Municipal solid waste management in the North West Province: Governance strategies to address existing performance gaps and capacity constraints

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Acknowledgements

To those who stood by me, and to those I lost. Some to the Lord, some to the world.

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Abstract

Key Terms:

Domestic Waste, Integrated Waste Management, Municipal, Solid Waste, Waste Services, Waste, Waste Management, Waste Management Strategy,

In order to address the growing waste concerns facing South Africa, the Department of Environmental Affairs (DEA) published the National Waste Management Strategy in 2012. The ultimate aim of the strategy is to effect the realisation of the objectives of the National Environmental Management Waste Act (NEMWA). The NEMWA is a sector environmental law based on the waste management hierarchy and its provisions apply to waste management activities in all three government spheres amongst others. The NWMS provides for eight distinct goals with accompanying targets to be met by 2016. Some of these goals and targets speak directly to the solid waste management mandate of local government. Concerns about the capacity of municipalities to see the execution of this mandate however, raise questions about the likelihood of some NWMS goals and targets being met by 2016. The North West Province serves as a case in point where recent reports by the office of the Auditor General have highlighted significant non-compliance in local government with the provisions of the existing waste law and policy framework of South Africa. It appears form these reports that a number of performance gaps and capacity constraints exist as far as it concerns municipal solid waste management. Against this back ground the study questions the governance strategies necessary within the municipalities of the North West Province to: a) address the existing performance gaps and capacity constraints and b) progressively move towards meeting the NWMS goals and targets as far as it concerns solid waste management. The study will explore the objectives, goals and targets of the NWMS against the background of the National Environmental Management Act (NEMA) and NEMWA, with a specific focus on solid waste management. The study will further review the documented performance gaps and capacity constraints as a far as it concerns solid waste management in municipalities in the North West province, specifically.

Opsomming

Sleutelwoorde:

Huishoudelike afval, geïntegreerde afvalbestuursplan, munisipale afval, afvalverwyderingsdiens, afvalbestuur, afvalbestuurstrategie, bestuur van vaste afval

Die Department van Omgewingsake het in 2012 die Nasionale Afvalbestuursstrategie gepubliseer om die kommer en uitdagings rondom afvalbestuur in Suid-Afrika aan te spreek. Die doel van die strategie is om die doelwitte van die *National Environmental Management Waste Act* (NEMWA) tot uitvoering te bring. Die NEMWA is 'n sektorale omgewingswet gebaseer op die afvalbestuurshiërargie en is van toepassing op al die afvalbestuursaktiwiteite in al drie owerheidsfere. Die strategie maak voorsiening vir agt doelwitte met gepaardgaande teikens wat teen 2016 bereik moet word. Sommige van die doelwitte en teikens is direk van toepassing op die bestuur van vaste afval, wat die mandaat van plaaslike owerhede is. Kommer rondom die kapasiteit van munisipaliteite om hierdie mandaat uit te voer laat egter vrae ontstaan rondom die waarskynlikheid en haalbaarheid van hierdie doelwitte teen 2016. Die Noordwes Provinsie dien as 'n goeie voorbeeld in hierdie geval, waar onlangse verslae van die Ouditeur-Generaal die beduidende nie-voldoening aan die bepalings van wetgewing en beleid in die plaaslike owerheidsfeer uitgelig het. Uit hierdie verslae blyk dit dat daar 'n aantal prestasie- en kapasiteitsbeperkinge bestaan met betrekking tot munisipale afvalbestuur. Teen hierdie agtergrond gesien, ondersoek hierdie studie vanuit 'n regsperspektief die owerheidsbestuurstrategieë wat nodig is vir munisipaliteite in die Noordwes Provinsie om: a) bestaande prestasie- en kapasiteitsbeperkinge aan te spreek, en b) om progressief te beweeg na die punt waar die doelwitte en teikens van die Nasionale Afvalbestuurstrategie nagekom word. Die studie verken die teikendoelwitte van die Nasionale Afvalbestuurstrategie teen die agergrond van die *National Environmental Management Act* (NEMA) en NEMWA, met 'n spesifieke fokus op die bestuur van vaste afval. Die studie hersien verder, meer spesifiek, die gedokumenteerde prestasie- en kapasiteitsbeperkinge met betrekking tot bestuur van vaste afval in die Noordwes Provinsie.

List of acronyms

Acronym	Description
AG	Auditor General
CBO	Community Based Organisation
CEM	Centre for Environmental Management
CoGTA	Department of Cooperative Government and Traditional Affairs
DEA	Department of Environmental Affairs
EMI	Environmental Management Inspector
EPR	Extended Producer Responsibility
EPWP	Extended Public Works Programme
IDP	Integrated Development Plan
IndWMP	Industry Waste Management Plan
IWMP	Integrated Waste Management Plan
NDWCS	National Domestic Waste Collection Standard
NEMA	National Environmental Management Act 107 of 1998
NEMWA	National Environmental Management: Waste Act 59 of 2008
NWA	National Water Act 36 of 1998
NWMS	National Waste Management Strategy
PPP	Public private partnership
SALGA	South African Local Government Association
SANS	South African National Standard
SAWIS	South African Waste Information System
WCMS	Waste Classification Management System
WMCO	Waste Management Control Officer
WMO	Waste Management Officer

1. Introduction

'Waste not, want not' is an adage that many people may have heard from parents and grandparents, along with tales of how in days gone by nothing was ever wasted. Despite this wisdom, modern life is characterised by waste, which has become a grave concern, globally as well as on the national front (Bosman, 2009:699). In South Africa the predicted population growth and economic development will result in 2 to 3 per cent more waste being generated per annum (South Africa, 2008). Further, according to the DEA National Waste Information Baseline Report (DEA, 2012c), the modelling of available data revealed that South Africa generated approximately 108 million tonnes of waste in 2011, 98 million tonnes of which was disposed of in landfills. Of this, 59 million tonnes were general waste, with a mere 10 per cent of waste having been recycled in the year of reporting (South Africa, 2008; DEA, 2012a). International and domestic waste law constantly develops to create and maintain a regulatory regime to deal with the causes, effects and overall handling of different waste types. This regulatory regime involves a range of role players, among them public authorities or state governments.

This chapter presents the problem statement as well as the main research aim and questions. The chapter concludes by giving a summary of the structure of the dissertation.

1.1 Problem statement

In order to address the growing waste concerns facing South Africa, the Department of Environmental Affairs (DEA) published the National Waste Management Strategy in 2012 (DEA, 2012b). The ultimate aim of the strategy is to effect the realisation of the objectives of the National Environmental Management Waste Act (NEMWA) (South Africa, 2008). The NEMWA is a sector environmental law based on the waste management hierarchy and its provisions apply to waste management activities in all three government spheres amongst others.

The NWMS provides for eight distinct goals with accompanying targets to be met by 2016. Some of these goals and targets speak directly to the solid waste

management mandate of local government. Concerns about the capacity of municipalities to see the execution of this mandate, however, raise questions about the likelihood of some NWMS goals and targets being met by 2016. The North West Province serves as a case in point where recent reports by the office of the Auditor General have highlighted significant non-compliance in local government with the provisions of the existing waste law and policy framework of South Africa. It appears from these reports that a number of performance gaps and capacity constraints exist as far as it concerns municipal solid waste management (DEA, 2012b).

1.2 Research Aim and Questions

Against this back ground the study questions the governance strategies necessary within the municipalities of the North West Province to: a) address the existing performance gaps and capacity constraints and b) progressively move towards meeting the NWMS goals and targets as far as it concerns solid waste management. The study will explore the objectives, goals and targets of the NWMS against the background of the National Environmental Management Act (NEMA) (South Africa, 1998a), and NEMWA, with a specific focus on solid waste management. The study will further review the documented performance gaps and capacity constraints as a far as it concerns solid waste management in municipalities in North West province, specifically. Based on the identified disconnect between the *status quo* in municipalities and the objectives, goals and targets of the NWMS, the study will propose a number of strategies for improved solid waste management in local government. The objective of the study is to generate knowledge about the future actions (governance strategies) that may be necessary for local government to successfully pursue the objectives of the NWMS.

The main aim of the study is to critically reflect on the governance strategies necessary within the municipalities of the North West Province to: a) address existing performance gaps and capacity constraints and to: b) progressively move towards meeting the NWMS goals and targets as far as it concerns solid waste management.

The main research questions explored by the study are:

- What is the law and policy mandate of municipalities in South Africa as far as it concerns solid waste management?
- What are the existing performance gaps and capacity constraints as far as it concerns municipal solid waste management in North West Province, specifically?
- Which actions (governance strategies) are necessary within local government in the North West Province to: a) address the identified performance gaps and capacity constraints and b) progressively move towards meeting the NWMS goals and targets as far as it concerns solid waste management?

The study will be conducted mainly by means of literature review, based on primary and secondary law and governance sources. This literature review will be limited to South African sources due to time and capacity constraints. The literature review will be informed by semi-structured interviews with the office of the Auditor General (AG) and relevant municipal employees within the North West province. The legal regime in place on or before November 2013 is the focus of this research. It is acknowledged that the current legal regime is in a state of flux and therefore changes after that date will not be reflected.

The study will in chapter 2 reflect on the law and policy relating to municipal solid waste management in South Africa, before reflecting on the *status quo* of municipal solid waste management in the North West province in chapter 3. Chapter 4 will reflect on the proposed strategies towards meeting the NWMS and addressing existing gaps and constraints. Chapter 5 will contain the conclusion.

1.3 Structure of the Dissertation

The dissertation is structured around the following chapters.

- Chapter 1 sets out the introduction, problem statement and research aim and question.

- Chapter 2 contains the literature review, which sets out the policy and legal framework against which form the basis for the interview questions conducted.

Essentially the study had to determine what the policy and legal objectives for solid waste management are in south Africa in order to contextualize and identify the performance gaps and capacity constraints.

- Chapter 3 describes the methodology and analysis, whilst interpreting the research results.
- Chapter 4 discusses the proposed strategies to address the identified performance gaps and capacity constraints as highlighted in chapter 3.
- Chapter 5 draws conclusions in relation to the main aim and research questions demonstrating that the dissertation achieved the desired objectives.

2. Law and policy mandate for local government waste management in South Africa

Waste management in South Africa faces numerous, wide-ranging challenges. The NWMS lists 10 challenges that it perceives as priorities and that it plans to address through a number of plans, targets and measures (DEA, 2012b):

2.1 NWMS: Ten challenges for waste management in South Africa

1. A growing population and economy, which means that greater volumes of waste are generated, thus resulting in pressures on already stressed waste management facilities.
    - In 2006/2007 an estimated 24.1 million tonnes/annum was disposed of in landfills in South Africa. The low , middle, and high-income groups accounted for 0.41, 0.74 and 1.29 kg/capita/day, respectively, and this is expected to grow by 2 to 3 per cent per annum. (DEA, 2012a)
2. Increased complexity of the waste stream resulting from urbanisation and industrialisation. This directly affects the complexity of waste management, which is further compounded by the mixing of hazardous waste with general waste.
3. Historical backlog of waste services for, especially, urban informal areas, tribal areas and rural formal areas. Although 61 per cent of all South African households had access to kerbside domestic waste collection services in 2007, this access remains highly skewed in favour of affluent and urban communities. Inadequate waste services lead to unpleasant living conditions and a polluted, unhealthy environment.
4. Limited understanding of the main waste flows and national waste balance, because the submission of waste data is not obligatory and, where data is available, it is often unreliable and contradictory.

- According to the DEA 'National Waste Information Baseline Report' (2012) iii, the absence of a fully operating South African Waste Information System (SAWIS) results in a general lack of accurate waste data in South Africa. It is, however, expected that the promulgation of the National Waste Information Regulations (GNR 625 in *GG* 35583 of 13 August 2012) in terms of the NEMWA, which came into effect on 1 January 2013, will provide the necessary incentives for accurate waste data to be reported to SAWIS. In terms of these regulations reporting of waste data to SAWIS will become mandatory for persons conducting certain waste management activities.

5. A policy and regulatory environment that does not actively promote the waste management hierarchy. This has limited the economic potential of the waste management sector which has a turnover estimated to be about R10 billion per annum. Waste collection and the recycling industry make meaningful contributions to job creation and GDP, and they can expand further.
6. Absence of recycling infrastructure, which will enable separation of waste at source and diversion of waste streams to material recovery and buy-back facilities.
    - A total of 87 per cent of municipalities do not have the capacity or infrastructure to pursue waste minimisation. Metropolitan municipalities and larger cities have the highest percentage of households provided with a weekly waste collection service. However, together they account for 54 per cent of the national backlog in waste services (DEA, 2007). In excess of 80 per cent of the municipalities are initiating recycling activities in one form or another but these projects are generally struggling to gain momentum due to, inter alia, a lack of capacity. There has, however, been a marked increase in informal recycling where informal recyclers are removing recyclables (cardboard, bottles, tins etc) out of collection bags or containers before collection by municipalities.
7. Growing pressure on outdated waste management infrastructure, with declining levels of capital investment and maintenance.
    - Total allocations to municipalities increased from R55 billion in 2009/10 to R78 billion in 2012/13. Despite this significant increase, service delivery challenges (including waste management services) persist (SALGA, 2011).

8. Waste management services suffer from persuasive under-pricing, which means that the costs of waste management are not fully appreciated by consumers and industry. Thus waste disposal is preferred to other options in the waste hierarchy.
    - A case in point is the 2011/12 price for the removal and disposal of an 85 ℓ refuse bin, which cost R33.90 per week in the City of Tshwane (City of Tshwane Environmental Management Department, 2013). This amounts to approximately R408 per tonne per year. The same service in Australia, for example, costs approximately R816 per tonne per year (BDA Group, 2013).
9. Few waste treatment options are available to manage waste; where they are available, they are more expensive than landfill costs.
10. Lack of adequate, compliant landfills and hazardous waste management facilities, which hinders the safe disposal of all waste streams. Although estimates put the number of waste handling facilities at more than 2000, a significantly large proportion of these are currently unpermitted.

Most of these challenges relate to the functional governance domain of municipalities and as such serve to emphasise the role of local government in waste management in South Africa, generally. Waste management in this context refers to

the sum total of the management endeavours regarding, inter alia, the collection and handling, transportation, transfer, treatment and the disposal of waste. Local government in South Africa has an explicit legal mandate to assist the national and provincial authorities in keeping the country clean and to manage waste well. The foundations of this mandate are municipalities' general constitutional environmental duties as embodied in ss 7(2) and 24 of the Constitution, read in conjunction with the overall objects of local government in s 152(1)*(b)* and *(d)*.

The National Environmental Management Waste Act 59 of 2008 (NEMWA) further confers upon the entire government a general duty to put in place uniform measures that seek to reduce the amount of waste that is generated; and, where waste is generated, to ensure that it is reused, recycled and recovered in an environmentally sound manner, before being safely treated and disposed of (South Africa, 2008:section 3). This general duty typically also applies to municipalities' approach to solid waste management.

