

8. INTEGRATED WASTE MANAGEMENT PLAN 2015/2016

2/12/1

Johan van Taak
5 May 2015

(028) 313 5045

Corporate Head Office

1. Executive Summary

The purpose of this report is to table the Integrated Waste Management Plan (IWMP) for the 2015/2016 financial year for Council's approval.

2. Service Delivery and Budget Implementation Plan - IGNITE

Directorate: Infrastructure & Planning;
Engineering Planning: Waste Services

2. Compliance with Strategic Priorities

Provision of democratic, accountable and ethical governance
Provision and maintenance of municipal services
Creation and maintenance of a safe and healthy environment
The encouragement of structured community participation in the matters of the municipality
Promotion of tourism, economic and social development

4. Delegated Authority

None

5. Legal Requirements

Waste Management Act, 2008 (Act 59 of 2008)

6. Background/Discussion

Background

The IWMP is a statutory requirement of the new Waste Management Act, which has as its goal the transformation of the current methodology of waste management, i.e. collection and disposal, to a sustainable practice, focussing on waste avoidance and environmental sustainability.

Council took cognisance of the Draft IWMP for 2015/2016 on 25 March 2015. The availability of the Draft IWMP for comment was subsequently advertised on 2 April 2015 in the following newspapers: Hermanus Times, Overstrand Herald and Gansbaai Courant. The period for submission of comments closed on 30 April 2015.

Copies of the document were placed at the various administrative offices and libraries. During this period it was also available for scrutiny on Overstrand Municipality's web site. The Draft IWMP was also sent for input to the relevant provincial government departments.

Discussion

Comments on the draft IWMP were received only from the provincial Department of Environmental Affairs - refer to Annexure B.

The comments were taken into account in the final draft IWMP document, which is tabled for approval by Council as part of this agenda.

7. Financial Implications

Provision has been made for the IWMP under the 2014/15 budget.

8. Staff Implications

None

9. Comments from other Departments, Divisions and Administrations

None

10. Annexures

Annexure A : Integrated Waste Management Plan

Annexure B : Comments received from Department of Environmental Affairs

RECOMMENDATION TO THE COUNCIL:

that the Integrated Waste Management Plan for 2015/2016, **be approved.**

RESPONSIBLE OFFICIAL :

J VAN TAAK

TARGET DATE FOR IMPLEMENTATION :

1 JULY 20

OVERSTRAND MUNICIPALITY



INTEGRATED WASTE MANAGEMENT PLAN (4th Generation)

(Final Draft Report)

Compiled by:



Jan Palm Consulting Engineers
Specialist Waste Management Consultants
P O Box 931
BRACKENFELL, 7561

Tel: (021) 982 6570
Fax: (021) 981 0868
E-mail: info@jpce.co.za

MAY 2015

OVERSTRAND MUNICIPALITY
INTEGRATED WASTE MANAGEMENT PLAN

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ABBREVIATIONS

DEA	Department of Environment Affairs
D:EA&DP	Department of Environmental Affairs and Development Planning
DWA	Department of Water Affairs
EIA	Environmental Impact Assessment
Haz	Hazardous
HCGW	Health Care General Waste
HCRW	Health Care Risk Waste
HCW	Health Care Waste
HDPE	High Density Polyethylene
kg	kilogram
kℓ	kilolitre
ℓ	litre
m ³ pa	cubic meter per annum
t/a	ton per annum
VWMF	Vissershok Waste Management Facility
WWT	Waste Water Treatment
CNC	Cape Nature Conservation
MRF	Material Recovery Facility
IWMP	Integrated Waste Management Plan
JPCE	Jan Palm Consulting Engineers
IPWIS	Integrated Pollutant and Waste Information System
OM	Overstrand Municipality
EAP	Environmental Assessment Practitioner

OVERSTRAND MUNICIPALITY

INTEGRATED WASTE MANAGEMENT PLAN

EXECUTIVE SUMMARY

INTRODUCTION AND GENERAL DESCRIPTION

The fourth generation of this Integrated Waste Management Plan (IWMP) has been formulated by Jan Palm Consulting Engineers (JPCE) on behalf of Overstrand Municipality. The third generation IWMP was developed in 2012 and was subsequently commented on and evaluated by the Department: Environmental Affairs and Development Planning (D:EA&DP). This update incorporates the comments and recommendations made on the 2012 IWMP as well as the latest checklist for IWMPs by the D:EA&DP.

