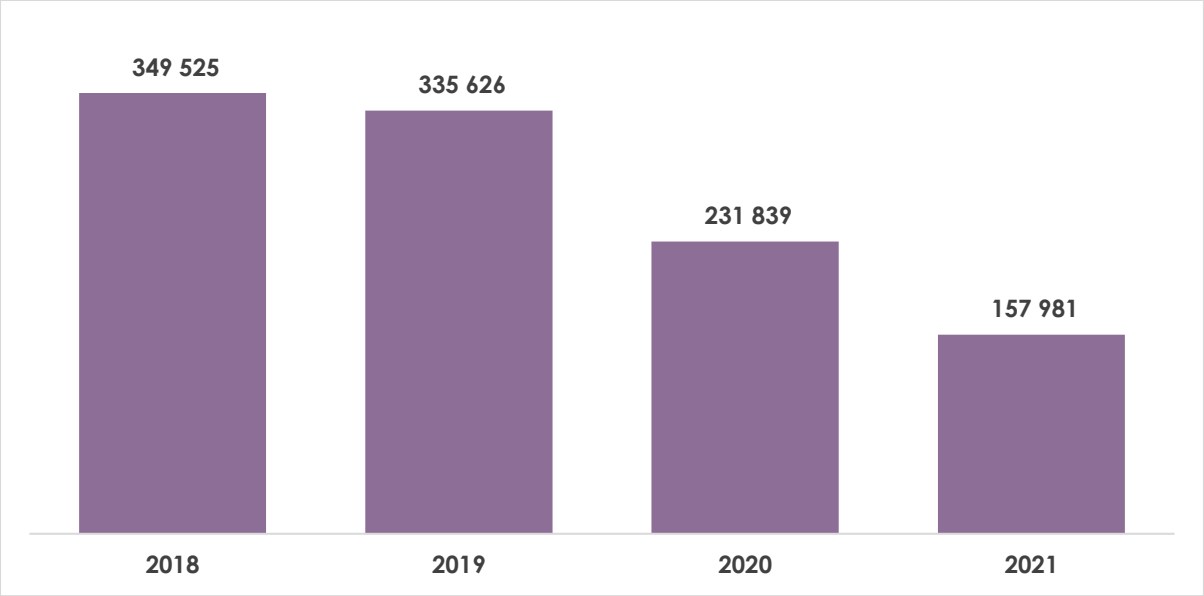


Figure 19: Hazardous waste generated in the Western Cape (tonnes) during 2018-2020 (Source: DEA&DP, 2021

As highlighted in Table 6, the hazardous waste generated in the Western Cape is mainly due to three key waste types i.e. "inorganic waste", driven mainly by the casting industry; "other organic waste without halogens or sulphur", driven mostly by petroleum refineries and synthesizers, and "sewage sludge". There was a sharp decline in the tonnes of inorganic waste generated in 2020 and 2021, which could be attributed to the COVID-19 pandemic restrictions, which slowed down production of goods. In addition to the COVID-19 pandemic restrictions, the decrease in "other organic waste without halogens or sulphur" by 61% is partly due to the decline of Natural Liquid Gas reserve at Mossgas that is nearly exhausted and led to a decline in production.

Sewage sludge has been identified as a hazardous waste type of concern. The significant increase in the amount of sludge generated during 2021 is likely due to a contract issue that was being resolved by the CoCT and its service provider. The sewage sludge was stockpiled for some months and once the contract was resolved the material was taken to the privately owned Vissershok WDF. The Department has recently drafted a guideline focused on the beneficiation of sewage sludge and hosted a workshop with municipalities and other stakeholders to discuss beneficiation options for sewage sludge.

Table 6 Hazardous waste types generated in the Western Cape for 2018 - 2021 (tonnes)

HAZARDOUS WASTE TYPES	2018	2019	2020	2021
Inorganic waste	117 267	111 751	25 541	16 724
Asbestos containing waste	8 163	9 161	11 432	8 399
Waste oils	30 285	32 275	19 783	9 567
Organic solvents without halogens and sulphur	91	248	240	345
Other organic waste without halogens or sulphur	119 981	117 609	111 756	47 001
Tarry and bituminous waste	919	1,412	1,473	2,352
Mineral waste	5,097	171	376	441
Sewage sludge	47 541	48 788	45 806	60 778
Miscellaneous	19 886	13 831	14 888	11 885
* Combined	296	380	544	489
Total	349 525	335 626	231 839	157 981

Note: ** The Combined waste type is the addition of all the waste types that each have a combined value less than 500T over 2018-2021*

3.2.4 Waste Collection, Transfer and Transport

3.2.4.1 Municipal Waste Collection

Waste collection and transportation is an integral component of waste management service provision. A significant portion of waste management costs is associated with the provision of waste collection and transport services. Although municipalities may be effective at delivering waste collection services, they may not be doing so efficiently. The high cost of waste collection coupled with limited financial resources available to many municipalities, require municipalities to operate efficiently. Efficiency refers to internal operations and involves maximizing the outputs i.e., waste collection services, with the available resources e.g., time, vehicles, staff, financial resources. Some municipalities are undertaking waste collection using aged vehicles, which may be more prone to breakdowns, thereby affecting operational costs and service delivery. During 2020, the average age of vehicles in the province was 10.5 years, which is higher than the recommended vehicle replacement age of 8 years (Figure 20).

Efficiency of waste collection services can be improved by ensuring a proactive approach is taken to maintenance and replacement of vehicles. Several municipalities have vehicle maintenance plans and vehicle replacement plans in place to proactively maintain and

replace their vehicles. Some municipalities undertake smaller vehicle repairs internally to reduce vehicle downtime. In terms of collection operations, most municipalities do not make use of software to assist with routing and many do not collect accurate data that could be used as inputs into software programmes. Improper route planning may result in waste collection beats not being evenly distributed among vehicles, overlapping of collection points and too many stops, thereby wasting time.

Cooperation between municipalities can be useful in assisting those municipalities who do not have enough vehicles to undertake waste collection services e.g., Beaufort West Municipality currently has vehicles out of operation due to its aged fleet. Prince Albert Municipality has offered Beaufort West Municipality the use of their vehicles to ensure continuity of waste collection services.

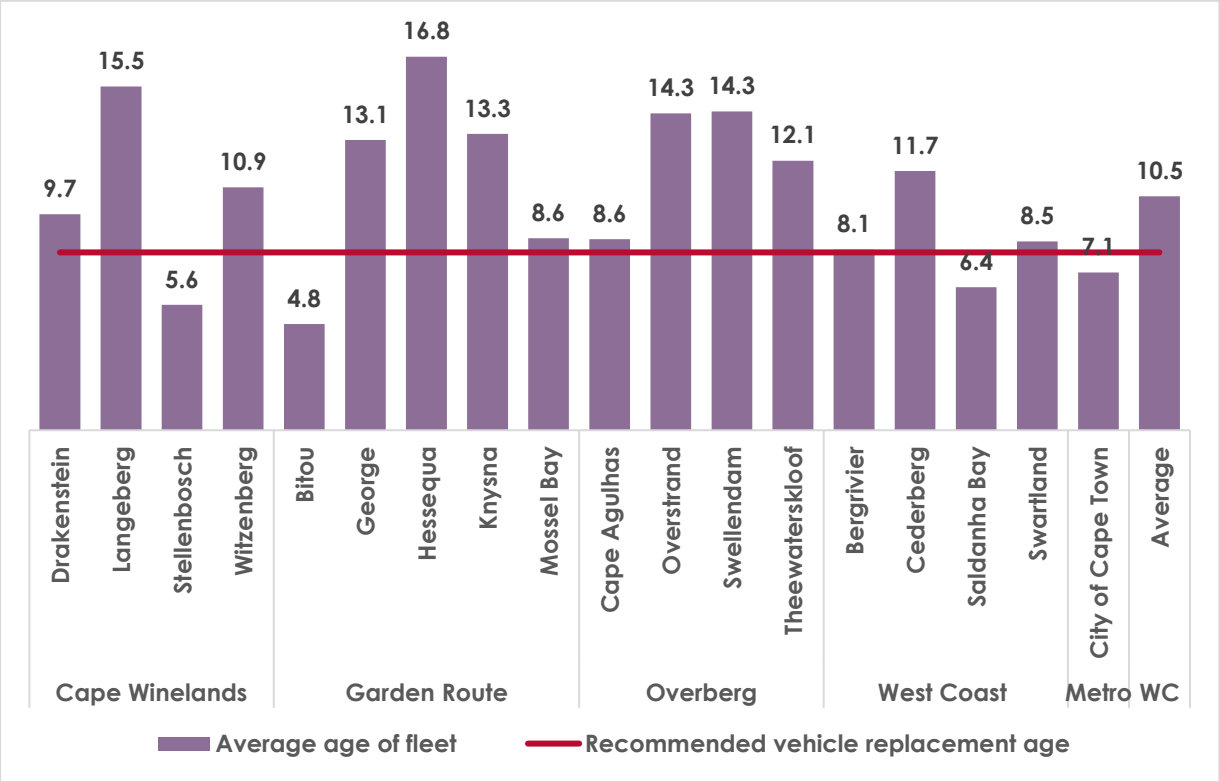


Figure 20: Average age of municipal vehicle fleet (Source: Gilbert et al.)

3.2.4.2 Waste-on-rail

Currently, most waste in the Western Cape is transported via road; however, there has been increasing consideration in recent years to include rail as a means for transporting waste. There are several potential benefits of using rail instead of road for freight movement, e.g. (Spoestra, 2021):

- reduced number of road accidents;
- reduction in road infrastructure damage;

- reduced traffic congestion;
- reduction in air and noise pollution; and
- reduction in land use requirement for infrastructure.

The Western Cape Freight Strategy indicates that a better understanding of the potential of shifting waste transport to rail would be required; this would entail detailed studies or demand modelling to assist with the feasibility thereof. A proposal was submitted to Knysna Municipality recently by Classic Rail to reinstate the Outeniqua Choo Tjoe services in 2021. The Outeniqua Choo Tjoe will be used as a passenger rail system and could also transport waste via rail to the regional landfill site in Mossel Bay. Classic Rail and the Knysna Municipality have been in discussions regarding the proposal (Knysna Municipality, 2021). The Knysna Municipality previously used the Spoornet waste-on-rail system of compacting, containerising, and transporting its waste to the PetroSA WDF in Mossel Bay since 1999, until floods damaged the railway line in 2006.

Potential challenges associated with the rail system in the province include high rail tariffs, cable and associated rain infrastructure theft and lack of maintenance.

3.2.5 Refuse Removal Service Levels

Municipalities in the province provide a weekly waste collection service to communities. In the case of informal areas, residents take their waste to communal skips, which are then emptied by the Municipality. Service levels vary between municipalities (the average waste removal service level is 95.3%) as seen in Table 7.

Several challenges exist regarding the provision of refuse removal services and meeting service standards. These include inadequate services to backyarders, and challenges in providing services to expanding of informal settlements, the unsuitable terrain where informal settlements are established and land invasions on public and private land.

Due to the high levels of unemployment and poverty within municipal areas, many households and citizens 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 (DPLG, 2005).

Table 7: Refuse removal levels per municipality

MUNICIPALITY	BASIC REFUSE REMOVAL % (2017/2018 ANNUAL REPORTS)	BASIC REFUSE REMOVAL % (2018/2019 ANNUAL REPORTS AND LATEST IWMPS)	BASIC REFUSE REMOVAL % (2019/2020 ANNUAL REPORTS AND LATEST IDPs)
Beaufort West	100	100	100
Bergrivier	100	100	100
Bitou	95	88.6	100
Breede Valley	67	100	76.6
Cape Agulhas	100	100	100
Cederberg	100	100	100
CoCT	99.9	99.2	100
Drakenstein	100	100	90.6
George	100	93.3	100
Hessequa	91	74.4	97
Kannaland	66	79.2	79.2
Knysna	94	93.1	94
Laingsburg	100	100	100
Langeberg	79	100	71.5
Matzikama	100	100	100
Mossel Bay	98.2	87.2	92.6
Oudtshoorn	100	87.4	87
Overstrand	100	100	100
Prince Albert	100	100	100

MUNICIPALITY	BASIC REFUSE REMOVAL % (2017/2018 ANNUAL REPORTS)	BASIC REFUSE REMOVAL % (2018/2019 ANNUAL REPORTS AND LATEST IWMPS)	BASIC REFUSE REMOVAL % (2019/2020 ANNUAL REPORTS AND LATEST IDPs)
Saldanha Bay	78	96.5	100
Stellenbosch	71	100	94.1
Swartland	83	100	100
Swellendam	88	87	100
Theewaterskloof	100	100	100
Witzenberg	100	100	100
Western Cape	**92.4**	**95.4**	**95.3**

3.2.6 Waste Treatment and Disposal

3.2.6.1 Waste Treatment

The NEM: WA defines waste treatment as follows "*means any method, technique or process that is designed to:*

(a) change the physical, biological or chemical character or composition of a waste; or
(b) remove, separate, concentrate or recover a hazardous or toxic component of a waste; or
(c) destroy or reduce the toxicity of a waste,

In order to minimise the impact of the waste on the environment prior to further use or disposal"

In the Western Cape, the following waste treatment methods are being undertaken:

- Wet/putrescible/organic waste such as food waste, is either composted to produce fertilizer or digested anaerobically to also produce fertilizer.
- Anaerobic digestion allows for the recovery of biogas from waste. Biogas is combustible and can be used as a source of energy.
- Healthcare risk waste is either treated by incineration or autoclaved and shredded prior to disposal. Incineration is a high temperature, dry oxidation process which reduces waste volume and weight (WHO, 2014). Autoclaves are used to disinfect and sterilise waste. Autoclaving treats various infectious waste e.g., cultures and stocks, sharps, materials contaminated with blood and limited amounts of fluids, isolation and surgery waste, laboratory waste (excluding chemical waste) and patient care waste e.g., gauze, bandages, drapes, gowns and bedding) (WHO, 2014).

As per Table 8, the following private treatment facilities manage and treat healthcare risk waste in the Western Cape with a total treatment capacity of 54 tonnes per day:

Table 8: Health care risk waste treatment facilities in the Western Cape

TREATMENT FACILITY	TREATMENT CAPACITY TONNES/DAY
Averda Killarney (thermal)	24
Averda George (thermal)	12
Compass (autoclave or incineration(outsourced))	12
BCL Medical Waste (ecosteryl microwaving and incineration)	6
TOTAL	**54**

3.2.6.2 Waste Disposal

There was an increase in the tonnes of general waste disposed of between 2018 and 2019, followed by a decline during 2020 and a slight increase in 2021 from the previous year (Figure 21). In the past few years, municipalities in the Central Karoo and Garden Route districts have relied heavily on disposal (Figure 22). Meanwhile municipalities in the Cape Winelands, West Coast and Overberg districts have reduced the percentage of waste being disposed of over time. The CoCT, which is the largest generator of waste compared to the other districts, disposed of 74% of the waste generated in 2021.

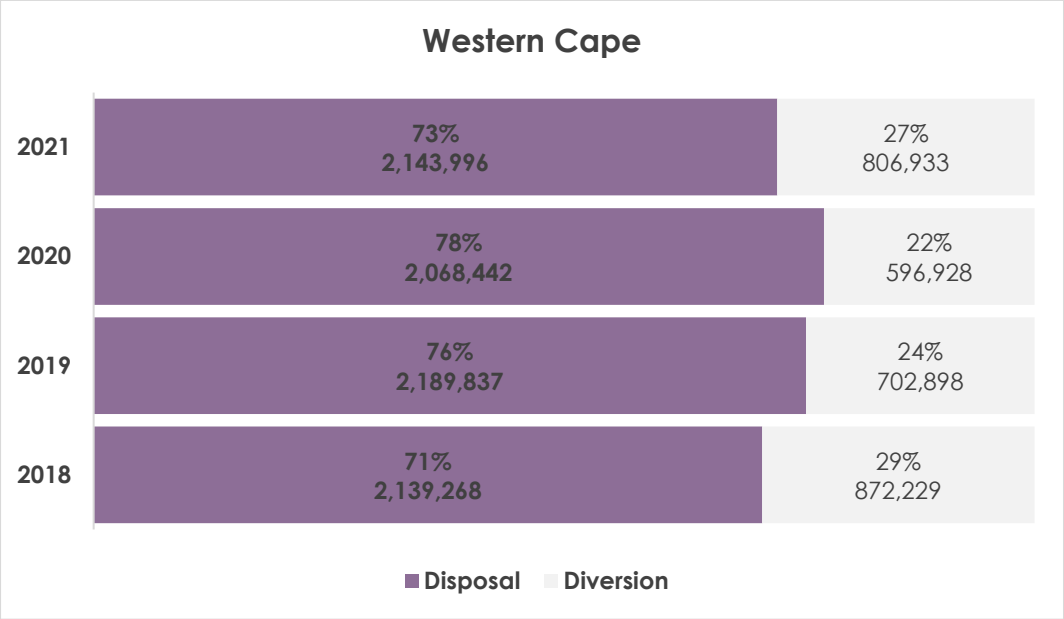


Figure 21: Waste disposal in the Western Cape (percentage and tonnes) for 2018-2021

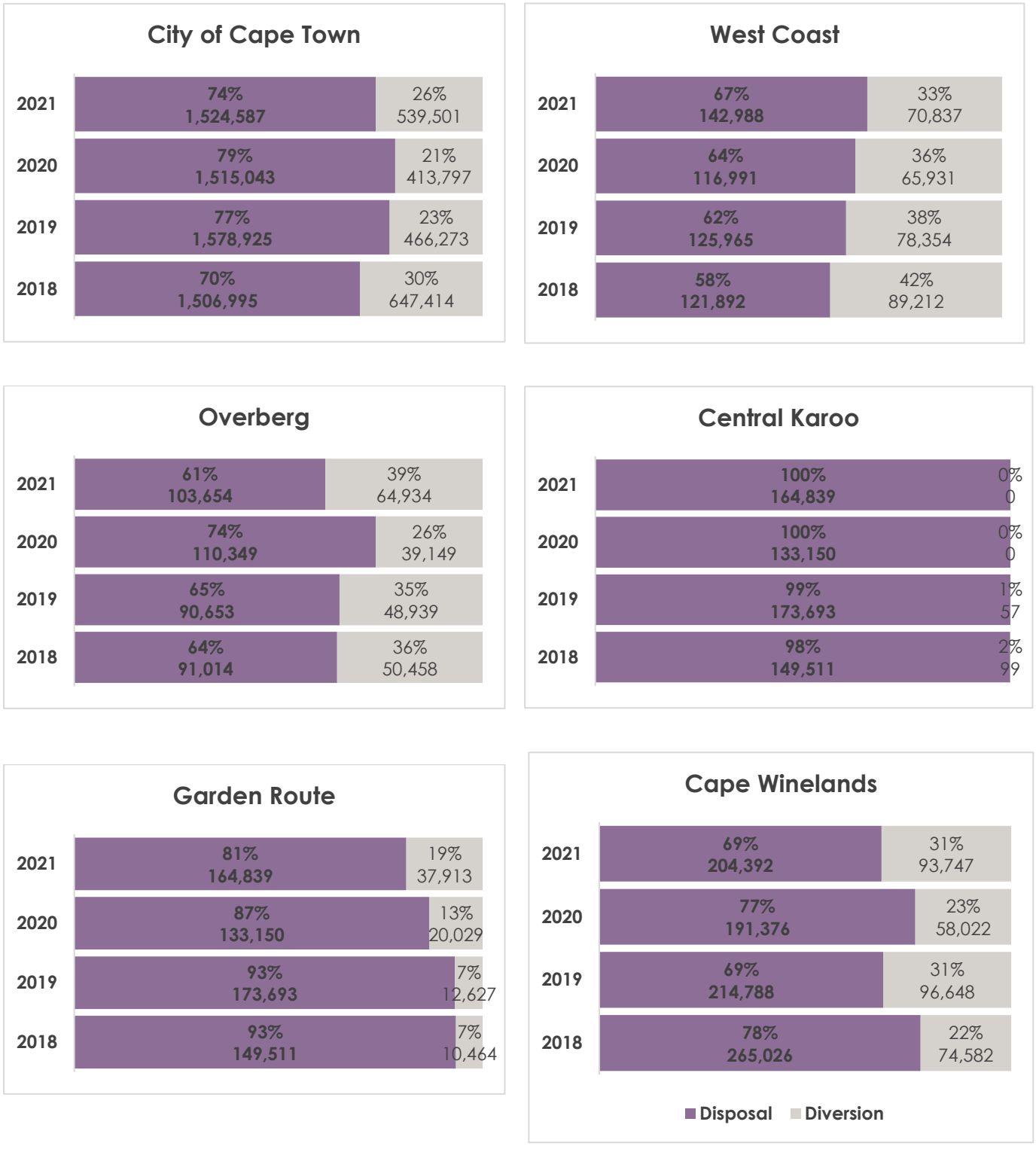


Figure 22: Waste disposal per District (percentage and tonnes) for 2018-2021

With respect to hazardous waste, there has been a decline in the tonnes of waste disposed of over the 2018-2020 period, with a sharp decline between 2019- 2020, as a result of lower hazardous waste generation rates during that period (Figure 23). During 2021, hazardous waste disposal increased from the previous year.

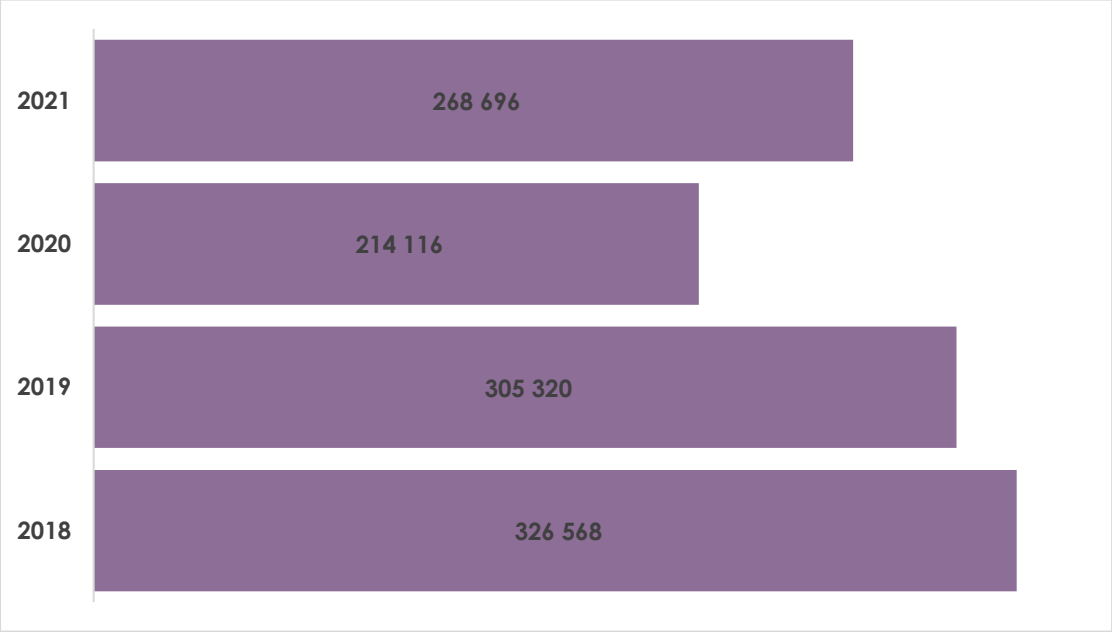


Figure 23: Hazardous waste disposed of in the Western Cape 2018-2020 (tonnes)

3.2.6.3 Illegal Dumping

The illegal dumping of waste is widespread throughout all municipalities in the province. Although the volumes of waste from illegal dumping have yet to be fully quantified, the overall budget required for its clean-up ensures that it is a high priority for many municipalities, who spend significant amounts annually on clean-up operations.

C&D waste (builders' rubble), and general municipal waste constitute most of the waste dumped illegally. During windy conditions, illegally dumped waste often gets scattered across large tracts of land and finds its way into rivers and to the ocean. Since water security is identified as a provincial risk, it is important to protect all water resources from pollution of waste through littering and illegal dumping. This could lead to improved water quality, which would contribute positively to managing the water security risk.

Common causes of illegal dumping range from people refusing to pay disposal fees, too many people using the same wheelie or disposal bin, the misuse of wheelie bins for carting other materials, the inaccessibility of the waste bins and other receptacles for purposes of disposal, amongst others. The use of different methodologies to eradicate illegal dumping across the Western Cape is evident and is mainly due to the different socio-economic challenges and budget constraints for each municipality. It is recognized that each

municipality will have a different approach to combat illegal dumping and moreover, eliminate the causes of illegal dumping, based on the circumstances within each municipality.

The combatting of illegal dumping and littering of waste is currently being prioritised due to high socio-economic and environmental impact:

- Many municipalities have rolled out illegal dumping pilot projects and conducted awareness campaigns to ensure community buy-in and heighten the knowledge of waste management within their communities.

- Solutions to the problem associated with illegal dumping and littering include the use of the EPWP for clean-ups, the strategic placements of mini drop-offs, municipalities allowing free disposal for smaller quantities, offering a discount for clean waste disposed for recycling and numerous well-placed drop-off facilities for ease of disposal, amongst others.

- Details on illegal dumping in the Western Cape is further discussed in "A Strategy to Reduce Illegal Dumping in the Western Cape Province", currently in draft format for commenting.

3.2.7 Waste Minimisation

The NWMS, 2020 highlights waste minimisation as one of its key strategic pillars, with focus being placed on minimising the impact of waste and especially plastic packaging on our coasts, 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 strategy further mentions two key focus areas namely waste prevention and managing waste as a resource (DEFF, 2020).

There are several drivers for waste re-use, recovery and recycling in the province, which includes:

- Limited landfill airspace.
- Growing cost of landfilling.
- Policy e.g. landfill disposal restrictions, EPR Regulations.

Despite the above drivers, disposal is still largely favoured over other waste management methods, which is contrary to the adopted waste managment hierachy. Therefore concerted effort needs to be made by Municipalities to adopt alternative waste management technologies and options that would drive waste diversion from landfills and the shift towards a circular economy.The diversion rates in the province are elaborated on in the following sections:

3.2.7.1 General Waste Diversion

During 2018, the waste diversion rate in the Western Cape was 29%. The diversion rate declined to 27% during 2021 (Figure 24). The decline in waste diversion is likely due to the impact of COVID-19 as a result of lockdown measures that resulted in recycling facilities being closed and the restriction on the movement of people during stage 4 and 5. The West Coast District has led with diversion during the 2018-2021 period and the Central Karoo District has consistently had the lowest diversion rates over the 2018-2021 period (

Figure 25). It should be noted that the CoCT, as the largest generator of waste, diverted an average of 492 700 tonnes or 25% of waste per year during the 2018-2021 period.