Before delving further into the extent and meaning of the role of municipalities in waste management in South Africa it is necessary to clarify: a) the meaning of 'waste'; and b) the type of activities included in the legal definition of waste.

2.2. Key definitions

The most important definitions for purposes of municipalities' understanding of the NEMWA and the NWMS are contained in s 1 of the NEMWA. For purposes of this study some of these definitions are highlighted below (South Africa, 2008:section 1):

Waste

> means any substance, whether or not that substance can be reduced, re-used, recycled and recovered—
>
> *(a)* that is surplus, unwanted, rejected, discarded, abandoned or disposed of;
>
> *(b)* which the generator has no further use of for the purposes of production;
>
> *(c)* that must be treated or disposed of; or
>
> *(d)* that is defined as a waste by the Minister by notice in the Gazette,

and includes waste generated by the mining, medical or other sector, but-

(i) a by-product is not considered a waste; or

(ii) any portion of waste, once re-used, recycled and recovered, ceases to be waste.

By-products are excluded from the NEMWA definition of waste. A by-product is defined as 'a substance that is produced as part of a manufacturing or extraction process that is primarily intended to produce another substance which the generator intends to exploit or market on terms which are advantageous to the generator in a subsequent process, without any further processing." For an understanding of the legal relevance of the distinction between these concepts and for other interpretational matters, see the DEA 'Understanding the definition of waste' (DEA, 2010a).

Despite the apparent inclusive reach of this definition, the following are excluded from its scope (South Africa, 2008:s4(1)): radioactive waste, residue deposits, residue stockpiles and the disposal of explosives. These waste types are regulated in terms of other Acts (National Nuclear Regulator Act 47, 1999; Mineral and Petroleum Resources Development Act 28, 2002; Explosives Act 26, 1956). This is relevant to the extent that municipalities' duties and obligations in terms of the NEMWA only accrue in terms of the waste types included in the Act's definition of waste and in the context of waste management services and waste management activities.

It is important to note that different laws may define 'waste' differently for purposes of the Act. For example, the National Water Act 36 of 1998 in section 1 defines 'waste' to include

> any solid material or material that is suspended, dissolved or transported in water (including sediment) and which is spilled or deposited on land or into a water resource in such volume, composition or manner as to cause, or to be reasonably likely to cause, the water resource to be polluted (South Africa, 1998b:Section 1(1)(xxiii)).

Waste management services

refers to waste collection, treatment, recycling and disposal services (South Africa, 2008:s 1).

Waste management activities

means any activity listed in Schedule 1 of the NEMWA, or as published by notice in the *Gazette* in terms of section 19 of the Act, and includes but is not limited to the importation and exportation of waste, the generation of waste, including the undertaking of any activity or process that is likely to result in the generation of waste, the accumulation and storage of waste, the collection and handling of waste, the reduction, re-use, recycling and recovery of waste, the trading in waste, the transportation of waste, the transfer of waste, the treatment of waste and the disposal of waste (South Africa, 2008: s 1).

An inclusive reading of these definitions suggests that often waste management *services* will amount to waste management *activities*. A typical example would be municipal refuse collection services (a waste management service) and the transportation of waste to disposal facilities (a waste management activity) – both of which form part of the waste management mandate of local government.

2.3. Waste management challenges and the corresponding mandate of local government through the lens of the National Waste Management Strategy

With the aim of addressing the waste management challenges of South Africa and realising the objectives of the NEMWA, the Department of Environmental Affairs (DEA) published the NWMS in 2012.

As per chap 2 (part 1) of the NEMWA, the NWMS was published for immediate implementation on 4 May 2012. No direct sanction accompanies failure to give effect to, or for a contravention of the NWMS. This renders its legal status unclear. However, the NEMWA is defined in s 1 to include any regulations, notices or other subordinate legislation issued or made in terms of the Act. The NWMS is typically such a notice. Section 67*(f)* of the NEMWA states that a person commits an offence if that person contravenes or fails to comply with a norm or standard established in terms of the Act, while s 68(2) sets out the penalties that will apply under these

circumstances. To the extent that the NWMS creates norms and sets standards, one may argue that the offences and penalties in terms of the Act also apply with respect to the NWMS. Municipalities would therefore be well advised to treat the NMWS as binding law.

The objects of the strategy are based on the steps in the waste management hierarchy that generally informs waste management in South Africa. The hierarchy consists of the options for waste management during the waste lifecycle. The options are arranged in descending order of priority, namely, waste avoidance and reduction, reuse and recycling, recovery, and treatment and disposal as a last resort (South Africa, 2008:s 2(a)). Although the objectives of the NEMWA stipulate the desired state with respect to implementing this hierarchy, the reality at present looks quite different, as illustrated by figure 1 (adapted from Bosman, 2009:709; DEA, 2012b:18).

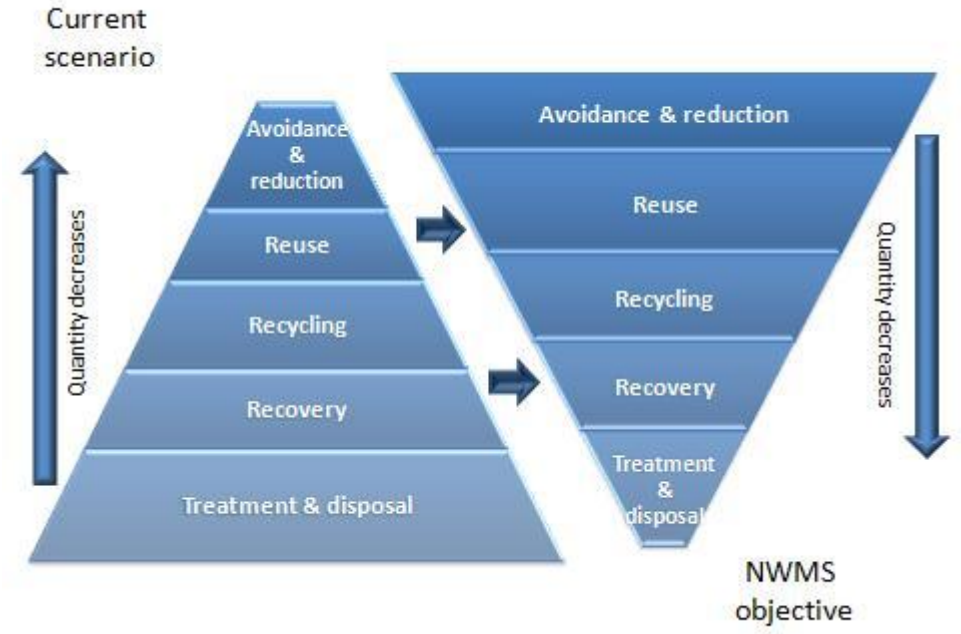

Figure 1: The status quo of the implementation of the waste hierarchy in South Africa

The NWMS is aligned with the Government-wide Monitoring and Evaluation System. The aim of the system is to contribute to improved governance and to enhance the

effectiveness of public sector organisations and institutions. Two of its outputs include the enhancement of the protection of natural resources and environmental assets and the reduction of greenhouse gas emissions, climate change and the improvement of air quality, waste minimisation, diversion of waste from landfill, composting and reduced resource consumption. (The Presidency 2007).

The NWMS has a framework of eight goals, each with targets to be met by 2016. These goals, which are helpful in understanding the direction that waste management will take in the local government sphere, among others, are summarised in table 1, and are discussed in greater detail in 3.2 (DEA, 2012b: 7).

Table 1: NWMS goals

Goal	Description	2016 Targets
Goal 1	Promote waste minimisation, reuse, recycling and recovery of waste.	• 25% of recyclables diverted from landfill sites for reuse, recycling and recovery. • All metropolitan municipalities and secondary cities and large towns to have initiated separation at source programmes. • Achievement of waste reduction and recycling targets set in industry waste management plans (IndWMPs) for paper and packaging, pesticides, lighting (CFLs) and tyre industries.
Goal 2	Ensure effective and efficient delivery of waste services.	• 95% of urban households and 75% of rural households have access to adequate levels of waste collection services. • 80% of waste disposal sites have permits.
Goal 3	Grow the contribution of the waste sector to the green economy.	• 69 000 new jobs created in the waste sector. • 2 600 additional Small Medium Enterprises and cooperatives participating in waste service delivery and recycling.

Goal 4	Ensure that people are aware of the impact of waste on their health, well-being and the environment.	• 80% of municipalities running local awareness campaigns. • 80% of schools implementing waste awareness programmes.
Goal 5	Achieve integrated waste management planning.	• All municipalities have integrated their integrated waste management plans (IWMPs) with their integrated development plans (IDPs) and have met the targets set in their IWMPs. • All waste management facilities required to report to the South African Waste Information System (SAWIS) and have waste quantification systems that report information to the Waste Information System (WIS).
Goal 6	Ensure sound budgeting and financial services for waste services.	• All municipalities that provide waste services have conducted full-cost accounting for waste services and have implemented cost-reflective tariffs.
Goal 7	Provide measures to remediate contaminated land.	• Assessment complete for 80% of sites reported to the contaminated land register. • Remediation plans approved for 50% of the confirmed contaminated sites.
Goal 8	Establish effective compliance with and enforcement of the NEMWA.	• 50% increases in the number of successful enforcement actions against non-compliant activities. • 800 EMIs appointed in the three spheres of government to enforce the NEMWA.

The NWMS's goals speak to the content of the NEMWA and generally serve to highlight the overall importance of municipalities in waste management and in achieving the law and policy objectives set for waste management across South Africa. The execution of the waste management function of municipalities may best be understood by considering the waste management tools provided for in the NEMWA.

2.3.1. Waste management tools for local government

The NEMWA provides for a wide range of waste management tools – some of which may go a long way in facilitating the execution of local government's waste management function and duties. In what follows, the waste management tools that may assist local government in practically working towards the implementation of the NEMWA and in meeting the objectives of the NWMS, are briefly discussed. Following the discussion of the waste management tools, in-depth attention is paid to the goals of the NWMS and the strategy's implications for local government.

2.3.1.1. The Waste Classification and Management System

The Waste Classification and Management System provides a methodology for the classification of waste and provides standards for the assessment and disposal of waste for landfill sites. Within the municipal context, the Waste Classification System is expected to aid in the management of waste disposal facilities and to ensure that waste is correctly classified (before being disposed of), thus enabling correct disposal practices.

Section 7(1)*(a)* of the NEMWA requires that national norms and standards for the classification of waste be developed. Waste is to be classified in line with the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), as specified in the South African National Standards (SANS) 10234 (SANS, 2007). GHS classifies hazardous substances according to the type and degree of risks that chemical compounds in different physical states, such as liquid, solid or gaseous, pose to human health and the environment. Once promulgated, the WCMS will replace the DWAF *Minimum Requirements for the Handling, Classification and Disposal of Hazardous Waste* (1998). It is envisaged that the WCMS will implement a management system for hazardous waste consisting of waste manifests, safety data sheets, container labelling and detailed storage records. It is furthermore envisaged that the WCMS will improve the management and quality of data available on hazardous waste and ensure reporting to SAWIS (South Africa, 2008b:39-40). The National Waste Classification and Management Regulations were published in GN 634 in *GG* 36784 of 23 August 2013. The national norms and standards for assessment of waste for landfill and the national standards for disposal of waste to

landfill sites were published in GN 635 and 636 in *GG* 36784 of 23 August 2013 respectively.

2.3.1.2. Norms and standards

Norms and standards establish baseline regulatory standards for managing waste at each stage of the waste management hierarchy. Section 9(1) of the NEMWA deals with waste service standards and requires that municipalities must exercise their executive authority to deliver local waste management services, including waste removal, waste storage and waste disposal services, in a manner that does not conflict with the norms and standards set by national and provincial government (South Africa, 2008:ss 7, 8 & 9(1)).

The NEMWA (chapter 2, part 2) provides for the development of an integrated system of norms and standards across all three spheres of government. The establishment of certain norms and standards at national level is obligatory, while the development of others is at the discretion of the DEA as set out in the NEMA s 7(1)–(6). Examples of norms and standards that have already been set at the national level include Draft Norms and Standards for the Storage of Waste (DEA, 2011d) and the National Domestic Waste Collection Standards (DEA, 2011a). Standards may also be set at the provincial level provided that they are not in conflict with any national norms and standards (DEA, 2012b:s 8(1)–(5)). Municipalities may set local waste service standards in accordance with NEMWA s 9(1)–(5). In order to avoid the proliferation of norms and standards, provincial and local government norms and standards will only be developed where national norms and standards cannot effectively address provincial or local waste management issues.

The NEMWA further requires municipalities to exercise their executive authority and to perform their duties in relation to waste services, including waste collection, waste storage and waste disposal services by, inter alia, adhering to all national and provincial norms and standards.

Section 9(2) of the NEMWA creates a number of duties for municipalities including the duty to: a) integrate their waste management plans with their IDPs (see para

2.3.2.2 below); b) ensure access to waste services for all; c) provide waste services at an affordable rate in line with a municipality's tariff policy; and d) ensure sustainable services through effective and efficient management, while keeping separate financial statements, including a balance sheet of waste services provided.

Municipalities may also set local standards for the separation, compacting and storage of solid waste as part of their municipal waste services (South Africa, 2008: Section 9(3)*(c)*). They may set local standards for the management of solid waste, which is disposed of by the municipality or at a waste disposal facility owned by the municipality. Such standards may include requirements in respect of the avoidance and minimisation of the generation of waste and the reuse, recycling and recovery of solid waste (South Africa, 2008:Section 9(3)*(b)*). Municipalities may also set local standards in respect of the directing of solid waste (collected as part of the municipal service or that is disposed of by the municipality or at a municipal waste disposal facility) to specific waste treatment and disposal facilities. Local standards may also be set for the control of litter (South Africa, 2008:Section 9(3)(*c)-(d)*).

The National Domestic Waste Collection Standards (NDWCS) set out standards for municipalities' domestic waste collection services in terms of the NEMWA. The standards provide the benchmark for a variety of activities associated with domestic waste collection services, such as the levels of waste collection services, waste collection, drop-off centres for recyclables, collection vehicles and health and safety associated with waste collection services, communication awareness, and waste collection customer service standards for kerbside collection of waste (DEA, 2011a).

Notably, the NDWCS stipulates that the levels of waste service may vary between different types of services and settlements. Provision is made in para 3 for a distinction between: on site appropriate and regularly supervised disposal (applicable mainly to remote rural areas with low-density settlements and farms supervised by a waste management officer appointed in accordance with s 10 of the NEMWA); community transfers of waste to central collection points (mainly applicable to medium-density settlements); organised transfer to central collection points and/or kerbside collection (usually applicable to high-density settlements); and a

combination of community transfer and organised transfer for medium- to high-density settlements.

2.3.1.3. Licensing of activities

The purpose of licensing in the waste sector is to ensure that specific conditions are set to regulate waste management activities that have been identified as having the potential to affect the environment detrimentally.