The IWMP is a statutory requirement of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) that has been promulgated and came into effect on 1 July 2009 and that has as its goal the transformation of the current methodology of waste management, i.e. collection and disposal, to a sustainable practice focussing on waste avoidance and environmental sustainability. Implementation of this IWMP will be through municipal by-laws and in accordance with an implementation schedule.

The IWMP must be incorporated as part of each Municipality's Integrated Development Plan (IDP), but is submitted as a separate document. The IWMP also shows alignment of its goals with the Western Cape IWMP and the National Waste Management Strategy (NWMS 2011).

The primary objective of integrated waste management (IWM) planning is to integrate and optimise waste management, in order to maximise efficiency and minimise the associated environmental impacts and financial costs, and to improve the quality of life of all residents within the Overstrand Municipality.

The Plan takes particular note of importance of local authority waste management planning. This document underlines the following principles of the National Waste Management Strategy:

- The prevention of waste generation;
- The recovery of waste of which the generation cannot be prevented, and
- The safe disposal of waste that cannot be recovered

The general topography, geology and hydrogeology of the area is discussed in section 1.3 and the demographic details in section 1.4. The current population estimate of the Overstrand is 93 374 people, based on the Census 2011 population of 80 433 people and an annual growth rate of 3.8%.

POLICY AND LEGISLATION

All applicable waste management legislation is listed and discussed under section 2 of the IWMP. The latest published legislation have been added in the IWMP update, which mainly consists of Norms & Standards published under the Waste Act since the 2012 IWMP.

The Overstrand Municipality has also revised the previous solid waste by-laws into a comprehensive Integrated Waste Management By-law which was published in the Provincial Gazette of 12 July 2013.

EXISTING WASTE MANAGEMENT

Awareness and Education

The Municipality distributes solid waste information and news via the Overstrand Bulletin, the Overstrand website and visits to schools. Various advertising boards are erected throughout the Municipal area which promote and encourage responsible waste management and waste minimisation. It is planned that the Youth Jobs In Waste Programme will also be applied to partly conduct solid waste awareness and education campaigns.

Waste Quantities and Types

The Municipality makes use of weighbridges to record accurate waste quantities. Weighbridges are installed at the Gansbaai and Karwyderskraal landfills with another weighbridge to be installed at the Hermanus transfer station during 2015. The Municipality also reports to the Integrated Pollutant and Waste Information System.

From the recorded waste quantities and the population figures, average waste generation rates per income group in the Overstrand were calculated as well as the future estimated waste quantities.

Income group	kg/person/day
Very Low & Low	0.94
Middle	1.41
High & Very High	2.83

The total waste generated for 2015 was estimated at 59 109 tonnes, with a future total of 66 106 tonnes estimated for 2018.

Waste is recorded in general categories e.g. garden waste, general household, building & demolition waste, etc., but not in specific material streams such as glass, plastic, paper or metal. For this reason the amount of available recyclables calculation was based on the findings of the 2007 study commissioned by D:EA&DP to determine the waste characterisation in the Overberg District. The IWMP further recommends that a new study is conducted over the span of four seasons to acquire an updated reflection of the Overstrand waste stream composition. This will assist in future waste minimisation strategies.

The annual tonnes of each major recyclable category was calculated to be as follows:

PAPER/ CARD (t/a)	PLASTICS (t/a)	GLASS (t/a)	METAL (t/a)
10679	6942	3204	2136

The above calculations indicate that at the current waste stream characterisation and assumptions that 40% of the generated waste stream consists of recyclable materials. Due to at-home waste handling, waste collection methods and handling, the full 40% cannot yet be seen as recyclable due to contamination. Overstrand practises source separation to reduce contamination and maximise waste recovery.