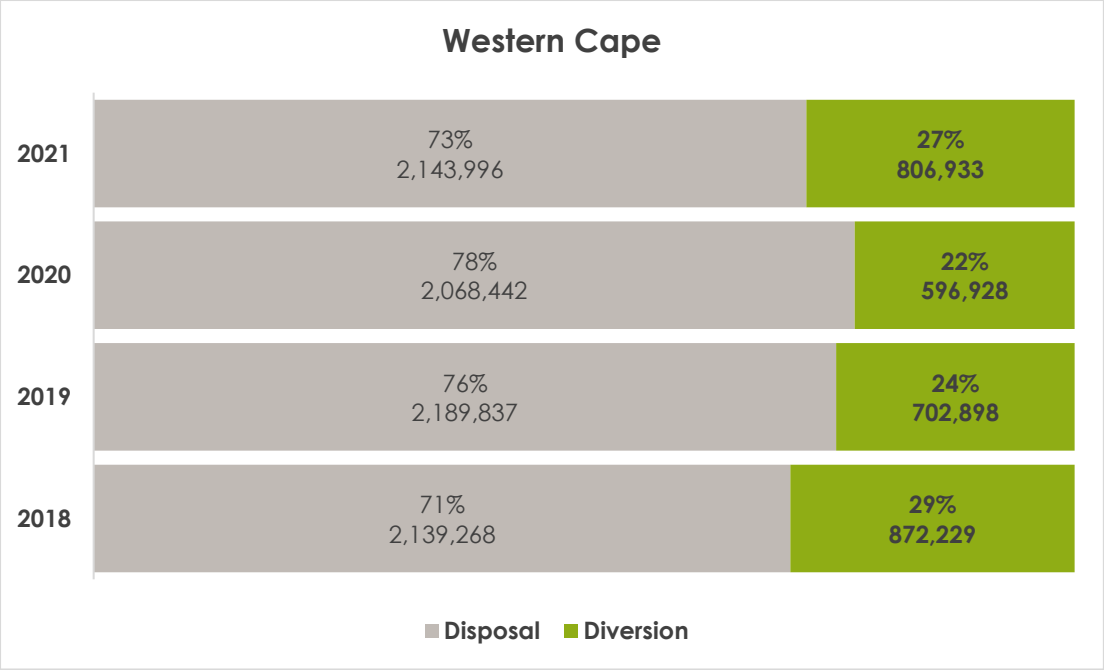


Figure 24: Waste diversion (percentage and tonnes) in the Western Cape between 2018 -2021

Figure 25: Waste diversion per district (percentage and tonnes) between 2018 -2021

Figure 26 indicates the proportion of each waste type diverted over the 2018-2021 period. C&D waste constituted the largest portion i.e., 44% of the waste diverted from landfill (by weight). For each waste type, the annual diversion rate is indicated in Figure 27. Organic waste and C&D waste have consistently experienced high levels of diversion over the 2018-2021 period. Waste diversion for "other" waste has also been relatively high for the 2019-2021 period, however, "other" waste only contributed 4% of the total waste generated over the 2018-2021 period.

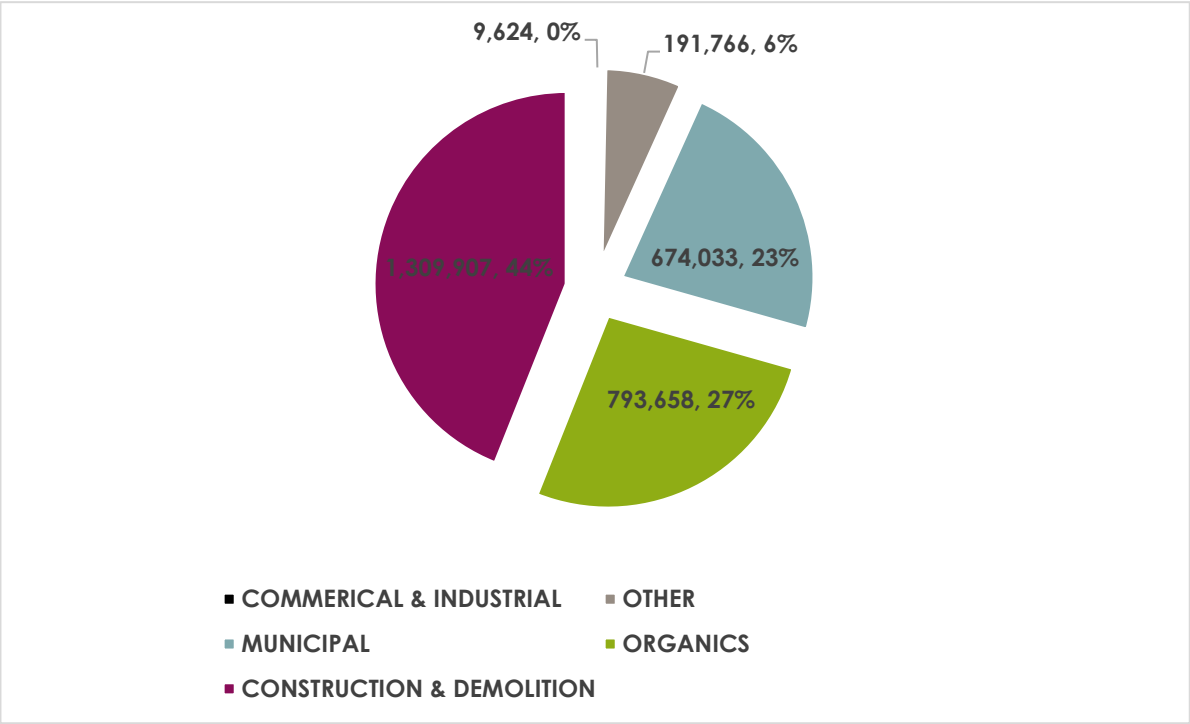


Figure 26: Proportion of waste diverted in the Western Cape per type (mass) between 2018-2021

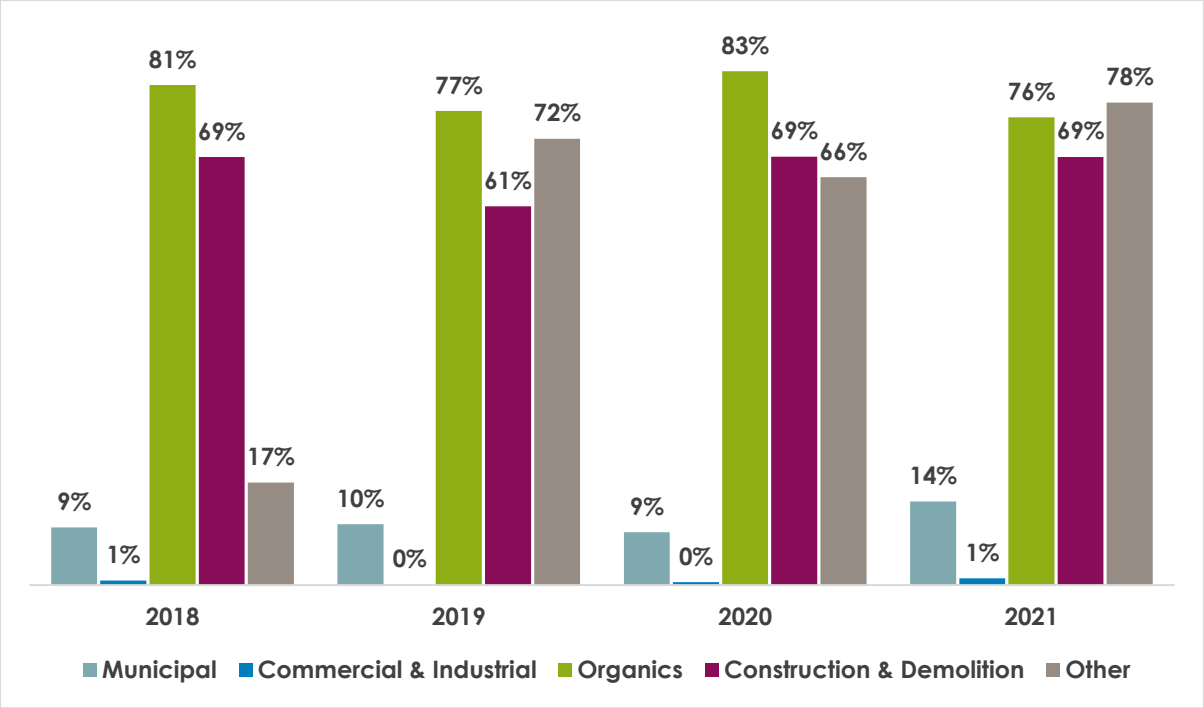


Figure 27: Waste diverted per stream during 2018-2021 (percentage)

3.2.7.2 Organic Waste Diversion

The WC IWMP 2017-2022 indicated the following targets for organic waste diversion, which were subsequently included in WML conditions of WMFs.

- 50% diversion by 2022
- 100% diversion by 2027

Figure 28 provides the annual waste diversion rate for organic waste per district. This only includes the green waste/garden waste portion of organic waste, which is reported by the facility and does not factor in the municipal portion of the waste, which also includes an organic waste portion comprising food waste and garden waste.

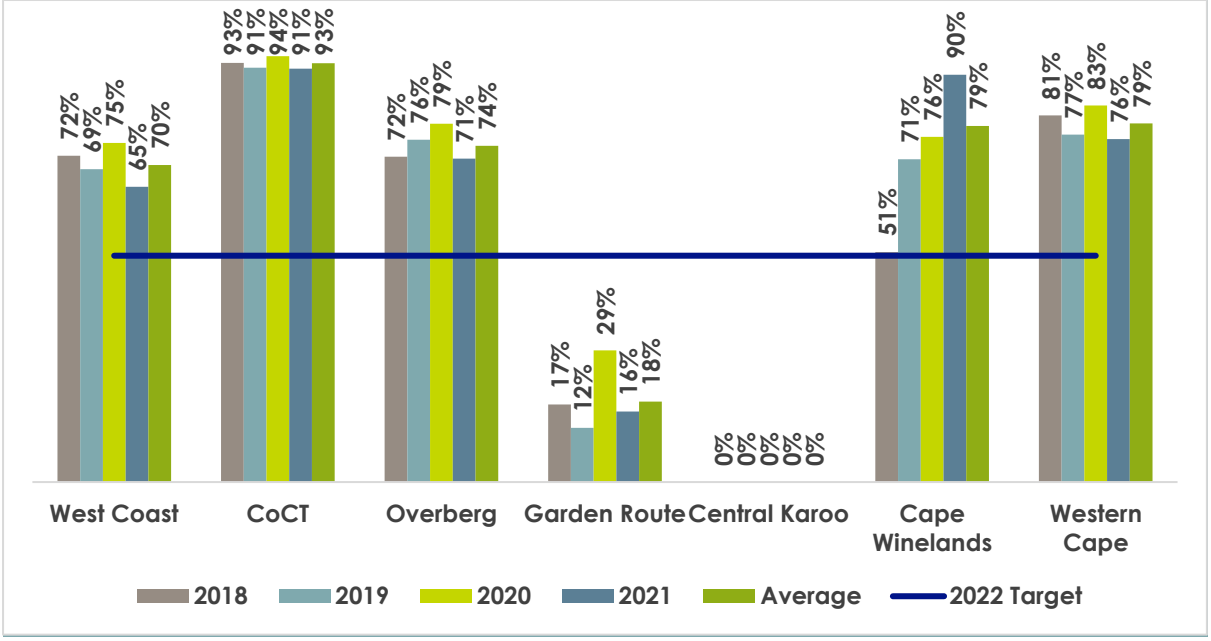


Figure 28: Organic waste diversion per district during 2018-2021 (no assumptions)

Figure 28, therefore makes no assumptions about the data, and only displays the data as it is reported to the IPWIS. As indicated in Figure 28, the average overall organic waste diversion for the province was 79% over the 2018-2021 period. The CoCT has the highest levels of organic waste diversion, averaging at 93%. Since most facilities in the Central Karoo did not report to the IPWIS, no organic waste diversion has been recorded for the district.

Figure 29 is based on Figure 28; however, an assumption is made that 35% of the municipal waste disposed of is organic waste (mostly food waste) and therefore needs to be factored in when calculating the overall organic waste diversion rate to obtain a more accurate picture. This would mean a lower overall diversion rate for organic waste. The formula used to calculate organic waste diversion based on the 35% assumption is as follows:

(1) *Total Organic Waste Generated* = Disposed *Organic waste reported on IPWIS + Diverted Organic Waste reported to IPWIS + 35% Municipal Waste Disposed*

(2)*Total Organic Waste Diverted = Diverted Organic Waste reported to IPWIS / Total Organic waste Generated.*

As indicated in Figure 29, the average organic waste diversion for the Western Cape was 29% over the 2018-2021 period. The West Coast District has the highest average organic waste diversion at 46%.

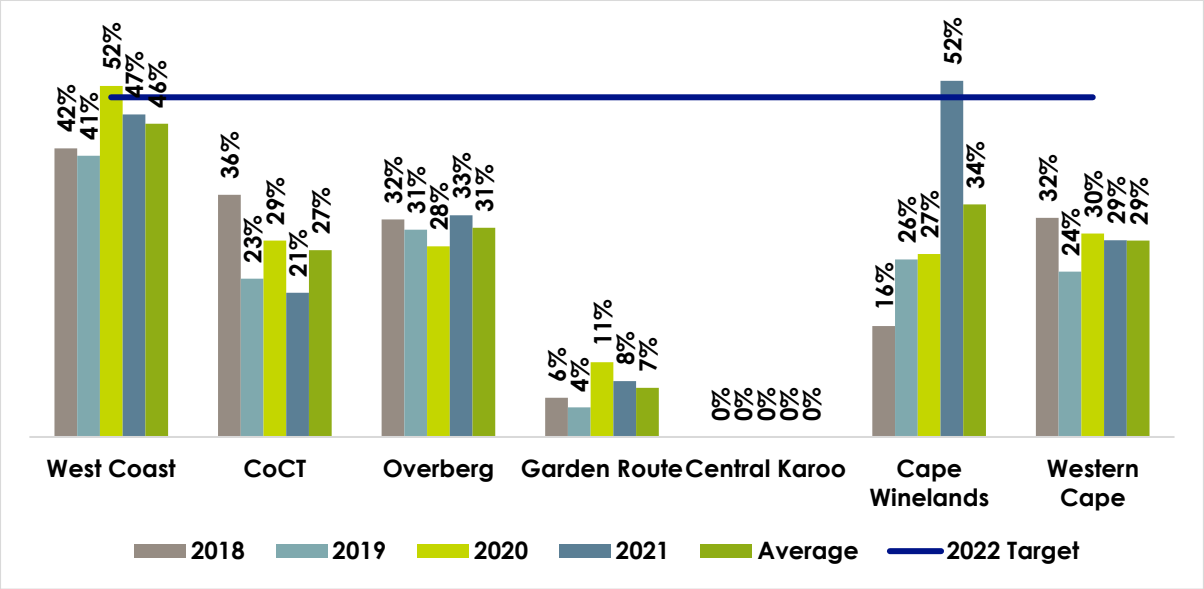


Figure 29: Organic waste diversion per district during 2018-2020 (with 35% assumption)

3.2.7.3 Hazardous Waste Diversion

Figure 30 shows the tonnes of hazardous waste diverted between 2018 and 2021. The major hazardous waste stream being recovered during that period was waste oils. It is evident that the amount of waste oils diverted increased between 2018 and 2019 but decreased in 2020 and 2021. This decrease is likely due to the pandemic affecting business and industry operations. Liquid and organic sludge was diverted in small quantities during 2018-2021.

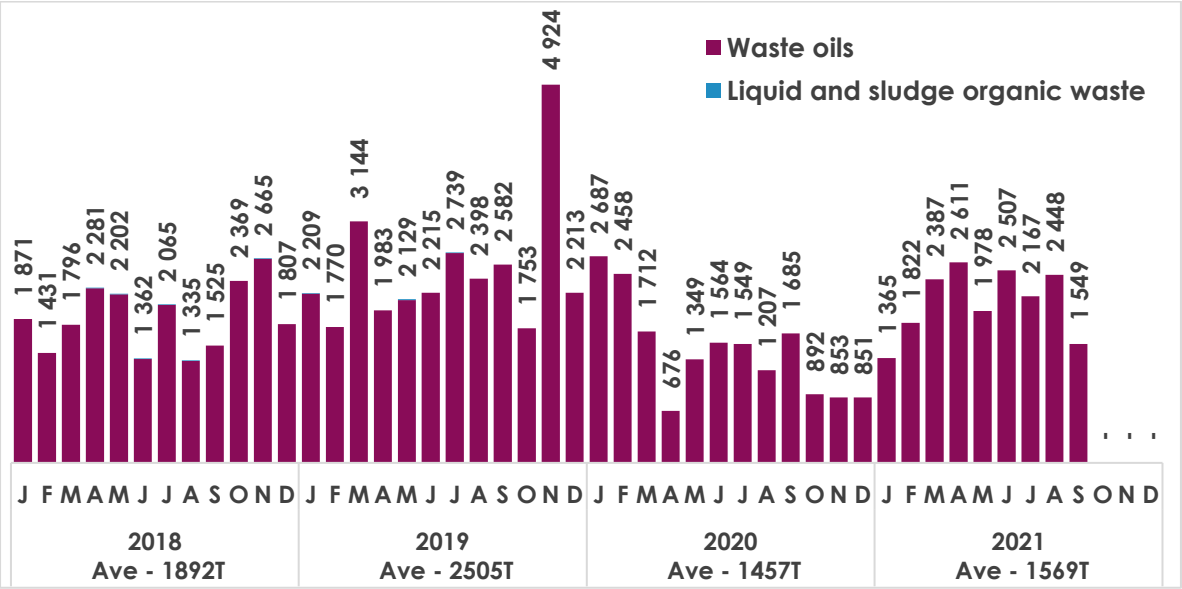


Figure 30: Hazardous waste diversion in the Western Cape between 2018-2020 (tonnes)

3.2.8 Waste Minimisation Initiatives to Support Diversion

Separation at source (s@s) is key to any waste recovery and recycling initiative. S@s is the practice of setting aside recoverable materials from non-recoverable waste materials at the point of generation to reduce the volume of waste being landfilled. This may include the use of a split-bag system (e.g., a wet/dry two-bag system or 3-bag system) or other methods such as drop-offs, buy-back centres and swop shops). In promoting the then NWMS, 2011 Goal 1, Promotion of waste minimisation, reuse, recycling and the recovery of waste, the Department developed a Guide to Separation of Waste at Source aimed at municipalities. The guideline focuses on global and local initiatives, provides details on s@s systems, financing, and provides practical steps to consider when implementing an s@s programme. This report further critically evaluates opportunities for implementing practices, programmes and systems for s@s to improve diversion efforts. This was followed by hosting two workshops on the topic.

The Department has also undertaken several waste minimisation initiatives specifically aimed at providing waste minimisation training to a wide range of stakeholders including municipal officials and waste collection staff, EPWP workers, private recyclers, and the youth working in waste management (Figure 31). An overview of key waste minimisation training undertaken is shown in Figure 32.

Figure 31: Photograph showing waste minimisation training being undertaken by the Department

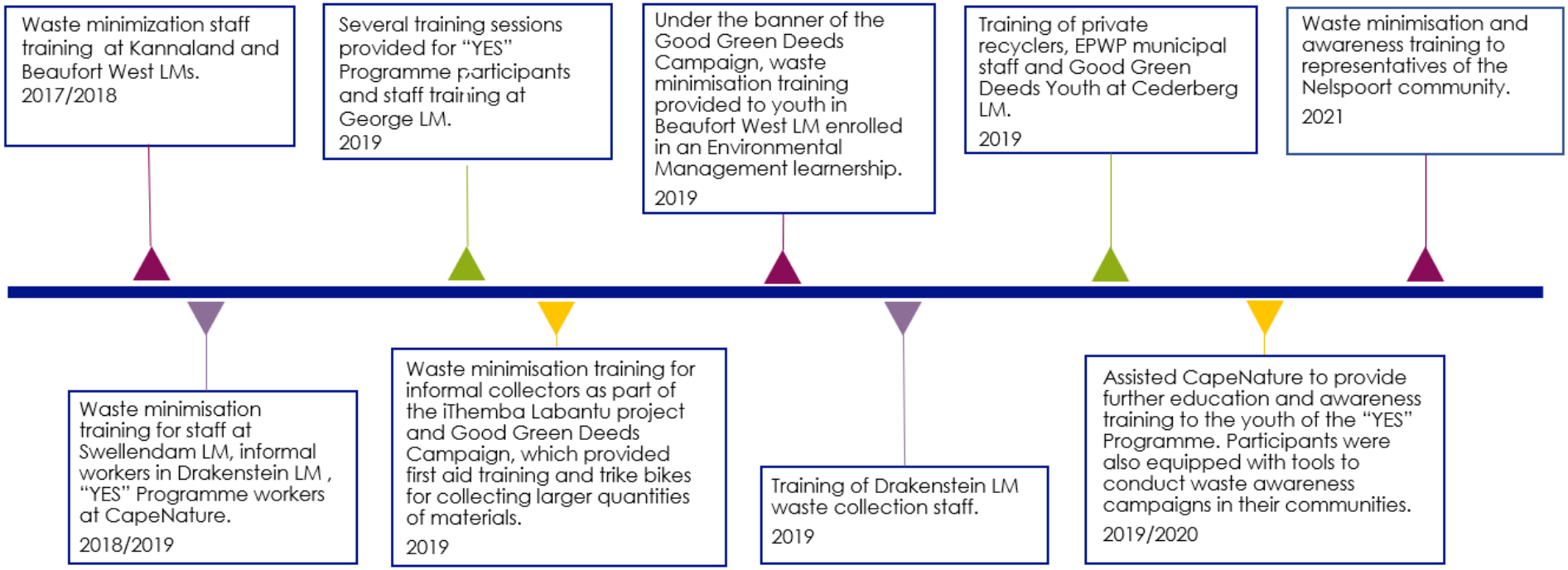


Figure 32: Departmental waste minimisation Initiatives undertaken

Municipalities have undertaken several waste minimisation initiatives aimed at waste reduction and waste separation (Figure 33 - Figure 36). Municipalities within the Central Karoo District had either few or no waste minimisation initiatives. Other municipalities of concern, outside of the Central Karoo include Kannaland, Oudtshoorn and Cederberg municipalities. Also, of concern is that some municipalities lack waste minimisation initiatives for organic waste, despite the national and provincial landfill restrictions pertaining to this waste type.

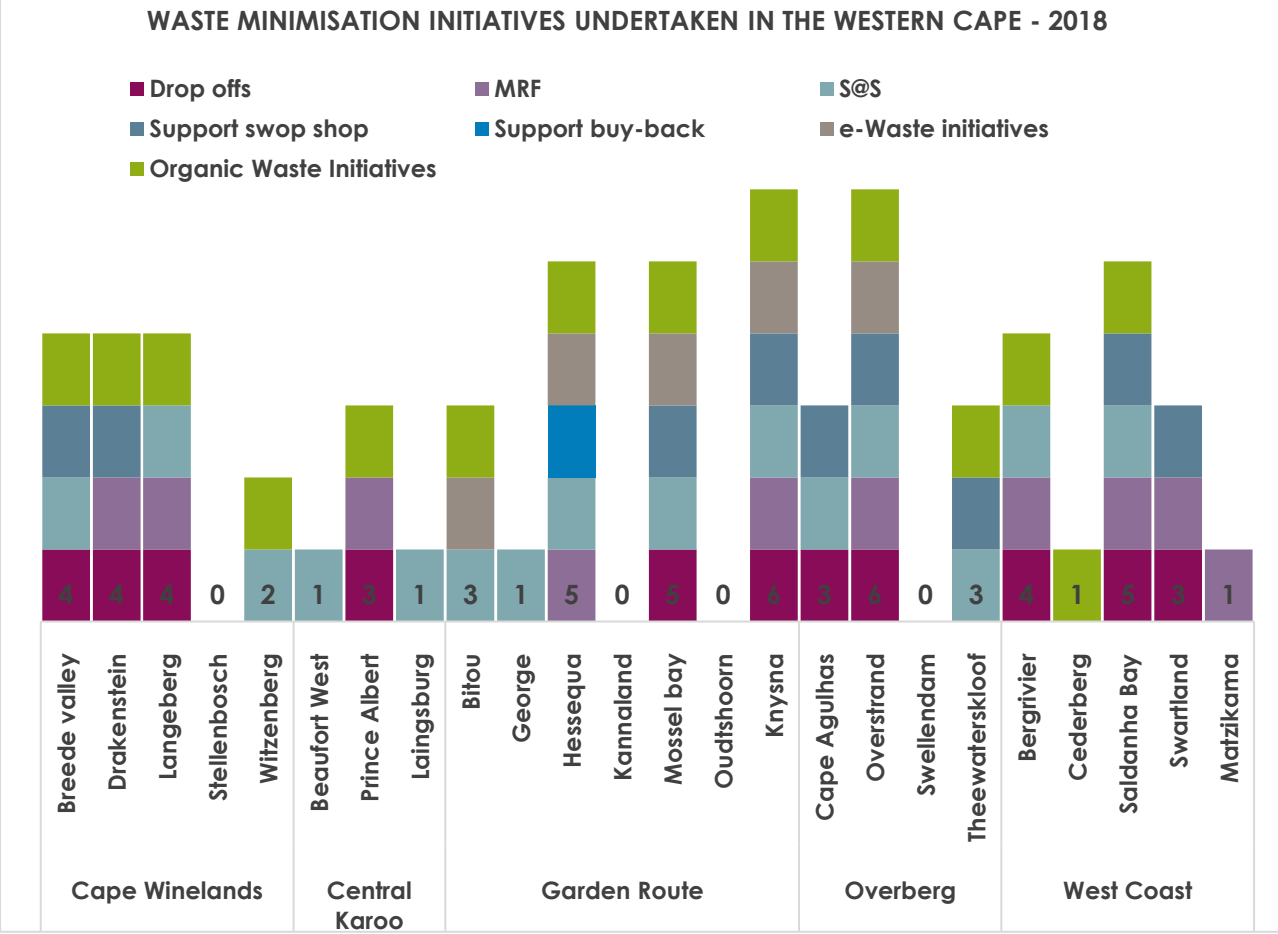


Figure 33: Waste minimisation initiatives undertaken by municipalities per district during 2018