Section 20 of the NEMWA provides that any activity listed in s 19 requires a waste management licence before such an activity is conducted. The list of waste management activities requiring authorisation have been published in GNR 921 in *GG* 37083 of 29 November 2013 (DEA, 2013b). A distinction is made between Category A, Category B and Category C listed activities, with the differentiation between the categories being determined by thresholds. Category A activities require a basic assessment to be conducted in accordance with the NEMA Environmental Impact Assessment (EIA) Regulations (DEA, 2010c). Category B activities require a full assessment report in terms of the NEMA EIA Regulations (DEA, 2010c). Category C activities must be conducted in accordance with the relevant published Norms and Standards pertaining to the particular activity. Licence applications lodged by municipalities to the national or provincial departments must conform to the requirements stipulated in ss 45, 46 and 47 of the NEMWA. In terms of Category A activities the MEC is the licensing authority, while the Minister (the DEA) is the licensing authority for Category B activities. Section 43 of the NEMWA sets out the competencies in respect of the Minister or the MEC regarding the licensing of waste management activities. Section 43(1)*(c)*(iii) renders the MEC the competent authority with regard to the licensing of municipal waste management activities.

Because of the nature of their waste management activities (including the rendering of waste management services), municipalities require waste management licences. The main activity of a municipality that requires a waste licence is the provision of waste disposal facilities e.g. landfill sites. A licence is typically also required for the provision of recycling infrastructure through, inter alia, transfer stations for the temporary storage of waste as well as for treatment and storage of waste.

At present many municipalities are operating facilities licensed in accordance with s 20 of the Environmental Conservation Act 73 of 1989 (ECA). The NEMWA caters for the transitional arrangements in these instances. Section 81 of the NEMWA states that, despite the repeal of ECA s 20, a permit issued in terms of this section remains valid subject to the following: a) that the holder of the ECA permit must apply for a waste management licence in terms of the NEMWA when required to do so by the licensing authority, in writing, and within the specified period; b) as soon as a NEMWA licence is issued for a specific activity, an existing ECA permit for the same activity lapses; c) a permit issued in terms of the ECA lapses if a waste management licence is issued in terms of the NEMWA in respect of the same waste management activity; and d) if the holder fails to apply for a NEMWA licence as per the requirements of the Act or if the licensing authority refuses the application for any reason. When an ECA permit lapses in the any of the ways provided, the permit holder remains liable for taking all measures that are necessary to ensure that the cessation of the activity is done in a manner that does not result in harm to health or the environment. The provisions of the NEMWA will apply during the period for which an ECA permit remains valid as if it was a waste management licence issued in terms of the NEMWA (South Africa, 2008:s 81(1)-(6)).

2.3.1.4. Waste management planning

A number of waste management plans are required in terms of South African waste law. These plans serve different purposes, as they apply to different public and private bodies.

2.3.1.4.1. Industry waste management plans

Industry waste management plans (IndWMPs) are aimed at collective planning by industry to manage products once they become waste and to collectively set targets for industrial waste reduction, recycling and reuse of waste (South Africa, 2008:s 12; DEA, 2012b:45-7).

IndWMPs effectively give industries the opportunity to set additional standards for their waste management activities. An IndWMP commits industries to targets for the

management of specific wastes, eg with respect to recycling, recovery or reuse or, in some cases, with respect to waste collection. Industry must report on IndWMP targets.

Reports on IndWMPs are ordinarily given to the DEA, but the overseeing function may also be delegated or assigned to municipalities.

2.3.1.4.2. Municipal waste management plans

An integrated municipal waste management plan (IWMP) is a crucial waste management tool for local government. In terms of s 11 of the NEMWA all municipalities must submit an IWMP to the MEC for approval. IWMPs are critical tools for achieving the objectives of the NWMS and for implementing and complying with the NEMWA. The contents, design and implementation of IWMPs are discussed in detail in section 3.2.2.1.

2.3.1.4.3. Provincial and national waste management plans

The NEMWA requires of the national department and provincial departments responsible for waste management that they also prepare integrated waste management plans (South Africa, 2008:section 11(1)). National and provincial IWMPs must be submitted (South Africa, 2008:section 11(5)) to the Minister for approval. All municipal IWMPs must be coordinated and aligned with the waste management plans developed by the national and provincial authorities.

2.3.1.5. Extended producer responsibility

Extended producer responsibility (EPR**)** is another waste management tool provided for in the NEMWA. It is based on the understanding that industry is responsible beyond the point of sale for products that have toxic constituents or that pose waste management challenges, particularly where voluntary waste measures have failed (DEA, 2012b:7). Municipalities may have to bear extended producer responsibility in mind, among other things, as part of their procurement processes.

2.3.1.6. Priority wastes

The determination of priority wastes may be regarded as another waste management tool provided for in the NEMWA. It entails the categorisation of waste in accordance with the risks it poses to human health and the environment. Priority wastes require special waste management measures.

Section 14 of the NEMWA provides for the determination of priority wastes, and states that the Minister may, by notice in the *Gazette*, declare a waste to be a priority waste if he or she on reasonable grounds believes that the waste poses a threat to health, well-being or the environment because of the quantity or composition of the waste and that specific waste management measures are required to address the threat, or that the imposition of specific waste management measures in respect of the waste may improve reduction, reuse, recycling and recovery rates or reduce health and environmental impacts.

Section 15 of the NEMWA sets out the consequences once a waste is listed as a priority waste. Of relevance to municipalities (as legal personae) is s 15(2), which dictates that no person may recycle, recover, treat or dispose of a priority waste unless it is in accordance with the Act and the waste management measures contemplated in s 14(4). The Minister may, when listing a waste as a priority waste, prescribe specific waste management measures to be applicable to such a waste. Such measures may include, but are not limited to, preparation of industry waste management plans, the prohibition on the generation of priority wastes, measures for the management of priority wastes, as well as specific measures for the minimisation, storage, reuse, recycling and recovering, treatment and disposal of priority wastes. The Minister may also stipulate requirements for the registration and monitoring of, and reporting on priority wastes (South Africa, 2008:section 14(5)).

2.3.1.7. Economic instruments

As waste management tools, economic instruments encourage or discourage certain practices and augment others. Pricing of waste services, rebates on property rates and taxes, and grants available to municipalities are but a few examples of economic

instruments that may be used to drive consumers (eg municipalities or local community members) towards the adoption and implementation of the waste management hierarchy.

Municipalities would be well advised to adopt and use a hybrid of the available waste management tools to ensure compliance with South African waste law and to execute their waste management function in the local sphere. The clever and strategic use of the waste management tools may further be critical for municipalities' pursuit of the eight goals of the NWMS, which currently set the future agenda for waste management in South Africa.

2.3.2. Municipalities' pursuit of the National Waste Management Strategy goals and the implementation of the National Environmental Management Waste Act

The role and function of municipalities with respect to solid waste management can be explained from many different angles. In order to avoid the repetition of other scholarly works (Bosman, 2009:699-745; Glazewski, 2013:20-1 – 25-48; Kidd, 2008:176-93) and to provide municipalities with a sense of the future direction of waste management in South Africa, the following section, locates municipalities in the broader waste management programme, with specific reference to the eight goals outlined in the NWMS. As will become clear, the goals serve to repackage in practical terms, the objectives and provisions of the NEMWA as the key national waste law.

2.3.2.1. Goal 1: Promotion of waste minimisation, reuse, recycling and recovery

The primary aim of the NEMWA is to implement the waste management hierarchy (South Africa, 2008:s 2*(a)*). The first goal of the NWMS addresses the first four stages of this hierarchy and is structured around two objectives. The first objective is the promotion of waste minimisation in the design, composition and manufacturing of products. The second is the promotion of the reuse, recycling and recovery of goods and waste materials (DEA, 2012b:21). These objectives speak directly to the general duty created in terms of s 16 of the NEMWA which requires that the holders of waste (also municipalities) should adhere to the waste hierarchy – seeking first to avoid waste generation before moving down the hierarchy towards disposal as a last resort. This general duty applies to every municipality, both as a regulated entity and

as a local regulator. Every municipality must implement measures to apply the waste hierarchy and to comply with the s 16 general duty with respect to a) its own activities and b) how it regulates waste management in its own area of jurisdiction.

Arguably, the most significant role of local government in realising Goal 1 of the NWMS is its implementation and promotion of reuse, recycling or recovery of goods and waste materials. According to the NWMS, this will depend on: a) collection and sorting of general recyclable waste materials, supported by a recycling infrastructure, as well as general recyclable waste collection systems which will be coupled to existing waste collection services; and b) the establishment of material recovery facilities and buy-back centres along with the provision of space to sort waste into reusable and recyclable wastes. The realisation of Goal 1 further goes hand in hand with the National Domestic Waste Collection Standards (NDWCS), which requires that municipalities must encourage separation at the source of waste (DEA, 2011a). The NDWCS requires that all domestic waste must be sorted at source in all metropolitan and secondary cities, and that municipalities must provide clear guidelines to households regarding types of waste, the sorting of waste, appropriate containers, and removal schedules for each type of waste, while ensuring that community involvement in recycling is encouraged.

The NDWCS also provides specific standards for the collection of recyclable waste. It further provides that national coordinated awareness campaigns that support separation of recyclables from the domestic waste stream at source for all households, businesses and organisations must be implemented. It would be important for municipalities to join such initiatives.

The NDWCS requires that municipalities must provide an enabling environment for households to recycle domestic waste through the provision of, inter alia, kerbside collection and/or well-maintained drop-off centres, which are within easy reach of residents. Where a municipality does not provide for kerbside collection of recyclable wastes, it must cooperate with the recycling sector to ensure the provision of facilities where recyclables can be dropped off for collection by service providers. Mainstream recyclables (such as paper, cardboard, newspaper, plastic, glass, metal

cans and tins) must, in accordance with the level of service provided, be either collected at households or from communal collection points by the municipality or by a service provider. Non-mainstream recyclables (such as electronic waste, scrap metal, batteries, fluorescent lights, and used oil) must be routed to clearly marked drop-off centres at well-advertised locations for collection by service providers in the relevant recycling sector. In attending to the former, municipalities must consider: the use of existing infrastructure (such as garden waste centres and landfills) for the temporary accumulation and storage of recyclable waste; the use of bulk waste transfer facilities for recyclable waste by district municipalities; possible regionalisation of collection of recyclables to ensure the necessary economies of scale, especially in remote areas; collaboration with recycling companies to avoid potential bottlenecks; and (where no market exists for the recycling of source separated recyclables) waste-to-energy options before disposal (DEA 2011a: 2). The NDWCS further creates a duty for municipalities to provide easily accessible drop-off centres for recyclable wastes not collected at households. These centres must be conducive to reinforcing recycling behaviour, while being clean and user friendly.

Still in support of Goal 1 it is expected per the Standard for Disposal of Waste to Landfill that particular waste streams be diverted from landfill within prescribed periods (South Africa, 2013). Local control measures as implemented by municipalities for general waste entering landfill sites may reinforce diversion of recyclable waste from landfill sites, lessening the burden on these facilities and the local authorities in charge of operation and management. The NWMS also expects municipalities to take responsibility for diverting organic waste, which it is contended can be used as compost or in biogas digesters (South Africa, 2008:22).

Furthermore municipalities who undertake waste management activities that serve to encourage and promote the reuse, recycling and recovery of waste may in future be exempted from having to license these activities. The NWMS envisages that these activities will be listed as activities that do not require licensing in terms of the provisions of the Waste Classification and Management Regulations (South Africa, 2013). Municipalities will, however, have to demonstrate that any such proposed waste management activity could indeed be implemented and conducted

consistently and repeatedly in a controlled manner without unacceptable impact on, or risk to the environment or health.

Still applicable to Goal 1 of the NWMS, the NDWCS determines that, should a municipality hold waste that cannot be reused or recycled, it should explore the various options which exist for energy recovery, including biogas projects and methane gas from landfills, while waste-to-energy initiatives must be considered before disposal (DEA, 2011a:4.2.). It may be encouraging for municipalities to note that the envisaged transformation of municipal waste disposal practices will be supported by the development of national recycling infrastructure facilitated by the establishment of partnerships between the various role-players. Such infrastructure will for example enable separation at source of organic waste, hazardous waste and clean general recyclable waste as well as the collection of particular waste types that may contaminate general household waste, through specialised infrastructure. Municipalities will be critical for provision of local recycling infrastructure (forming part of the national infrastructure) and management in the local sphere of different waste streams. The NWMS at 24 sets an onerous target for all metropolitan municipalities, secondary cities and large towns to have initiated separation-at-source programmes by 2015.

2.3.2.2. Goal 2: Effective and efficient delivery of waste services

The most prominent role of municipalities in terms of the NWMS finds expression in Goal 2, which is aimed at the effective and efficient delivery of waste services. Waste services are the constitutional responsibility of local government and it is therefore relevant for municipalities to note the subsidiary goals in the NWMS, namely the progressive expansion of access to at least a basic level of waste services and the safe disposal of waste that cannot be reused, recycled or recovered in properly permitted landfill sites.

2.3.2.2.1. Instrumentation

Several regulatory, planning and fiscal instruments exist in support of effective and efficient waste service delivery. The first of these instruments, as discussed earlier, is the National Domestic Waste Collection Standards, which have been promulgated to provide minimum standards that municipalities must meet for waste services in urban, peri-urban and rural contexts (DEA, 2011a). The standards aim to address past imbalances in waste collection services. The standards will furthermore direct municipalities in terms of the level of service to be provided and in selecting options for waste collection, separation at source, provision of waste receptacles, waste collection vehicles, as well as the adoption of health and safety standards. The second instrument is indigent policies that, inter alia, provide for poor and qualifying households' access to essential refuse removal services (DEA, 2011b). The third relevant instrument is the integrated waste management plan. This is a particularly important instrument as already indicated. IWMPs, inter alia, contain the strategies of municipalities to achieve all applicable waste standards in their local areas of jurisdiction. In their IWMPs municipalities, for example, also set targets for the achievement of waste management services objectives and describe how these will be achieved. IWMPs further contain methods to monitor and measure progress against specific targets.

Chapter 3 of the NEMWA, 'Institutional and Planning Matters', deals in detail with IWMPs. The primary aim of an IWMP is to integrate and optimise waste management planning to maximise efficiency and minimise the associated environmental impacts and financial costs associated with improper waste management. In terms of s 11(4) every municipality must prepare an IWMP and submit it to the MEC for approval (South Africa, 2008:section 11(4)(i)).

The development of IWMPs is not a new concept as many municipalities and provinces have over time developed what are termed 'first generation IWMPs' in accordance with the 1999 National Waste Management Strategy. The development of first generation IWMPs was, however, not required in terms of enforceable law. Accordingly, these IWMPs could not be enforced. Today, s 11 of the NEMWA requires of all government spheres to develop IWMPs. To assist municipalities in

developing the now mandatory IWMPs, the DEA has developed the Guideline for the Development of Integrated Waste Management Plans (DEA, 2012e).