Recycling takes place at the Hermanus MRF, done by Walker Bay Recycling, and at the Gansbaai MRF, done by Enviroserv Waste Management. Overstrand also chips garden waste and composting is done at the Karwyderskraal landfill. The combined effort of recycling and garden waste chipping and composting amounts to an average of 23% of the total generated waste stream being diverted from landfill.

Waste Collection

The Municipality provides a waste collection service to all formal and informal households and waste is collected in wheelie bins, black bags, clear bags for source separation waste and communal skips. Farmers not located on collection routes do not receive a waste collection service, but bring their own waste to the various drop-offs and transfer stations for disposal. The Municipality delivers free basic services to all registered indigent households in the area. Public cleansing services are also rendered by the Municipality in all towns which includes the cleansing of streets, public open spaces and areas of illegal dumping.

Few vacancies exist in the solid waste management personnel structure and solid waste services are rendered at a good level. The waste collection vehicles and other vehicles in the waste fleet are assessed by the Municipality and replaced where necessary.

Waste Management Facilities

The Municipality currently operates the Gansbaai landfill, which is permitted in terms of Section 20 of the Environment Conservation Act. The landfill was extended within its permitted boundaries by the construction of a new disposal cell in 2013/2014. Operation is done by Enviroserv and is generally good. The landfill is externally audited as required by the permit. The current available disposal airspace provides an estimated remaining lifetime until 2031.

The Karwyderskraal regional landfill is currently undergoing an extension with a new disposal cell being constructed. The disposal of waste will resume in 2015, no longer necessitating the Overstrand Municipality to transport and dispose all of its waste at the Gansbaai landfill.

The Municipality operates two Solid Waste Transfer Stations at Hermanus and Kleinmond. Both transfer stations are licensed and externally audited. A number of solid waste drop-offs have also been established throughout the Municipal area which act as satellite collection points for general waste. These drop-offs are located at Rooiels, Pringle Bay, Betty's Bay, Hawston, Onrus, Sandbaai, Voëlklip, Stanford and Pearly Beach. The weekend drop-offs allow for weekend visitors to drop off their waste on the weekends if they are not in the Overstrand to put it out for weekly collection.

There are a number of disposal sites in the Overstrand that are no longer operational. All of these sites have been issued with closure licenses as part of the National Outcome 10 project to license all unlicensed waste facilities. The sites that require rehabilitation are located at Onrus, Hermanus, Hawston, Fisherman's Haven, Voëlklip, Stanford and Pearly Beach. The Betty's Bay and Kleinmond closed disposal sites have been rehabilitated.

Provision must be made to rehabilitate the sites not yet rehabilitated. The estimates are currently:

Rehab estimate excl. VAT	Onrus	Hermanus	Hawston	Fishershaven
	R7 152 827.00	R18 431 235.00	R4 052 778.00	R5 904 258.00
	Voëlklip	Stanford	Pearly Beach	
	R9 440 861.00	R4 228 013.00	R2 910 199.00	

Identified Gaps

- Public Awareness and Education: This is not lacking in Overstrand, but identified as a gap as it is one of the most important aspects of successful integrated waste management and requires continuous input.
- Waste information: A new waste characterisation study in the Overstrand needs to be conducted.
- Collection Fleet: Vehicles operating beyond their economic lifetimes need to be replaced.
- Law enforcement: Stricter law enforcement needs to be applied to perpetrators of illegal dumping.
- Closed disposal sites: A number of disposal sites require rehabilitation.
- Solid waste management departments: Vacancies need to be filled to ensure that the services are rendered effectively.

Strategic Objectives

The strategic objectives of the IWMP is centred on waste avoidance, waste reduction and waste disposal, wherever each is practical and achievable.

Overstrand Municipality needs to provide a safe, robust, and secure system for the management of wastes generated in its administrative area.

It is essential that this system can respond to changes in socio-economic situation, to changing waste composition and quantities, and to alterations in the public's perception of waste management issues. Overstrand Municipality must adopt, therefore, a combination of options for handling waste, tailored to meet the needs and prevailing circumstances of its particular administrative area. The combinations utilised will undoubtedly vary over time - reflecting the changing needs of local residents and the environment.