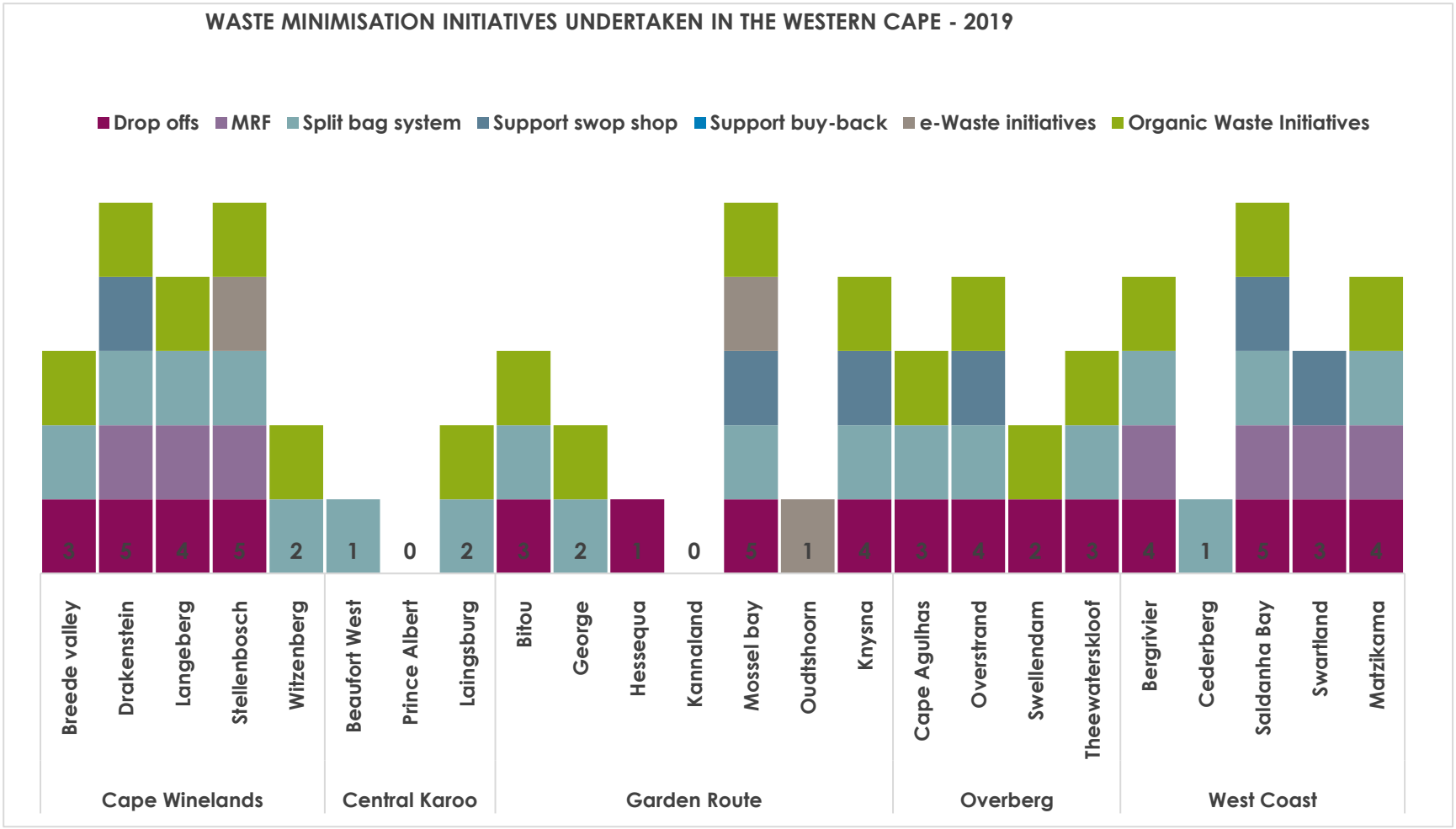


Figure 34: Waste minimisation initiatives undertaken by municipalities per district during 2019

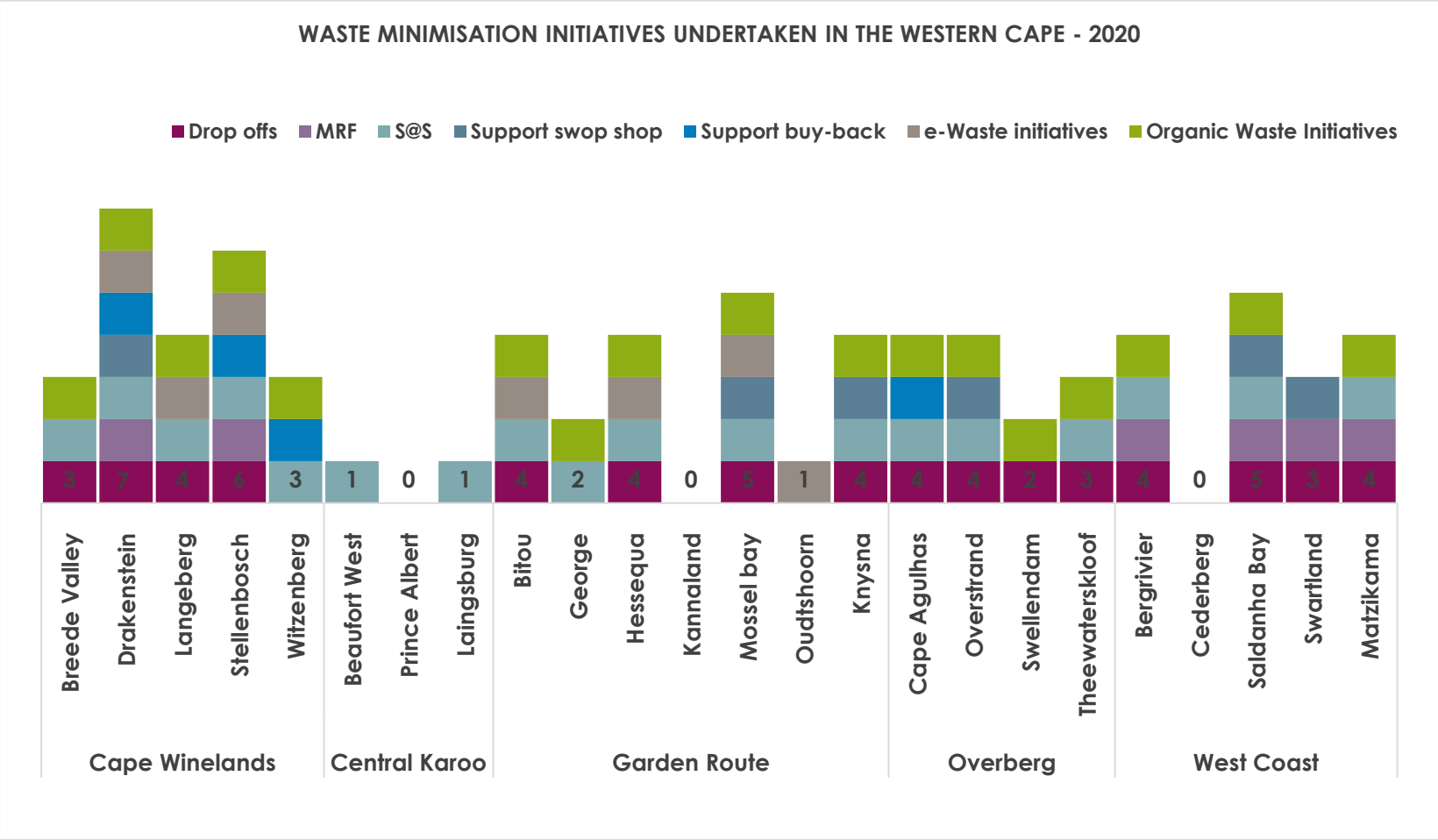


Figure 35: Waste minimisation initiatives undertaken by municipalities per district during 2020

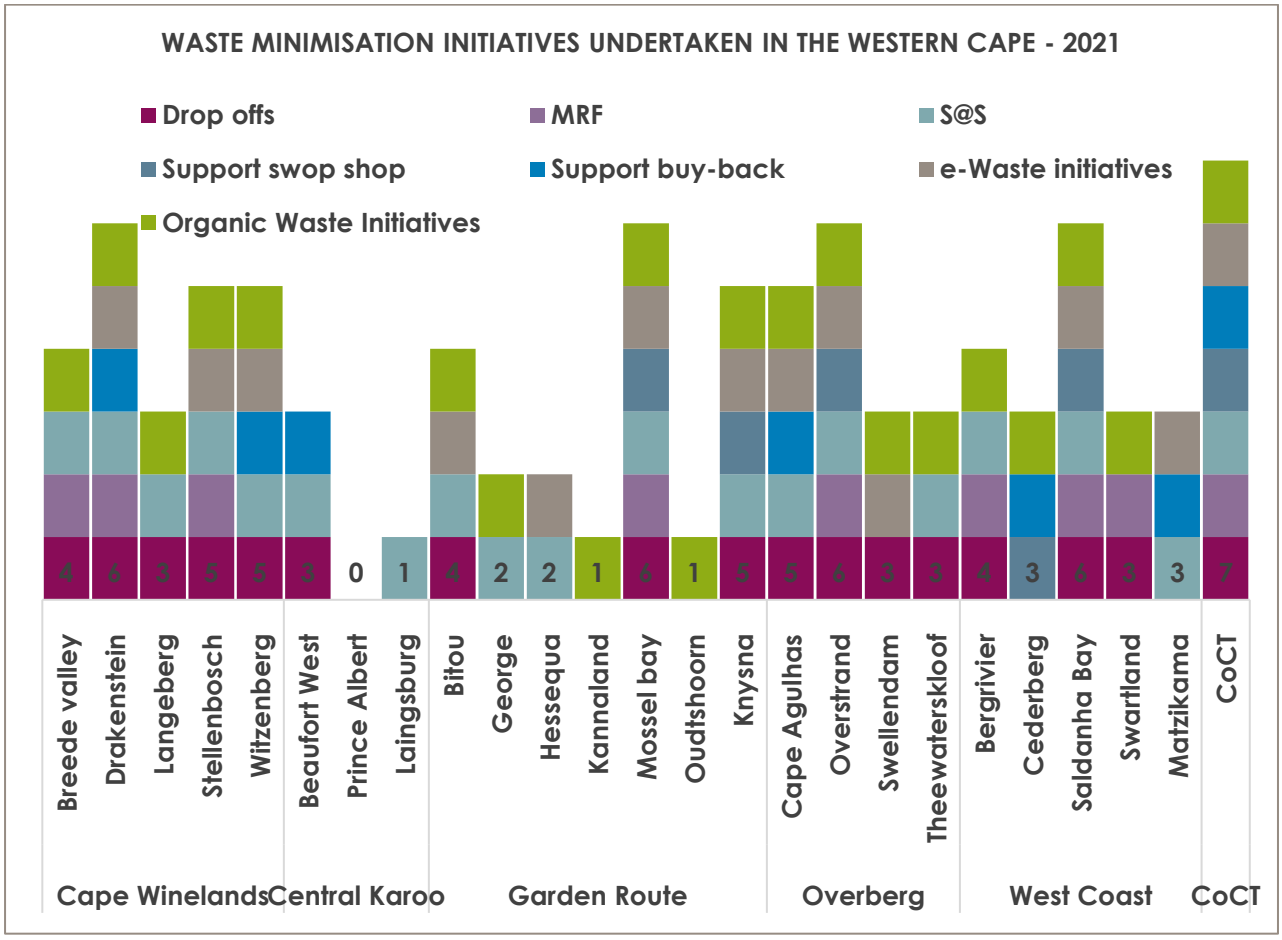


Figure 36: Waste minimisation initiatives undertaken by municipalities per district during 2021

3.2.8.1 Provincial Organic Waste-focussed Initiatives

Organic waste has been identified as a key waste type requiring intervention. Targeting organic waste has climate change benefits, since CH_4 produced during the landfilling of organic waste has negative climate change impacts. The separation of organic waste from the rest of the waste stream, also results in the availability of cleaner recyclables. In addition to the above, food waste, is problematic since it represents wasted resources due to food loss and a lost opportunity for the beneficiation to those in need (DEA&DP, 2020).

The IWMP 2017 -2022 set diversion targets for organic waste; 50% diversion by 2022 and 100% diversion by 2027. The following measures to divert organic waste from landfill were undertaken by the Department.

- During 2019, the Department developed a Provincial Organic Waste Strategy for the diversion of organic waste to landfill. The vision of the strategy is to assist in the creation of a circular economy where organic waste is not wasted within the entire value chain

and is instead largely prevented or beneficiated to reduce the amounts going to landfill and the major impact on climate change.

- A Guide to Separation of Waste at Source and specific waste stream management guidelines i.e., green waste, abattoir waste and sewage sludge were drafted.

- The Department hosted annual organic waste capacity-building and networking workshops during this period. During COVID-19, these engagements were presented online to stakeholders. These interactive workshops exposed stakeholders to new technologies and good practice models.

- The Department has ensured that organic waste diversion targets were written into WML conditions. The Department has requested that municipalities submit Organic Waste Diversion Plans. The purpose of the organic waste targets and diversion plans are to reduce the cumulative environmental impacts caused by WDFs, among others, leachate generation impacting groundwater quality, the decomposition of organics causing CH_4 generation and immediate explosion risks at WMFs, and surrounding structures. These impacts can be reduced by diverting organic waste. Progress on Organic Waste Diversion Plans is indicated in Box 2.

Box 2: Progress on Organic Waste Diversion Plans

- Currently, only 15 municipalities have submitted organic waste diversion plans to the Department for review. The plans have been reviewed by the Department and comments have been furnished to the various municipalities. Comments provided by the Department must be addressed in the final plans, prior to being tabled at municipal council and adopted for implementation. Monitoring and reporting on the progress of actions to divert organic waste must be undertaken to ensure implementation.

- It was observed that many plans lacked sufficient information regarding organic waste sources to establish a baseline. Many of the plans also lacked information on how to plan for the 50% diversion target by 2022. The technologies proposed to process diverted organic waste seemed appropriate. It must however be ensured that funds to support such infrastructure and for associated transportation costs, are set aside to ensure that implementation takes place. Newer and innovative technologies that become available need to be considered.

- Organic waste-focussed workshops were held:
    - Hosted two workshops to promote the guideline for the management of abattoir waste in the West Coast District during 2017.
    - A Restriction and Prohibition of Organic Waste to Landfill in the Western Cape workshop was held on the 22 November 2019. The purpose of the workshop, which was hosted in the West Coast District, aimed to find a regional solution with all the organic waste generators, treaters and beneficiates in the area by means of an industrial symbiosis model. The industrial symbiosis model will allow synergies to be formed with organic waste generators, treaters and beneficiates in the district to better facilitate the diversion of organic waste from landfill.
    - Hosted two workshops on the development of generic Organic Waste Diversion Plans for municipalities in the Garden Route District (1 November 2018) and Cape Winelands District (14 February 2019). The workshops aided municipalities to develop a plan in working towards achieving these targets to divert and minimise organic waste from landfill by means of a roadmap.
    - Opportunities and solutions for managing food, green, abattoir and other organic waste in the Cape Winelands District: Finding a Regional Solution for Organic Waste Management, held online on the 28 October 2020.
    - A group session was held within the CoCT to get feedback from stakeholders on what are the key challenges experienced by the abattoir sector and what role should government and private sector play in resolving the challenges.

3.2.9 Wastepreneur and Waste Picker Support

The Department recognises the role of the informal sector in diverting waste from landfill and have embarked on a support programme for small and micro-waste entrepreneurs since 2015/16. A need was identified to assist municipalities with their waste services procurement specifications in a manner that supports access of these small and micro-waste entrepreneurs (wastepickers and wastepreneurs) to municipal tenders or to recyclable material. Therefore, during 2021, a procurement specialist was appointed to develop four procurement plans, including strategies and specifications, that would include and integrate wastepreneurs into the waste management system. Numerous engagements were held with four pilot municipalities on the programme.

3.2.10 Circular Economy Initiatives

- The Western Cape Industrial Symbiosis Programme (WISP)

  - The Department invites WISP representatives on an annual basis to its Industry Waste Management Forum to increase exposure of the programme to industry.

  - WISP is facilitated by GreenCape and is a resource efficiency approach whereby one company's unused or residual resources are used by another for mutual benefit, leading to a more resource-efficient and lower carbon economy. WISP connects companies with unused or residual resources such as materials, energy, water, assets, logistics and expertise and offers free facilitation to business members to allow them to negotiate transactions

  - GreenCape reports that the cumulative impact of WISP over the last six years has been the following:

    - 104 900 tonnes of waste diverted from landfill;
    - 309 200 fossil GHG emissions saved (equivalent to the electrical usage of 39 800 households in SA);
    - Over R120 million generated in financial benefits (additional revenue, cost savings and private investments);
    - 69 permanent jobs in member companies, as well as 25 temporary positions, and 218 economy-wide jobs in supply chains have been created.

- Extended Producer Responsibility (EPR)

  - The EPR regulations were published by the DFFE in May 2021 and all EPR schemes were required to register with DFFE by 5 November 2021. The EPR schemes currently cover the paper, packaging and some single use products as well as the lighting, electrical and electronic equipment, portable battery, pesticide and lubricant oil sectors. The management of EPR schemes is a national competency and the province does not have any EPR-focused initiatives. The Department will however be working with municipalities to leverage support from its industry partners for its four waste integration projects. It is envisaged that the Producer Responsibility Organisations (PROs) will come on board and provide the necessary infrastructural requirements from the EPR Fees collected. Provinces will also be involved in compliance checks in partnership with DFFE. Current challenges include: the existence of free riders; PROs not consulting with their members; late processing of proposed EPR fees; EPR fees not submitted; lack of applications and late registration.

3.2.11 Waste Management Infrastructure

3.2.11.1 Available Landfill Airspace

The limited landfill airspace in many local municipalities will more than likely result in increasing pressures for municipalities and see the movement of waste between them e.g., Stellenbosch Municipality disposing of their waste at Vissershok WDF. Since many of the existing WDFs will run out of landfill airspace within the near future, municipalities will have to bear higher development and operational costs to increase available airspace. Figure 37 shows the estimated lifespan of the province's municipal landfills as of 2019, and the location of intended regional landfills (GreenCape, 2022). As seen in Figure 37, of the 25 local municipalities, 22 have less than five years left of available airspace.

Landfill airspace utilisation needs to be tracked regularly, to allow WDF managers to plan accordingly by ensuring that additional waste cells are developed timeously. A Basic Assessment process in terms of the National Environmental Management Act 1998 (Act 107 of 1998), which could take more than six months, must be undertaken after submission of a WML application to the Competent Authority. The appointment of contractors for the construction of the new waste cells, the budgeting processes and Municipal Infrastructure Grant (MIG) applications also have time implications. This is important since, the planning and administrative timeframes have been underestimated in the past, which resulted in some municipalities having to resort to disposal of waste at facilities outside of the municipality. This has resulted in significantly more money being spent on hauling waste over longer distances and the need to increase the municipal waste disposal tariffs.

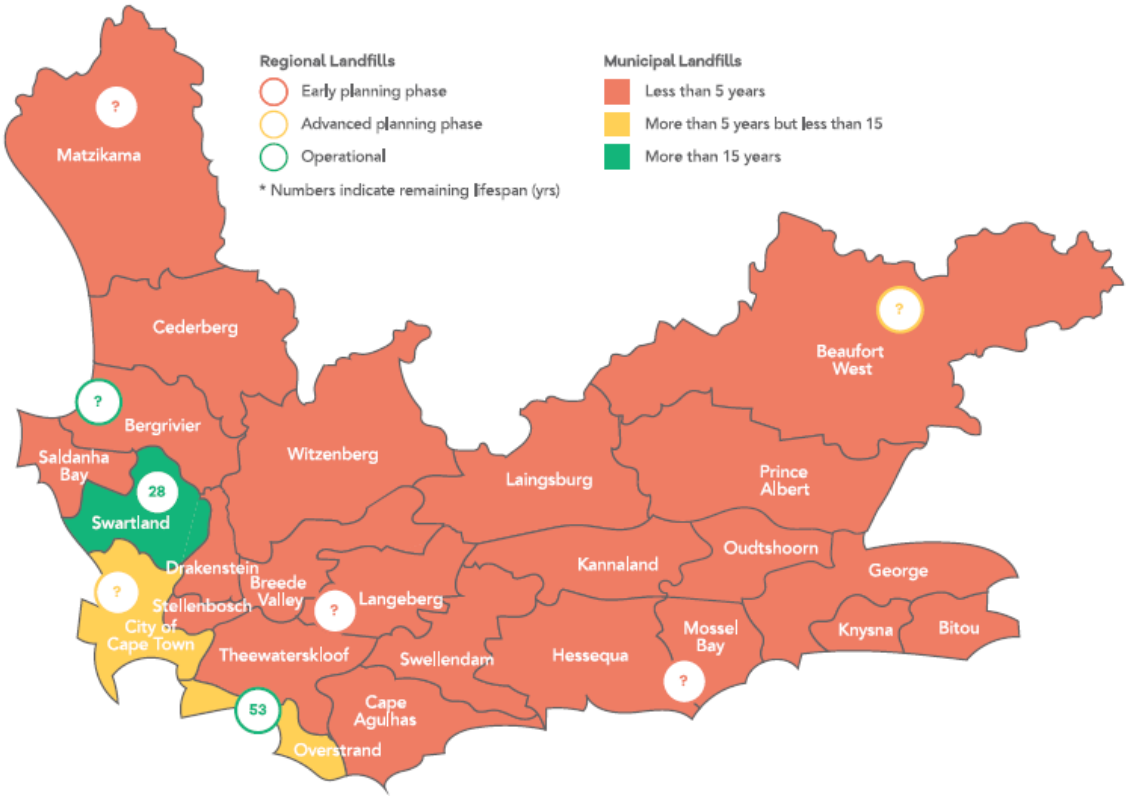


Figure 37: Estimated landfill airspace for each municipality in the Western Cape (GreenCape 2022)[3]

A landfill airspace study undertaken by the Department during 2012 recommended that to keep a handle on the status quo at WDFs, airspace surveys need to be conducted every two to three years. Depending on the current airspace, a better extrapolation could occur for future WDF development and management.

The Department has implemented several methods to extend the lifespan of operating WDFs, to optimize the use of available airspace and increase diversion:

- Alternative Waste Management Technologies (developed in collaboration with GreeCape) and Landfill Airspace Tool (AWMT&LAT);
- Organic Waste Diversion Plans;
- Wastepreneurs (waste entrepreneurs) SMME support programme;
- Authorising landfill height extensions; and
- Waste stream guidelines.

[3] Based on engagements with DEA&DP.

3.2.11.2 Number and Type of Waste Management Facilities

WMFs include e.g., WDFs, waste drop-offs, recycling and composting facilities (Table 9). There is limited waste management infrastructure at municipalities as per the Departmental Infrastructure Study developed in 2016. The privately owned WDFs in the province include PetroSA (Mossel Bay), PPC (De Hoek and Riebeek West), Exxaro (Vredenburg) and ArcelorMittal (Saldanha Bay). The Vissershok (Averda Enviroserv) Private WDF operates as a commercial landfill receiving waste from businesses and municipalities.

Table 9: Number and type of waste management facilities in the Western Cape

WASTE MANAGEMENT FACILITIES	COCT	OVERBERG	CAPE WINELANDS	WEST COAST	CENTRAL KAROO	GARDEN ROUTE	TOTAL
Operational WDFs	4	9	14	8	7	15	57
Decommissioned WDFs	23	20	16	34	1	15	109
Operational Drop-off facilities	19	8	5	12	0	0	44
Operational Transfer stations	1	4	4	2	0	0	11
Operational Materials Recovery Facilities	27	3	3	5	1	0	39
Operational Compost Facilities	3	1	2	0	0	0	6
Total Number of WMFs	77	45	44	61	9	30	266

3.2.11.3 Regional Waste Management Facilities (WMFs)

The regionalisation of WMFs may provide a benefit to municipalities by providing cost savings through economies of scale. Initially there were nine regional WMFs in various stages of operation within the Western Cape, but this has been reduced to eight since the CoCT's Kalbaskraal WDF has been rescinded. The CoCT will restart the Environmental Impact Assessment process to establish the regional facility as legal matters and appeals have led the CoCT to consider a new application. The West Coast District WDF, Cape Winelands District and Garden Route District are in various planning phases. Karwyderskraal WDF in the Overberg, Vredenburg in the Saldanha Bay Municipality and Highlands WDF in Swartland Municipality are operational. The Central Karoo District is in the initial stages of planning for their regional facility.

3.2.11.4 Conditions at Waste Management Facilities

The conditions at the WMFs generally fluctuate. Some of the key issues experienced at WMFs are summarised below:

ISSUES	IMPACTS
Broken perimeter fences	• Unauthorized waste pickers enter the grounds of the facility and trespass on the waste body. • Spread of windblown litter. • Facility footprint creep which results in illegal disposal of waste outside of the permitted perimeter.
Lack of stormwater management channels (Recent audits conducted has indicated that the water management at many facilities have improved.)	• Stormwater becomes contaminated when encountering the waste body. • Contaminated stormwater not contained within the footprint of the facility.
The lack of cover material.	• Disposed waste becomes windblown causing numerous nuisances such as blocked/clogged sewage and water channelling systems. • Aesthetic nuisances at most WDFs.
Access control at facilities is lacking.	• Volumes of incoming waste, and the checking of the waste entering the landfill are also lacking at many at WMFs.
Lack of groundwater monitoring at facilities	• If water quality is not monitored, it could create conditions which could lead to significant and prolonged environmental impacts.

Detection of landfill gas (Box 3).	• Methane gas detected above range (above 5%) at some facilities. Unless captured by a gas recovery system, methane. generated by the WDF is emitted directly through the landfill cover 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 should also check for the ingress of water at the affected facility, as organic waste that breaks down in anaerobic conditions produces methane.

Issues highlighted at WDFs during Departmental audits are requested to be addressed by municipalities in their Action Plans. Due to the lack of consistency from municipalities in supplying these plans to the Department, an additional administrative step which automatically leads to further environmental law enforcement action has been implemented.

Box 3: Landfill Gas Detection

The main components of landfill gas are CO_2 and CH_4. CH_4 is a colourless, odourless asphyxiant, flammable, gas that is lighter than air with a vapour density of 0.6. CH_4 is explosive between the concentrations of 5% - 15% by volume in air. This concentration range is referred to as the explosive range with the two extremes being referred to as the lower (LEL) and upper (UEL) explosive limits respectively.

Municipalities are required, in terms of their WDF WML conditions to undertake landfill gas monitoring. The Department also undertakes 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.

Method Used for the Landfill Gas Detection Exercise

Measuring points are selected in and around the waste body for the measurement of CH4 concentrations. The Department normally tries to measure four points on the waste body. The measuring points are determined by establishing where older waste was disposed of, particularly in areas where the decomposition of the solid waste has already begun. These points are 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 is 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.

The measuring probe is lowered into the hole for detection of gas. The concentration of O_2 by volume of air (%), along with the value of the CO_2, hydrogen sulphide (H_2S) (ppm) and CH_4 (% volume in this case), as detected by the device, is recorded.

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.

3.2.11.5 Waste-related Complaints

The Department receives several waste-related complaints annually. Many of the complaints are linked to the illegal dumping of waste and the operation of WMFs. Figure 38 provides an overview of waste-related complaints received by the Department over the 2018-2021 period. In the case of Cape Winelands, there was a decline in the number of complaints received over the 2018-2021 period, with only one complaint received during 2021. In the West Coast

District, there was an increase in the number of complaints received compared to the two preceding years.