An approved IWMP must form part of a municipality's IDP as required in terms of the Local Government: Municipal Systems Act 32 of 2000. Within 30 days of receiving a municipality's IWMP or an amendment to it, the MEC may request that the municipality adjust or amend the plan. The MEC may request such an adjustment or amendment of the IWMP based on the fact that it does not comply with the NEMWA's requirements (South Africa, 2008:section 11(4)*(b)*(i)*(aa))*, or if it is in conflict with, is not aligned with or negates any relevant integrated waste management plan or the national waste management strategy (South Africa, 2008:section 11(4)*(b)*(i)*(bb))*. This highlights the importance of the NWMS also with respect to the countrywide alignment of waste management planning across the three spheres of government.

The MEC may further request a municipality to comply with a specific provision of the NEMWA relating to the process of drafting or amending its IWMP. Before finalising their IWMPs municipalities must follow the consultative process as contemplated in s 29 of the Municipal Systems Act. This process could form part of or be separate from the process that a municipality ordinarily follows when developing or revising its IDP (South Africa, 2008:section 11(7)*(b)*.

In accordance with s 11(7)*(c)*, the process contemplated in para *(b)* need not be followed if the IWMP is amended in a non-substantive manner. In addition to the NEMWA calling for community or stakeholder participation, chap 4 of the Municipal Systems Act encourages municipalities to conduct community participation when developing their IWMPs and provides different mechanisms as to how this can be done. Classes of persons that would typically have to be consulted by municipalities include, but are not limited to: traditional authorities, recyclers, community-based organisations, political leaders, ie ward councillors and MECs, general members of the public, businesses and industry associations.

The NEMWA stipulates that a municipal IWMP must contain at least the following:

- A situation analysis that includes a description of the population and development profiles of the area to which the IWMP relates (South Africa, 2008:section 12(1)*(a)*(i)). In relation to waste management and the drafting of an IWMP, a municipality would need to collate information relating to, for example, the population that it must serve and the development profile of that population. This information is necessary to develop projections of current and future waste quantities, for example. The information is also necessary to ensure that previously un-serviced areas such as informal settlements and rural or sparsely populated areas are adequately provided for. It will also form the basis of projecting the generation of different waste types; allow for an evaluation of the potential financial recovery for waste services rendered by the municipality; and enable assessment of the required resources to provide waste management services and infrastructure (City of Cape Town, 2013; DEA, 2012e:section 2.2.1.).

- An assessment of the quantities and types of waste that are generated within the municipality's area of jurisdiction (South Africa, 2008:section 12(1)*(a)*(ii)). Information relating to the types and quantities of waste being generated are required for the situation analysis to ensure adequate planning of resources to deliver waste management services; to ensure the rolling out of waste collection services to un-serviced areas as may be prioritised by government; and to cater for the establishment of waste recycling initiatives such as buy-back centres. The information typically also feeds into decisions and estimations relating to: the provision of waste receptacles and collection needs; the procurement of suitable waste vehicles; and the expansion of waste service infrastructure. The DEA 'Guideline for the Development of Integrated Waste Management Plans' (DEA, 2012f), describes the processes that may be followed to garner the necessary information relating to waste quantities and types, and cites the following sources of information: waste transporters from both municipalities and private companies, waste managers from waste disposal facilities and treatment facilities, among others, IDPs and municipal records, and the waste information system itself.

- A description of the services that are provided, or that are available, for the collection, minimisation, reuse, recycling and recovery, treatment (South Africa, 2008:section 12(1)*(a)*(iii)) and disposal of waste (Section 12(1)*(a)*(iii)). This part of the situation analysis entails the identification of existing recycling initiatives for purposes of, for example, raising awareness. The DEA 'Guidelines for the Development of Integrated Waste Management Plans' 42 gives details of the type of information required; for instance, municipalities must keep records of the waste disposal facilities (also privately owned and private sector facilities) within their area of jurisdiction, and should indicate the status of these facilities (including hazardous waste treatment facilities) with regards to being licensed or unlicensed. The types and quantities of waste disposed at the facilities should, for example, also be recorded.

- The number of persons in the area who are not receiving waste collection services (South Africa, 2008:section 12(1)*(a)*(iv)). The situational analysis of a municipality's IWMP should also contain, for example, a list of areas that receive waste collection services and a parallel list of areas that do not. It should further reflect on, for example, the number of indigent households, the resource capacity of the municipality and the extent of collection services (including collection routes) rendered by the municipality (DEA, 2012e:47).

A municipality's IWMP must further indicate how a municipality intends to give effect to the overall NEMWA objects (South Africa, 2008:section 12(1)*(b)*(i)-(ii)) and, in respect of waste management, to the National Environmental Management Act's provisions on cooperative governance (chapter 3). In addition, IWMPs must identify and provide for the negative impact of poor waste management practices on health and the environment within the area of jurisdiction of the municipality (Section 12(1)*(b)*(iii)). Every IWMP must further make provision for the municipality's implementation of the waste management hierarchy and the applicable targets and initiatives of the NEMWA and the NWMS (Section 12(1)*(b)*(iv)); the delivery of waste management services to residential premises (Section 12(1)*(b)*(v)); and best environmental practices in respect of waste management (Section 12(1)*(b)*(vii)).

An IWMP serves as the instrument in which a municipality must identify and unpack its priorities and objectives with respect to waste management (Section 12(1)*(d)*). It should, in addition to what has already been discussed, also set targets for the collection, minimisation, reuse and recycling of waste (Section 12(1)*(e)*), discuss issues of financial management and resource availability, and provide for the establishment of new or the decommissioning of old waste disposal facilities in the municipality, for example (Section 12(1)*(f)*). A municipality must indicate the financial resources required to give effect to its IWMP.

Notably a municipality's performance and progress as per its IWMP forms part of the municipality's annual report as required by s 46 of the Municipal Systems Act. A municipality must report on:

- the implementation of its IWMP;
- the extent to which the IWMP has been implemented during the reporting period;
- the waste management initiatives that have been undertaken during the reporting period;
- the delivery of waste management services and measures taken to secure the efficient delivery of waste management services;
- the level of compliance with the IWMP and any applicable waste management standards;
- waste management monitoring activities;
- the actual budget expended on implementing the plan and
- the measures that have been taken to make any necessary amendments to the plan should they be needed (Section 13(2)). A local municipality must submit its IWMP annual performance report to the applicable district municipality, which in turn should submit the IWMP annual performance report to the province. Provincial reports are subsequently submitted to the DEA, which finally submits an annual national IWMP report. The deadline for municipalities to submit their annual IWMP performance report is 31 August each year. Before a report may be submitted, approval is required from the respective councils. A copy of the report must be submitted to the MEC of the

province in which the municipality is located, as well as to the Minister and the Department of Cooperative Governance (DEA, 2012b:64).

Although the contents of IWMPs are prescribed by the NEMWA as discussed above, the DEA Guideline for the Development of Municipal IWMPs offers more prominent guidance in developing these plans. The Guideline, for example, lists the following procedural steps (DEA, 2012e:15):

1. Develop the municipality's situation analysis, which should include waste service delivery backlogs.
2. Set the desired end state.
3. Identify, evaluate and select alternative methods and approaches for achieving the end state.
4. Implement the integrated waste management plan.
5. Evaluate and review the plan to ensure the respective objects are being met.

This study does not intend to provide an in-depth analysis of the drafting of municipal IWMPs. For ease of reference, the following outline, however, depicts the main features of the DEA Guideline.

Before any municipality can conduct a **situation analysis** as the first step for developing its IWMP, the geographical area to which the IWMP applies must be defined (DEA, 2012e: 15). For this it would typically be necessary to describe the total area in square metres, the municipalities operating under the relevant municipality (in the case of a district municipality) or towns (in the case of a local municipality). A description of infrastructure such as roads, the ward system and brief information about the socio-economic status of the local area must also be provided.

The main objective of the situation analysis is to analyse and quantify all aspects pertaining to the management of waste within the boundaries of the municipality (DEA, 2012e:15). Such an analysis should therefore typically also include the current status with regard to the delivery of waste services, the number of residents in the municipality and the municipality's demographic profile and socio-economic composition. The situation analysis should also investigate the amount and type of

waste that is being generated, recycled, recovered, treated and disposed of in the municipality. It should further contain information on municipal resources for purposes of waste management, such as financial and human capital and equipment (DEA, 2012e:16). A municipality should further determine how much revenue is being generated within a particular year from the provision of waste management services, and this tally should be balanced against expenditures.

A municipality is expected to indicate in its situation analysis its current organisational structure to determine the available human resources for the delivery of waste services (DEA, 2012e:16). An organogram would highlight the number of available staff in terms of management staff, staff involved in planning, waste collection, recycling and disposal, as well as those staff members dealing with compliance and enforcement (DEA, 2012e:49). The use of an organogram is regarded as a potential tool to highlight any functional gaps which may be required to be filled by staff with respect to the municipality's waste management mandate (DEA, 2012e:50).

The second step in developing an IWMP is for a municipality to set the **desired end state**. This entails the identification of priorities and goals that a municipality wishes to attain with regards to waste management (DEA, 2012e:50).The information collated during the situational analysis should be used to develop strategic goals. The strategic goals should aim to address the gaps and needs of the community related to waste management. These goals should respond directly to the requirements in the NEMWA (DEA, 2012e:50). Overall, the strategic goals must be based on relevant waste legislation, regulations and policies (eg the NWMS) and should be informed by the waste management hierarchy. The strategic goals are divided into immediate goals (1 year), short-term goals (2–3 years), medium-term goals (3–5 years) and long-term goals (5–10 years). Long-term goals extend beyond the lifespan of an approved IWMP, which lasts for five years. These goals therefore relate to targets that extend beyond the five-year period of implementing the IWMP. An example of such a goal is the planning for and erection of a new waste disposal facility. The DEA Guideline provides examples of how desired end state for waste management strategic goals can be captured in a municipality's IWMP (DEA, 2012e: 51-55).

The third step in the development of an IWMP is to identify, evaluate and select **alternative methods and approaches for achieving the desired end state**. This step requires a municipality to identify alternatives for achieving the desired end state of integrated waste management. In so doing it is expected that the municipality explore different approaches towards achieving the goals and targets set in the IWMP. A cost benefit analysis is typically required. A municipality is also expected to consider critically all the law and policy requirements to be met, and given its available capacity and resources, to make decisions regarding the categorisation of goals as either short, medium or long term. An indication should also be given of the effects of the municipality failing to take action steps towards the goals of the IWMP (DEA, 2012e:55). After having considered the alternatives, a municipality should indicate the preferred options for each waste management goal to be met (DEA, 2012e:55). The Guideline explains how such alternatives must be identified, evaluated and selected, based on the criteria applicable to each goal.

An IWMP must include a summary of the stakeholders that have been consulted, the issues that have been raised and any concerns, views and inputs and the municipality's response thereto. Municipalities are also encouraged to develop awareness raising programmes to alert stakeholders to the development, content and implementation of their IWMPs (DEA, 2012e:64-65). It is provided that municipalities may engage stakeholders through various forums such as, but not limited to, ward committee meetings, waste management forum meetings and workshops with interested and affected parties, as well as through the publication of information relating to the IWMP in local media such as newspapers and local radio stations. It is critical that the information gathered during stakeholder participation be captured and dealt with under the implementation plan of the IWMP, and that all stakeholders be informed of progress made. It is also strongly recommended, for purposes of transparency and accountability, that the annual performance reports drafted in terms of the Municipal Systems Act and the NEMWA be made available to stakeholders.

Implementation of the IWMP is the fourth step in the development of an IWMP. Implementation entails, in terms of the DEA Guideline, the formation of partnerships and the adoption of appropriate legislative instruments, economic instruments and a financial plan for the implementation of the IWMP. Partnerships are regarded as a mechanism for providing the services and facilities required for integrated waste management to the extent that partnerships (eg with the private sector) could help ease the burden on municipalities. Different types of partnerships could be formed, for example:

- public–public partnerships (DEA, 2012e:65). A public–public partnership could for example take the form of a partnership between a district and a local municipality for collaboration on the provision of waste services, eg the establishment of a regional waste disposal facility.

- public–private partnerships (PPPs). PPPs could provide the necessary financial assistance for waste services, the establishment of waste management facilities, the establishment of separation at source and other waste management initiatives, such as the development and management of waste disposal facilities, transfer stations and recycling facilities (DEA, 2012e:65 and

- partnerships with non-governmental organisations (NGOs) or community-based organisations (CBOs) (DEA, 2012e:65). These partnerships could be valuable for awareness-raising and education campaigns and related programmes

The idea of the establishment of partnerships (especially PPPs) is strongly encouraged in the DEA Guideline to the extent that PPPs could for example greatly reduce the demands on municipal resources for purposes of implementing IWMPs. Two additional requirements for the implementation of an IWMP are the development, adoption and enforcement of waste by-laws and the securing of sufficient funds. Both of these requirements are discussed in greater detail below. The penultimate instrument for the implementation of an IWMP is the development of an ‘implementation plan’. An implementation plan should typically contain details on how the targets set in a municipality’s IWMP will be attained, as well as on the

resources required to attain the targets of the IWMP in the next five years. An example is provided of an IWMP, which illustrates the use of the required situation analysis, desired end state and targets, together with the resources needed to implement the alternatives identified to give effect to the goals of the IWMPs.

The final step in the process of developing an IWMP is the **approval and review** of the plan against the goals that have been set.

In addition to the mentioned tools, a further instrument of use for purposes of municipalities' pursuit of Goal 2 of the National Waste Management Strategy is waste by-laws. Municipal waste by-laws should typically set local service standards for separating, compacting and storing solid waste, as well as for the management and directing of solid waste disposal and the control of litter (South Africa, 2008:s 27). Waste by-laws should be based on applicable national standards. The NWMS is also in favour of the development and use of generic (model) waste by-laws to assist municipalities in developing their own waste by-laws. A model waste by-law was published by the Chief Directorate: Pollution and Waste Management in November 2011 (DEA, 2011e).

It should be noted that waste by-laws may deal with a variety of waste management service issues, including, for example, collection of waste, types of waste collected, methods for waste collection, waste containers or receptacles to be used, the frequency of waste collection and tariffs.

Additional instruments for the achievement of Goal 2 of the NWMS are fiscal mechanisms which give effect to appropriate tariff settings and full cost accounting for waste services. These could subsidise the expanded waste mandate of municipalities as created by the NWMS. The NWMS also calls for the integrated coordination within the three spheres of government to address fiscal and capacity problems that may hamper waste service provision (DEA, 2012b:25). In accordance with the NWMS an interdepartmental committee is to be established consisting of the DEA, National Treasury, the Department of Cooperative Governance and Traditional Affairs (CoGTA), SALGA and the Department of Human Settlements, which will address waste service delivery issues and support municipalities in meeting their

extended waste management obligations. Government, through the implementation of the NWMS has committed to ensure access to basic waste collection services for all by 2022. In striving towards these targets government has committed to provide 95 per cent of urban households and 75 per cent of rural households with adequate levels of waste services by 2015. These commitments greatly affect local authorities, who are the main actors in local waste service provision and waste management. The strategy to achieve these commitments has been set out in the 'Municipal Waste Sector Plan for Addressing Waste Service Backlogs'.