The plans formulated by Overstrand Municipality are specific to the area and its resources. They reflect the availability of suitable waste management facilities in the region, as well as local market demand for recovered materials.

IMPLEMENTATION

The IWMP has an implementation plan which is part of 7 main goals. These goals have each been divided into actions and years of implementation with estimated costs in order to achieve the main goals. These goals are:

Goal 1: Awareness and Education

Goal 2: Improve Waste Information Management

Goal 3: Effective Solid Waste Service Delivery

Goal 4: Promote and Ensure Waste Minimisation

Goal 5: Improve Regulatory Compliance

Goal 6: Ensure Safe and Integrated Management of Hazardous Waste

Goal 7: Ensure Sound Budgeting For Integrated Waste Management

MONITORING AND REVIEW

The IWMP acts as a planning guide and requires regular updates and reviews in order to stay relevant, especially the projects for implementation. Each project must be reviewed to measure its success, shortcomings or reasons for failure. The IWMP must be updated to reflect the progress of projects or to adapt strategies. The review will also assist in budgeting for upcoming waste management projects.

As the IWMP is a sectoral plan of the IDP, the following projects are recommended to be included in the IDP:

- The rehabilitation of the Onrus, Hermanus, Hawston, Fisherman's Haven, Voëlklip and Stanford landfills.
- The construction of a weighbridge at the Kleinmond transfer station.

OVERSTRAND MUNICIPALITY

INTEGRATED WASTE MANAGEMENT PLAN

1. PREFACE

1.1 INTRODUCTION

The fourth generation of this Integrated Waste Management Plan (IWMP) has been formulated by Jan Palm Consulting Engineers (JPCE) on behalf of Overstrand Municipality to address the challenge of waste management in Overstrand, home to some 93 374 people (2015 population estimate. Refer Section 1.4). The third generation IWMP was developed in 2012 and was subsequently commented on and evaluated by the Department: Environmental Affairs and Development Planning (D:EA&DP). JPCE was appointed by the Overstrand Municipality to develop the fourth generation IWMP for 2014.

The March 2013 assessment report of the 3rd generation, 2012 IWMP is summarised as follows, which identified topics which should be addressed with the new IWMP revision:

- Introduction and general description: Requires reference to recommendations made in the assessment report.
- Strategic linkages: The IWMP must be aligned to the Integrated Development Plan (IDP), Provincial Spatial Development Framework (SDF) as well as the municipal SDF, the Western Cape IWMP and National Waste Management Strategy 2011. Indicate what will be incorporated in the IDP.
- Public participation: Include proof of public participation.
- The latest solid waste legislation must be included in the IWMP, including Municipal by-laws.
- The latest demographic information must be used from Census 2011.
- Budget and capital and operational expenditure should be shown.
- The IWMP must indicate service areas the level of free basic services and tariffs and tariff reviews.
- The IWMP must indicate an updated status of waste management licenses and compliance of waste management facilities.
- The previous IWMP does not include a waste stream characterisation.
- The IWMP must indicate which awareness and education campaigns have been successful to date, the cost of these campaigns and how the Municipality plans to improve on them.
- The IWMP must include a gaps and needs analysis.
- Implementation budget and human resources must be shown.
- There was no monitoring or review programme in the IWMP.

The terms of reference for the development of the Overstrand fourth generation IWMP include a status quo analysis, strategic objectives and an implementation plan.

The IWMP is a statutory requirement of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) that has been promulgated and came into effect on 1 July 2009 and that has as its goal the transformation of the current methodology of waste management, i.e. collection and disposal, to a sustainable practice focussing on waste avoidance and environmental sustainability. Implementation of this IWMP will be through municipal by-laws and in accordance with an implementation schedule.

The development of the IWMP is necessary as it is an integral tool to identify current needs and act as a guide towards sustainable waste management. With regular updates of this document the changing needs as well as progress in the waste management field can be tracked and strategies adapted accordingly. It also provides a framework for budgeting purposes. The IWMP must be incorporated as part of each Municipality's Integrated Development Plan (IDP), but is submitted as a separate document. The IWMP also shows alignment of its goals with the Western Cape IWMP and the National Waste Management Strategy (NWMS 2011).