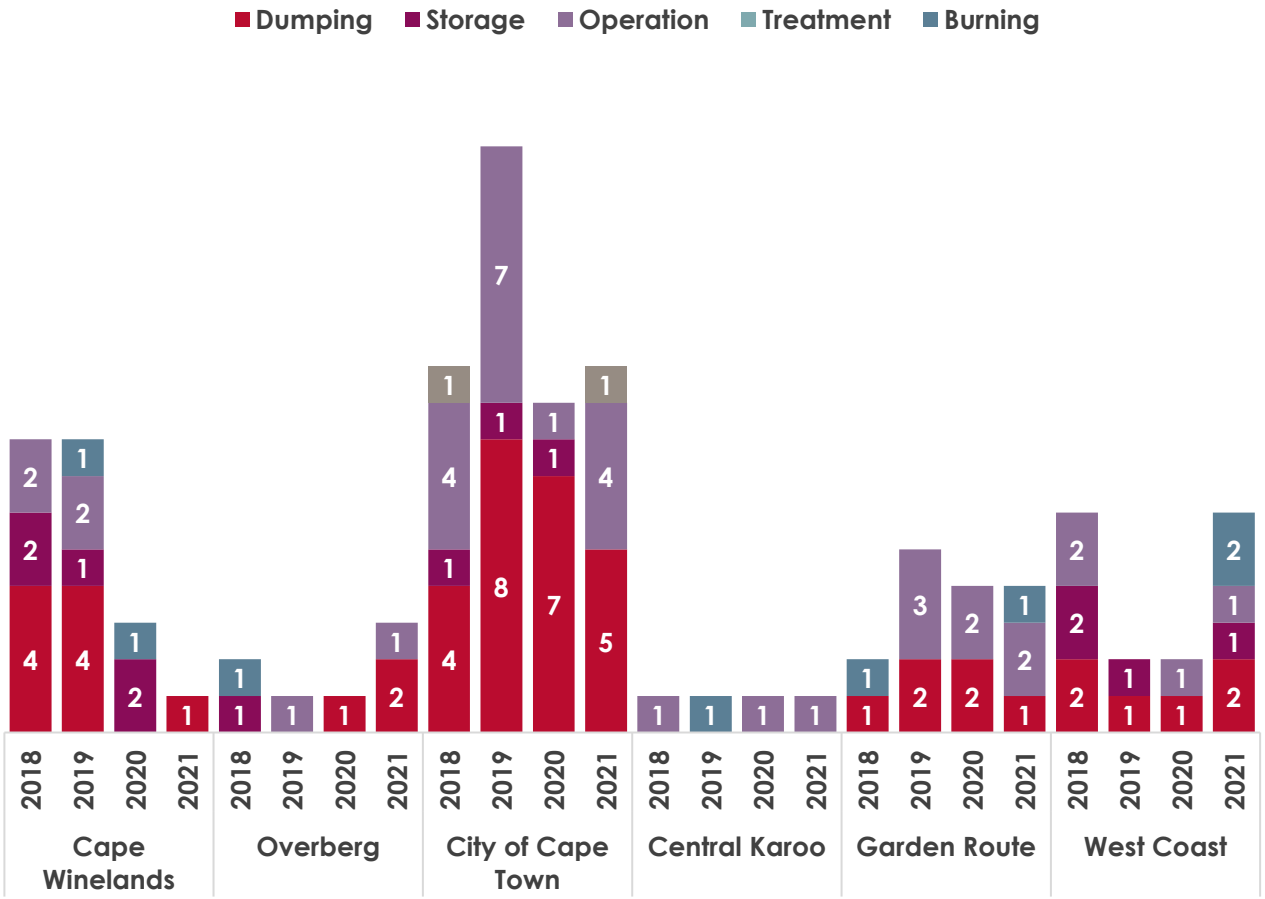
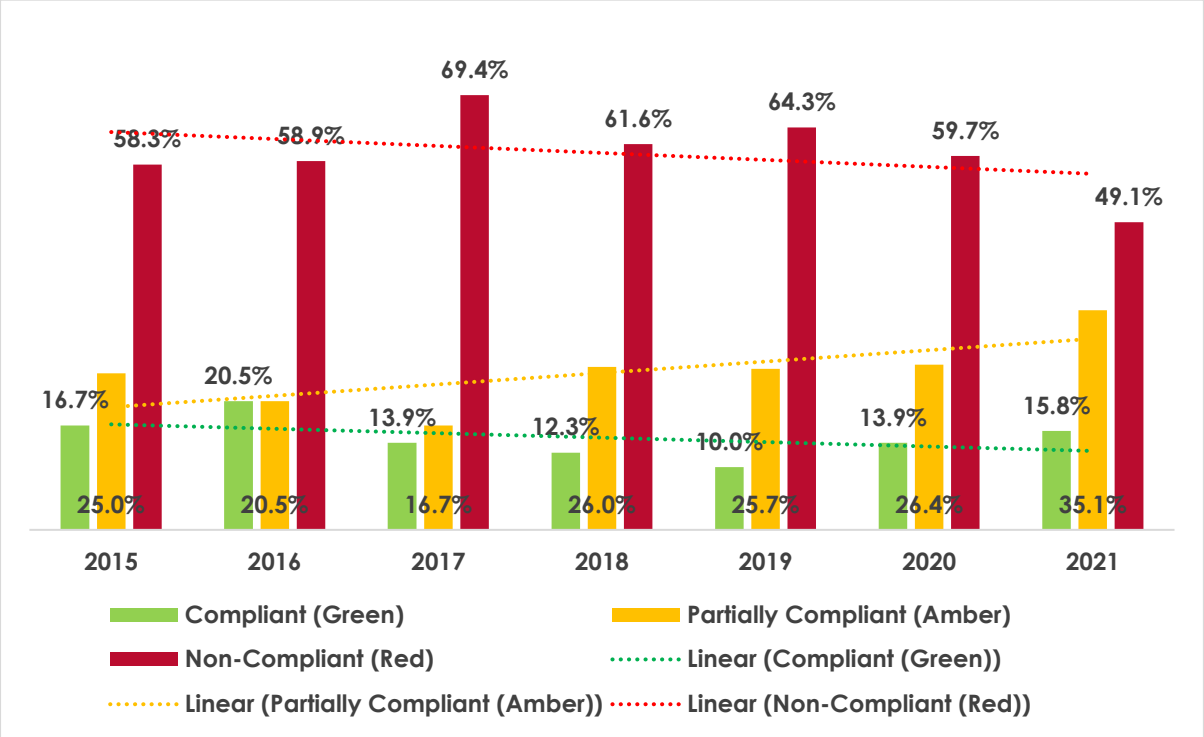


Figure 38: Waste-related complaints received at Waste Management Facilities (2018-2021)

3.2.11.6 Compliance at Waste Disposal Facilities

The Department undertakes routine audits at various WDFs to determine the level of compliance with WML conditions. From the compliance audits conducted during the period 2015 to 2021 (Figure 39), the observations are:

- The rate of non-compliance has moved towards a downward trend.
- There is an observed relationship between the downward trend of full compliance and the upward trend of partial compliance. Some facilities that were compliant, became partially complaint.



COMPLIANCE RATING	STATUS INDICATOR (X)	REQUIRED ACTION
84.5 ≤ X ≤ 100%	Compliant (Green)	Minor Improvements
64.5% ≤ X < 84.5%	Partially Compliant (Amber)	Improvements
X < 64.5%	Non-Compliant (Red)	Major Improvements

Figure 39: Compliance at waste management facilities in the Western Cape (2015-2021)

During 2018, WMLs were varied to streamline operations and add more restrictions to outdated methodologies conducted by municipalities and which were permitted in the older permits and WMLs. Box 4 provides an overview of WDF height restrictions.

A weighted compliance monitoring methodology, which highlights environmental negligence, was implemented in 2020. This weighted auditing system was implemented during

2020 and this coincided with the COVID-19 pandemic restrictions. The constraints associated with the pandemic restricted the financial and human resources of most of these municipalities. The lack of funds and human capital to deploy caused a decline in the rate of compliance. The awareness created by the highlighted environmental negligence may create an improvement in compliance at these municipalities over time. Only a few Action Plans have been submitted to the Department during this period, the Department needs to encourage the municipalities to submit these plans.

Box 4: Waste Disposal Facility Height Restrictions

Many WDFs in the province were established through the historical unsanitary landfill methodology and approach, meaning that they had no containment barriers or liners to protect the groundwater resources. Those WDFs had very little consideration of modern engineering construction and design, the sites were managed by imposing suitable height restrictions that allowed for the disposal of waste over a period of between 10 to 20 years. From Departmental audits conducted and external audit reports it has been determined that some of these WDFs are well operated and have high ratings in relation to compliance with permit or licence conditions. WDFs in some municipalities were often restricted to very low heights of final disposal i.e., 1 or 2 metres, which was intended for the construction of a boundary berm used for controlled burning of waste. The burning of waste at WDFs is no longer allowed. The low height restrictions have become impractical due to the waste burning prohibition, which forced WDF mangers to only dispose of waste at WDFs having low height restrictions imposed.

Some WDFs are non-compliant due to being over the permitted height prescribed in permits or licences and this is associated with the reasons why some of these WDFs have low levels of compliance. These WDFs have untapped airspace and could be utilized by the WDFs owners, who may consider applying for an increase in the operational heights which can be extended from 1 or 2 metres above natural ground level to between 5 and 10 metres above natural ground level. These applications could be made by the respective licence holders in consultation with professional civil engineers, the Department, as well as the Department of Water and Sanitation. The licence holder will then have the benefit of having increased WDF lifespan.

3.2.11.7 Closure and Rehabilitation of Waste Disposal Facilities

Compliance with legislative requirements as written into the records of decision and environmental authorisations of WDFs are very cost restrictive and requires a large capital investment. The rehabilitation of landfills requires adequate financial planning and allocation of funds. The challenge is that while closing and rehabilitating a landfill, municipalities are required to simultaneously procure new landfill airspace. Historic WDFs do not necessarily require costly landfill caps, however this needs to be determined by the Department of Water and Sanitation. Depending on the detail of the associated specialist studies, the appropriate capping can be provided for the site, smaller builders' rubble sites may pose less of a risk to the environment and the associated costs of closure may be significantly less than the associated costs of a larger landfill. The aim of the capping and closure is to ensure that the historic site no longer significantly pollutes the environment, and the organic waste which would have potential to pollute has already been decomposed. There is a great need for cost-effective and safe waste disposal. The limited budgets of municipalities mean that securing landfill airspace is prioritised over capping older WDFs.

3.2.12 Waste Planning and Institutional Arrangements

3.2.12.1 Institutional Framework of the Waste Sector

The Constitution highlights cooperative governance where the different spheres of government, although distinct, must work together in an interdependent and interrelated manner. Schedule 4 of the Constitution lists the areas where national and provincial government share concurrent national and provincial legislative competence. The environment is one of the concurrent competences of both national and provincial governance. The provincial powers of 'supervision', 'monitoring' and 'support' of local government are derived from section 41, 139 and 154 of the Constitution.

- To facilitate effective communication between WMOs, WMOs' Forums were established at various levels of government i.e., national, provincial (Variable 1) (Figure 40) and district level. The Central Karoo District Municipality does not have a WMOs' Forum but has established an environmental forum, which deals with broader issues relating to environmental matters including, waste.
- The WCG, together with municipalities, have several key strategic and technical engagements relating to planning, budgeting and governance. The provincial and municipal engagements, where strategic discussions take place (Variable 2), together with the WMOs forums provide input to and receive information from National MINMEC, MINTECH (Variable 3) and Working Group 8.

- Other important DEA&DP forums, which provide a platform for industry, are the Industry Forum and the Recycling Action Group (Variable 4).
- Important forums particularly pertaining to municipalities include the South African Local Government Association Municipal Infrastructure Forum and the Department of Local Government Municipal Infrastructure Grant forum. Other key government departments, municipal representatives, NGOs and industry bodies are also invited as stakeholders to attend and participate at these various governance platforms.

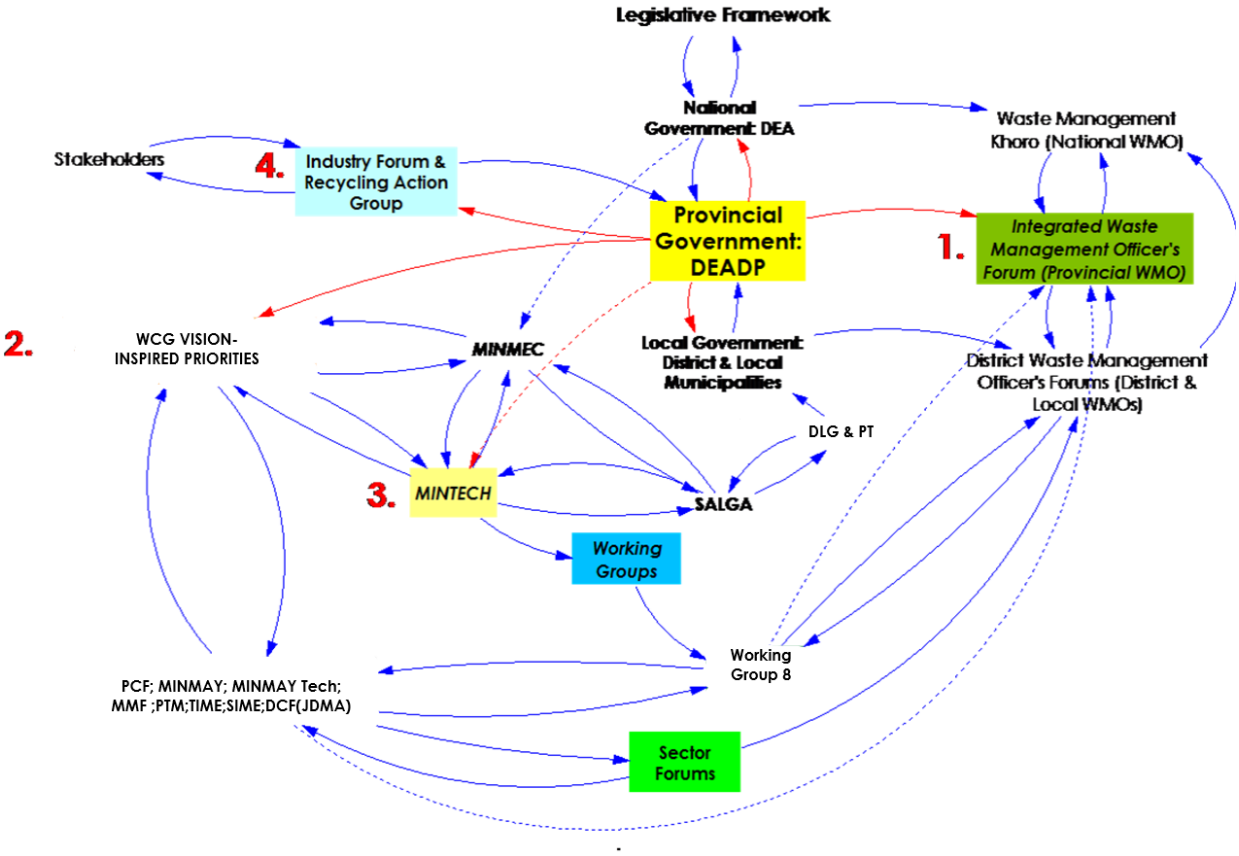


Figure 40: Institutional framework for the waste sector

3.2.12.2 Integrated Waste Management Plan Status

The NEM: WA requires that provincial government and municipalities develop IWMPs and that these plans are endorsed by the relevant National Minister or provincial MEC, respectively.

Although all municipalities have developed IWMPs in the past, currently only 17 municipalities have the latest generation of their IWMPs endorsed by the MEC. Challenges include that some municipalities have outdated IWMPS, which must be reviewed to ensure that they are still relevant. A further challenge is that there needs to be improved monitoring and reporting of the Implementation Plan to ensure that planned activities are implemented.

TOTAL NUMBER MUNICIPALITIES	30
Municipalities with updated IWMPs	20
Municipalities with endorsed IWMPs	17

The CoCT's IWMP was endorsed during 2022. An overview of the IWMP status per district is provided below:

Cape Winelands District

In the Cape Winelands District, all municipalities' IWMPs are updated and endorsed except Drakenstein Municipality. Drakenstein Municipality's IWMP will be considered for endorsement when their new 5-year plan gets developed in 2024/25.

Central Karoo District

In the Central Karoo District, Beaufort West Municipality's IWMP is updated and endorsed. Prince Albert, Laingsburg and the Central Karoo District are being funded by DFFE to develop their 3rd generation IWMPs. A service provider is currently being sourced through a competitive bid process. Their IWMPs will be considered for endorsement once developed.

Garden Route District

In the Garden Route District, all municipal IWMPs are updated and endorsed.

Overberg District

In the Overberg District, the IWMPs that are in the process of being drafted are Theewaterskloof, Cape Agulhas and Swellendam. Their IWMPs will be considered for endorsement once developed. The Overstrand IWMP was updated and endorsed. The Overberg District IWMP will be considered for endorsement when their new 5-year plan gets developed in 2024/25

West Coast District

In the West Coast District, the IWMPs that are in the process of being drafted are West Coast District and Cederberg Municipality. Saldanha Bay and Swartland Municipal IWMPs are currently being considered for endorsement. The Bergrivier Municipal IWMP is endorsed and Matzikama Municipality will be considered for endorsement when their new 5-year plan gets developed in 2024/25.

3.2.12.3 Municipal Performance

Performance of municipalities has previously been monitored using the Western Cape Monitoring and Evaluation System (WCMES), which is a provincial system developed to quantify the impact of the current support processes at municipalities and applies unified principles of predetermined criteria used to categorise municipalities that need support. WCMES was developed as a web-based system to address the specific support requirements

of each municipality. In addition, through the WCMES, all the support to be potentially provided by the different sector departments will also be combined and pooled to ensure single application and combined impact. The process of categorising municipalities and having a combined approach to providing support facilitates a process to benchmark municipalities and have a sustained impact on their service delivery ability and sustainability.

Each municipality in the province is evaluated and categorised based on their performance and compliance to a set of pre-determined indicators, underpinned by Key Performance Areas), that cut across all levels of functioning and service delivery in a municipality. The outcome of this categorisation process then places each municipality in one of the phases that describe their level of maturity, functioning and service delivery and which ultimately determines the content and extent of their own individualised support plan. These support plans will contain input and support initiatives from all sector departments and other support partners. Once these integrated support plans are developed, DEA&DPs own municipal support plans will align with the integrated support plans, as required.

Currently, the WCMES is being decommissioned. The Department of Co-operative Governance and Traditional Affairs (COGTA) is piloting a similar system, which can be utilised by Provinces to monitor municipal performance.

Reporting

The last performance assessment published was for the period ending December 2021 (July 2021 to December 2021), only nine municipalities responded to the assessment.

3.2.12.4 Integrated Waste Management By-laws

During 2017/18, it was found that 20 of the 25 local municipalities had waste management by-laws, however many of them were not aligned to the NEM: WA. After finalising the Model Integrated Waste Management By-law (DEA&DP) in 2020 and providing assistance to municipalities, the Western Cape now has 23 out of 25 local municipalities with by-laws and 72% of these are now aligned to the NEM: WA (Figure 41).

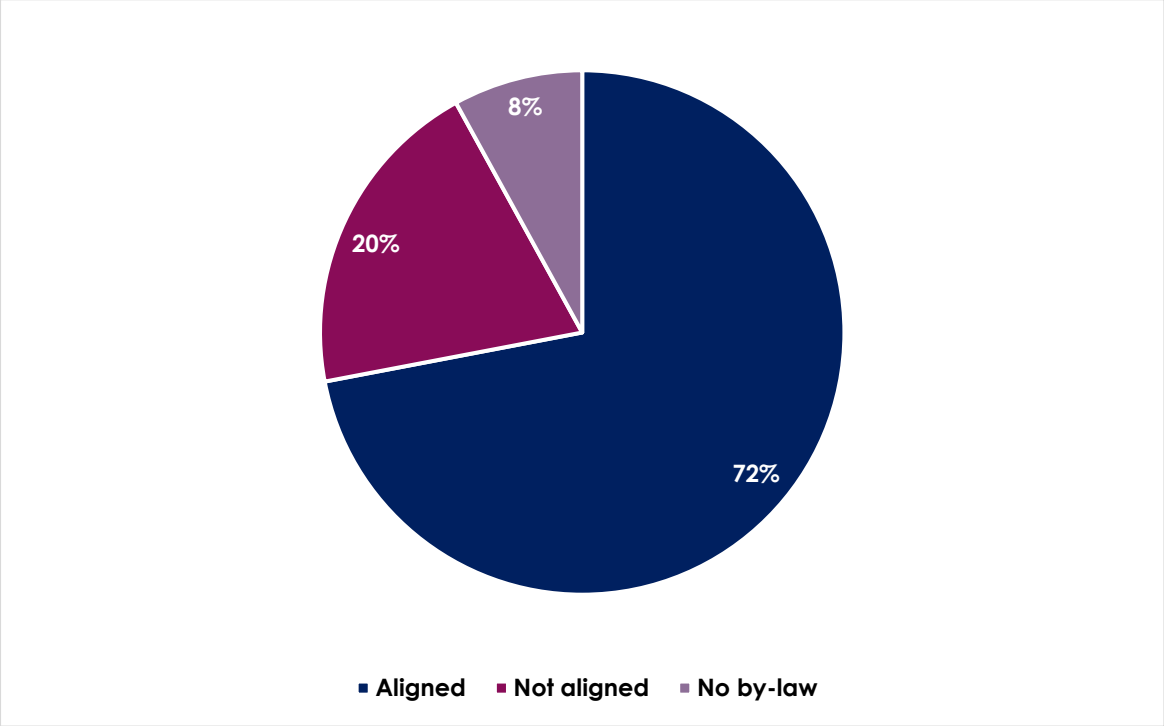


Figure 41: Alignment of municipal waste by-laws to the National Environmental Management: Waste Act (59 of 2008)

3.2.12.5 Waste Management Officer Status

The designation, in writing, of waste management officers (WMOs) is a requirement of the NEM: WA. 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 District WMOFs. Currently, 26 of the 30 municipalities have designated WMOs; 88% are men and 12% are women, illustrated in Table 10. On occasion WMO posts become vacant due to resignations or retirements. The recruitment processes can take a while to complete and this delays the filling of posts and subsequently the designation of WMOs. Oudtshoorn Municipality, however, have resisted designating a WMO since the requirement

came into effect with the promulgation of the NEM: WA. Their motivation being the need to restructure the corporate structure before considering designation of a WMO.

Table 10: Number of municipalities with designated waste management officers

DESIGNATED WASTE MANAGEMENT OFFICERS	NUMBER	PERCENTAGE
Municipalities with designated WMOs	26	87%
Municipalities without designated WMOs	4	13%
Female designated WMOs	3	12%
Male designated WMOs	23	88%

The Department also has a designated provincial WMO, who is the Director: Waste Management.

3.2.12.6 Regional Cooperation Amongst Municipalities

Regional cooperation is a concept that has flowed from regionalisation and encompasses not only shared waste management infrastructure but also other aspects necessary for the efficient and effective provision of waste management services within municipalities. These aspects include, but are not limited to, vehicles needed for the provision of waste collection and disposal services and expertise in certain aspects of waste management. The potential benefits of following regional cooperation approach includes improved waste management services, reduced capital and operational costs and improved overall compliance. Box 5 and Box 6 provide examples of regional cooperation undertaken by municipalities.

Box 5: Regional cooperation example 1: Bergrivier and Saldanha Bay municipalities

Since Bergrivier Municipality does not have an operational WDF, they have a formal agreement in place with Saldanha Bay Municipality to utilise the Vredenburg WDF. Bergrivier Municipality was forced to follow this process as the transport costs to Vissershok WDF was significant and they had also run out of landfill airspace. It was also not feasible to construct their own landfill site. Saldanha Bay Municipality went through a legal opinion process which covered their constitutional requirements, the requirements pertained in section 84 (1)(e) of the Municipal Structure Act, Act 117 of 1998 as well as their own Waste By-law. The outcome of the legal opinion was positive in that there was nothing legally that could prevent Saldanha Bay Municipality from accepting waste from Bergrivier Municipality. The agreement was formalised through a service level agreement with council approval. Bergrivier Municipality would have to adhere to the requirements stipulated in the service level agreement. This assists Saldanha Bay Municipality with cost recovery associated with operating and managing the WDF and reduces the cost for Bergrivier Municipality in terms of having to construct a new landfill.

Box 6: Regional cooperation example 2: Overberg District Municipality

The Overberg District Municipality, with the development of the regional waste disposal facility at Karwyderskraal facilitated regional cooperation between municipalities and the District for the shared use of the facility. The establishment of the District Waste Management Officer's Forum further helped cement and enhance the cooperation among all parties. The District has also highlighted the importance of cooperation on a senior level where municipal managers engage and foster mutual understanding and agreement. The District is currently holding discussion with Swellendam and Cape Agulhas Municipalities to determine the best way of dealing with the disposal of their general household waste at the regional waste disposal facility.

3.2.12.7 Capacity Building Initiatives

The Department recognises the importance of engaging with and building capacity of various stakeholders during workshops and forums. The Directorate: Waste Management regularly holds capacity building workshops with municipalities to assist waste managers and operators on an individual level where required (Table 11).

Table 11: Capacity building initiatives aimed at municipalities

CAPACITY – BUILDING INITIATIVES	AIM/OBJECTIVES
Alternative Waste Management Technologies & Landfill Airspace Tool (AWMT&LAT) Workshops for municipal landfill managers.	To stimulate municipal landfill managers to utilise the Alternative Waste Management Technologies & Landfill Airspace Tool (AWMT&LAT) and create awareness about the need to recycle waste and operate landfills for optimal airspace utilisation. This tool identifies landfilling, organic waste composting, builders' rubble (construction and demolition waste) crushing and recycling of dry recyclables such as paper, plastics, metals and glass via clean material recovery facilities to be feasible if effective methods for waste segregation are implemented and sufficient volumes of waste are available for the technology.
Departmental Waste Forum for municipal waste managers and independent private sector consultants.	Networking and best practice waste information sharing.

Compliance Analysis Tool Workshops for municipal landfill managers and independent private sector consultants	Ensured that the municipalities are using the tool to improve the compliance rates at the facilities and the awareness raising of the tools has resulted in more municipalities striving towards compliance.
Strategy to reduce illegal dumping (STRID) Workshop for municipal waste managers.	A draft strategy document will be shared with municipalities to create more awareness on the management of illegal dumping.
A waste awareness strategy was developed.	To provide municipalities with various means of communicating with their communities and stakeholders. These ranged from a variety of initiatives and was followed up with workshops held 6 September 2018. The strategy has been shared widely, and some municipalities have included it or sections of it to their IWMPs.
Organic waste strategy and guide for organic waste diversion planning and Organic waste diversion capacity building and networking workshops	To improve the capacity amongst municipal waste officials and other stakeholders to divert organic waste and to promote regional cooperation.
Integrated Waste Management Capacity-building Workshops for Municipal Managers and municipal waste managers.	To build and strengthen integrated waste management capacity among municipal waste management officers and other municipal officials.
Co-design capacity building workshops	To capacitate municipalities on co-design principles and methodologies when planning waste management services in informal areas.
Waste characterisation training provided to municipal staff and EPWP workers. A Waste Characterisation Guideline for municipalities was also developed.	Provide training on how to plan, conduct and analyse data when undertaking waste characterisation studies. This will ultimately assist municipalities to save costs by doing these studies themselves, instead of paying consultants to do it. Waste characterisation information is essential for municipalities to understand the types of waste being generated and plan accordingly. Waste characterisation data must be included in municipal IWMPs.
IPWIS capacity- building workshops (Most of the attendees are those who requested training or those who wanted their new staff to be trained but also where a particular identified sector needed to be	The IPWIS Capacity workshops focused on the IPWIS registration and waste reporting. The aim of the training sessions is to assist organisation in improving waste reporting/ accuracy of waste reporting to IPWIS and ensures the facilities are compliant.

trained, based on the amount of erroneous data being submitted)	

3.2.12.8 Co-design Approach to Address Waste Management Challenges

The Department embarked on an initiative to address the mismanagement of waste in hotspots around the province. Informal areas were identified as areas of concern and one of the main contributors of plastic seepage into the environment, due to the challenges experienced by municipalities in providing effective waste management services to these communities. The co-design and community enhancement methodology was trialed by the Department to test it in different communities with a view of refining the approach so that it can be used by municipalities. It is also important to demonstrate to municipalities that community consultation is a critical factor in the design of the waste management system and should not be an afterthought once they have already planned and designed the service.

The workshops are very interactive and full participation of all delegates are encouraged. Municipal staff and other key stakeholders are required to be present so that joint planning can take place. The methodology uses various techniques including "Theory of Change". During 2021, a co-design intervention was undertaken in Nelspoort.