Notably, municipalities' effective management of landfill sites has been identified as a major concern at a strategic level in achieving Goal 2 of the NWMS. The pressure is expected to increase once the envisaged expansion of waste collection services commences. In mitigating the existing concerns about landfill management, the DEA has flagged several planned interventions aimed at assisting municipalities in better managing their landfill sites. These interventions include, among others: setting standards for the disposal of waste to landfill and for the assessment of the level of risk associated with the disposal of waste to landfill; passing regulations for waste classification and management that include criteria for and restrictions on waste disposal to landfill; and a nationwide assessment of the steps required to standardise management and licensing of existing waste disposal sites in an effort to assist municipalities in effectively and legally managing and operating their landfill sites.

Goal 2 of the NMWS furthermore provides for the registration of general waste transporters in all three spheres of government. A municipality may in this respect, through the working of s 25 of the NEMWA require that transporters of general waste register with the municipality's municipal waste management officer (South Africa, 2008:section 25(1)*(a)*). The waste management officer (WMO) is appointed in terms of s 10(3) of the NEMWA: each municipality authorised to carry out waste management services in terms of the Municipal Systems Act must designate in writing a WMO from its administration to be responsible for coordinating waste management. The DEA has published a document, which sets out the role, powers, profile and rank of a WMO (DEA, 2009b). WMOs perform a regulatory function and should be located in functional divisions separate from service delivery functions as far as possible. A WMO may typically require that a holder of waste appoint a waste

management control officer (WMCO), in accordance with s 58(1) of the NEMWA to give effect to the requirements stipulated in s 58(2) of the Act, which lists the duties of a WMCO. A WMO may further exercise the right to request that a holder of waste submit a waste impact report, in accordance with s 66(1) and (2) of the NEMWA. Such a request may be submitted if a reasonable suspicion exists that a person has on one or more occasions contravened or failed to comply with the Act or any conditions of a waste management licence, and that the contravention or failure has had or is likely to have a detrimental effect on health or the environment – which includes social conditions, economic conditions, ecological conditions and cultural heritage – or has contributed to degradation of the environment. A municipal WMO may also request a waste impact report if a review of a waste management licence is undertaken in terms of s 53 of the NEMWA. The procedures to be followed and contents of waste impact reports are stipulated in s 66(3)–(7) of the NEMWA.

In addition, transporters of waste must abide with the general duties in s 25 of the NEMWA. Municipalities, as waste transporters in their capacity as waste service providers, are of course also bound by the general duties of waste transporters. Section 25 of the NEMWA requires that any person who is engaged in the transportation of waste must take all reasonable steps to prevent any spillage of waste or littering from a vehicle which is used to transport waste, for example (Section 25(2)). It continues to place a duty on the transporters of waste for disposal purposes to ensure that the facility for which the waste is destined is authorised to accept such waste (Section 25(3)). Section 25(3) of NEMWA serves to place municipalities and private waste transporters in somewhat of a quandary, as many municipal landfill sites are currently not licensed or permitted to accept waste for disposal. Pragmatic resolve will dictate that waste be disposed of at such facilities because of the lack of practical and plausible alternatives, thus resulting in a situation of illegality on the part of the waste transporter. Municipalities in such cases are illegally disposing of waste as a result of the illegality of the unpermitted waste sites or facilities. This provision is mirrored in s 25(4) of the NEMWA in so far as hazardous waste, specifically, is concerned. Section 25(5) of the Act imposes a reverse onus of proof on persons who have, while in control of a vehicle, offloaded waste at a location. Such offloading is deemed to have been done knowingly, unless evidence to the contrary is provided which raises reasonable doubt (DEA, 2011a:s

6)). As transporters of waste, municipalities must also ensure that their vehicles comply with the minimum requirements set by the NDWCS for waste collection vehicles. Such vehicles must be suited to the task at hand and the geographical terrain in which they are required to operate. Collection vehicles, which are used for the collection and transportation of waste must not be used for any other purpose while collecting and transporting waste. Health issues must be considered when maintaining vehicles, thus regular cleaning is essential. Waste must be collected and transported in closed vehicles, to prevent littering during transportation. A duty is also placed on municipalities to phase out unsuitable or incompatible vehicles. Municipalities must ensure that maintenance schedules for their waste collection vehicles are adhered to and that vehicles are roadworthy to ensure a reliable waste collection service.

Other provisions in the NEMWA which inform and provide the contextual background for understanding Goal 2 of the NWMS are now discussed.

With regards to the storage of waste, the NEMWA, through the workings of s 21, sets minimum requirements which must be complied with. Municipalities may in certain instances be responsible for the storage of waste eg at waste transfer stations belonging to the municipality. Section 21 requires that any person who stores waste must at least take steps to ensure that the containers in which the waste is stored, are intact and not corroded or in any other way rendered unfit for the safe storage of waste (South Africa, 2008:section 21*(a)*). Adequate measures must be taken to prevent accidental spillage or leaking, and waste being blown away, and to ensure nuisances such as odour, visual impacts and breeding of vectors do not arise (Section 21*(b)–(d)*). When storing waste, pollution of the environment and harm to health must be prevented (Section 21*(e)*).

The storage of general waste is regulated by s 22, which requires that any person who generates general waste that is collected by a municipality, must place the waste in a container approved, designated, or provided by the municipality for that purpose and in a location approved or authorised by the municipality (Section 22(1)). The types of containers which may be used are prescribed in the National Domestic Waste Collection Standards. In other words, the NDWCS provides municipalities

with specific standards that waste containers or receptacles must meet (DEA, 2011a:s 4.3.).

Receptacles for the storage of non-reusable and non-recyclable waste must, for example, be easily distinguishable from those for the storage of recyclable waste. Receptacles for the storage of non-recyclable waste at households must be:

(i) fit for the safe storage of waste;

(ii) such that pollution of the environment and harm to health are prevented;

(iii) rigid and durable to within reason prevent accidental tipping, accidental spillage and leaking;

(iv) intact and not corroded or worn out;

(v) covered to ensure that animals and insects cannot enter and that the waste cannot be blown away; and

(vi) not bigger than 240 ℓ;

NEMWA s 23 serves to limit the right of access to waste collection services provided by municipalities. Waste collection services should cater for the equitable rendering of these services to all people in the municipal area and differentiated payment for waste collection services (South Africa, 2008:section 23(1)*(a)–(b)*). In addition, a municipality would be able to limit the provision of waste collection services if there is a failure to comply with reasonable conditions set for the provision of such services, such as payment or incorrect waste disposal. Such limitation of waste service delivery must not jeopardise human health or safety (Section 23(1)*(c)*). The provision of services is also subject to the right of a municipality to differentiate between categories of users and geographical areas in setting its service standards and levels of service (Section 23(1)*(d)*).

Section 23(2) of the NEMWA places a positive duty on municipalities to, as far as reasonably practical, provide containers or receptacles for the collection of recyclable waste that are accessible to the public (South Africa, 2009:section 23(2)). Section 24 confirms the role of municipalities as waste collectors, stating that no person may collect waste for removal from premises unless such a person is a

municipality or municipal service provider, authorised by law to collect that waste (Section 24*(a)–(c)*).

In order to address the service backlogs hampering waste management service delivery and the achievement of Goal 2 of the NWMS, the DEA has recently published the 'Municipal Waste Sector Plan: Challenges with waste service provision in South Africa' (DEA, 2012a). This plan sets outs objectives and priorities for the municipal waste sector (DEA, 2012a:11). Strategic objectives identified by the MWSP include: reducing the amount of general and hazardous waste disposed of in landfill in the country; ensuring that all waste is disposed of appropriately, in a manner that is not detrimental to the environment and human health; and providing adequate domestic waste collection services across the country, thus ensuring the protection of the environment from unmanaged waste, and providing all communities with access to a basic refuse removal service in line with national and provincial service delivery targets.

The Waste Sector Plan sets the vision and mission of the waste management sector. The vision is to develop, implement and maintain an integrated waste management system, which contributes to practical, sustainable waste service delivery, and a measurable improvement in the quality of life of all people and the environment. The mission is to: provide appropriate and sustainable municipal waste collection services to all households and settlements and basic refuse removal services to households identified as indigent; formulate national domestic waste collection standards; provide user friendly, practical guidelines and assistance for safe waste disposal in all areas not classified as dense settlements or urban areas; develop a Municipal Waste Sector Plan for addressing backlogs in waste service delivery; and adopt a continuous quality improvement approach to municipal waste collection services in South Africa that incorporates the 'Plan, Do, Check, Act' fundamentals and the implementation of the waste hierarchy in collaboration with the private sector. Notably, the MWSP requires that all communities be provided with access to basic refuse removal services, while the NDWCS and the NEMWA make provision for certain areas, and thus by implication, certain communities to be excluded from waste collection service provision, subject to certain criteria. The objectives of the MWSP are, however, aligned with the objectives of the Local Government

Turnaround Strategy of 2009, which requires, inter alia, that municipalities meet the basic service needs of communities, as well as improve performance and professionalism (CoGTA, 2009).

Goal 2 of the NWMS undoubtedly requires local government to commit, together with the other two spheres of government, to the effective and efficient delivery of waste services. As the main interface between government and the public with regard to the provision of waste management services, municipalities will play a crucial role in giving effect to Goal 2.

2.3.2.3. Goal 3: Growing the contribution of the waste sector to the green economy

Effective waste management has important economic and social impacts, besides the environmental benefits that it offers. The waste management sector as a whole, and especially local government, has an important role to play in giving effect to a green economy (DEA, 2012b: 27). In order to maximise the benefits offered by the waste sector to the green economy the sector must be well regulated and well formalised. The objectives of Goal 3 of the NWMS is to stimulate job creation while broadening the participation of small and medium enterprises (SMEs) and marginalised communities in the waste sector. Strategies identified to achieve these objectives include formalising the role of waste pickers and the expansion of the role of SMEs and cooperatives in waste management. Goal 3 acknowledges that investment in recycling infrastructure to facilitate reuse, recycling and recovery as set out in Goal 1 will serve to further create jobs in the sector, for example.

In contributing to the achievement of Goal 3, municipalities are expected to encourage the use of labour-intensive, community-based collection methods in providing waste services. This is especially encouraged in areas which are difficult to access or service through conventional collection methods. The adoption of this approach may serve in many instances to lessen the burden faced by municipalities in the provision of adequate waste services, while at the same time providing sustainable income opportunities for communities as required for purposes of local economic development. However, municipalities will still have to ensure that the prescribed practices, as promoted above, all occur within the confines of the

applicable legislative requirements, which could potentially create another financial and human resources burden for municipalities. In other words, SMEs and other role players must still comply with standards and any applicable legal requirements; which does not do away with existing challenges with respect to the quality of waste services provision in municipalities. Municipalities shall ultimately remain liable for any non-delivery and non-compliance.

2.3.2.4. Goal 4: Public awareness of the impact of waste on health, well-being and the environment.

The main object of Goal 4 of the NWMS is to ensure that awareness is created of waste management issues among the public as well as to add practical waste projects to basic education curriculums. The DEA has set a target of 80 per cent of schools to be implementing waste awareness programmes, such as recycling projects by 2015. The success of these goals will largely depend on the successful achievement of the goals and objectives as set out in Goal 1 above, as effective recycling programmes rely largely on effective recycling infrastructure. Goal 1 of the NWMS places the burden on municipalities to provide effective recycling infrastructure such as buy-back centres. It may be argued that a lack of sufficient recycling infrastructure may hamper the objectives of Goal 4, leaving the envisaged recycling programmes reliant on ad hoc recycling services and infrastructure, making it difficult to track the progress and success of such programmes.

Central to achieving this objective will be the role played by municipalities in designing and delivering waste management awareness campaigns within their areas of jurisdiction (DEA, 2011a:8).

The NDWCS in s 8.2 stipulates the minimum requirements for awareness creation and municipal guidelines. It states that municipalities must at a minimum create awareness among households about the following: the types of waste collection services provided; separation at source; the potential of composting of some household wastes and its benefits; the unacceptability of illegal dumping and littering; measures to be taken against individuals that litter and dump waste illegally; the cost of cleaning up illegal dumping and littering and the implication for household waste collection rates; and the advantages of reporting illegal dumping activities. It also stipulates that municipalities must provide clear guidelines to households about:

the different types of waste generated in households; separation of non-recyclable and non-reusable household waste from compostable and recyclable waste; appropriate containers for each type of waste; removal schedules for each type of waste; and what to do with waste other than those wastes forming part of the regular schedule of waste collection services.

These campaigns should be designed and implemented in partnership with local stakeholders, which include the workforce, industry, civil society and NGOs – ultimately aiming to create a broader awareness of waste among the public (DEA, 2012b:28). The DEA has set an optimistic target for local awareness campaigns, stating that it expects 80 per cent of municipalities to be running campaigns about waste and littering by 2015. In giving effect to Goal 4, the NWMS commits the DEA to launch a long-term awareness campaign on waste management. The ultimate objective is to effect changes in waste management behaviour. The NWMS states that SALGA is to be co-opted by the DEA to develop a coordinated national approach to waste awareness that will provide common messages and promotional material to support municipal campaigns. Incentives for municipalities will be created through existing recognition programmes such as the Cleanest Town competition, which the DEA is said to plan to expand and strengthen through its 'Cleaning and Greening' programme.

2.3.2.5. Goal 5: Achievement of integrated waste management planning

The NWMS recognises that the major challenges facing waste management in South Africa are, among other things, backlogs in waste collection services, aging waste collection vehicles and equipment deployed by local government, population growth resulting in growing settlements, towns and cities, which results in larger volumes of waste produced, and ever decreasing airspace in current landfill sites (DEA, 2012b:29). In order to address these challenges a coordinated approach must be adopted by all three government spheres. The principal tool provided by the NEMWA to facilitate the needed coordination is the integrated waste management plan. Goal 5 of the NWMS addresses integrated waste management planning, generally, which has two objectives. First, the establishment of an effective system of

IWMPs (in particular at local government level), and second, the establishment and maintenance of an information base on waste flows.

Municipalities are the primary providers of waste management services in South Africa. To this end, it is imperative that an effective system of IWMPs at local government level is developed and implemented in accordance with the provisions of the NEMWA (South Africa, 2008:s 11, 12, 13). As discussed in detail earlier, these IWMPs must be outcomes focused, and must include priorities, objectives, targets, and implementation and financing arrangements.