The primary objective of integrated waste management (IWM) planning is to integrate and optimise waste management, in order to maximise efficiency and minimise the associated environmental impacts and financial costs, and to improve the quality of life of all residents within the Overstrand Municipality.

The Plan takes particular note of importance of local authority waste management planning. This document underlines the following principles of the National Waste Management Strategy:

- The prevention of waste generation;
- The recovery of waste of which the generation cannot be prevented, and
- The safe disposal of waste that cannot be recovered

The Plan will address all areas of waste management – from waste prevention and minimisation (Waste avoidance), to its collection, storage, transport, treatment, recovery and final disposal. It will not only address the practicalities of waste management, but also the issues of public education and changing concepts, as these are vital to a successful management system.

1.2 IWMP DEVELOPMENT

The planning phase of the fourth generation IWMP included the following:

The scope of the plan follows the D:EA&DP's checklist for Integrated Waste Management Planning. The checklist is attached as **Annexure 1**.

The public participation phase of the development of the IWMP was in the form of advertisements in the local newspapers. The draft document was available at the public libraries, municipal offices and at www.jpce.co.za for the public to view and comment on. The draft IWMP served as base on which to provide comment and input. No comments were received during the comment phase from the public. The D:EA&DP provided comments and these comments were addressed where applicable in the IWMP.

The participants in the Overstrand IWMP fourth generation process are Mr J. van Taak (Manager: Solid Waste Planning, Waste Management Officer Overstrand) and Jan Palm Consulting Engineers (Consulting Civil Engineers specializing in Solid Waste Management) with communication and input from the various Municipal officials who provided information contributing to the IWMP development. During the public comment phase, other participants have the opportunity to contribute to the IWMP development before the release of the final document, e.g. NGO's. The IWMP will have to be approved by Council, as it forms part of the IDP.

A project meeting was held at the Overstrand Municipal Offices in Hermanus on the 1st of October 2014 which was attended by the project team. The contents of the document, required information and planned way forward were discussed.

The waste streams and quantities discussed in this IWMP include household waste, garden (green) waste, commercial and industrial waste and building & demolition waste. Medical waste and hazardous wastes are also discussed, but accurate quantities are unknown at this stage.

1.3 OVERSTRAND MUNICIPALITY GENERAL DESCRIPTION

Overstrand Municipality is located along the south western coastline of the Overberg District Municipal area bordering the City of Cape Town in the west and Cape Agulhas Municipality in the east. Its northern neighbour is Theewaterskloof Municipality.

The area is noted for its floral kingdom as well as whale-watching.

The Overstrand Municipality was established in terms of Provincial Notice 494/2000 published in Provincial Gazette 5591 (Western Cape) dated 22 September 2000. It is an amalgamation of the areas of the earlier municipalities of Hangklip-Kleinmond, Greater Hermanus, Stanford and Greater Gansbaai.

Refer to Figure 1-1 for a Plan of the Study Area.



Figure 1:1: Study Area - Overstrand Municipality

1.3.1 **Geology and Hydrogeology**

1.3.1.1 **Geology**

(Refer Figure 1-2)

The Overstrand Municipal area is underlain by rocks of five main geological formations which are, in chronological order, the Malmesbury, Table Mountain, Bokkeveld and Bredasdorp Groups. The Malmesbury Group rocks are intruded by granites of the Hermanus Pluton.

The Malmesbury Group rocks occupy relatively small areas in the Papiessvlei and Ratel River areas. These rocks are very old, >600 million years, and comprise metasediments such as phyllitic shale characterized by clayey soils. They are intruded by granites of the Cape Granite Suite, which form the Hermanus Pluton. Outcrops are limited to a small fault bounded area inland of Onrus and granites are also known to occur south-east of Pearly Beach.