- The Department tested the first workshop when a request for assistance was received from the Nelspoort community. The Department then used this opportunity to test the model. Workshops were well attended and culminated in the community establishing an Environmental Forum, that with the support from and partnership with the Beaufort West Municipality, would drive awareness initiatives around waste management. They have initiated a WhatsApp group and included officials from the Department

Reflection:

- Beaufort Municipality has not been responsive and have not been providing any support to the community. All attempts to communicate with the Waste Manager have been unsuccessful.
- The support of the Municipality is necessary to improve waste management in Nelspoort. The community do want changes, but they need the support of the Municipality.
- Internal challenges within the Municipality and their inability to provide basic waste management services is the biggest risk factor for the success of this initiative.

3.2.13 Waste Management Costs

3.2.13.1 Provincial Government

The Directorate: Waste Management performs the waste management function of the Department. Some of the key areas of the Directorate: Waste Management includes giving 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. The total costs associated with performing waste management functions have increased annually and are provided in Figure 42. A further breakdown of the budget and expenditure is provided in Table 12, which indicates that the budget and expenditure for goods and services has declined over the 2019/20 to 2021/22 period. The external financial constraints and resultant budget cuts imposed on the Department, especially regarding goods and services is therefore hampering the Directorate's ability to meet its mandated and legislative commitments. The financial projections and the level of budget cuts over the next three to five years will further hinder the Directorate in achieving its deliverables. The budget for the Directorate: Waste Management is driven largely by staff costs. The cost of employment has steadily increased over the years with it now making up more than 90% of the 2021/22 total budget. Vacant posts will however still remain unfunded for the foreseeable future and will prevent the Directorate from giving the necessary attention to other mandated areas e.g., hazardous and industry waste management planning.

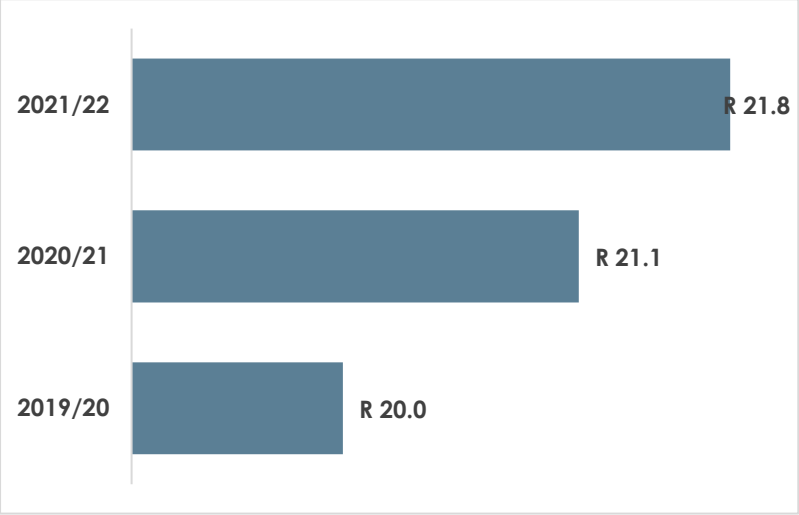


Figure 42: Directorate: Waste Management costs 2019/20- 2021/22 (millions)

Table 12: Budget and expenditure for the Directorate: Waste Management 2019/20 to 2021/22

	2019/20		2020/21		2021/22	
	ADJUSTED BUDGET (R)	EXPENDITURE (R)	ADJUSTED BUDGET (R)	EXPENDITURE (R)	ADJUSTED BUDGET (R)	EXPENDITURE (R)
Cost of Employment	18 423 627.00	18 345 964.95	19 621 711.00	19 621 479.27	20 623 003.00	20 557 153.94
Goods & Services	1 752 292.00	1 301 807.16	1 428 929.00	1 428 853.71	927 216.00	964 142.80
Departmental Agencies		402.44	450.00	449.33	470.00	1 036.14
Households	74 734.00	74 317.66			244 000.00	243 969.63
Capital	271 349.00	271 158.58	53 999.00	53 998.98	56 000.00	51 957.00
Payments for financial assets	1 481.00	1 273.39				
	20 523 483.00	**19 994 924.18**	**21 105 089.00**	**21 104 781.29**	**21 850 689.00**	**21 818 259.51**

3.2.13.2 Municipal

- Revenue

Municipalities generate income from a variety of sources. According to StatsSA (2021), the two main sources of revenue include:

- Municipalities actively generate their own income via e.g. property taxes, service charges, traffic fines.
- Municipalities receive funding from either government grants and subsidies or public donations and contributions.

Figure 43 provides an overview of the combined waste management revenue received for each district for the 2018/19-2020/21 period. Due to its higher population and waste management services provided, the CoCT has the highest revenue generated, by far, of all the other districts within the province.

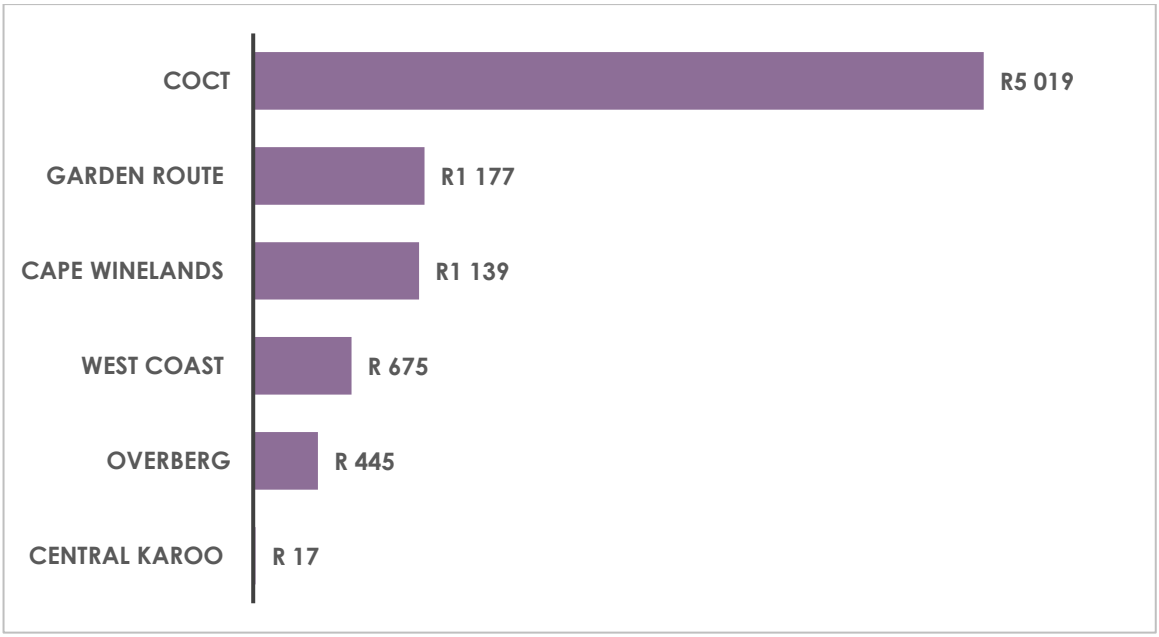


Figure 43: Municipal waste management revenue (millions) within each district 2018/19-2020/21

- Capital expenditure

The capital expenditure for infrastructure projects for all the municipalities in the district is indicated in Figure 44 for a three – year period 2018/19-2020/21. An overview of capital expenditure per district is as follows:

- The CoCT has had the highest capital spend for waste management-related infrastructure of all the regions during these three financial years.
- Municipalities in the Central Karoo District have had a minimal spend over the same period with no capital spend from the Laingsburg Municipality during this period.
- In the Overberg District, the Swellendam Municipality has had no capital expenditure over the three year period.
- In the Garden Route District, the Kannaland Municipality has spent a minimal amount and the Oudtshoorn Municipality has had no capital expenditure over the same period.

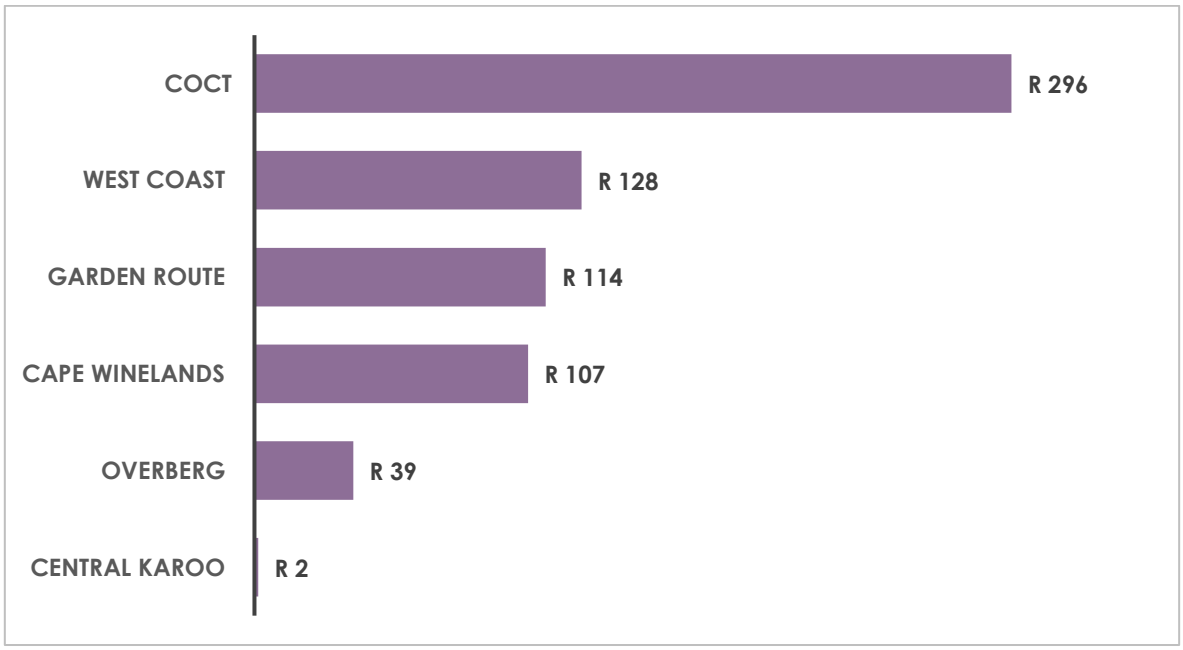


Figure 44: Municipal waste management capital expenditure (millions) within each district 2018/19-2020/ 21

- Operational expenditure

To ensure that effective waste management services are provided, municipalities need to ensure that sufficient funds are set aside to provide these services. Figure 45 depicts a higher population and service needs, that relates to the CoCT having the highest operational expenditure, by far, compared to all the other districts. In the case of some of the municipalities, operational costs exceed revenue generated from waste management

services. This likely means that the true cost of waste management is not being considered when setting waste management tariffs.

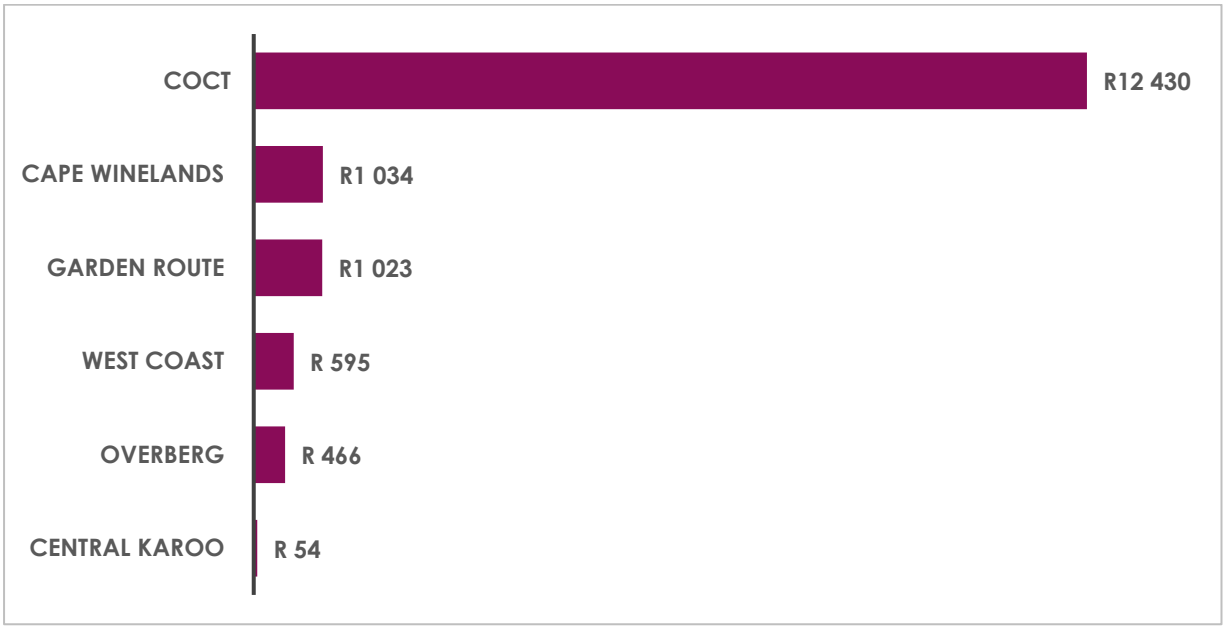


Figure 45: Municipal waste management operational expenditure (millions) within each district for 2018/19-2020/21

3.2.14 Waste Management Jobs

According to GreenCape (2020b), the waste economy contributed R24.3 billion to the South African GDP in 2016. It provided 36 000 formal jobs and supported 80 000 informal jobs/livelihoods. A further R11.5 billion per year could be unlocked by 2023 by diverting up to 20 million tonnes of waste. It further added that with recent changes in legislation opportunities within the organics, e-waste, plastics and builders' rubble sectors have the potential to add between approximately R661and R1 086 million in value to the economy. It is anticipated that the spin-offs could include 45 000 additional formal jobs and 82 000 indirect jobs, as well as create 4 300 SMMEs (GreenCape 2020b).

3.2.14.1 Formal Waste Sector Jobs

In 2012, it was estimated that the formal waste sector employed 29 833 people. This included people employed at both public and private places (DST, 2013). In the private waste sector, most people (77.5%) are employed by large enterprises, with an annual revenue of > R 51 million, while in the public sector, the majority of people (64.9%) are employed by metropolitan municipalities (Category A). Employment in the public sector has levelled off at around 20 000 people (DST, 2013). Potentially, another 5 000 people could be employed if vacant positions at municipalities are filled. It was estimated that in 2012, the minimum value of the formal sector was R15.3 billion (DST, 2013). This was equivalent to about 0.51% of GDP at the time. The

estimated contribution of the private sector was approximately R7 billion, while that of the public sector was approximately R8.3 billion.

3.2.14.2 Informal Sector Jobs

There is no official estimate of the number of waste pickers in South Africa. Initial estimates ranged between 60 000 and 90 000 pickers (DEA, 2014b), but more recent estimates are as high as 215 000 pickers (Godfrey and Oelofse, 2017). The increase in the number of waste pickers over the past few years has been partly attributed to rising unemployment in South Africa, forcing people to seek a livelihood in the informal sector.

During 2020, the Department assisted with the collation of waste picker information in the Western Cape as part of the Waste Picker Relief programme. The programme was set up by DFFE, the packaging industry and waste reclaimer associations' to provide COVID-19 relief to waste pickers in the form of electronic food vouchers.

4 An Analysis of the Extent of Implementation of the WC IWMP 2017-2022

The WC IWMP 2017-2022 includes four strategic goals, each goal includes objectives and activities for implementation. This section presents an overview of the Department's performance as measured against its strategic goals, objectives and targets for the 2017-2022 period (Table 13). Although the Department has implemented many of the activities indicated, there are some activities that were not undertaken due to resource constraints.

Table 13: Implementation of the Western Cape Integrated Waste Management Plan 2017-2022

WC IWMP 2017-2022 GOALS	OUTPUT INDICATORS ACHIEVED (NO.)	OUTPUT INDICATORS ACHIEVED (%)
Goal 1: Strengthened education, capacity, and advocacy towards Integrated Waste Management.	5/7	71%
Goal 2: Improved integrated waste management planning and implementation for efficient waste services, technologies and infrastructure.	11/13	85%
Goal 3: Effective and efficient utilisation of resources.	6/7	86%
Goal 4: Improved compliance with environmental regulatory framework.	12/16	75%
Overall IWMP Implementation	34/43	79%

A list of the achievements and activities undertaken by the Department is provided:

- **Goal 1: Strengthened education, capacity, and advocacy towards Integrated Waste Management.**
  - The Department has hosted the Integrated Waste Management Forum on a quarterly basis and the Industry Waste Management Forum on an annual basis over the 5-year period.
  - The Department has hosted waste minimisation training with municipalities over the past 5 years.
  - Various Integrated Waste Management capacity-building sessions were hosted over the 5-year period including waste characterisation training; IPWIS and waste calculator capacity-building sessions; licensing process and operations at WMFs, internal auditing; landfill gas monitoring; rehabilitation and remediation of the Hermanus landfill sites; landfill airspace; separation at source; regional cooperation; EPR; municipal transport

and collection efficiencies; municipal costing models; waste diversion; littering and illegal dumping; minimum requirements for the appointment of waste managers; IWMPs; IWMP/IDP/SDF integration.

- The Department conducted waste minimisation training with municipal staff in Beaufort West, Kannaland, Swellendam, Drakenstein; with 109 YES programme workers of Cape Nature and 11 informal workers from the iThemba Labantu project.
- The Department developed minimum criteria for the appointment of waste managers.

Goal 2: Improved integrated waste management planning and implementation for efficient waste services, technologies and infrastructure.

- The Department provided support to the Central Karoo District, Laingsburg, Prince Albert and Beaufort West Municipalities and other municipalities during their IWMP development process. The Department also endorsed 17 municipal IWMPs during the 5-year IWMP period. The Department also developed an IWMP process flow and SOP during the period.
- The Department conducted site visits and assessments to companies within the consumer-formulated chemical sector.
- Alternative Waste Treatment technologies decision making tool was developed in conjunction with GreenCape.
- Developed a status quo on e-waste.
- Developed a status quo and a guideline on the beneficiation of treated sewage sludge.
- The Department surveyed 12 farms in the Breede River area as part of the African Stockpile Program.
- The Department has facilitated the allocation of MIG funding for waste management infrastructure projects.
- The Department helped facilitate the establishment of the Regional WDFs in Garden Route, West Coast, Overberg and Cape Winelands districts.
- The Department monitors municipal basic refuse removal services from Annual Report data. The Department also conducted a status quo on municipal wase collection and transportation.
- The Department submits quarterly IPWIS data reports to SAWIS and continuously monitors and provides support to municipalities on IPWIS registration and reporting.
- The Department conducts waste data verifications of selected municipalities to verify municipal data.
- Developed annual State of Waste Managment Reports (SoWMRs) (currently in the process of developing 2021 SoWMR).
- The Department conducted IPWIS support and maintenance including the design of the complaints module, the development of the PowerBI schema, COVID-19 functionality, upgrade of JAVA 8 and administrative functions.

- **Goal 3: Effective and efficient utilisation of resources.**

  - The Department developed a C&D Waste Management Guideline for Municipalities.
  - The Department workshopped and developed an Abattoir Waste Guideline and Generic Organic Waste Diversion plans.
  - The Department attended meetings with the Recovered Materials Committee.
  - The Department has engaged with GreenCape and provided them with a platform to inform Industry about the WISP program and encourage their participation.
  - The Department has provided ongoing monitoring and support to SMME's and developed a tool assist them.
  - The Department developed a tool for alternative waste treatment technologies.
  - The Department has set waste diversion targets within varied WMLs. The Department also developed an organic waste strategy and hosted workshops in various districts to facilitate regional solutions.

- **Goal 4: Improved compliance with environmental regulatory framework.**

  - The Department has on average conducted 72 compliance visits to licensed WMFs.
  - The Tygerberg HCRW plan was assessed during the period. The Department was also involved in compliance visits to health care facilities and treaters during the 2020/21 financial year.
  - The Department has dealt with over 100 waste-related complaints for the period.
  - The Department has reviewed and updated the waste licensing standard operating procedure.
  - The Department has reviewed and amended the waste licensing audit protocol a number of times over the period.
  - The Department has set waste diversion targets in waste variation licenses.
  - The Department developed a generic Integrated Waste Management By-law for municipalities.
  - Engagements with stakeholders to influence the development of a risk-based methodology for WMFs.
  - The Department engaged with the consumer-formulated chemical sector and the Health-care sector.

5 Gaps and Needs Analysis

The aim of the gaps and needs analysis is to compile a summary of identified waste management gaps and needs in the province that must be addressed to achieve the desired-end state for waste management.
Sources of gaps include:

- An analysis of the extent of implementation of the WC IWMP 2017-2022.
- Situational Analysis;
- Gender Gap Analysis;
- Consultation and engagement with internal and external stakeholders.

5.1 Gaps Identified in Terms of the Implementation of the WC IWMP 2017-2022

The following activities were not implemented in the WC IWMP 2017-2022 (Table 14) due to constrained budgets, limited human resources and some projects being set out for the medium- and long-term. Activities that are still relevant will be included in the WC IWMP 2023-2027 implementation plan.

Table 14: Activities that were included in the WC IWMP 2017-2022 and not implemented

GOAL	ACTIVITY
Goal 1: Strengthened education, capacity, and advocacy towards Integrated Waste Management.	• Roll out an industry rewards recognition programme on integrated waste management. • Mainstream integrated waste management in schools and training institutions.
Goal 2: Improved integrated waste management planning and implementation for efficient waste services, technologies and infrastructure.	• Monitor the implementation of municipal IWMPs. • Develop a guideline for e-waste management. • Facilitate the prioritisation, establishment and monitoring of Integrated Waste Management Infrastructure and services. • Facilitate discussions with the Department of Human Settlements (DoHS) regarding funding for waste

	management infrastructure in public housing projects.
Goal 3: Effective and efficient utilisation of resources.	• Assist with the development of projects for the waste economy business cases.
Goal 4: Improved compliance with environmental regulatory framework.	• Engage and monitor industry for compliance to Part 8 of Chapter 4 of the NEM: WA.[4] • Conduct an assessment of contaminated land in the Western Cape.[5] • Build a business case for the management of contaminated land in the Western Cape. [6] • Compile a guideline on the regionalisation of waste management infrastructure and services.

[4] Part 8 cases were identified for compliance monitoring, but inspections were placed on hold during the COVID-19 pandemic.

[5] The Department has a database of contaminated land cases, which can provide an indication of where our hotspots are, or the areas where significant contamination was found in the past. The database will be able to show the areas in which the Department receives the most cases.

[6] The Department is in the process of developing a guideline (internally) for the management of contaminated land. Phase 1 of the guideline is completed, It is anticipated that Phase 2 of the Guideline will be completed in 2022.

5.2 Gaps Identified from the Situational Analysis and from Stakeholder Engagements

Gaps identified from the situational analysis and during stakeholder engagements are summarised in Table 15.

Table 15: Summary of identified gaps

CATEGORY	IDENTIFIED GAPS
Waste Information	• Lack of reporting on the IPWIS and accuracy of reporting in certain areas of the province from public and private sectors. • The availability of waste characterisation info and the accuracy of the data. • Challenges in the capturing of certain beneficiation/ recycling/ diversion activities. • Improved information management capacity at municipal level.
Waste Education and Awareness	• General lack of education and awareness on waste management and a lack of strategies to implement such awareness programs. • Councillors, faith-based organisation leaders, local artists etc. can play a major role in creating waste awareness campaigns. • More targeted waste awareness initiatives that will speak and reach different groups.
Waste Collection and Transportation	• Poor service delivery in certain areas of the province and challenges in accessing waste from informal settlements. • Integration, training and support of waste salvaging / waste pickers. • The age of waste fleet vehicles and the lack of maintenance and replacement plans. • Lack of waste to rail projects and challenges in implementation • Refuse collection statistics only report on account holders.
Circular Economy	• Value of recycling is too low. How to value waste as a resource? • Accessibility to waste streams that can be used in existing processes. • Lack of knowledge on benchmarked or alternative, sustainable waste management solutions amongst industry professionals. • More focus on uncommon waste streams in the private sector i.e., foundry sand, brine, paint sludge. • Promote the implementation of separation at source and recycling programmes that go beyond pilots and specific areas.

	• A strong focus on the approaches to waste separation and diversion and how it can be mainstreamed. • Need to reduce production with virgin material and encourage the use of secondary materials. • Insufficient assistance provided to producers to get their packaging materials out of the waste stream. • How do we as WCG support green SMMEs to be sustainable through capacity and training opportunities. • Improved communication and engagement between PROs and Municipalities in planning to implement EPR effectively and the role of provinces must be fleshed out i.e., expand on our compliance monitoring role. Improve rate of registration and payment of EPR fees. Eliminate free riders. • Promote with and assist with the development of Green Chemistry. • Biomass economies to reduce organics in landfills. • Need to address materials specification and green procurement to drive markets and create demand for remanufactured products. • Diversion options and alternatives for rural areas where recycling markets are too far (e.g., Central Karoo District). • Assist with the development of projects for the waste economy business cases.
Waste Management Infrastructure	• Widespread illegal dumping. • Lack of priority given to compliance at landfills. • Reducing climate change emissions from landfills or capturing of gases for use. • Regionalisation of waste management services. • Lack of adequate waste infrastructure and land for new waste management infrastructure within the urban area. • Dependencies on other key role players, government departments for infrastructure such as rail. • More emphasis should be placed on sustainable funding and sustainable funding mechanisms towards waste infrastructure.
Governance & Institutional Arrangements	• High costs associated with landfill closure and rehabilitation. • Lack of organic waste management plans received from municipalities and poor quality of these plans. Plans to be integrated with IWMPs. • More collaboration/ knowledge sharing events and partnerships are needed. • Ability of municipalities to be able to fully finance the waste management service.

	• The setting of criteria for more specific job descriptions for appointing competent waste managers. • Some Municipal by-laws are not aligned to NEM:WA. Municipalities are requested to consider the draft Model By-law developed by the Department. • Some Municipalities do not have updated IWMPs in place. • Lack of reporting by Municipalities on implementation of IWMPs in Annual reports and monitoring the implementation of Municipal IWMPs. • Waste performance indicators imbedded in IDPs linked to budgets.

5.3 Gaps Identified from the Gender Gap Analysis

The Gender Gap Analysis undertaken of the WC IWMP 2017-2022 highlighted that the needs and preferences of women and other vulnerable groups must be identified and addressed. The following gaps are applicable:

- Low representation of women in the waste sector in decision-making positions.
- There is a need for networking, skills training and job opportunities for vulnerable groups e.g., women, youth and people living with disabilities in the waste sector.
- Waste pickers face health and safety challenges when carrying out their work, women are especially impacted by the lack of sanitation at WDFs.
- Women waste pickers are often discriminated against (limited access to high-value materials/ often receive less money for products compared to men)
- Need for recycling to be more accessible to those with mobility issues i.e. elderly people and people living with disabilities.
- Need for awareness-raising messages to be more inclusive to reach those with disabilities i.e. use of audio communication to get messages across to those with visual impairment.
- Need for awareness-raising messages to be targeted.

5.4 Prioritisation of Needs Based on Gap Analysis

Priority needs based on the gaps identified are indicated below:

- Accurate and consistent (reliable) waste data from industry and municipalities.
- Targeted waste education and awareness programmes, which include various role-players.
- Improved access to waste collection services, specifically in underserviced areas.
- Improved promotion of prevention, reduction, re-use and recovery of waste to support a circular economy.