As was alluded to above, an important consideration in effective planning is the availability of reliable and adequate information. Within the waste context, reliable information is required on, inter alia, waste flows to inform waste planning. To this effect, the Minister has established the South African Waste Information System (SAWIS) in accordance with s 60 of the NEMWA (South Africa, 2008:chapter 6). The National Waste Information Regulations (DEA, 2012d) referred to in footnote 9, regulate the reporting of waste information for the protection of the environment and the management of waste. One of the targets of the NWMS is that, by 2016, all specified waste management facilities that are required to collect and report to SAWIS must have waste quantification systems. This has a direct impact on municipalities, as the practical implementation of SAWIS in accordance with the provision of the NEMWA will see all municipalities having to report to the system.

In order to measure the progress made in achieving integrated waste management planning, the DEA and the provinces shall monitor the per centage of municipalities who have prepared IWMPs and integrated them with their integrated development plans. The deadline set for all municipalities to have IWMPs integrated with their IDPs is 2015.

2.3.2.6. Goal 6: Sound budgeting and financial management for waste services

The sustainable provision of waste services depends on sound budgeting and financial management. It is widely accepted that in most municipalities waste services are under-priced and under-funded, the problem being compounded by aging capital infrastructure and insufficient capital investment (DEA, 2012a:1). The

objectives of Goal 6 of the NWMS include municipalities to use full cost accounting and to implement cost-effective and, where feasible, volumetric tariffs (DEA, 2012b:30). Volumetric tariffs are tariffs which are calculated based on the amount of waste being disposed. These tariffs serve a dual purpose of rewarding the persuit of the waste management hierarchy, in that they encourage reduction, reuse and recycling over disposal, while also ensuring that the disposal services of municipalities are funded in a sound manner, which if correctly calculated and implemented will ensure that waste services are not under priced.

The NWMS punts the use of full cost accounting by municipalities to determine the complete cost of waste service provision. These costs include operational and capital expenditure for collection, transportation, landfill development and closure, street cleaning, fee collection, credit control, monitoring and enforcement costs, interest payments and depreciation (DEA, 2012b:30). Full cost accounting, if correctly implemented, will serve to lay the basis for managing waste services as a financially sustainable service for all. It will furthermore enable municipalities to accurately project the costs of expanding their waste services. The information gleaned can be used by local government to implement cost-reflective tariffs and ultimately move towards the more complex, but sustainable volumetric tariff systems. Full cost accounting will also indicate whether it is more cost effective to make use of internal or external waste service providers (DEA, 2012b:30). It must, however, be noted that, in terms of s 78 of the Municipal Systems Act, municipalities will have to do an assessment taking into account all relevant factors in terms of s 78 before any waste services can be outsourced. It is envisaged that, in order to assist municipalities in addressing the fiscal planning matters as stated above, National Treasury will issue a municipal circular to provide guidelines for waste service budgets and the required accompanying accounting practices (DEA, 2012b:30).

Waste management is an under-provided basic service, and inadequate levels of refuse removal have become a negative externality culminating in high levels of litter and illegal waste disposal practices, among other things. In order to address these challenges internal and external sources of revenue will have to be sourced within and across all three spheres of government. The National Policy for the Provision of Basic Refuse Removal Services to Indigent Households (DEA, 2011c) provides

guidance on financing mechanisms and implementation strategies to budget for basic refuse removal from poor households, for example. Revenue for these services must be obtained from internal sources such as cross-subsidies within municipalities and external sources such as transfers from the national fiscus through the Equitable Share Grant and the Municipal Infrastructure Grant.

Cost recovery by means of customers' municipal accounts (which include the billing of waste services), is essential for the provision of financially sustainable waste services. Municipalities will have to structure the tariffs for waste services to cover expenditure for the maintenance, renewal and expansion of infrastructure which is required to provide much needed basic waste services. It is envisaged that, to assist municipalities in the setting of sustainable tariffs, the DEA will issue an update of the 'Solid Waste Tariff Setting Guidelines for Local Authorities' (DEA, 2012g).

It is imperative that any increases in tariffs are appropriately phased in so that consumers and businesses may manage the financial implications that will result (DEA, 2012b:31). Municipalities will have to consider the number of indigent households and local economic conditions when increasing their tariffs. Municipalities will have to justify in their budget documentation all increases in excess of the 6 per cent upper boundary of the South African Reserve Bank's inflation target. Excessive increases in property rates and other tariffs which could ultimately result in unpaid accounts and resultant bad debt must be avoided as far as possible. This being said, the NWMS envisages that, although unfavourable, long-term above inflation increases in rates will be unavoidable.

Enforcement capacity in municipalities will have to be strengthened to counteract the expected unintended consequences of tariff increases such as illegal dumping. A crucial role in bolstering enforcement measures is the provision of updated waste by-laws to support the enforcement of regulatory measures.

In order to support the above measures, National Treasury will be required to align equitable share provisions, Municipal Infrastructure Grants and other grant systems to effectively support the extension of waste services and to provide for the minimum levels of refuse removal as a basic service (DEA, 2012b:31). The NWMS contends that the DEA and National Treasury will investigate and establish financing

mechanisms to ensure that capital expenditure in the waste sector increases, to create a robust pipeline for the delivery of municipal projects and to develop an appropriate capital financing mix across all three spheres of government. The DEA and National Treasury will furthermore investigate the merits of a dedicated fund for supporting the extension of municipal waste services to those communities who at present lack such services (Department of Public Works, 2013). The DEA will also participate in municipal budget reviews as undertaken by National Treasury, as well as in performance monitoring of metropolitan councils, to ensure that waste sector objectives for municipal financial management are met. The use of an expanded public works programme (EPWP) type delivery model in ensuring the delivery of such services is suggested by the NWMS (DEA, 2012b:31). The EPWP is one of government's array of programmes aimed at providing poverty and income relief through temporary work for the unemployed to carry out socially useful activities. The EPWP was launched in April 2004 to promote economic growth and create sustainable development. The immediate goal of the EPWP Phase 1 was to help alleviate unemployment by creating at least 1 million work opportunities, of which at least 40 per cent of beneficiaries will be women, 30 per cent youth and 2 per cent people with disabilities (Department of Public Works, 2013).

The result of all the above actions is for all municipalities that provide waste services, to have established full cost accounting for waste services, along with the implementation of cost-reflective tariffs. The suggested method for monitoring the achievement of these objectives is the use of the annual municipal financial reports submitted to National Treasury, which are also consolidated in the Municipal Budget and Expenditure reviews.

2.3.2.7. Goal 7: Measures to remediate contaminated land

Goal 7 of the NWMS draws upon chapter 4 (part 8) of the NEMWA which sets out the regulatory measures for the management of contaminated land. The management of contaminated land has historically been under regulated, resulting, inter alia, in the lack of data on the number and extent of contaminated sites. Although the regulation of contaminated land falls within the ambit of the DEA,

municipalities play a role as potential owners or holders of contaminated land. For example, all landfill sites that cannot be upgraded to compliant landfills will be dealt with in terms of the provisions in the NEMWA relating to the management of contaminated land. In this capacity municipalities must not only comply with the applicable provisions of the NEMWA, but also with the provisions of the Framework for the Management of Contaminated Land (DEA, 2010b). Municipalities must accordingly be guided by the contemplated guidelines, which spell out the implications for affected sectors and describe the roles and responsibilities of affected organisations and persons such as municipalities who are the owners of contaminated land.

The target set by the NWMS is for 80 per cent of the sites on the register of contaminated land to have been assessed, with 50 per cent of the sites being issued with approved remediation plans. This target might seem somewhat optimistic, especially if one considers that chapter 4 part 8 has to date not yet been effected, and thus work on the contaminated land register is yet to commence.

2.3.2.8. Goal 8: Compliance with and enforcement of the National Environmental Management Waste Act

It is trite to mention that no matter how comprehensive the legal framework for waste management in South Africa might be, it is meaningless without effective enforcement in areas where non-compliance with the provisions abound.

The first objective of Goal 8 of the NWMS is to ensure systematic monitoring of compliance with the NEMWA, which includes regulations published in terms of the Act, licences, industry waste management plans and IWMPs (DEA, 2012b:33). The second objective of Goal 8 is for government to extend the current environmental management inspectorate's capacity to enable effective enforcement of the NEMWA.

In enforcing the NEMWA, municipalities are supported by several provisions within the Act. The most important of these is the designation of a waste management officer (WMO), as discussed previously, as well as the powers and duties accruing to such a WMO. Furthermore, in accordance with s 31 of the NEMA, the Minister may

designate a municipal official as an environmental management inspector (EMI), who may enforce the provisions of the NEMWA (South Africa, 1998a:section 31). Such a designation will give a municipal-level EMI (ie a local government official) the relevant enforcement powers provided for in the NEMA as well as the NEMWA. Chapter 7 of the NEMWA deals with offences and penalties, and extends certain powers and functions to WMOs and EMIs in ensuring compliance and enforcement of the Act. The main tool in this arsenal is the waste impact report which may be requested under certain circumstances by the EMI or WMO.

As alluded to earlier, local government has numerous challenges with regards to non-compliant waste treatment facilities and waste disposal sites. In addressing this issue, the DEA has undertaken to coordinate a national programme to systematically bring all facilities into compliance (DEA, 2012b:33). It must be noted that non-compliance ranges from non-adherence to permit conditions to the operation of waste disposal facilities without the required permits or licences. In addressing such non-compliance, enforcers will take into account the operating procedure for non-compliant organs of state (South Africa, 1989:s 31(1)-(3)).

With respect to non-compliance by organs of state, the constitutional provisions for cooperative government require that every reasonable effort must be made to settle a dispute and all remedies applied before a matter is taken to court for resolution. The Constitution also governs the ability of a sphere of government to interfere in the affairs of another sphere of government. A standard operating procedure has been developed consisting of an 11-step process that will eventually culminate in prosecution if the offending practice is not stopped. The procedure also allows for the development of an action plan to deal with illegal practices. For a discussion of the operating procedure for non-compliant organs of state refer to Craigie *et al*., (2009:65). It should further be noted that s 31 of the Environmental Conservation Act (ECA), which deals with the powers of Ministers and competent authorities in case of defaults by local authorities, may find bearing when addressing disposal facilities permitted in terms of s 20 of the ECA. The section provides that if, in the opinion of the competent authority of the province in question, any local authority fails to perform any function assigned to it by or under the ECA, the competent authority may, after giving the local authority an opportunity to make representations to it in

writing, instruct the local authority to perform the function within a specified period. If that local authority fails to comply with the instruction, the competent authority may perform the function as if it were the local authority and may authorise any person to take all steps required for that purpose. Any expenditure incurred by the competent authority in the performance of the function, may be recovered from the local authority concerned. Section 31 of the ECA continues to state that whenever, in the opinion of the Minister, a local authority has failed to perform a particular function, the Minister may request the competent authority in question to act as if it were the local authority. If the competent authority fails to act accordingly within 90 days, the Minister may do anything which the competent authority could have done, and also be entitled to the expenses incurred.

Government has realised the need to expand the EMIs substantially if effective compliance monitoring and enforcement is to be maintained (DEA, 2012b:33). It is envisaged that approximately 800 additional EMIs will be appointed, with two-thirds of them being deployed to operate at provincial and local government level. An interesting development in the environmental compliance and enforcement realm at municipal level is the possible inclusion of environmental health practitioners at local government level as EMIs (DEA, 2012b:33). It is suggested that, in order to provide for such inclusions, the qualifications of EMIs and environmental health practitioners (EHPs) be aligned, by including EMI training material into the EHP National Diploma. This will serve to use the existing skills of people who are experienced at operating at local government level and within local government structures, and will undoubtedly serve to speed up and bolster the effort to see more EMIs enforcing the provisions of the NEMWA.

2.3.3. Local government and the implementation of the NWMS and NEMWA

The constitutional waste services mandate of municipalities dictates that such services should, on the one hand, be planned for and, on the other, that plans (such as IWMPs) must be efficiently implemented. In this context implementation means that municipalities should gear their resources (eg financial, human and infrastructure) towards the achievement of national and, in particular, local waste management goals. A range of different stakeholders must be involved in and will be

affected by municipalities' implementation efforts. These include, inter alia, industries, households (both formal and indigent), and other organs of state.

The various types of instrumentation that are discussed above and the role of the local waste management officer should not be underestimated. It is similarly crucial for municipalities to acquire the necessary skills and capacity and to appoint and retain competent staff.

It would be futile to deny that manifold challenges regarding waste and other municipal services currently exist in South Africa's local government sphere. In the waste management and waste services sector specifically the most pertinent challenges include: insufficient capacity, deteriorating infrastructure, financial constraints, competing needs and priorities across different local government sectors, and historical legacies (especially with regard to the legal operation of landfill sites).

3. Methodology and Analysis: Municipal solid waste management in the North West Province

During 2013, the Centre for Environmental Management (CEM) of the North West University Potchefstroom Campus hosted municipal officials from across the North West province at its courses dealing with *inter alia* the Legal Framework for Integrated Waste Management in South Africa (CEM, 2013). The attendance of key municipal officials dealing with waste in the North West Province provided and ideal opportunity to, through interviews, explore the performance gaps and capacity constraints.

Ultimately a total of 14 Officials were interviewed, out of approximately 30 officials dealing with waste management in the province. Of the 23 municipalities in North West (4 district and 19 local) delegates represented 1 district municipality as well as 7 local municipalities as set out in figure 2 below.

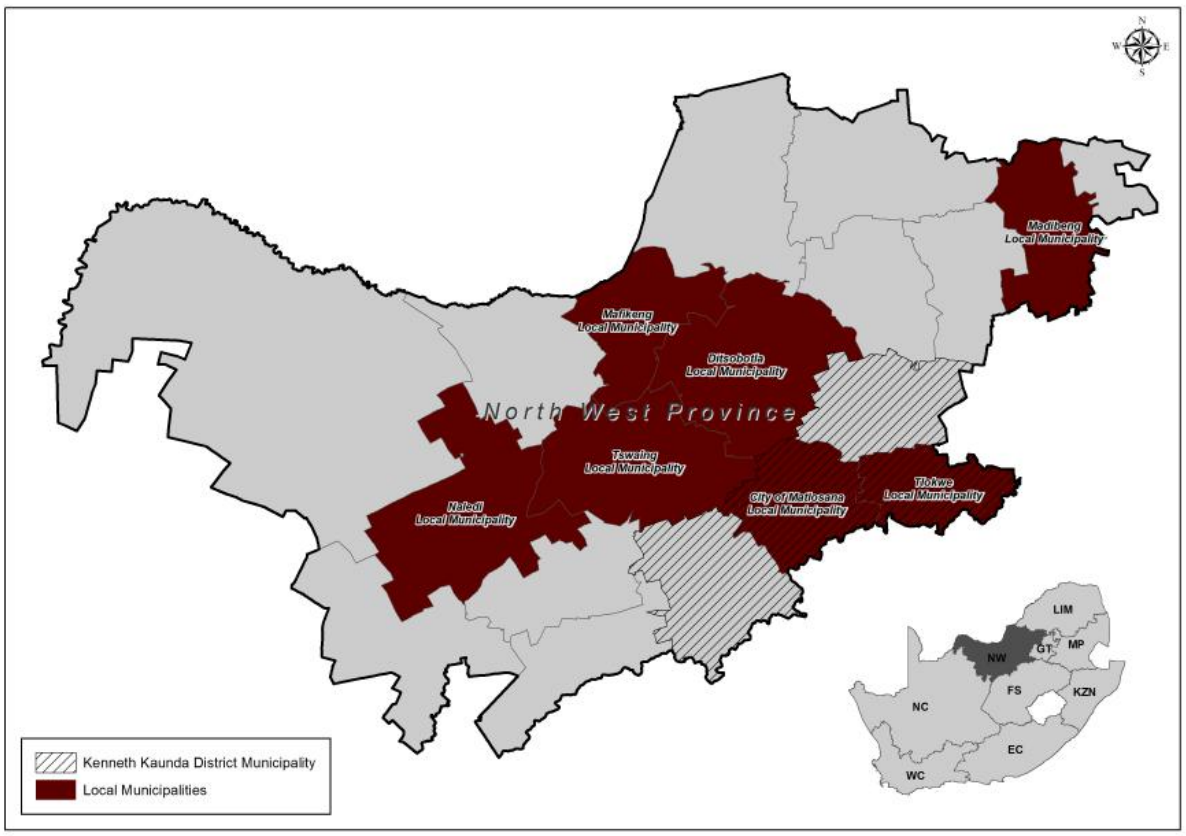

Figure 2. Sample of Municipalities Interviewed.