The Table Mountain Group (TMG) rocks occupy the mountainous topography forming the bulk of the Pringle Bay-Hermanus-Stanford area, a "V" shaped area between Danger Point and Oukraal/Elim and the catchments of the Haelkraal and Ratel Rivers. Two main formations are present, the lower Peninsula Formation and upper Nardouw Subgroup. They predominantly comprise resistant quartzitic sandstones separated by the Cederberg Shale Formation. This forms a prominent marker horizon characterized by a smooth green band amongst the otherwise greyish craggy outcrops of quartzitic sandstones.

The Bokkeveld Group consists of alternating shale and subordinate sandstone beds limited to the area between Baardskeerdersbos and Elim, and east of Stanford. It is characterized by clayey soils.

The Bredasdorp Group occupies the coastal plain area between the TMG Mountains and the coast and is characterized by wind-blown sand, calcarenite and calcrete deposits. They are most extensive in the Walker Bay area where they reach thicknesses of over 100 m. They infill palaeochannels in the underlying TMG rocks with coarse sediments that give rise to springs, particularly in the Gansbaai area, e.g. De Kelders.

Alluvial deposits comprising sand, gravel and clay occur in mostly narrow belts following the main rivers, particularly the Uilkraal River.

A number of regional fault systems cut the area with the main trend being ENE-WSW.

1.3.1.2 **Groundwater**

(Refer to Figure 1-3 and Figure 1-4)

In broad terms, any aquifers developed in rocks of the Malmesbury, Table Mountain and Bokkeveld Groups will be of the fractured or secondary type, which are shown as shades of green on Figure 1-3. Aquifers developed in the unconsolidated Bredasdorp Group and alluvial deposits will be of the intergranular or primary type and are coloured shades of mauve on Figure 1-3. Aquifers developed in the granites can be of the fractured and intergranular type (weathered zone) and are coloured light red on Figure 1-3.

The towns of Hermanus, Gansbaai, Kleinmond, Pearly Beach, Buffeljags and Stanford all derive part of their water supplies from groundwater sources and as such is it crucial that the Municipality prevent any groundwater contamination by regularly monitoring groundwater quality at the landfill sites.

The Malmesbury and Bokkeveld Group rocks are of generally low potential in the area. The TMG Aquifers have good potential and are recognized as one of the best aquifers in South Africa, but are often inaccessible due to the rugged mountainous topography developed on the resistant quartzitic sandstones. The best potential in this aquifer is found in the coastal plain area around Hermanus and the Kleinmond area. In the former area the Gateway Wellfield has been developed for supply to Hermanus from deep (>150 m) boreholes. Further exploratory drilling is taking place in this aquifer in the Hemel-en-Aarde Valley for further supply to Hermanus and also inter alia for the towns of Baardskeerdersbos and Buffeljags.

Gansbaai derives part of its water supply from springs emanating from palaeochannels in the TMG bedrock, e.g. at De Kelders and Stanford's Cove on the coast just to the north-east of the town. Springs of a different origin also supply Pearly Beach.

Groundwater circulation in the TMG Aquifer is generally deep-seated and it has been postulated that the major fault zones act as conduits for groundwater flow from the inland mountainous recharge areas to the coast.

The Walker Bay primary aquifer is largely undeveloped and un-characterized but could have good potential given its thickness and storage capacity. This aquifer is tapped to some extent for supply to Stanford with a perennial spring located just outside of the town near the road to Gansbaai.

In terms of groundwater quality (Figure 1-4), most of the area has good to moderate quality groundwater, with electrical conductivity of <70 mS/m in the TMG Aquifer and 70 to 300 mS/m in the Walker Bay and Pearly Beach-Haelkraal-Ratel River areas.

Eskom has identified a site about 5 km to the south-east of Pearly Beach, Bantamsklip, as being potentially suitable for establishment of a nuclear power plant and investigations are underway to determine the suitability of the site from an engineering and EIA perspective. Groundwater occurrence at this site has been shown to be minimal and of poor potential.

1.3.2 Hydrology

The Overstrand municipal area has a number of rivers flowing from the northern mountain range towards the coast. Most prominent of these are the Bot River, Klein River and Uilkraal River. All three of these rivers open up into lagoons before discharging into the ocean.