- Integrated waste management infrastructure for recovery, treatment and disposal and an increase in compliance with waste management legislation.
- Strengthened governance and partnerships, and ensuring sustainable financial management.
- Respond to the needs of women and other vulnerable groups.

5.5 Formulation of Strategic Goals which Respond to Identified Needs

The prioritised needs were used to formulate key strategic waste management goals which form the basis of the WC IWMP. The strategic goals are captured in Section 6.

6 Implementation Plan

When developing the Implementation Plan and considering how to take it forward, a citizen - centric approach, in which the needs of citizens are served, was considered key. The Batho Pele "People First" principles are key to service delivery and provide public servants with a guide to serving the members of the public in terms of consultation, service standards, access, information, courtesy, openness and transparency, redress and value for money.

The current vision and mission for waste management was reviewed to ensure that it took a more citizen - centric approach. The current vision and mission for waste management were determined to still be largely applicable, however the term "inclusivity" has been added to highlight the need for waste management to be inclusive of all people, and to highlight that all citizens have a right to a clean and healthy environment, basic services and economic opportunities. In addition, the need to make use of technology to support waste management has been included in the mission to highlight the need for innovation in the waste sector.

The vision and mission are stated as follows:

Vision:
"*A resource-efficient, inclusive and thriving society that ensures a clean environment.*"

Mission:
"Building a resource-efficient, inclusive and thriving society that recognises the value of waste, supported by affordable, appropriate services, technologies and infrastructure through good governance and partnerships that will benefit communities, the economy and the environment."

6.1 Alignment of Goals

Strategic goals and objectives were developed based on the prioritised needs. These goals align to the NWMS, 2020 pillars as indicated in Table 16.

Table 16: Alignment of Western Cape IWMP Goals with NWMS, 2020 strategic pillars

WC IWMP GOALS	NWMS, 2020 STRATEGIC PILLARS
Goal 1: Strengthened education, capacity, awareness and advocacy towards Integrated Waste Management.	Compliance, enforcement and awareness
Goal 2: Improved integrated waste management planning and implementation for efficient waste services, technologies and infrastructure.	Effective and sustainable waste services
Goal 3: Effective and efficient utilisation of resources.	Waste minimisation
Goal 4: Improved compliance with the environmental regulatory framework.	Compliance, enforcement and awareness

6.2 Overview of Goals:

The Department has identified four goals to assist in its vision for a clean environment. The four goals centre around awareness, improved waste planning, resource-efficiency (recognising waste as a resource) and compliance. A Gender Gap Analysis, which included a human rights component was undertaken during the previous financial year to ensure that the WC IWMP is responsive to women and other vulnerable groups. When undertaking activities indicated in the implementation table, a gender and human rights lens will be applied.

6.2.1 Goal 1: Strengthened education, capacity, awareness and advocacy towards Integrated Waste Management

Waste awareness and education were identified as one of the gaps in integrated waste management during the situational analysis and stakeholder engagement. Stakeholders highlighted the lack of strategies to implement education and awareness on waste management as well as a lack of involvement by organised community leaders including ward councillors. It was also emphasised that there needs to be targeted awareness-raising programmes that will contribute to the promotion of prevention, reduction, re-use and recovery of waste to support a circular economy. The need for awareness-raising to be more inclusive by involving all vulnerable groups was highlighted in the Gender Gap Analysis Report

and examples would include awareness campaigns that use audio communication for the visually impaired.

The NWMS (2020) also highlights the need for a shift in behaviour and attitude towards littering, illegal dumping and the awareness of the related environmental impacts. This is further emphasised in Pillar 3 of the strategy, which aims to mainstream waste awareness and a culture of compliance that will result in a zero tolerance of pollution, littering and illegal dumping.

A waste education and awareness strategy for the province was developed by the Department and an industry forum was established to provide a platform for engagement with industry. The Department will continue to facilitate consumer and industry responsibility and mainstream integrated waste management education and awareness at all societal levels. The Department will also encourage municipalities to adopt the waste education and awareness strategy for conditions in their municipal areas and for the different income levels in order to promote integrated waste management. The Department will continue to capacitate municipalities through the Waste Management Officer's forum held on a quarterly basis and the integrated waste management capacity-building workshop hosted annually. This aligns with section 154(1) of the Constitution, which requires national and provincial governments to support efforts that strengthen municipal performance. Capacity building and skills development of municipal officials is crucial to ensure service delivery and the enforcement of the laws that govern integrated waste management. Municipalities need support to ensure that qualified people are hired to perform their duties as per the requirements of the Municipal Systems Act 32 of 2000 and the Municipal Finance Management Act of 2003. Key waste management areas municipalities need to be capacitated in, include-

- full -cost accounting and alternative revenue sources/co-funding;
- auditing and operation of WMFs;
- planning for informality;
- long-term financial 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.

Objective:

- Objective 1: Create awareness and education of integrated waste management.

Expected outcome:

- Improved waste management and the prevention of pollution, litter and illegal dumping.

6.2.2 Goal 2: Improved integrated waste management planning and implementation for efficient waste services, technologies and infrastructure

Goal 2 aims for citizens of the Western Cape to live in clean communities with well managed and financially sustainable waste services. The goal aims to provide support to municipalities regarding integrated waste management planning and to promote integrated waste planning within industry. Most municipalities in the province have drafted their 3rd generation IWMPs and some have already drafted 4th and 5th generation plans. The Department strives to ensure alignment between the IDP process and the development of municipal IWMPs. The Department will review the Integrated Waste Management Planning Guideline for municipalities and plans to focus on monitoring the implementation of the plans by assessing municipal annual reports. The implementation of IWMPs is limited by budgetary constraints within municipalities as the waste management component often receives a small percentage of the municipal budget. The Department will facilitate industry waste management planning by promoting the waste management hierarchy with specific focus on waste prevention and/ or minimisation from source as well as encouraging post-consumer responsibility.

The promotion of public-private partnerships for investment in infrastructure is crucial for the provision of adequate and equitable services and this may include partnerships between municipalities through the regionalisation of waste management services. Furthermore, financial investment, the forming of strategic partnerships with the private sector, the efficient delivery of waste management services and the application of alternative waste treatment technologies are required to ensure equitable waste management services and clean communities. The Department will also focus more on the monitoring of waste management services and unserviced areas.

The Department engages municipalities and industry through the integrated waste management officers' forum and industry forum, respectively, regarding integrated waste management planning. These platforms have had success in ensuring that both industry and municipalities are aware of new policies and legislation regarding waste management and any new waste technologies that may be implemented.

Objectives:

- Objective 1: Facilitate municipal integrated waste management planning;
- Objective 2: Promote industry waste management and the circular economy;
- Objective 3: Promote the establishment of integrated waste management infrastructure and services; and

- Objective 4: Ensure timeous and reliable waste information reporting.

Expected Outcome:

- All citizens of the Western Cape live in clean communities and have access to well managed and financially sustainable waste services.

6.2.3 Goal 3: Effective and efficient utilisation of resources

Goal 3 aims to minimise the impact of waste on the environment, including climate change, by moving away from the dependence on waste disposal to the diversion of waste from landfill through re-use, recycling, recovery, refurbishment and alternative waste treatment methods. A key waste type that has been identified for diversion from landfill in the 2nd Generation WC IWMP is organic waste. The plan proposed a 50% diversion of organic waste by 2022 and 100% by 2027; these have been included in WML conditions of WMFs to ensure compliance. The Department will continue to focus on the diversion of organic waste and monitor the progress of municipalities towards achieving the target of 100% diversion. The Department will also focus on the diversion of other waste types such as textiles, absorbent hygiene products, C&D waste and packaging waste.

The Department aims to support municipalities in diverting waste from landfill and aims to create an enabling environment for the private sector to undertake waste beneficiation and by supporting the use of innovation and technology. The aforementioned requires the need to form key strategic partnerships with municipalities and the private sector. The Department also aims to provide support to SMME's and waste entrepreneurs to stimulate jobs in waste.

Goal 3 provides an opportunity for the Department to respond to the needs of vulnerable groups, i.e. women, people with disabilities, the aged and the youth, through training initiatives, networking opportunities, especially within the refurbishment sector. This would also require the need to partner with the Department of Social Development to identify opportunities in this regard.

Another key aspect to this goal is the need move towards the circular economy, with the aim to reduce waste and become less resource intensive by redesigning products, promoting and instituting green procurement in targeted sectors, promoting cleaner production, promoting the refurbishment sector, and using waste as a resource. The focus will thus be to promote and facilitate interventions with respect to both the technical and biological cycles of the circular economy. The national EPR regulations are a useful tool to assist in shifting towards a circular economy. The Department will provide support where necessary to ensure implementation of these regulations in the province.

Objectives:

- Objective 1: Minimise the consumption of natural resources and promote circular economy principles;
- Objective 2: Stimulate job creation within the waste economy; and
- Objective 3: Increase waste diversion through reuse, recovery and recycling.

Expected outcome:

The reduction of waste to landfill through increased re-use, recovery, recycling, refurbishment and alternative waste treatment, leading to increased economic opportunities for all.

6.2.4 Goal 4: Improved compliance with the environmental regulatory framework

Goal 4 has been carried over from the 2nd generation WC IWMP with no changes as it is still pertinent to the mandate of the Provincial department. This is reflected in the Western Cape Strategic Plan (2019-2024), Focus Area 3 which aims for increased social cohesion and safety of public places and further states that a healthy living environment is a precondition for creating safe and cohesive communities.

Goal 4 thus aims to give effect and provide oversight to the above by ensuring the sound management of WMFs and the protection of public health and the environment. This will be done through compliance promotion measures, compliance enforcement, promoting industry self/coregulation as well as auditing and monitoring of WMFs. A key project in relation to this goal is the rolling out of the Western Cape Strategy to Reduce Illegal Dumping as illegal dumping is a challenge in municipalities across the province. The Department also has several tools i.e., auditing tool and the alternative waste technology/airspace tool which will help municipalities improve their level of compliance. This goal will also focus on developing policy instruments for industry and municipalities and amending/varying existing WMLs. The remediating and rehabilitation of contaminated land will also be focused on.

Objectives:

- Objective 1: Strengthen compliance and enforcement; and
- Objective 2: Facilitate the rehabilitation of Waste Management Facilities.

Expected outcome:

- Creating a culture of compliance with zero tolerance towards pollution, littering and illegal dumping.

6.3 Implementation Table

Table 17: Western Cape Integrated Waste Management Plan 2023-2027 Implementation Table

GOAL 1: STRENGTHENED EDUCATION, CAPACITY, AWARENESS AND ADVOCACY TOWARDS INTEGRATED WASTE MANAGEMENT							
Objective	**Output indicator**	**Activity**	**Timeframe**			**Responsibility**	**Target**
			2023-2027	**2028-2032**	**2033-2037**		
Objective 1: Create awareness and education of integrated waste management	Number of integrated waste management training initiatives with targeted sectors	Conduct integrated waste management training initiatives with targeted sectors: 1. Landfill operator training 2. Integrated Waste Management Capacity-building workshop 3. WCRAG Knowledge sharing engagements	X	X	X	DEA&DP/Industry/ Municipalities/ Educational Institutions/ Community Organisations	1
	Number of waste minimisation awareness/knowledge sharing interventions with targeted sectors of society to build capacity	Conduct waste minimisation awareness/knowledge sharing interventions with targeted sectors of society to build capacity: 1. Waste minimisation support rendered to municipalities. 2. Organic waste knowledge sharing and networking workshops 3. WCRAG knowledge sharing engagements	X	X	X	DEA&DP/Industry/ Municipalities/ Community Organisations	2 per year

GOAL 1: STRENGTHENED EDUCATION, CAPACITY, AWARENESS AND ADVOCACY TOWARDS INTEGRATED WASTE MANAGEMENT							
Objective	**Output indicator**	**Activity**	**Timeframe**			**Responsibility**	**Target**
			2023-2027	**2028-2032**	**2033-2037**		
	Number of awareness campaigns	Increase awareness campaigns on littering and illegal dumping.	X	X	X	DEA&DP/Industry/ Municipalities/ Community Organisations	Ongoing
	Number of co-design workshops undertaken	Co-design workshops to address waste management challenges with targeted communities	X	X	X	DEA&DP/Community Organisations	1

GOAL 2: IMPROVED INTEGRATED WASTE MANAGEMENT PLANNING AND IMPLEMENTATION FOR EFFICIENT WASTE SERVICES, TECHNOLOGIES AND INFRASTRUCTURE							
Objective	**Output indicator**	**Activity**	**Timeframe**			**Responsibility**	**Target**
			2023-2027	**2027-2032**	**2032-2037**		
Objective 1: Facilitate municipal integrated waste management planning	Number of IWMPs developed	Support municipalities with the development of IWMPs with the inclusion of a gender-based assessment	X	X	X	DEA&DP/ Municipalities	Demand driven
	Number of IWMPs endorsed	Assess and endorse Municipal IWMPs	X	X	X	DEA&DP/ Municipalities	Demand driven
	Number of waste management officer forums hosted.	Waste Management Officers Forum	X	X	X	DEA&DP/ Municipalities	3 per annum
	Number of Annual reports monitored	Monitor the implementation of municipal IWMPs	X	X	X	DEA&DP/ Municipalities	30

GOAL 2: IMPROVED INTEGRATED WASTE MANAGEMENT PLANNING AND IMPLEMENTATION FOR EFFICIENT WASTE SERVICES, TECHNOLOGIES AND INFRASTRUCTURE							
Objective	**Output indicator**	**Activity**	**Timeframe**			**Responsibility**	**Target**
			2023-2027	**2027-2032**	**2032-2037**		
	Number of IWMP guidelines reviewed and updated	Review and update Guideline/template style/ for IWMP development	X			DEA&DP	1
	Number of engagements with municipalities around ensuring that WMOs are designated	Engage with municipalities around ensuring that WMOs are designated in terms of the NEM: WA	X	X	X	DEA&DP/Municipalities	5
	Number of Municipal Recognition Programmes undertaken	Undertake a Municipal Recognition Programme	X	X	X	DEA&DP / Municipalities	1
	Number of reports monitored	Monitor waste collection services and un-serviced areas.	X	X	X	DEA&DP / Municipalities	Quarterly
	Number of topographical surveys undertaken	Undertake topographical surveys of selected waste disposal facilities to determine landfill airspace	X			DEA&DP	14 surveys (7 sites)
Objective 2: Promote industry waste management and the circular economy	Number of engagements with the hospitality sector	Monitor and promote Industry Waste Management Planning and the circular economy in the hospitality sector	X			DEA&DP/DEDAT	1
	Number of Knowledge sharing and engagements with Industry (including SMMEs)	Host WCRAG knowledge sharing support engagements with Industry SMME and other stakeholders in the recycling sector.	X	X	X	DEA&DP/Recycling industry	4

GOAL 2: IMPROVED INTEGRATED WASTE MANAGEMENT PLANNING AND IMPLEMENTATION FOR EFFICIENT WASTE SERVICES, TECHNOLOGIES AND INFRASTRUCTURE							
Objective	**Output indicator**	**Activity**	**Timeframe**			**Responsibility**	**Target**
			2023-2027	**2027-2032**	**2032-2037**		
		Host an Industry Waste Management Forum	X	X	X	DEA&DP/Industry/ Municipalities	Annual
	Number of engagements that facilitate EPR implementation	Assist with EPR implementation	X	X	X	DEA&DP/PROs/ Municipalities	Demand driven
Objective 3: Promote the establishment of integrated waste management infrastructure and services	Number of technologies sharing workshops hosted	Host technology sharing workshops on waste minimisation with municipal officials	X	X	X	DEA&DP	Ongoing
	Number of interventions supporting regional cooperation	Regional cooperation and Regionalisation of waste management services at all (municipal, provincial & national) waste management platforms)	X	X	X	DEA&DP/ Municipalities	Demand driven
		Compile a guideline on the regionalisation of waste management infrastructure and services	X			DEA&DP	1
	Number of waste infrastructure commissioned	Conduct an assessment of municipal infrastructure needed	X			DEA&DP	1
	Number of waste infrastructure funded through MIG and other government grants	Identify and engage with municipalities in need of MIG funding for waste collection vehicles / yellow fleet.	X			DEA&DP / Municipalities	3

GOAL 2: IMPROVED INTEGRATED WASTE MANAGEMENT PLANNING AND IMPLEMENTATION FOR EFFICIENT WASTE SERVICES, TECHNOLOGIES AND INFRASTRUCTURE							
Objective	**Output indicator**	**Activity**	**Timeframe**			**Responsibility**	**Target**
			2023-2027	**2027-2032**	**2032-2037**		
	Number of municipalities funded for yellow fleet and the number of yellow fleet received	Support motivations by municipalities for the procurement of waste collection vehicles /yellow fleet	X	X	X	DEA&DP / Municipalities	Demand driven
Objective 4: Ensure timeous and reliable waste information reporting.	Verification of reported waste data to the IPWIS	Conduct IPWIS waste data verifications of selected facilities to ensure reported information is accurate and credible.	X	X	X	DEA&DP	18
	Capacity building sessions conducted with relevant IPWIS stakeholders	Conduct IPWIS capacity building with relevant stakeholders on IPWIS functionality and related waste information legislation	X	X	X	DEA&DP/ Municipality/ Industry	1
	Report on the key enhancements in the Annual State of Waste Management Report to demonstrate that IPWIS was enhanced.	Maintain, enhance and support the IPWIS to ensure alignment to legislative and business requirements	X	X	X	DEA&DP/ Centre for e-Innovation / Municipalities	1
	Annual State of Waste Management Report	Assess, analyse and disseminate waste management information.	X	X	X	DEA&DP	1

GOAL 3: EFFECTIVE AND EFFICIENT UTILISATION OF RESOURCES							
Objective	**Output indicator**	**Activity**	**Timeframe**			**Responsibility**	**Target**
			2023-2027	**2027-2032**	**2032-2037**		
Objective 1: Minimise the consumption of natural resources and promote circular economy principles	Number of interventions with the private sector to beneficiate waste	Engage private sector regarding the beneficiation of identified large waste generators (IPWIS)	X			DEA&DP	Demand driven
	Number of action plans implemented	Implement strategy and action plans to promote the repair and refurbishment sector and other targeted sectors	X			DEA&DP	Demand driven
	Number of WCRAG seminars hosted	Host WCRAG seminars on initiatives (inclusive of the facilitation of EPR implementation) that support the growth of the circular economy	X	X	X	DEA&DP/ Recycling Industry / PROs	Demand driven
	Number of interventions with SALGA	Collaborate with SALGA around EPR implementation	X	X	X	DEA&DP/SALGA	Demand driven
	Number of interventions with Municipalities to facilitate the diversion of organic waste	Facilitate and ensure municipalities divert organic waste	X	X	X	DEA&DP / Municipalities	100% diversion of organic waste by 2027
	Number of interventions wrt the biological cycle of the circular economy	Promote and facilitate the regenerative biological cycle of the circular economy	X	X	X	DEA&DP	Demand driven
	Number of interventions wrt technical (refurbishment) cycle of the circular economy	Promote and facilitate the technical (refurbishment) cycle of the circular economy	X	X	X	DEA&DP	Demand driven

GOAL 3: EFFECTIVE AND EFFICIENT UTILISATION OF RESOURCES							
Objective	**Output indicator**	**Activity**	**Timeframe**			**Responsibility**	**Target**
			2023-2027	**2027-2032**	**2032-2037**		
	Number of support initiatives provided to SMME's	Provide assistance and support (through PROs e.g. fibrecycle and through working with municipalities) to SMME's in the waste sector	X	X	X	DEA&DP / Municipalities / PROs	Demand driven
Objective 2: Stimulate job creation within the waste economy	Number of wastepreneur integration support initiatives undertaken	Provide wastepreneur integration support to municipalities	X	X	X	DEA&DP	Ongoing
	Number of interventions undertaken to stimulate the repair and refurbishment in targeted sectors	Implement strategy and action plans to stimulate the repair and refurbish sector (textiles, furniture etc.) in a manner that leads to job creation and skills development for vulnerable sectors of society.	X	X	X	DEA&DP	Ongoing
	Number of municipalities exploring and implementing the procurement models for wastepreneur (SMME and waste picker) integration.	Initiation of procurement strategies that facilitate wastepreneur (SMME and waste picker) integration.	X	X	X	DEA&DP / Municipalities	Ongoing
	Monitor initiatives diverting waste from rural municipalities to markets	Assess and conduct a reverse logistics study for waste diverted from rural municipal waste disposal facilities to recycling markets	X	X	X	DEA&DP / Municipalities	Demand driven
Objective 3: Increase waste diversion through	Number of organic waste diversion interventions undertaken	Promote the diversion of organic waste	X	X	X	DEA&DP	1 per year

GOAL 3: EFFECTIVE AND EFFICIENT UTILISATION OF RESOURCES							
Objective	**Output indicator**	**Activity**	**Timeframe**			**Responsibility**	**Target**
			2023-2027	**2027-2032**	**2032-2037**		
reuse, recovery and recycling	Number of construction and demolition waste diversion interventions undertaken	Promote the diversion of construction and demolition waste	X	X	X	DEA&DP	Ongoing
	EPR schemes, promoted, implemented and monitored.	EPR schemes implementation plans for paper, packaging and some single use products as well as the lighting, electrical and electronic equipment, portable battery, pesticide and lubricant oil sectors reported, and progress monitored.	X	X	X	DEA&DP	Ongoing
	Number of textile waste interventions	Conduct a textile waste stream assessment report to identify and promote beneficiation options.	X			DEA&DP	1
	The number of Green Procurement strategies implemented	Promote and institute Green Procurement in targeted sectors	X			DEA&DP/Industry/ Municipalities	1
	Number of cleaner production interventions with the manufacturing sector	Promote cleaner production within targeted manufacturing industry sector	X	X	X	DEA&DP/ Industry/ DEDAT	1
	Number of interventions with regard to the beneficiation of absorbent hygiene products	Promote the diversion and beneficiation of Absorbent hygiene products	X	X	X	DEA&DP	Ongoing
	Number of alternative waste treatment technologies licensed and commissioned.	Facilitate the promotion of alternative waste treatment technologies that enables diversion from landfills.	X	X	X	DEA&DP	Ongoing

GOAL 3: EFFECTIVE AND EFFICIENT UTILISATION OF RESOURCES							
Objective	Output indicator	Activity	Timeframe			Responsibility	Target
			2023-2027	2027-2032	2032-2037		
	An action plan for the sustainable management of schools' chemicals developed for the WCED	Implement the action plan for the sustainable management of schools' chemicals developed for the WCED	X	X	X	DEA&DP/ Department of Education	1
	Identification and adoption of safe management measures for agrochemicals	Facilitate the safe management of Agrochemicals	X	X	X	DEA&DP/ Department of Agriculture	1

GOAL 4: IMPROVED COMPLIANCE WITH THE ENVIRONMENTAL REGULATORY FRAMEWORK							
Objective	Output indicator	Activity	Timeframe			Responsibility	Target
			2023-2027	2027-2032	2032-2037		
Objective 1: Strengthen compliance and enforcement	Number of waste audits conducted	Conduct waste audits on waste management facilities and other regulated waste activities'	X	X	X	DEA&DP	48-72 per year (depending on funds)
	Number of promotional compliance visits undertaken	Undertake promotional compliance visits to facilitate industry and other waste holder responsibility	X	X	X	DEA&DP	Demand driven
	Number of enforcement actions undertaken	Enforce compliance with waste management legislation	X	X	X	DEA&DP	Demand driven
	Number of interventions to roll out the illegal dumping strategy	Roll out the Strategy to Reduce Illegal Dumping in the Western Cape Province	X	X	X	DEA&DP	One per annum

GOAL 4: IMPROVED COMPLIANCE WITH THE ENVIRONMENTAL REGULATORY FRAMEWORK							
Objective	**Output indicator**	**Activity**	**Timeframe**			**Responsibility**	**Target**
			2023-2027	**2027-2032**	**2032-2037**		
Objective 2: Facilitate rehabilitation of Waste Management Facilities	Number of waste management facilities decommissioned	Decommissioning of waste management facilities	X	X	X	DEA&DP / Municipalities	Application based
	Number of decisions issued in respect of contaminated land cases received	Monitor compliance in respect of decisions issued for contaminated land cases received	X	X	X	DEA&DP	Ongoing
	A Guideline for the management of contaminated land in the Western Cape	Develop and implement a Guideline for the management of contaminated land in the Western Cape	X	X	X	DEA&DP	1

6.4 Cost of Implementation

The Department's **total budget** for implementing the WC IWMP for the Medium-Term Framework (MTEF) periods 2023/24, 2024/25 and 2025/26 is **R4 657 710** (Table 18). Approximately a third **(R1 578 910 – 33.9%)** of the **total budget,** will be spent during the 2023/24 financial year. 13% and 18.7% of the total budget will be spent during the 2024/25 and 2025/26 financial years, respectively.

Less than 10% of the annual budget across the three financial years is allocated to Goal 1: "*Strengthened education, capacity, awareness and advocacy towards Integrated Waste Management*".

Most of the annual budget for Goal 2: "*Improved integrated waste management planning and implementation for efficient waste services, technologies and infrastructure*", is allocated for IPWIS enhancements.

75 to 90% of the annual budget for Goal 3: "*Effective and efficient utilisation of resources*" is for wastepreneur integration support to Municipalities.

Most of the 2023/24 budget for Goal 4: "*Improved compliance with the environmental regulatory framework*" is allocated for departmental audits.

The Department also received a once-off payment of R5 000 000 from Provincial Treasury (Strategic Priority Funding) towards Goal 4 for the 2023/24 financial year. Other additional funding across the 3 financial years is for IPWIS Maintenance and Support (est. R3 867 338) and Topographical studies (R542 000).

Table 18: Cost of implementing the Western Cape Integrated Waste Management Plan

Goals		Key Projects	2023/24 (R) and % of annual budget)	2024/25 (R) and % of annual budget)	2025/26 (R) and % of annual budget)	Total budget per Goal (R) and % of total budget
Goal 1	Strengthened education, capacity, awareness, and advocacy towards Integrated	Waste Minimisation; Priority Waste stream; Landfill operators training	83 100 **(5.3)**	86 100 **(7.3)**	90 100 **(4.7)**	259 300 **(5.6)**

	Waste Management					
Goal 2	Improved integrated waste management planning and implementation for efficient waste services, technologies and infrastructure.	Topographical study; IPWIS enhancements/ verification/training; Industry Forum; Municipal regional cooperation	636 700 **(40.3)**	643 100 **(54.7)**	838 600 **(44.1)**	2 118 400 **(45.5)**
Goal 3	Effective and efficient utilisation of resources	Waste Economy; WCRAG; Waste Minimisation	686 600 **(43.5)**	265 100 **(22.6)**	785 500 **(41.3)**	1 737 200 **(37.3)**
Goal 4	Improved compliance with the environmental regulatory framework	Pods, Boreholes, Water quality monitoring, internal/external audits, fencing of landfills, industry compliance visits	172 510 **(10.9)**	181 300 **(15.4)**	189 000 **(9.9)**	542 810 **(11.7)**
	Total		**1 578 910**	**1 175 600**	**1 903 200**	**4 657 710**

7 Monitoring, Review and Reporting

7.1 Monitoring and Review

Monitoring the implementation of the WC IWMP must be undertaken as it is an essential part of the planning process. The Implementation Plan includes output indicators, which will be used to assist with monitoring. annual performance reports will be used to monitor progress and to ensure that actions are implemented. The following will be monitored and reported on in the annual performance reports:

- Performance and progress on meeting short-, medium- and long-term goals and objectives;
- Budget forecasting and budgeting constraints with respect to implementation of the WC IWMP; and
- Amendments to the IWMP necessitated by constraints in terms of finances and capacity (note that the WC IWMP will be revised every 5 years).