This opportunity was identified as being ideal for the conducting of semi structured interviews with municipal officials in North West so as to provide information on the current understanding, perceptions and performance, in line with the goals as set by the NWMS, relating to municipalities in North West. Semi structured interviews, aided by a questionnaire survey provided insight into the current situation regarding the achievement of the NWMS goals set for local government as viewed by those officials on the ground.

Furthermore, interviews were also conducted with representatives from the office of the auditor general so as to distil the shortcomings with regard to solid waste management in municipalities across the province. The auditor general has over the past two years conducted waste management audits on all municipalities in the province, focusing on *inter alia* legal compliance, compliance with permit conditions and administration of resources. Interviews were conducted during November 2013 with the Auditor General's office (AG). The officials interviewed have, over a period of 10 years been tasked with conducting environmental compliance audits for the

office of the AG. They piloted the first environmental audits for the AG in 2002, which have culminated in all 9 provincial offices of the AG considering environmental criteria as part of their performance audits. Environmental criteria form part of the AG's mandate insofar as non-compliance with environmental regulatory requirements may result in direct financial implications for a particular municipality, along with the AG's mandate to consider legal compliance in its audits. Questions were posed based on the 2011/2012 and 2012/2013 audits conducted by the AG. These audits were conducted, with specific emphasis placed on waste management, and more particularly

- The legality of landfills
- Compliance with permit conditions
- Compliance with the DWAF Minimum Requirements in the absence of permits
- The status and use of waste management bylaws within the municipalities
- The status of Waste Management Officers within the municipalities
- The management specifically of waste transfer stations within the municipalities
- Provision for rehabilitation of landfill site closure

It was against this background that representatives of the office of the AG were identified as being key interviewees, so as to provide an objective view of the current status of waste management in North West municipalities in so far as performance relating to the NWMS goals and targets are concerned. The key findings of these interviews are discussed below.

Lastly, information as gleaned from the North West Progress report relating to the implementation of the NWMS was also considered and is reflected on below (Department of Economic Development, Environment, Conservation and Tourism (DEDECT), North West Provincial Government, 2013). The information obtained from the 3 sources will provide a better understanding as to the current status

regarding the implementation of the NWMs in the North West Province as perceived by Government.

3.1. Addressing the NWMS goals and targets

Interviews were conducted with delegates at the commencement of the courses so as to glean an understanding the delegates perceptions, knowledge and views of the requirements set by the NWMS on their respective municipalities, and how they considered their municipalities were performing in terms of the NWMS expectations. The interviews were conducted with the aid of a questionnaire which is set out below in 3.1.1.

3.1.1. Questionnaire design

The questionnaire used to aid the semi-structured interviews comprised the following:

Table 2: Questionnaire used to aid semi-structured interviews.

Demographic data
i. Name of your municipality:
ii. Province where municipality is situated:
iii. Is you Municipality a District or Local Municipality
iv. What is your designation within your Municipality
Section A
1. Have you read the National Waste Management Strategy of 2012 (NWMS)?
2. The NWMS sets out several strategic goals relating to waste management, are you familiar with these goals? Provided that you have heard about the NWMS, please answer questions 3, 4, 5 and 6
3. These goals are measured by strategic targets which are to be met by 2016?
4. All municipalities in South Africa must have integrated their IWMPs with their Integrated Development Plans (IDPs)?
5. All municipalities must have met the targets in their IWMPs by 2016.

6. All metropolitan municipalities and secondary cities and large towns must have initiated separation at source programmes by 2016?
7. Municipalities have an important function to play in regard to ensuring compliance with national, provincial and local waste related laws ?
8. In your opinion, what level of solid waste service delivery is provided by your municipality?

a. Very good
b. Good, but room for improvement
c. Average
d. Not good.

9. Does your municipality have an Integrated Waste Management Plan (IWMP)?

Section B

1. Which waste-related issues that you know of are regulated by the IWMP and/or bylaws in your municipal area?
2. In your opinion, is your municipality doing enough within it's available resource capacity, to effectively deliver waste management services?
   Why do you say so?
3. Does your municipality have a programme in place to track waste service delivery and to collate such data so as to measure how many urban and rural households are receiving waste collection services?
   If yes, please provide an indication of the number of urban and rural households (%) currently receiving waste collection services in your jurisdiction.
4. Does your municipality have community awareness programmes on amongst others waste management, generation, recycling and recovery?
   Please elaborate and explain how such programmes function.
5. Does your municipality specifically encourage waste awareness programmes in schools in your area ?
   Please explain and if possible provide an indication (%) of schools in your area running such programme
6. Has your municipality undertaken a full cost accounting exercise for it's waste services ?
   If yes, has the information gleaned form the above been incorporated and taken into account in the setting of service tariffs? Please elaborate
7. Do you know whether your municipality currently reports to the South African Waste Information System?
   If yes, please provide a brief indication of how your waste quantification system, which is used to generate the reported data works.

8. Has your opinion / input ever been asked for in any of the following processes?

8.1	Drafting of an IWMP?	**Yes**	**No**
8.2	Drafting of municipal bylaws dealing with waste?	**Yes**	**No**
8.3	Budgeting for waste services?	**Yes**	**No**
8.4	Programmes to promote waste minimisation, re-use, recycling and recovery of waste?	**Yes**	**No**

9. Is your municipality legally compliant with environmental legislation dealing with waste such as the National Environmental Management Waste Act 59 of 2008, the National Water Act 36 of 1998 and the National Environmental Management Act 108 of 1998?
   If no, please explain where you believe your main areas of non-compliance are?
10. Are you aware of any enforcement initiatives relating to community and industry non-compliance with waste laws or regulations in your municipality?
    If yes, please provide details.
    Has your municipality appointed officials dedicated to the enforcement of waste laws?
    If yes, how many, and where these new appointments or was it the extension of an existing function within the municipality
11. Has your municipality appointed a Waste Management Officer?
    If so, please state to your mind what the main functions of this position are.
12. Do your municipality receive support from provincial and national government with regard to any of it's waste management services, programmes or initiatives?
    If yes, please stipulate the forms of support.
    If no, please provide some of the perceived reasons for the lack of support.
13. Please indicate the main problems, if any, which make your day-to-day execution of waste management tasks difficult within your municipal area

3.2. Interview Results and Key findings

A brief exposition of the interview results and key findings are set out below.

3.2.1. Demographic Data

The answers to the demographic questions yielded the following answers (questions i-iv in table 2 above).

- Questionnaires were completed by representatives from the 7 local municipalities in North West as indicated in figure 2 above.

- 5 of the survey participants were employed within the district municipality, of which all 5 were appointed as Environmental Health Practitioners.
- Of the 14 participants, only 3 carried official “waste management” appointments, whilst the rest were expected to fulfil waste related tasks in addition to other duties within the municipality.

3.2.2. Meeting the Goals and Targets as set in the NWMS

The aim of the semi structured interviews was to obtain first hand information regarding current performance within municipalities in North West relating to the goals and targets as set in the NWMS. The results of the interviews and the key findings will be set out below per NWMS goal and target where applicable to local government as contained in table 2 above.

3.2.2.1. Goal 1 Promote Waste minimisation, re use, recycling and recovery of waste.

Goal 1 has set the following targets, applicable to local government, to be met by 2016. 25% of recyclables must be diverted from landfill sites for reuse, recycling and recovery. Secondly all metropolitan municipalities and secondary cities and large towns must have initiated separation at source programmes. The North West government has, despite the NWMS goal, in its IWMP set a less onerous target of 20% reduction of waste to landfill (Department of Economic Development, Environment, Conservation and Tourism, North West Provincial Government, 2013).

Most of the interviewees were aware of the requirement as stipulated in the NWMS, however, the recurrent theme throughout the responses was that despite certain *ad hoc* programmes, diversion from landfill for reuse, recycling and recovery was not taking place in the municipalities interviewed. *Ad hoc* diversion is however a reality in that many of the municipalities have informal waste salvagers operating on landfill sites. In some of the municipalities it was reported that recycling initiatives by third parties had been piloted, however many of these programmes were not sustainable and were quickly ended due to lack of funding and resources. In accordance with the DEDECT report, it is averred that 15% of waste in North West is diverted from landfills, however, it was in the same breath acknowledged that reporting structures

are not entirely accurate, with cases of double reporting of waste being diverted being identified (Department of Economic Development, Environment, Conservation and Tourism, North West Provincial Government, 2013:6). Such discrepancies cast doubt over the accuracy of the figures reported, and this coupled with *ad hoc* diversion measures and methods raises questions as to the accuracy of the reported 15%.

3.2.2.2 Goal 2: Ensure effective and efficient delivery of waste services.

The following targets as set by goal 2 relating to local government are to be met 2016. Firstly, 95% of urban households and 75% of rural households must have access to adequate levels of waste collection services. In reaching this target, interviewees were asked several questions relating to waste service delivery. Firstly interviewees were asked whether their specific municipality had a programme in place to track waste service delivery, and to collate such data so as to measure how many urban and rural households receive waste collection services. Of the 7 municipalities interviewed 4 had programmes in place to track service delivery, whilst 3 did not. Of the 4 municipalities who indicated that programmes were in place, 3 could provide data on the number of households receiving waste collection services. In reaching the target set by the NWMS, it would be imperative that municipalities are able to track and quantify the level of waste collection services offered within their areas of jurisdiction. One of the municipalities interviewed, which was able to provide data relating to number of households which received waste collection services, indicated that such data was obtained from the census, which is very concerning, as census data, although potentially accurate, very quickly ages, and can in no way be considered to provide reliable long term figures of households receiving waste collection services. The views provide by the municipalities who were interviewed were corroborated by the AG, who indicated that throughout North West province, there are several municipalities which have programmes in place to track waste collection service delivery, the majority however do not have such programmes in place. Given the fact that municipalities have to provide waste collection services to 95% of urban households by 2016, the lack of programmes to track actual service delivery is concerning. Furthermore the target of 75% of rural households receiving waste collection service delivery by 2016 also seems to be at

the moment, a unrealistic target, as all municipalities interviewed indicated that there was little or no waste collection services offered to rural areas within the areas of jurisdiction. The DEDECT however reports that all the municipalities in North West provide weekly kerb side collection to 100% of urban households. It is furthermore reported that on a whole 50% of the households in the province are receiving waste collection services. This figure being derived from the 2011 census.

All municipalities who were interviewed indicated that the level of service delivery within the municipality ranged between not good and average. The AG, based on assessments dating back to 2006 was in a position to state that in their opinion, waste service delivery throughout the province was not good. The majority of interviewees also indicated that their respective municipalities were not doing enough with regards to waste service delivery. Recurring themes which emerged as to why municipalities were struggling with the delivery of waste services were *inter alia* lack of resources, which included infrastructure, financial and human resources, as well as lack of skilled staff, competent in the field of waste management and waste service planning. Issues identified by the AG relating to poor waste service delivery include *inter alia* personnel who are not suitably qualified or trained, the filling of vacancies relating to waste management services by unsuitably qualified staff, or by staff whom are already performing other functions within the municipality, thus creating a dual mandate and stressed resources. This is often the case where environmental health practitioners are required to fulfil waste management duties without adequate training or capacity building, whilst still having to fulfil the traditional environmental health inspector role. This coupled with high staff turnover in municipalities added to the strain. At management level, the appointment of staff lacking the requisite technical knowledge and expertise of waste management, appears according to the AG to be a problem.

The second target set within goal 2 of the NWMS is that 80% of all waste disposal sites have to be permitted. In the North West province, the permitting of landfill sites remains a challenge, as most of the municipalities interviewed did not have a permitted landfill site. This is corroborated by the AG, who highlights the use of unpermitted landfill sites as being a concern within the province. The lack of permit conditions results in a lack of substantive regulatory conditions within which the site

must be managed and operated. Despite the lack of permitted landfill sites in the province, the AG nevertheless audited those sites not having permits against the conditions set in the DWAF minimum requirements guideline. When audited against permit conditions or in the absence thereof, the minimum requirements, not one municipality in North West as audited by the AG from 2011 to 2103 could demonstrate complete compliance. Encouragingly it was stated by the AG that during the 201/2013 audit period, it was noted that a major drive occurred throughout the province's municipalities to obtain waste management licenses for the landfill sites in accordance with NEMWA. This drive will be further bolstered by the programme launched by the DEA to legalise all landfill sites throughout the country. A tender has been published by the Department listing all landfill sites that are to apply for licenses or closure permits, with suitable service providers asked to tender their services. Whether the 2016 target will be met remains to be seen. One hurdle in this regard could be the lengthy EIA process required for the licensing and closure of the landfill sites. DEA has however indicated its intentions to provide a platform for an expedited process in this regard. As of October 2013, the North West provincial government indicated that 52% of all landfills in the province were permitted (Department of Economic Development, Environment, Conservation and Tourism, North West Provincial Government, 2013:6).

3.2.2.3. Goal 3: Grow the contribution of the waste sector to the green economy

The 2016 targets set in relation to goal 3 of the NWMS require the creation of 69 000 new vacancies in the waste sector (private and public) as well as the addition of 2 600 small and medium enterprises and cooperatives participating in waste service delivery and recycling nationally. In terms of current performance in the province the DEDECT report highlights the following (Department of Economic Development, Environment, Conservation and Tourism, North West Provincial Government, 2013:7). The development of two waste buy back centres in the province is being supported, along with the registration of four waste recycling cooperatives. The province reports that 28 vacancies had been created and filled in the waste sector, with a further 25 job opportunities in the waste sector created within the Extended Public Works Programme (EPWP). Challenges with regards to the targets set in Goal 3 were identified during the interviews held, and related to *inter alia* the fact

that despite that the need existed with the municipalities for personnel, budgets were often not provided for such appointments. Encouragingly, it was also communicated that the use of contractors has been explored within certain municipalities in providing waste service delivery, thus creating more jobs within the sector.