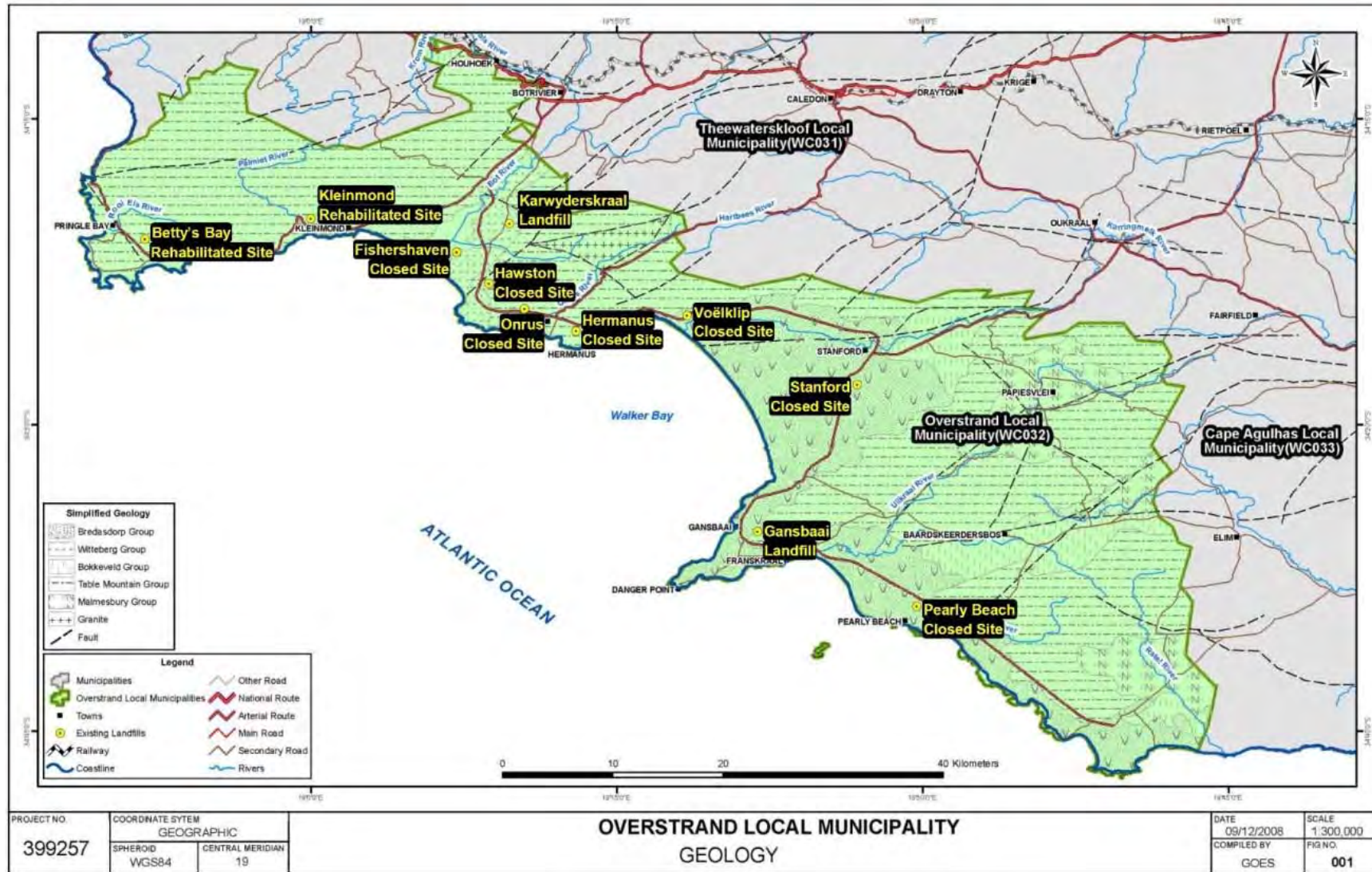


Figure 1:2: Geology of Overstrand Municipal Area