Currently, the WCMES for monitoring municipal performance is being decommissioned. COGTA is piloting a similar system, which can be utilised by Provinces to monitor municipal performance.

Performance of the Provincial Department, in implementing its IWMP will be monitored by tracking work done as per its Annual Performance Plan (APP). An IWMP Monitoring Committee, consisting of waste management officials will review the APP in conjunction with the WC IWMP Implementation Plan and track the progress made and note any challenges.

7.2 Reporting

Annual reporting requirements for provinces is outlined in the NEM: WA, section 13 (1)(2). Reporting on implementation of IWMPs will be adhered to. Reporting will be done on the progress of each output indicator.

In addition to this, the Department provides feedback annually to the DFFE via reporting templates.

Section 13 (3) of the NEM: WA notes the requirement in Section 46 of the Municipal Systems Act (32 of 2000) for municipalities to compile annual performance reports. Section 13 (3) also specifically requires that annual performance reports must contain information on the implementation of the IWMP and provide feedback on this.

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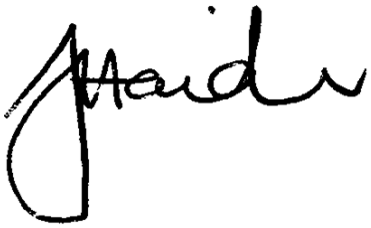
9 Official Sign-off

I, Saliem Haider as Director: Waste Management, hereby sign-off on the submission of the Western Cape Integrated Waste Management Plan 2023-2027 to the Head of Department and the Provincial Minister for consideration.



Director: Waste Management

Annexure A: Public Participation

ISAZISO
ESIBALULEKILEYO

INKQUBO YOKUTHATYATHWA KWENXAXHEBA LULUNTU UPHUHLISO LWESICWANGCISO ESIHLANGANYELWEYO SOLAWULO LWENKUKUMA ENTSHONA KOLONI SIKA-2022-2027

IMPORTANT NOTICE

PUBLIC PARTICIPATION PROCESS DEVELOPMENT OF WESTERN CAPE INTEGRATED WASTE MANAGEMENT PLAN 2022-2027 (WC IWMP)

Newspaper advertisement: Cape Argus – 10 September 2021 (English and isiXhosa)

086 225 6102 / 087 230 2318
882721 Sept. 10 - (4220)

M. Marx
AANSOEK OM BOEDELOORGAWE

Aansoek om boedeloorgawe MARELI MARX, ID-nr. 900512 0042 08 0, 'n ongetroud werklose dame van Silver Oak 23, Melkbosstrand, in die Hooggeregshof van SA (Wes-Kaapse Afdeling Kaapstad) op 4 Oktober 2021 om 10h00 of so spoedig daarna as wat Advokaat vir die Applikant aangehoor kan word.
Vermoënstaat lê ter insae by Meester van die Hooggeregshof, Kaapstad en Landdroshof vir 14 dae vanaf 10 September 2021 asook by Riaan de Kock, 6de Laan-nr. 16, Melkbosstrand.
283898 Sept. 10-(4220)V

M.A. Nienaber
KENNIS VAN BOEDELOORGAWE ARTIKEL 4(1) WET 24/1936

Kennis geskied hiermee dat aansoek gedoen sal word by die Hooggeregshof van Suid-Afrika, Wes-Kaapse Afdeling, Kaapstad op 8 Oktober 2021 vir die boedeloorgawe van:
Naam: MUHAMMED AMMAAR NIENABER, beroep: 'n kleinhandel departement bestuurder, ongetroud van Sir Lowryweg 76, Zonnebloem, Kaapstad en dat die vermoëstaat ter insae sal lê vir inspeksie by die Meesterskantoor Kaapstad vir veertien (14) dae vanaf 10 September 2021.
285253 Sept. 10-(4220)V

Contact Details	Water Use Licence Associates (Pty) Ltd Ms Jana Liebenberg Tel: 011 616 7893 E-mail: jana@seaenvgroup.co.za

NOTICE OF A WATER USE LICENCE APPLICATION FOR WATER USES AS DEFINED IN SECTION 21 (A), (C) AND (I) OF THE NATIONAL WATER ACT, 1998 (ACT NO. 36 OF 1998) FOR THE 140 MW KAREEBOSCH WIND ENERGY FACILITY AND ASSOCIATED INFRASTRUCTURE BETWEEN MATJIESFONTEIN AND SUTHERLAND IN THE NORTHERN AND WESTERN CAPE PROVINCE.
REFERENCE NUMBER: WU20781

Applicant	Kareebosch Wind Farm (Pty) Ltd
Consultant	Water Use Licence Associates (Pty) Ltd
Project Location of water use activities	The proposed Kareebosch Wind Energy Facility (WEF) is situated within the Karoo Hoogland Local Municipality and Namakwa District Municipality in the Northern Cape Province and the Laingsburg Local Municipality and Central Karoo District Municipality in the Western Cape Province. The nearest towns are Matjiesfontein and Sutherland, both located approximately 40 km from the Kareebosch WEF. The properties affected by the water use activities include: Remainder of the Farm Bon Avenue 75; Portion 0 of the Farm Riet Fontein 197; Portion 1 of the Farm Karree Kloof 196; Remainder of the Farm Oude Huis 195; Portion 1 of the Farm Klipbanks Fontein 198; Remainder of the Farm Karee Kraal 189; Remainder of the Farm Wilgebosch Rivier 188; Portion 1 of the Farm Bon Esperance 73; Remainder of the Farm Karree Bosch 200; Remainder of the Farm Roode Wal 187; Portion 2 of the Farm Ek Kraal 199; Portion 1 of the Farm Ek Kraal 199; Remainder of the Farm Appels Fontein 201.
Details of Applications and Activities	Notice is hereby given of a Water Use Licence Application (WULA) in terms of Section 21 of the National Water Act, 1998 (Act No. 36 of 1998) (NWA) for water use activities associated with construction and operation of the Kareebosch WEF and associated infrastructure (new access road, upgrade of existing road servitudes, underground cabling, temporary construction camp, construction of three (3) 33 kV overhead powerlines / collector systems, concrete pads of the wind generator turbines, and wind generator turbines) and the abstraction of groundwater from three (3) boreholes to meet water requirements during the construction and operational phase of the project. The overall objective of the proposed Kareebosch WEF is to generate electricity by means of renewable energy technology, capturing wind energy to feed into the national grid, which will be procured under either the Renewable Energy Independent Power Producer Procurement Program (REIPPPP), other government-run procurement programmes, or for sale to private entities.
Water Use Activities	The construction and operation of the Kareebosch WEF and associated infrastructure located within a watercourse and the regulated zone of a watercourse as well as the abstraction of groundwater from boreholes require a Water Use Licence Application in terms of activities triggered by Section 21(a), (c) and (i) of the NWA.
Opportunity to Participate	As part of the public participation process, the public is provided a 60-day period from 10 September 2021 until 10 November 2021 to register as an Interested and Affected Party and review the Water Use Licence Application before final submission to the Department of Water and Sanitation. Further information to register and participate in the public participation process can be obtained from the consultant at the contact details below.
Contact Details	Water Use Licence Associates (Pty) Ltd Ms Jana Liebenberg Tel: 011 616 7893 E-mail: jana@seaenvgroup.co.za

...Kaapstad by Retreat in die stad Kaapstad, Afdeling Kaap, Provinsie Wes-Kaap met grootte 490 (vier honderd en negentig) vierkante meters en gehou deur Transportakte T14192/1992 en geleë by Langevleiweg 14, Retreat, Kaapstad. Die eiendom is gesoneer Algemeen Residensieel (niks gewaarborg nie). Die volgende inligting in verband met verbeterings word verstrek, maar is nie gewaarborg nie: Hoofwoning: Baksteengebou onder teëldak, 3 x slaapkamers, 1 x sitkamer, 1 x kombuis, 1 x badkamer. Woonstel: Asbesdak, 1 x slaapkamer, kombuis, badkamer. Algemene bepalings: 1. Die geregtelike verkoping vind plaas ingevolge bepalings van die Verbruikersbeskermingswet 68 van 2008. 2. Registrasie as 'n koper is 'n voorvereiste onderhewig aan: a) FICA-wetgewing: bewys van ID en residensiële adres; b) Registrasiefooi; c) Registrasievoorwaardes. Bepalings: 1. 10% (tien persent) van die koopprys in kontant op die dag van die veiling, onmiddellike internetoordrag na die Balju se trustrekening of met 'n bankgewaarborgde tjek, die balans betaalbaar met registrasie van oordrag, verseker deur 'n bank of bouvereniging of ander aanvaarbare waarborg wat binne een en twintig (21) dae vanaf die verkoopdatum verskaf moet word. 2. Afslaer se kommissie betaalbaar op die dag van die veiling en soos volg bereken: 6% (ses persent) op die opbrengs van die veiling tot 'n prys van R100 000.00 (een honderd duisend rand) en daarna 3,5% (drie en 'n halwe persent) op R100 001.00 tot R400 000.00 en 1.5 persent op die balans daarvan, van die opbrengs van die verkoping, onderhewig aan 'n maksimum totale kommissie van R40 000.00 (veertig duisend rand) en 'n minimum van R3 000.00 (drie duisend rand) (insluitend van die balju se bankfooie en ander uitgawes aangegaan deur die opbrengs in sy of haar trustrekening in te betaal), welke kommissie deur die koper betaal sal word. 3. Die eiendom mag in besit geneem word ná tekening van die voorwaardes van verkoping, betaling van die deposito en die versekurering van die balans van die koopprys. 4. Indien die kopers die eiendom in besit neem, is die koper verantwoordelik vir okkupasiehuur teen die koers van 1% van die koopprys per maand. Pro-rata okkupasiehuur is deur die koper betaalbaar op die datum van in besitneming en daarna maandeliks op of voor die 1ste van elke maand tot die datum van registrasie van oordrag.
Gedagteken by Kaapstad.

STRAUSS DALY ING., Prokureur vir die Eiser, per R. Swanepoel, 13de Vloer Touchstone-huis, Breestraat 7, Kaapstad. Tel. 021 410 2200, faks 086 510 0157. Verw: STA801/0196.
Sept 10 - (180)

Wes-Kaapse Regering
BETER TESAME.

BELANGRIKE KENNISGEWING

OPENBAREDEELNAMEPROSES ONTWIKKELING VAN WES-KAAPSE GEÏNTEGREERDE AFVALBESTUURSPLAN 2022-2027 (WK GABP)

Die Wes-Kaapse Departement van Omgewingsake en Ontwikkelingsbeplanning beoog om 'n derdegenerasie-WK GABP op te stel, wat die 2017-2022-plan sal vervang. Die WK GABP sal ingevolge artikel 11(1) van die "National Environmental Management: Waste Act, 2008" (Wet 59 van 2008), opgestel word en het ten doel om strategiese leiding vir geïntegreerde afvalbestuur in die Provinsie te gee.

Belanghebbende en geraakte partye word genooi om hul besonderhede aan die Departement te verskaf, wat in 'n register opgeneem sal word om hul belangstelling om aan die opstelproses deel te neem, te kenne gee, en hulle sal dan op hoogte gehou word van geleenthede vir betrokkenheid en kommentaar.

Verskaf asseblief u besonderhede, soos uiteengesit in die onderstaande tabel, deur 'n e-pos te stuur na **Xoliswa.Mazana@westerncape.gov.za.** Navrae kan gerig word aan **Dean Gilbert** by **073 829 0429.**

NAAM EN VAN	KONTAK-NOMMER	E-POSADRES	ORGANISASIE (INDIEN VAN TOEPASSING)	TITEL	MUNISIPALE GEBIED

Die persoonlike inligting wat u verskaf, sal slegs gebruik word om met partye in verbinding te tree en sal geprosesseer word ooreenkomstig die "Protection of Personal Information Act, 2013" (Wet 4 van 2013). Verwys asseblief na ons kennisgewing oor privaatheid by **https://www.gov.za/documents/protection-personal-information-act**

Newspaper advertisement: Die Burger – 10 September 2021 (Afrikaans)

Western Cape Government
FOR YOU

Invitation

Dear stakeholder

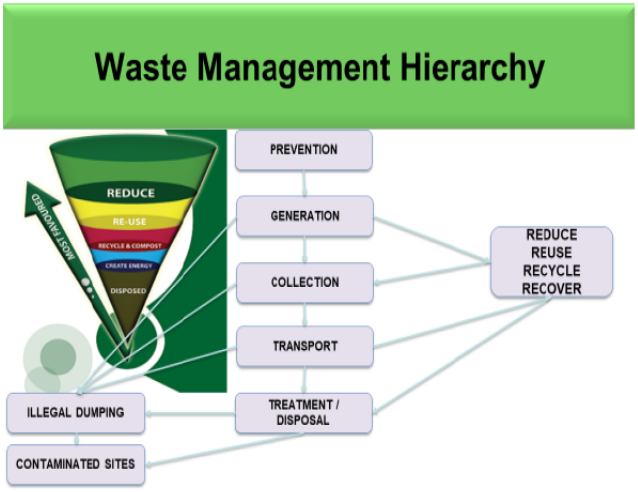
The Department of Environmental Affairs and Development Planning cordially invites you to participate in our first public participation workshop for the Development of the Western Cape Integrated Waste Management Plan (2022 – 2027), WC IWMP.

Date: 24 February 2022

Time: 09:00 – 12:00

Venue: Microsoft Teams – Webinar

RSVP: Martha.Strydom@westerncape.gov.za



The workshop will provide an update on the development of the WC IWMP and will allow stakeholders to participate in discussions on:

1. challenges with the waste system
2. climate change
3. circular economy
4. job creation, poverty reduction
5. gender and human rights

Public participation workshop invitation sent to stakeholders

Comments and responses table

Organisation	Date Received	Source	Reference	Comment	Recommendation	Response
Green Anglicans (Rev Rachael Mash)	20 September 2022	E-mail	Gaps and Needs Analysis	To include the faith communities in the education section – we have values and reach. A faith-based education program could be set up – like schools have eco-clubs churches could have eco-groups based on biblical principles of caring for creation.		Noted. Awareness campaigns should include faith-based organisations.
Green Anglicans (Rev Rachael Mash)	20 September 2022	E-mail	Gaps and Needs Analysis	Advocacy – we need a whatsapp number that people can complain to when the rubbish has not been collected, it is too expensive to phone and often in the communities the pickup is not done by the council but by a subcontractor. There also should be a safe number for whistle blowers of illegal dumping – they can send the bakkie registration number.		Noted. Suggestion can be passed to municipalities. The DEA&DP also has a toll-free number and email to report environmental crimes

Green Anglicans (Rev Rachael Mash)	20 September 2022	E-mail	Gaps and Needs Analysis	Incentivise the EPWP workers better, they are very demotivated – there should be bonuses and competitions which is the best kept street.		Noted. Suggestion can be passed to municipalities.
Green Anglicans (Rev Rachael Mash)	20 September 2022	E-mail	Gaps and Needs Analysis	Mobilise Schools and Churches with a small fund for a lunch after a clean-up. The local soup kitchen could be asked to provide a big pot of food after the clean-up.		Noted. Suggestion can be passed to municipalities.
Green Anglicans (Rev Rachael Mash)	20 September 2022	E-mail	Gaps and Needs Analysis	Link awareness of plastic rubbish with flooding and have prewinter clean-up campaigns.		Agreed. Littering/pollution should be linked to environmental impacts.
Green Anglicans (Rev Rachael Mash)	20 September 2022	E-mail	Gaps and Needs Analysis	Co-design workshop – its tricky if it is seen as a D.A event. These should be neutral – hosted in school or church.		Noted. The Department has commenced with hosting co-design workshops aimed at various communities throughout the Province.
Green Anglicans (Rev Rachael Mash)	20 September 2022	E-mail	Gaps and Needs Analysis	How aware are we of the global treaty on plastic and what items might be getting banned?		Noted. Will amend plan to reflect this.

Green Anglicans (Rev Rachael Mash)	20 September 2022	E-mail	Gaps and Needs Analysis	We need subsidized plastic drop off points within walking distance - plastic is weighed and the waste picker gets a voucher on their phone. Polluter pays principle these must be subsidized by Coke etc not by taxpayer		Extended Producer Responsibility Regulations aim to give effect to the "Polluter Pays Principle"
Overstrand Municipality (Craig Mitchell)	7 October 2022	E-mail	Pg 50 Last paragraph	Waste was transported by rail from Athlone to Vissershok not Kalbaskraal? Also is not active currently lines blocked at Dunoon. Maybe add land invasions to last sentence as an additional challenge.	Maybe relook at the waste on rail comments for accuracy.	Amended.
Overstrand Municipality (Craig Mitchell)	7 October 2022	E-mail	Pg 53 Fig 21	Overberg 2019 % captured wrong	Should it not be 35% and 65% instead of the recorded 7% and 93%.	Amended.
Overstrand Municipality (Craig Mitchell)	7 October 2022	E-mail	Pg 58 Fig 25	Overberg 2019 % captured wrong	Should it not be 65% and 35% instead of the recorded 93% and 7%.	Amended.
Overstrand Municipality	7 October 2022	E-mail	Fig 21,21 24 25 etc		The light shading used for the right-hand bar does not print clearly consider	Updated.

(Craig Mitchell)					changing the colour to make it easier to see on the printed documents.	
Overstrand Municipality (Craig Mitchell)	7 October 2022	E-mail	Pg 64 Fig 33	Overstand had a MRF operational at Gansbaai, please add to table. The number in the drop offs in the figure, is that the number of drop offs? IE 4 for Overstrand, if so what about transfer stations also. Note Overstrand had 2 TS 5 DO's & 3 mini DO's in 2020	Add MRF to table for Overstrand Correct the number in the drop-off block for Overstrand.	Noted. the graphs do not specify how many drop-offs the municipalities have but rather the number of initiatives.
Overstrand Municipality (Craig Mitchell)	7 October 2022	E-mail	Pg's 56, 60 &61	The organic waste diversion %'s bottom of the key insights table does not match either figure 28 or 29	Should it not match? I think it also didn't match the figure that Belinda presented today in the public participation webinar on the 7th October	Noted.
Overstrand Municipality (Craig Mitchell)	7 October 2022	E-mail	Pg 68	In Key insights second last bullet add space material and	Please review your comment and correct statement	Noted.
Overstrand Municipality	7 October 2022	E-mail	Pg 72 3.2.7.3	Second paragraph Kabaskraal in CoCt in advanced stage of planning? Is that accurate? As		Amended. This is correct the site was the preferred option,

(Craig Mitchell)				CoCt are starting the whole project over again as far as I am aware.		however due to an appeal and a legal process the CoCT opted to restart the application process and find alternatives.
Overstrand Municipality (Craig Mitchell)	7 October 2022	E-mail	Pg's 85 & 86	CoCt revenue appears to be very low compared to their expenses. (CoCt also generates waste revenue through rates and taxes for some of their services should that not also be included to provide a more holistic picture?)	Maybe check with CoCt and the explain the difference in costing methods somewhere.	Noted.
Overstrand Municipality (Craig Mitchell)	7 October 2022	E-mail	Pg 87	Key insights 2nd bullet correct typo watse (3rd line) to waste		Noted.
Hessequa Municipality (Andre Hansen)	20 October 2022	E-mail	2.1	Lack of environmental awareness / incentives to motivate the prevention of illegal dumping / promote waste minimisation programs.	Special programs at all schools are very important. Must form part of work schedule in schools. (Could also part of job creation projects in	Noted. The Municipality should arrange awareness raising through the school management to ensure normal school

					all wards – workshops at communities.)	curriculum is not disrupted
Hessequa Municipality (Andre Hansen)	20 October 2022	E-mail	3.2.3	Average age of Municipal vehicle fleet	Hessequa Municipality vehicle fleet is the oldest in Western Cape and must need urgent attention – especially the Refuse compactors and Dozer machines.	Noted. Municipalities could apply for MIG funding to assist with the purchasing of vehicles.
Hessequa Municipality (Andre Hansen)	20 October 2022	E-mail	3.2.7.1	Available landfill space	The cost to develop a new landfill facility or to extend air space at current permitted landfill facilities is not affordable. The use of regional landfill facility is also too expensive for taxpayers. National / Provincial Government must give some financial support to accommodate Municipalities to comply with legislation requirements. It must be part of the IWMP. Waste minimization initiatives	Noted. The Department plans to focus on the promotion of sustainable funding mechanisms municipalities.

					must also be financially supported by National / Provincial Government.	
Hessequa Municipality (Andre Hansen)	20 October 2022	E-mail	3.2.10	Waste Management jobs.	This objective / target must get priority attention in the Western cape IWMP. (More attention to the public sector to achieve sustainable job creation and to clean communities.).	Agreed. The stimulation of the waste economy and job creation is a key priority for the Department.
Hessequa Municipality (Andre Hansen)	20 October 2022	E-mail	6.3	Waste minimization: Re – use, recycle and recover.	Create workshops at all wards in Municipalities – part of the Ward Councilor duties in cooperation with Waste Managers.	Noted.
DEA&DP: Coastal Management (Mfundo Ndovela)	19 October 2022	E-mail	Acronyms in page 4.	There is a link between NEM: ICMA with waste management therefore the legislation should be added to the abbreviation list. Chapter 8 and Schedule 2 of the NEM: ICMA provide integrated procedures for regulating the	Addition of NEM: ICMA 24 of 2008 to the abbreviation list.	Updated.

				disposal of effluent and waste into the sea.		
DEA&DP: Coastal Management (Mfundo Ndovela)	19 October 2022	E-mail	1) Introduction in Page 15	The National Waste Management Strategy also stress the importance of Industrial symbiosis that speak to landfill waste diversion which creates job opportunities.	Considering adding that as part of the circular economy approach because the 2020 National Waste Management Strategy stresses the importance of industrial symbiosis which seeks to encourage industries from reusing waste from other industries.	Noted. Industrial Symbiosis is covered under "Waste Minimisation Initiatives to Support Diversion"
DEA&DP: Coastal Management (Mfundo Ndovela)	19 October 2022	E-mail	1.4. Public Participation in page 19	Please indicate that the draft IWMP has been distributed for stakeholder review from 20th of September to 20th of October 2022.	Revise the sentence that indicates that the draft IWMP has been distributed for stakeholder review from 16 September to 16 October 2022 to reflect the dates in request for comment email (20th of September to 20th of October 2022)	Updated.

DEA&DP: Coastal Management (Mfundo Ndovela)	19 October 2022	E-mail	2.2. The Circular Economy in Page 22	The linear economic model supports waste disposal at the landfill, and it was regarded as inefficient due to shrinking landfill airspace and it increased pollution. The circular economy came in as a remedy to address some of the challenges by proposing that waste materials should be recycled back into the economy. The reader should have this background in the document before engaging in the circular economy concept.	Sources to use: • Sa de Abreua, M. & Cegliaa, D., 2018. On the Implementation of a Circular Economy: The Role of Institutional Capacity-building Through Industrial Symbiosis. Resources, Conservation & Recycling, Volume 138, p. 99–109. • The Ellen MacArthur Foundation (2012), Towards a Circular Economy - Economic and Business Rationale for an Accelerated Transition. Greener Management International. • Tukker A., (2015) Product services for a resource-efficient and circular economy- The Journal of Cleaner	Updated.

					Production. Volume 97: 76–91.	
DEA&DP: Coastal Management (Mfundo Ndovela)	19 October 2022	E-mail	2.2. The Circular Economy in Page 23	Consider referring to industrial ecology and industrial symbiosis within this section.	Sources to use: • Ayres, R. & Ayres, L., 2002. A Handbook of Industrial Ecology. Cheltenham: Edward Elgar Publishing: Edward Elgar Publishing. • Mirata, M., Eklund, M. & Gundberg, A., 2017. Industrial Symbiosis and Biofuels Industry: Business Value and Organizational Factors within Case of Ethanol and Biogas Generation, Sweden: The Swedish Knowledge Centre for Renewable Transportation Fuels.	Noted. Industrial symbiosis is included in Chapter 3 under Circular Economy Initiatives.
DEA&DP: Coastal Management (Mfundo Ndovela)	19 October 2022	E-mail	2.3. Cross-cutting Issues and Waste Management	Include a subsection related to coastal management.	The section should also touch on Section 69 of the ICM Act that governs effluent discharges to	Noted. The WC IWMP specifically relates to solid waste management and not effluent. Impacts link to

			Linkages in Pages 24.		coastal waters, including estuaries. The section can also tap into the recent draft Western Cape Provincial Coastal Management Programme that states that Coastal areas are particularly vulnerable to the negative impacts of pollution, being the end or collection point in various solid and liquid waste streams. This pollution emanates from both the marine environment, as a result of shipping and commercial fishing activities, and from land-based sources, as a result of effluent discharges, urban stormwater and littering. In the case of urban estuaries contaminated	coastal waters are linked to environmental and health impacts.

					commercial and industrial stormwater runoff is a major concern for estuaries located in urban areas. Stormwater runoff contains an array of pollutants ranging from microbial contaminants, excessive nutrients and organic matter (e.g. linked to sewage from informal settlement areas) to high suspended solid loads and toxic chemicals such as trace metals and hydrocarbons. Source to use: • Van Niekerk, L. Adams, J.B. Bate, C. Forbes, A.T. Forbes, N.T. Huizinga, P. Lamberth, S.J. MacKay, C.F. Petersen, C. Taljaard, S. Weerts, S.P. Whitfield, A.K.	