3.2.2.4. Goal 4: Ensure that people are aware of the impact of waste on their health. well-being and the environment.

Goal 4 of the NWMS requires that 80% of municipalities must be running local awareness campaigns.

Although not reporting directly to the 80% target as set out in goal 4 the DEDECT report mentions several education and awareness initiatives running throughout the province. It is however not clear from the report as to whether these are provincial or municipal initiatives. In terms of the municipalities interviewed, only 3 indicated that no awareness programmes were in place, with the other 4 providing details as to such awareness programmes and their implementation. Credit was given by the AG to the district municipalities whom were said to be the driving force behind the requisite awareness programmes in the province. It was however not possible to obtain an accurate figure of the number of municipalities in the province actually conducting such awareness programmes, and thus performance against the 80% target remains difficult to ascertain. The effectiveness of these campaigns in essence, is also difficult to ascertain.

3.2.2.5. Goal 5: Achieve Integrated Waste Management Planning

The first target set by goal 5 is arguably one of the most import building blocks for municipalities in achieving the objectives of the NEMWA as well as the remaining goals and targets of the NWMS. All municipalities are required to have integrated their IWMPs with their IDPs and have met the targets set in their IMWPs by 2016. Proper planning, will afford municipalities the opportunity to set realistic goals and timeframes for achieving the targets as set by the NWMS.

According to DEDECT, all 4 district municipalities in North West have IWMPs, however these are due for review and are to be brought in line with the requirements for IWMPs as set out in NEMWA. The district municipality interviewed concurred that

a IWMP was in fact in place. This IWMP is however what is referred to as a first generation IWMP and a review is required so as to incorporate the subsequent requirements imposed on IWMPs by the NEMWA. DEDECT continues to report that 2 local municipalities had submitted IWMPs for approval and that 6 other local municipalities were in the process of developing their IWMPs. This information was confirmed by the interviewees. Worryingly, the interview with the AG heralded some cynical views with regard to the IWMPs of the municipalities in North West. It was revealed during the interview that the AG was of opinion that many of the municipalities who did in fact have IWMPs in place, viewed these as a mere paper exercise. Very often the IWMPs set unrealistic or unattainable targets. Operations and actual practice on the ground was very often far removed from what was promised in the IWMP. It was the view of the AG that performance in line with the IWMPs of the municipalities in North West province was poor to average. This view is bolstered by the performance audits conducted by the AG on IDPs in the province, which heralds the same results. Several challenges faced by municipalities relating to IWMPs are *inter alia* the fact that planning for waste management services takes a back seat in relation to planning for meeting basic needs like water and electricity. Capacity constraints in terms of suitably qualified and experienced staff to undertake comprehensive and meaningful waste planning, financial resources to appoint consultants to undertake waste planning and drafting of IWMPs, and the lack of resources to actually implement the IWMPs where these are approved was also raised as challenge. It however remains to be seen as to whether the municipalities in North West will succeed in meeting the 2016 deadline for them all to have IWMPs incorporated into their IDPs.

3.2.2.6. Goal 6: Ensure sound budgeting and financial services for waste services

Goal 6 of the NWMS has set the target for all municipalities that provide waste services, to have conducted full cost accounting for waste services and have implemented cost reflective tariffs as 2016. When posed with the question as to whether the AG was aware of any of the municipalities having conducted full cost accounting as required by goal 6, the answer was a simple no across the province. This was confirmed by the province, who indicated that efforts had been made to train waste managers and financial officers across the province in conducting full

cost accounting. These efforts were however hampered by poor turnout of targeted delegates. The reasons being offered is that resources and efforts are rather directed at securing the provision of basic needs services such as water and electricity. The importance of undertaking the full cost accounting exercise cannot be underestimated, as it will allow for realistic budgeting as well as the calculation and implementation of realistic and representative tariffs for the provision of waste services. This in turn will have a potential positive effect on the goals and targets relating to waste service delivery. It is apparent that the municipalities in North West still have a way to go in reaching the target set for full cost accounting.

3.2.2.7. Goal 7: Provide measures to remediate contaminated land.

Goal 7 does not provide specific targets relating to local government, but does provide national targets for the management and rehabilitation of contaminated land. Efforts at local level will of course feed into the overall effort in reaching the targets set which require that *inter alia* remediation plans be approved for 50% of confirmed contaminated sites. Although not yet in working, the provisions relating to contaminated land will find application in respect of especially municipal landfill sites. Perhaps because of the fact that Chapter 4 part 8 is not yet implemented, there appears to be little movement within municipalities regarding contaminated land with all of the municipalities interviewed bar one, not having any form of contaminated land register. There is thus a need within these municipalities to start identifying potential contaminated sites so as to be prepared when the contaminated land provisions become enforceable. Of concern, and as revealed in the interview with the AG is the fact that there are great disparities in the calculation of quantum amounts for the closure and rehabilitation of landfill sites across the province, with no standardised model being used. This may result in situations whereby amounts are calculated for differing landfill sites, so divergent in their scope, that questions may abound as to whether they are reasonable and in fact sufficient to ensure sustainable and environmentally acceptable closure of landfill sites.

3.2.2.8. Goal 8: Establish effective compliance with and enforcement of the NEMWA.

Goal 8 sets a target for a 50% increase in the number of successful enforcement actions against non-complaint waste management activities as well as an appointment of an additional 800 EMIs to enforce NEMWA.

Interviews with the municipalities revealed the following in relation to compliance and enforcement measures. Only 4 of the municipalities interviewed had appointed WMOs, this information being confirmed by the DEDECT report. What did transpire was that across the board, enforcement in relation to waste management often fell to individuals within other departments such as environmental health or traffic enforcement. A big reliance on environmental health practitioners was identified in so far as they were required to fulfil duties relating to compliance and enforcement of waste related issues. Furthermore, several interviewees indicated that although municipal officials had undergone the requisite EMI training so as to be designated to enforce the NEMWA, such designation from the MEC was often very slow in coming or did not occur. A positive aspect identified from the interviews was the fact that the province had signed an EMI implementation protocol with the Bojanala Platinum District Municpality, and that for the other three districts the protocols were awaiting final sign off by the MEC (Department of Economic Development, Environment, Conservation and Tourism, North West Provincial Government, 2013:14).

The lack of updated and substantive bylaws was also identified as a hurdle in terms of compliance and enforcement. The interviewees, the AG, as well as the DEDDECT report all point to the fact that across the province municipal bylaws relating to waste management are outdated and that a dire need for revision exists. What did transpire from interviews with the AG and the municipalities was that several had new bylaws that were awaiting approval by council.

Despite some of the positive progressions in terms of compliance and enforcement as alluded to above, it would appear as if actual compliance and enforcement measures implemented by municipalities is lacking. The fact that requests by the AG to the municipalities in North West to supply all details relating to municipal compliance and enforcement measures relating to waste were met with non-returns

serves to raise questions as to whether actual enforcement is taking place from within the municipalities. Lack of enforcement action can of course be attributed to the fact that few municipal officials are designated as EMIs and that the lack of substantive and current bylaws makes enforcement action difficult. Other hurdles facing enforcement action at a municipal level is the lack of resources in terms of manpower and vehicles a point raised by all the interviewees including the AG.

4. Strategies and conclusions towards meeting the NWMS and addressing existing gaps and constraints

The above section of this study has attempted to identify the current situation within municipalities in the North West province regarding performance against the goals and targets set within the NWMS. The interviews and information gathered above has served to highlight several recurring problems identified within the respective municipalities regarding the achievement of the set NWMS goals and targets which are discussed below.

4.1 Addressing Resource and Capacity Constraints

When considering all 8 goals and the accompanying targets within the NWMS, across the board the ever recognisable litany of lack of resources was heard. The four main areas of resource shortage relate to personal, funding, vehicles and equipment. Discussing resource shortages within the municipalities with the AG delivered the following revelations. Resources are often misdirected, with the critical operational level, responsible for actual service delivery often being overlooked. Often assets are neglected to a point where repair is not possible, necessitating the purchase of new equipment. Often asset degradation occurs due to the loss of expertise, which also results in the appointment of consultants or contractors, placing further strain on already limited resources. It was also mentioned that lack of qualified staff within municipalities makes it difficult to manage and evaluate the services rendered by contractors and consultants. It furthermore emerged from the interviews that local municipalities rely on the district municipalities for the allocation of funding and resources for the permitting, establishment and operation of landfill sites. However, district municipalities often do not receive the requisite resources from provincial level, thus perpetuating a knock on effect to the local municipalities.

The question as to how does one address resource shortages is not an easy one to answer. A fundament pre-requisite would be for proper planning so as to identify actual needs and priorities relating to waste management. In this vain it is disconcerting to realise that in terms of IWMPs and cost accounting measures, North West provinces municipalities leave a lot to be desired. This coupled with the appointment of experienced and suitably qualified staff within the waste management field are of grave importance. High staff turnover at municipal level also adds to the woes. Encouragingly it is noted that North West provincial government has established a waste learnership programme for 40 learners along with the EPWP vacancies as alluded to above. It would be encouraging to see these learners once qualified retained within the province, plying their trade and expertise within the municipalities of North West.

Related to the issue of resources is the expectations within several municipalities that waste management functions on especially the enforcement level, can be delegated to officials already appointed to fulfil other mandates. Examples include the expectations that environmental health practitioners be responsible for enforcement of waste related laws. In one instance, a municipality reported using traffic officials to enforce waste related laws. It may be argued that failure to appoint dedicated waste enforcement officials within a municipality may result in the waste mandate being overlooked.

4.2 Strengthening Compliance and Enforcement

A further problem relating to efficient compliance and enforcement is the slow designation of enforcement officials within municipalities by the MEC, thus effectively relegating enforcement actions into the realm of outdated bylaws prevalent within the province. In order to expedite and ensure effective compliance and enforcement with waste related legislation, a concerted effort will have to be made to finalise all EMI protocols between the province and municipalities, the appointment of suitably qualified and experienced staff within municipalities to effect compliance and enforcement is crucial. Such appointment is however only effective with the required designation of these officials as EMIs, a process which should be prioritised. The need for revised bylaws has been highlighted. It is contended that municipalities should review and where necessary draft new bylaws relating to waste management

which incorporate the legislative progressions made in terms of NEMWA as well as providing more substantive regulation in terms of activities relating to waste management within their areas of jurisdiction. The drafting of such bylaws is however only the first step, as council approval will be required for their adoption and implementation.

The fact that little or no direct sanction exists for municipalities who do not comply with their IWMPs is also a matter which deserves attention. A system whereby municipalities can be held directly accountable for failure to deliver on the IWMPs and the targets set therein may aid in the pursuit of proper and effective waste management within municipalities and ultimately the attainment of the NWMS goals.

4.3 Facilitating co-operative governance

Another possible area of concern which emanated from the interviews was the lack of a service level agreement (SLA) between the district and local municipalities. The lack of such an agreement has resulted in confusion relating to areas of responsibility between district and local municipality's in so far as waste management is concerned. It was confirmed by the AG, that in the province only SLAs for water supply and waste water management existed, delineating clearly, roles, responsibilities and authorities relating to the management of these functions. It is suggested that SLAs be drafted for solid waste management, setting out clearly, roles, responsibilities, authorities and accountabilities between district and local municipalities so as to resolve areas of confusion relating to mandates and responsibility. The fact that an SLA exists for example for water supply management is indicative of another concern which became apparent through the course of the study. The fact that waste management is seen as being less important than the delivery of basic human needs services such as water and electricity, often sees this service slipping down the priorities list, also in terms of resource allocation as described above. This is despite the fact that improper waste management may have acute health and environmental impacts. An example of the lack of understanding of the impacts of improper waste management was raised by the AG, who recounted the story of a particular municipality in the province, whom fearing prosecution for using an unpermitted landfill site, proceed to close the site. This resulted in a proliferation of illegal dumping within the municipality, with the

municipality itself disposing of collected waste in open areas. Not only does this demonstrate the lack of understanding regarding the impact of waste on people and the environment, it also demonstrates a lack of understanding of the regulatory regime relevant to waste management in South Africa under which municipalities operate. Attached to this is the necessity to identify all illegal landfill sites in the province and to get these permitted. As explained above, the licensing process will provide a set of substantive conditions within which the sites must be operated or decommissioned, ensuring that all relevant environmental and health impacts are consider assessed and addressed.

4.4 Clarification and Standardisation

A further point of consideration is the development of a standardised quantum calculator for landfills within the province. It became apparent that no standardised model exists, and thus there are great disparities regarding the calculation of funds for the closure of landfill sites. Adding to this problem is the lack of national guidance in the form of substantive guidelines for landfill closure, similar to those seen in the mining industry dealing with the management of residue deposits and stockpiles and mine closure. Furthermore municipalities in the province are encouraged to be proactive in their approach to the imminent implementation of the provisions contained within chapter 4 part 8 of NEMWA dealing with contaminated land. Such preparation should accrue with an inward an outward focus. That is to say that municipalities should identify and record all potentially contaminated sites belonging to themselves which may fall under the regulation of chapter 4 part 8, as well as all those site within their area of jurisdiction on which they may be required to enforce the contaminated land provisions.

4.5. Concluding Remarks

Waste management in South Africa is a continual area of study – especially regarding the complexities facing efficient implementation of the suite of local government mandates contained in the Constitution, the NEMWA and the NWMS. This research used the NWMS as its point of reference in discussing a very specific part of the waste mandate of local government – namely its solid waste management function. It is important to remember that waste management should, however, not

be bound or contained by administrative boundaries and thus by municipal and other borders. This suggests that every municipality must play its part in a more extensive national web of waste management efforts. Furthermore, in its entirety, waste management comprises also, among others, the management of effluent (eg sewage and industrial effluent), air emissions and hazardous chemical substances.

Municipalities in North-West, as part of the larger waste management effort in South Africa would be well-advised to make a constructive contribution to the achievement of the objectives of national waste law and policy. These have been designed to give effect to the internationally acknowledged waste hierarchy and, as such, give effect to local government's constitutional waste management mandate and its duties in terms of the constitutional environmental right. The challenges and constraints encountered by municipalities in North West were explored, with recommendations being made as to how these may be overcome. Although not professing to be *panacea* to the problems encountered by municipalities , specifically in North West, in meeting the objective of the NWMS and ultimately the NEMWA, the strategies proposed may aid the municipalities of the province in demonstrating a continued movement towards the attainment of the 2016 goals as set in the NWMS.

In order to deepen our understanding, the potential areas of future research could include:

- Expanded interviews with civil society, other departments and organs of state.
- Research into the performance gaps and constraints in other provinces to allow for comparative work.
- International comparative studies with the developed and developing world.

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