					Wooldridge, T.H., 2013. Country-wide Assessment of Estuary Health: An Approach for Integrating Pressures and Ecosystem Response in a Data Limited Environment. Estuarine, Coastal and Shelf Science, Volume 130, pp. 239-251. the PCM is managing the Sustainable Water Management Plan and aspects of the plan may be relevant to be included in the section.	
DEA&DP: Coastal Management (Mfundo Ndovela)	19 October 2022	E-mail	2.3. Cross-cutting Issues and Waste Management Linkages in Pages 24	Within the coastal management subsection consider adding some of the key achievements from the 2021/2022 Annual Implementation Report Western Cape Provincial Coastal Management Programme	The Sub Directorate Coastal Management has implemented environmental education programmes during Marine Week and Coastal Clean-up days to address waste issues along the coast. The Department worked	Noted.

					alongside various partners such as DFFE, CapeNature, Community Works Programme, Working on Fire, DFFE, Steenbok Nature Reserve, SANParks, Dyer Island Conservation Trust, Agulhas National Park, EPWP, Olifants Estuary Advisory Forum, primary schools and coastal municipalities. During the 2021/22 financial year the Directorate Biodiversity and Coastal Management and Directorate Pollution and Chemical Management were involved in the IISD project Sustainable Asset Valuation (SAVi) of Hartenbos Wastewater Treatment Infrastructure,	

					which evaluated the costs and benefits of using green infrastructure vs grey infrastructure in removing addition nutrients from the final effluent entering the estuary. Considering adding that the Directorate Biodiversity & Coastal Management and Directorate Pollution & Chemical Management continued to participate in the Nurdle clean-up Sub-committee during the 2021/2022 financial year. Over 61 tonnes of nurdles have been collected to date.	
DEA&DP: Coastal Management (Mfundo Ndovela)	19 October 2022	E-mail	2.3.1. Climate Change (links with SDGs 7, 11 & 13) in Page 24	Consider adding these additional references to support your statement that waste management activities	Sources to use: • Singh, A. & Chandra, R., 2019. Pollutants Released from the Pulp Paper Industry: Aquatic	Noted.

				can lead to an increase in GHG emissions.	Toxicity and Their Health Hazards. Aquatic Toxicology, Volume 211, p. 202–216. • Sharma, P., Gaur, V., Kim, S. & Pandey, A., 2020. Microbial Strategies for Bio-transforming Food Waste into Resources. Bioresource Technology, Volume 299, pp. 1-11. • Ravindran, R., Hassan, S., Williams, G. & Jaiswal, A., 2018. A Review on Bioconversion of Agro-industrial Wastes to Industrially Important Enzymes. Bioengineering, Volume 5, pp. 1-20.	
DEA&DP: Coastal Management (Mfundo Ndovela)	19 October 2022	E-mail	2.3.1. Climate Change (links with SDGs 7, 11 & 13) in Page 24	Consider adding that the Working for the Coast Programme and Source to Sea Programme which play an important role in landfill waste diversion by collecting waste	Source to use while updating the narration: • Department of Environmental Affairs (2014) South Africa's National Coastal	Noted.

				from rivers or estuaries for recycling purposes.	Management Programme. Cape Town.	
DEA&DP: Coastal Management (Mfundo Ndovela)	19 October 2022	E-mail	2.3.3. Job Creation and Poverty Reduction (linked with SDGs 1 & 8) in Page 25	Additional elaboration is needed on why waste pickers are within the margins of poverty such as lack of health insurance, lack of PPE and lack of government relief packages for waste pickers during the height of COVID-19.	Sources to use when updating the narration: • Hartmann, C., Hegel, C. & Boampong, O., 2022. The Forgotten Essential Workers in the Circular Economy? Waste Picker Precarity and Resilience Amidst the COVID-19 Pandemic. Local Environment, Volume 27, pp. 1-15.	Noted.
DEA&DP: Coastal Management (Mfundo Ndovela)	19 October 2022	E-mail	2.3.4. Health and Environmental Impacts (links with SDGs 3 & 6	Consider adding that abandoned fishing equipment sometimes contributes to plastic pollution.	Sources to use when updating the narration: • Environmental Investigation Agency (2022) Convention on Plastic Pollution Essential Elements: Fishing Gear. London. Environmental Investigation Agency.	Noted. The impact of waste on the environment has been included under section 2.
DEA&DP: Coastal Management	19 October 2022	E-mail	2.5. National Policy in Page 30	Consider adding the National Environmental Management: Integrated Coastal	Add legislation to section 2.5	Noted, however this is beyond the scope of the WC IWMP.

(Mfundo Ndovela)				Management Act: Regulations: Dumping at sea		
DEA&DP: Coastal Management (Mfundo Ndovela)	19 October 2022	E-mail	2.6. Provincial Policy in Page 32	Consider adding the Western Cape Gender Equity Strategic Framework because it encouraged us to undertake the Gender and Human Rights Gap Analysis processes in DEA&DP	Add legislation to section 2.6	Noted. This has been included in the Gender Gap Analysis, which informed the development of the WC IWMP.
DEA&DP: Coastal Management (Mfundo Ndovela)	19 October 2022	E-mail	2.6. Provincial Policy in Page 32	Consider adding the Sustainable Water Management Plan in this section.	Add legislation to section 2.6	Noted, however the WC IWMP's key focus is on solid waste management.
DEA&DP: Coastal Management (Mfundo Ndovela)	19 October 2022	E-mail	3.1.2. Employment in Page 38	Please consider the recent Provincial Economic Review and Outlook Report for 2021 and ensure that these figures are aligned to them?	Figures from the 2020 PERO in the report to be updated to reflect figures from the 2021 PERO.	This has been updated.
DEA&DP: Coastal Management (Mfundo Ndovela)	19 October 2022	E-mail	3.1.4. Housing and Informal Settlements in Page 40	A key element that should be added here is that some of the informal settlements that are located near river and estuarine systems have a lack of waste collection services therefore some of the solid	Source to use when updating the narration: • Van Niekerk, L. Adams, J.B. Bate, C. Forbes, A.T. Forbes, N.T. Huizinga, P. Lamberth, S.J. MacKay, C.F. Petersen, C. Taljaard,	Noted. The link between waste and health and environmental impacts is indicated in section 2.3.

				waste may end up in these sensitive systems.	S. Weerts, S.P. Whitfield, A.K. Wooldridge, T.H., 2013. Country-wide Assessment of Estuary Health: An Approach for Integrating Pressures and Ecosystem Response in a Data Limited Environment. Estuarine, Coastal and Shelf Science, Volume 130, pp. 239-251.	
DEA&DP: Coastal Management (Mfundo Ndovela)	19 October 2022	E-mail	3.2.4.3. Illegal Dumping in Page 55	Consider adding that the municipalities encourage their Environmental Officers to attend the Basic Training for Environmental Management Inspectors. Increasing enforcement capacity to address illegal dumping in the municipalities.	Add an extra bullet point to reflect on the EMI Capacity in the municipalities to address illegal dumping activities.	Noted. Illegal dumping activities are enforced by EMIs as well as Law Enforcement.
DEA&DP: Coastal Management (Mfundo Ndovela)	19 October 2022	E-mail	3.2.6.2. Circular Economy Initiatives in Page 66	Please consider also indicating that there are challenges that come with landfill waste diversion programmes such as the Western Cape Industrial	Source to use in the update of the narration: • Source: Kasese, E., Smout, S., O'Carroll, S. & Basson, L., 2016.	Noted. This will be reviewed and updated.

				Symbiosis Programme. Kasese et al (2016) identifies the barriers such as a lack of access to finance, lack of access to information on waste resources, the distance between industries and lack of staff to process waste.	Challenges to the Uptake of Industrial Symbiosis for Improved Waste Programme: Proceedings of the 23rd Waste Con Conference, Johannesburg: Institute of Waste Management of Southern Africa.	
DEA&DP: Coastal Management (Mfundo Ndovela)	19 October 2022	E-mail	3.2.10. Waste Management Jobs in Page 87	Consider tapping into your Gender and Human Rights Gap Analysis for the Western Cape Integrated Waste Management Plan to reflect on the employment of women, youth and disabled in this sector within the waste management field.	Add statistics on the number of women, youth and disabled that work in the waste management sector. 1.1.4. Annual report on the water quality improvement programmes (Breede, Berg, etc.) 1.1.5. Support the implementation of identified priority water quality improvement interventions in support of the SWMP outcomes and	Noted. This will be reviewed and updated.

					any other identified estuaries.	
DEA&DP: Coastal Management (Mfundo Ndovela)	19 October 2022	E-mail	6.3. Implementation Table in Page 112	Include that the Directorate Waste Management will support the Sustainable Water Management Plan which may fall under goal 4 which speaks to improved compliance with the environmental regulatory framework in Objective 1. The leachate produced by waste disposal sites contains a large number of substances which are likely to contaminate ground water and eventually affect estuaries. Compliance and enforcement actions from the Directorate Waste Management will be critical here and reporting through the SWMP structures will be important.		The focus of the WC IWMP is on solid waste management and therefore all activities in the implementation link to the management of solid waste.
DFFE: Malcolm Mogotsi	24 October 2022	E-mail	2.7 Overview of Environmental and Waste Legislation	The IWMP should not just list legislation for the sake of information purposes without practically highlighting the	For example, the IWMP should elaborate as to what extent NDWCS (GN21, 2011)	Noted. The status of compliance with key waste legislation is indicated within the

				status quo/ situational analysis on the ground.	municipalities have implemented such standards and which are those municipalities. This must happen to each listed legislation. I would like to propose additional column that will talk to the status quo of the legislation e.g act / regulation, Description, summary of impacts /status quo.	document e.g. status of waste reporting in terms of Waste Information Regulations, status of Designated WMOs in terms of the NEM: WA.
DFFE: Malcolm Mogotsi	24 October 2022	E-mail	2.6 Provincial Policy	This comment links to the above comment (2.7). OneCape 2040 for example, which municipalities have benefitted from it to date? The IWMP should be practical such that it is clear how OneCape has been implemented within the province. How and which municipalities have benefitted from it? As it stands the 2.6 just	Please include the practical part of all the provincial policy listed in 2.6.	The aim is to provide an overview of the relevant policies, which provided strategic direction to the Province/Municipalities.

				provided information without being practical.		
DFFE: Malcolm Mogotsi	24 October 2022	E-mail	3.2.8.4 WMO Status	The Province has a shortfall of 13% in terms of WMO designations. This is a gap identified.	The 13% target should form part of the 2023-2027 Implementation. Designation of LMs WMO is a requirement of the Waste Act.	It is difficult to set targets for WMO designations, since it is very dynamic as WMOs come and go due to e.g. retirement, resignations etc.
DFFE: Malcolm Mogotsi	24 October 2022	E-mail	3.2.3 Waste Collection, Transfer and Transport	Agreed that the waste collection and transport take a huge chunk of the waste budget. Since 2020 LMs who qualify could apply for MIG funding to address the issues of vehicle and waste disposal facilities non-compliance. Although this is meant for un-serviced poor households, the MIG funding can go a very long way in addressing and minimising the cost.	In addition to issuing the letters of support for MIG, the Province should identify those LMs that should benefit from MIG and engage the Municipal Managers to prioritise waste management for MIG allocation.	Noted
DFFE: Malcolm Mogotsi	24 October 2022	E-mail	MIG	MIG provide huge funding avenue especially on Yellow Fleet for both waste collection	The Province should prioritise capacity building to the Local	Noted. DEA&DP hosts capacity-building workshops with

				and landfill operations. In WC, there is several Technical Assessment Reports (TAR) which were sent back to the LMs due to inadequate information from the municipalities.	Municipalities on MIG funding of the specialized vehicles. The MIG funding can be of beneficial even addressing the non-compliances due to lack of covering and compacting the waste material because of yellow fleet.	municipalities. MIG funding of specialised vehicles can be included as a topic.
DFFE: Malcolm Mogotsi	24 October 2022	E-mail	3.2.7.5 Compliance at WDFs	Non-compliance is very high however, the IWMP is not specific as to what exactly are the drivers of non-compliances. One cannot specifically point where are the root causes. Is it something that has to do with yellow fleet? Is it broken fence or no security at the landfill sites?	There must not be a blanket approach when it comes to non-compliances especially in the IWMP. Noncompliance activities should be clear	Noted. The specifics around non-compliance are indicated under "*Conditions at Waste Management Facilities*".
DFFE: Malcolm Mogotsi	24 October 2022	E-mail	6.3 Implementation Table	3.2.1 Waste data, the IWMP identified low reporting of the waste information by the identified municipalities. This is an issue that must be	What is the Province going to do particularly addressing low reporting? What is the 'expected picture' to look like by	DEA&DP has liaised with the CKDM municipalities to report on outstanding IPWIS waste reports. Waste Calculator training has

				addressed, and it should form part of the 2023-2027 Implementation plan. It is not mentioned in the Implementation plan that the Province will address the low reporting.	2027 with respect to waste information reporting to the IPWIS?	been provided and subsequent warning letters have been issued to municipalities where non reporting has taken place and the reasons for non-reporting. Followed by liaison with ELE and a Pre-Compliance Notice is issued to the municipality. Recently, Prince Albert received a PCN for outstanding waste data. Waste management needs to be prioritised as municipalities and the relevant financial and human resources linked to this needs to be catered for as the reporting of waste to the IPWIS is mandatory and legislated.

DFFE: Malcolm Mogotsi	24 October 2022	E-mail	7.2 Reporting	Reporting on the implementation of the Provincial IWMP is very critical. The IWMP does not provide the list of the activities to be reported on.	The IWMP should include a table which contains the activities which will be reported on.	Noted. Progress will be reported in terms of each output indicator. See section 7.2.
DFFE: Malcolm Mogotsi	24 October 2022	E-mail	Section 12 of Waste Act.	Although it is acknowledged that this draft IWMP has adequate information however, the information is not packaged in such a way that it addresses Section 12 and 13.Several gaps have been identified but they are left hanging and not addressed in the Implementation plan of the 2023-2027.	I would like to propose that the province verify each provision of Section 12 and 13 to see whether the IWMP addresses every provision as stipulated.	Noted. The gaps have been used to inform prioritised needs. The goals and activities aim to respond to these prioritised needs.
DFFE: Malcolm Mogotsi	24 October 2022	E-mail	2017-2022 Implementation & 2023-2027 Implementation	The IWMP indicated that previous activities which were not implemented in 2017-2022 IWMP will be included in the 2022- 2027 Implementation Plan e, g. DoHS matters.	Please ensure that activities that matters be included. The Province should also be careful committing on activities or goals which the Province does not have control e, g. Industry issues. The	Noted.

					Implementation plan should talk to the issues of finance and responsibility	

Western Cape Government
FOR YOU

Invitation
7 October 2022

PUBLIC PARTICIPATION WORKSHOP FOR THE DEVELOPMENT OF THE WESTERN CAPE INTEGRATED WASTE MANAGEMENT PLAN 2022-2027 (WC IWMP)

Dear Stakeholder

In terms of section 11(1) of the National Environmental Management: Waste Act, 2008 (Act 59 of 2008), provincial departments responsible for waste management must prepare integrated waste management plans. The WC IWMP aims to provide strategic direction for waste management in the Western Cape.

The Department of Environmental Affairs and Development Planning cordially invites you to participate in our second public participation workshop for the Development of the WC IWMP.

Date:	7 October 2022
Time:	09:00 – 13:00
Venue:	Microsoft Teams – Webinar (Online)
RSVP by 23 September:	Martha.Strydom@westerncape.gov.za

Public participation workshop invitation sent to stakeholders

PROVINCIAL NOTICE

The following Provincial Notice is published for comment.

DR HC MALILA,
DIRECTOR-GENERAL

Provincial Legislature Building,
Wale Street,
Cape Town.

PROVINSIALE KENNISGEWING

Die volgende Provinsiale Kennisgewing word vir kommentaar gepubliseer.

DR HC MALILA,
DIREKTEUR-GENERAAL

Provinsiale Wetgewer-gebou,
Waalstraat,
Kaapstad.

ISAZISO SEPHONDO

Esi saziso silandelayo sipapashelwe ukunika izimvo.

GQIR HC MALILA,
MLAWULI-JIKELELE

ISakhiwo sePhondo,
Wale Street,
eKapa.

PROVINCIAL NOTICE

P.N. 125/2022 **11 November 2022**

DEPARTMENT OF ENVIRONMENTAL AFFAIRS AND DEVELOPMENT PLANNING

NATIONAL ENVIRONMENTAL MANAGEMENT: WASTE ACT, 2008 (ACT 59 OF 2008)

INVITATION FOR PUBLIC COMMENT: DRAFT WESTERN CAPE INTEGRATED WASTE MANAGEMENT PLAN (2022–2027)

I, Anton Wilhelm Bredell, Provincial Minister of Local Government, Environmental Affairs and Development Planning in the Western Cape, under section 73, read with section 11(7), of the National Environmental Management: Waste Act, 2008 (Act 59 of 2008) (the Act), publish the Draft Western Cape Integrated Waste Management Plan (2022–2027) (the Draft Plan), prepared in terms of section 11(1) of the Act, and invite members of the public to submit written representations on or objections to the Draft Plan.

Section 11(1) of the Act requires that all provincial departments responsible for waste management prepare integrated waste management plans and that, in terms of section 11(7) of the Act, before an integrated waste management plan is finalised, a consultative process in accordance with sections 72 and 73 of the Act must be followed.

The Draft Plan may be viewed at—

(a) the offices of the municipal manager of the local authority; and

(b) https://www.westerncape.gov.za/eadp/about-us/meet-chief-directorates/environmental-quality/waste-management/.

Alternatively, details may be obtained electronically on request by email to August.Hoon@westerncape.gov.za or Dean.Gilbert@westerncape.gov.za.

For queries, contact:

Mr August Hoon at tel: 083 566 2762, or by email at: August.Hoon@westerncape.gov.za; or

Mr Dean Gilbert at tel: 073 829 0429, or by email at: Dean.Gilbert@westerncape.gov.za.

Written representations on or objections to the Draft Plan must be submitted within 30 days from the date of publication of this Notice in the *Provincial Gazette*, by—

(a) posting the representations or objections to:
The Head of Department
Department of Environmental Affairs and Development Planning
Attention: Mr Saliem Haider
Private Bag X9086
Cape Town 8000;

(b) delivering the representations or objections to:
Mr Saliem Haider
Department of Environmental Affairs and Development Planning
Property Centre
1 Dorp Street
Cape Town 8001; or

(c) emailing the representations or objections to:
Saliem.Haider@westerncape.gov.za.

Representations or objections received after the closing date may be disregarded.

Signed at Cape Town on this 7th day of November 2022.

AW BREDELL
PROVINCIAL MINISTER OF LOCAL GOVERNMENT, ENVIRONMENTAL AFFAIRS AND DEVELOPMENT PLANNING

Provincial Gazette Notice – 11 November 2022 (placed in English, Afrikaans and isiXhosa)

18 Friday, November 11 2022 CAPE ARGUS

SPORT

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FORMULA ONE

Hamilton hoping for 'home' win

SEVEN-TIME Formula 1 world champion Lewis Hamilton speaks while being awarded the title of Citizen of Honour on Monday. Hamilton received the honour in gratitude for having waved the Brazilian flag and for having used Ayrton Senna's helmet at the Interlagos circuit in 2021. | JOEDSON ALVES EPA

LEWIS Hamilton returns to the scene of one of his greatest triumphs this weekend hoping to celebrate again by giving Brazil a 'home' winner at the Sao Paulo Grand Prix, the penultimate race this season.

The seven-time world champion was confirmed as an honorary Brazilian citizen this week and promptly declared that he felt "like now I am one of you" – a claim as strong a circuit for us as Mexico, but regardless, we want to keep up our momentum from recent races. So, we will keep working hard to hopefully be in the mix once again."

Last year, Hamilton kept his title challenge alive in sensational fashion by charging through the field from 10th to take a stunning victory and then pulled aloft a Brazilian flag to signal his feelings and

INDEPENDENT MEDIA

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Western Cape Government FOR YOU

IMPORTANT NOTICE

INVITATION FOR PUBLIC COMMENT DRAFT WESTERN CAPE INTEGRATED WASTE MANAGEMENT PLAN (2022 – 2027)

In terms of section 11(1) of the National Environmental Management: Waste Act, 2008 (Act 59 of 2008) (the Act), the provincial departments responsible for waste management must prepare integrated waste management plans. Members of the public are invited in terms of section 73 read with section 11(7) of the Act to submit written representations on or objections to the Draft Western Cape Integrated Waste Management Plan (2022 – 2027) (the Draft Plan).

The Draft Plan may be viewed at—
(a) the offices of the municipal manager of the local authority; and
(b) https://www.westerncape.gov.za/eadp/about-us/meet-chief-directorates/environmental-quality/waste-management/.

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Mr Dean Gilbert at tel: 073 829 0429, or by email at: Dean.Gilbert@westerncape.gov.za.

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The Head of Department
Department of Environmental Affairs and Development Planning
Attention: Mr Saliem Haider
Private Bag X9086
Cape Town 8000;
(b) delivering the representations or objections to:
Mr Saliem Haider
Department of Environmental Affairs and Development Planning
Property Centre
1 Dorp Street
Cape Town 8001; or
(c) emailing the representation or objections to:
Saliem.Haider@westerncape.gov.za.

Representations or objections received after the closing date may be disregarded.

LEWIS Hamilton returns to the scene of one of his greatest triumphs this weekend hoping to celebrate again by giving Brazil a 'home' winner at the Sao Paulo Grand Prix, the penultimate race this season.

The seven-time world champion was confirmed as an honorary Brazilian citizen this week and promptly declared that he felt "like now I am one of you" – a claim that Mercedes may hope helps power him and them to a first win of the season in Sunday's race.

To do that and extend his record of claiming at least one win in every season of his career since his debut in 2007, the 37-year-old Briton will need to beat the relentless runaway world champions Max Verstappen and Red Bull.

He did it last year with a spectacular demonstration of speed and courage to secure his third win at the fast and exciting Interlagos circuit, where the spectators generate a carnival atmosphere, and where he won his maiden title in 2008 as Felipe Massa scored Brazil's last home win in a Ferrari.

But despite two consecutive second place finishes behind newly-acclaimed two-time world champion Verstappen and a mounting sense of momentum, Hamilton and the 'silver arrows' know they face a formidable challenge.

"Interlagos is an iconic track and the scene of so many special F1 moments, including Lewis's spectacular performance last year in the 'sprint' and the race," said team boss Toto Wolff.

"And we're proud to be coming back to Brazil with Lewis having been made an honorary citizen – and having such good memories.

"On paper, it shouldn't be quite as strong a circuit for us as Mexico, but regardless, we want to keep up our momentum from recent races. So, we will keep working hard to hopefully be in the mix once again."

Last year, Hamilton kept his title challenge alive in sensational fashion by charging through the field from 10th to take a stunning victory and then pulled aloft a Brazilian flag to signal his feelings and revive memories of his childhood hero Ayrton Senna.

On Sunday, he will be a surrogate Brazilian and seek to win both the sprint tomorrow and the Grand Prix on Sunday. In last year's sprint he started last on the grid and finished fifth before receiving a five-place grid penalty for Sunday's contest.

The time, there will be no titles on offer as Mercedes battle to overhaul Ferrari for second place in the constructors' championship ahead of a scrap between Alpine and McLaren for fourth.

A similar close contest is in prospect between Alfa Romeo and Aston Martin for sixth as the F1 circus heads towards the seasonal finale in Abu Dhabi.

After the political storms in Mexico, where Red Bull were told of their punishment for breaking last season's $145 million (about R2.532 billion) cost cap and then announced they were snubbing Sky TV, for alleged biased reporting, Verstappen should enjoy a calmer weekend as he seeks a record-extending 15th win in a season.

If he succeeds, it will mark Red Bull's 10th consecutive victory, a landmark moment to salute the contribution to their team by patriarch Dieter Mateschitz, who died last month. | AFP

FOOTBALL

Lloyd's predicts England triumph

ENGLAND have been tipped to win the World Cup in Qatar by Lloyd's of London based on a prediction model using players' collective insurable value as the commercial insurance market targets a hat-trick after picking the last two champions.

Lloyd's have predicted that Gareth Southgate's England side will beat Brazil in the final – with France, Argentina and Spain falling just short. The same model correctly identified Germany as winners in 2014 and France in 2018.

According to analysis backed by the Centre for Economics and Business Research, which ranks the teams based on the collective insurable value of their players, England's squad will have an estimated insurable value of £3.17 billion (about R61.326b).

They edge out France (£2.66b) and Brazil (£2.56b) to claim top spot. Lloyd's said the assessment of insurable value comprises a variety of metrics like wages, sponsorship, age and on-field positions.

Using this methodology to play out the tournament in full, Lloyd's predicted that England – champions in 1966 – will finish top of Group B in Qatar and seal knockout wins over Senegal, France, Spain and then Brazil.

England midfielder Jude Bellingham was rated the most insurable player at the World Cup, followed by France striker Kylian Mbappe and Brazil forward Vinicius Jr.

Research also found that players aged between 18-24 have an average insurable value of £32 million compared to £12m for players over 31.

Lloyd's said the research was designed to emphasise the need for athletes at all levels and in all sports to consider their insurance protection packages and coverage.

England's first World Cup game will be against Iran on November 21. | Reuters

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Department of Environmental Affairs and Development Planning
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(c) emailing the representation or objections to:
Saliem.Haider@westerncape.gov.za.

Representations or objections received after the closing date may be disregarded.

ISIMEMO SOKUFUMANA IZIMVO ZOLUNTU ISICWANGCISO SOLAWULO LWENKUNKUMA OLUKUHLANGANISIWEYO SENTSHONA KOLONI (2022 – 2027)

Ngokwecandelo 11(1) lomthetho i*National Environmental Management: Waste Act, 2008* (uMthetho 59 ka-2008), (uMthetho) amasebe amaphondo anoxanduva lokulawula inkunkuma kufuneka alungise izicwangciso ezihlangeneyo zolawulo lwenkunkuma, Uluntu luyamenywa ngokwecandelo lama-73 elifundwa kunye necandelo 11(7) loMthetho ukuba lingenise izimvo ezibhaliweyo malunga okanye izichaso kuQulunqo lweSicwangciso esiHlangeneyo soLawulo lweNkunkuma seNtshona Koloni (2022 – 2027) (uQulunqo lweSicwangciso).

UQulunqo lweSicwangciso sinokujongwa apha—
(a) kwiiofisi zomphathi kamasipala kagunyaziwe wengingqi; kunye
(b) https://www.westerncape.gov.za/eadp/about-us/meet-chief-directorates/environmental-quality/waste-management/.

Kungenjalo, iinkcukacha zinokufunyanwa ngekhompyutha xa zicelwe nge-imeyili apha August.Hoon@westerncape.gov.za okanye Dean.Gilbert@westerncape.gov.za.

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Izimvo ezibhaliweyo malunga okanye izichaso kuQulunqo lweSicwangciso kufuneka zingeniswe zingaphelanga iintsuku ezingama-30 ukususela kumhla wokupapashwa kweSaziso *kwiGazethi yePhondo*, ngo—
(a) ngokuthumela okanye izichaso kwi:
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IKapa 8001; okanye
(c) ngokuthumela izimvo okanye izichaso ngeimeyili ku-:
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Newspaper advertisement: Cape Argus – 11 November 2022 (English and isiXhosa)

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Wes-Kaapse Regering VIR JOU

BELANGRIKE KENNISGEWING

OPROEP OM OPENBARE KOMMENTAAR WES-KAAPSE GEÏNTEGREERDE KONSEPAFVALBESTUURSPLAN (2022 – 2027)

Ingevolge artikel 11(1) van die "National Environmental Management: Waste Act, 2008" (Wet 59 van 2008) (die Wet), moet die provinsiale departemente wat verantwoordelik is vir afvalbestuur, geïntegreerde afvalbestuursplanne opstel. Die publiek word ingevolge artikel 73, saamgelees met artikel 11(7), van die Wet genooi om skriftelike vertoë oor of besware teen die Wes-Kaapse Geïntegreerde Konsepafvalbestuursplan (2022 – 2027) (die Konsepplan) in te dien.

Die Konsepplan is beskikbaar by—
(a) die kantore van die munisipale bestuurder van die plaaslike owerheid; en
(b) https://www.westerncape.gov.za/eadp/about-us/meet-chief-directorates/environmental-quality/waste-management/.

Andersins is besonderhede elektronies beskikbaar op versoek per e-pos aan: August.Hoon@westerncape.gov.za of Dean.Gilbert@westerncape.gov.za.

Vir navrae, kontak:
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Mnr Dean Gilbert by tel: 073 829 0429, of per e-pos by: Dean.Gilbert@westerncape.gov.za.

Skriftelike vertoë of besware oor die Konsepplan moet binne 30 dae van die datum van publikasie van die Kennisgewing in die *Provinsiale Koerant* ingedien word deur—
(a) die vertoë of besware te pos aan:
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Departement van Omgewingsake en Ontwikkelingsbeplanning
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Kaapstad 8000;
(b) die vertoë of besware af te lewer by:
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Kaapstad 8001; of
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Vertoë of besware wat ná die sluitingsdatum ontvang word, sal moontlik nie oorweeg word nie.

Newspaper advertisement: Die Burger – 11 November 2022 (Afrikaans)

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Department of Environmental Affairs and Development Planning

Chief Directorate: Environmental Quality

Directorate: Waste Management

www.westerncape.gov.za

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