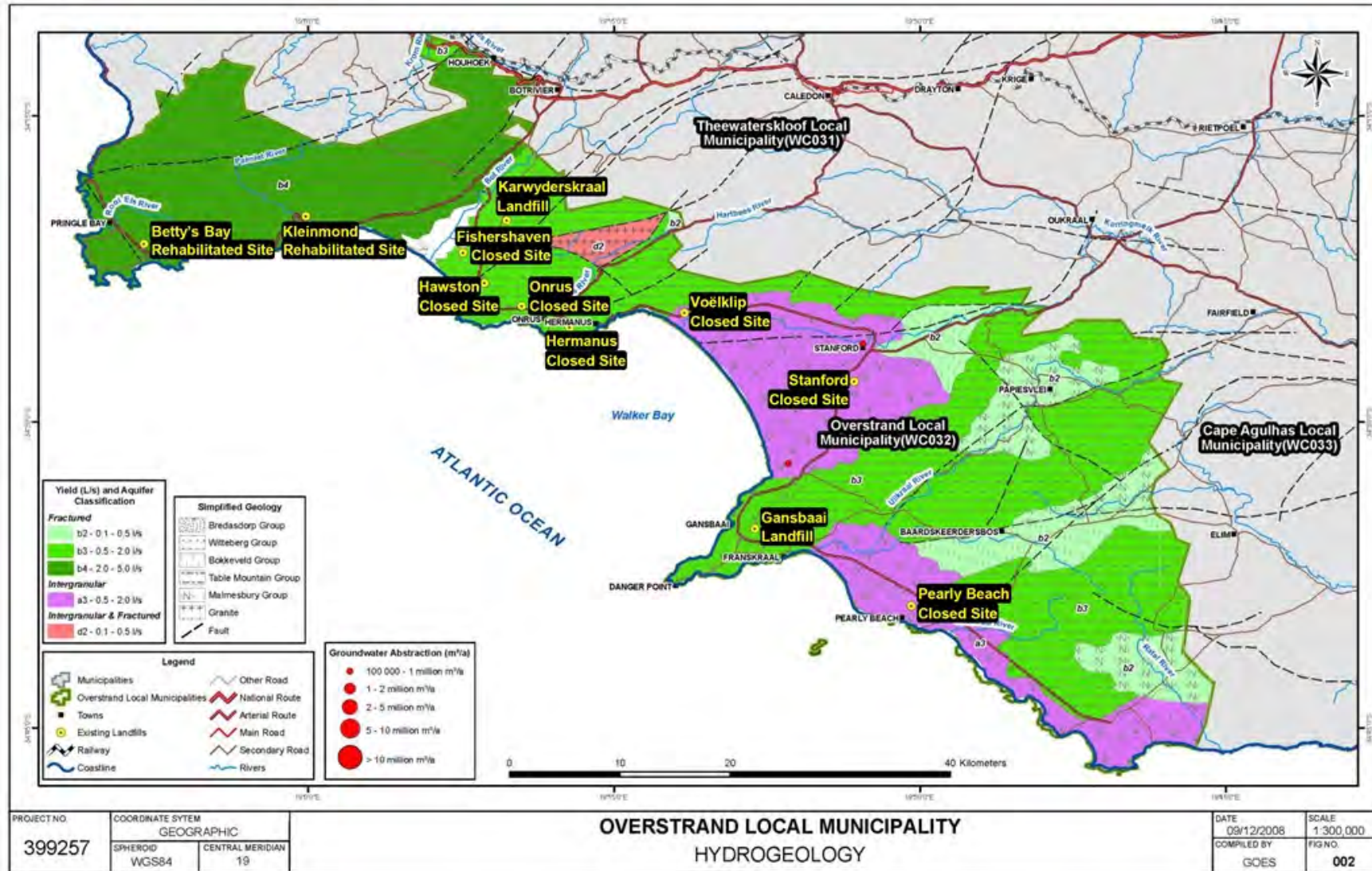


Figure 1:3: Hydrogeology of Overstrand Municipal Area

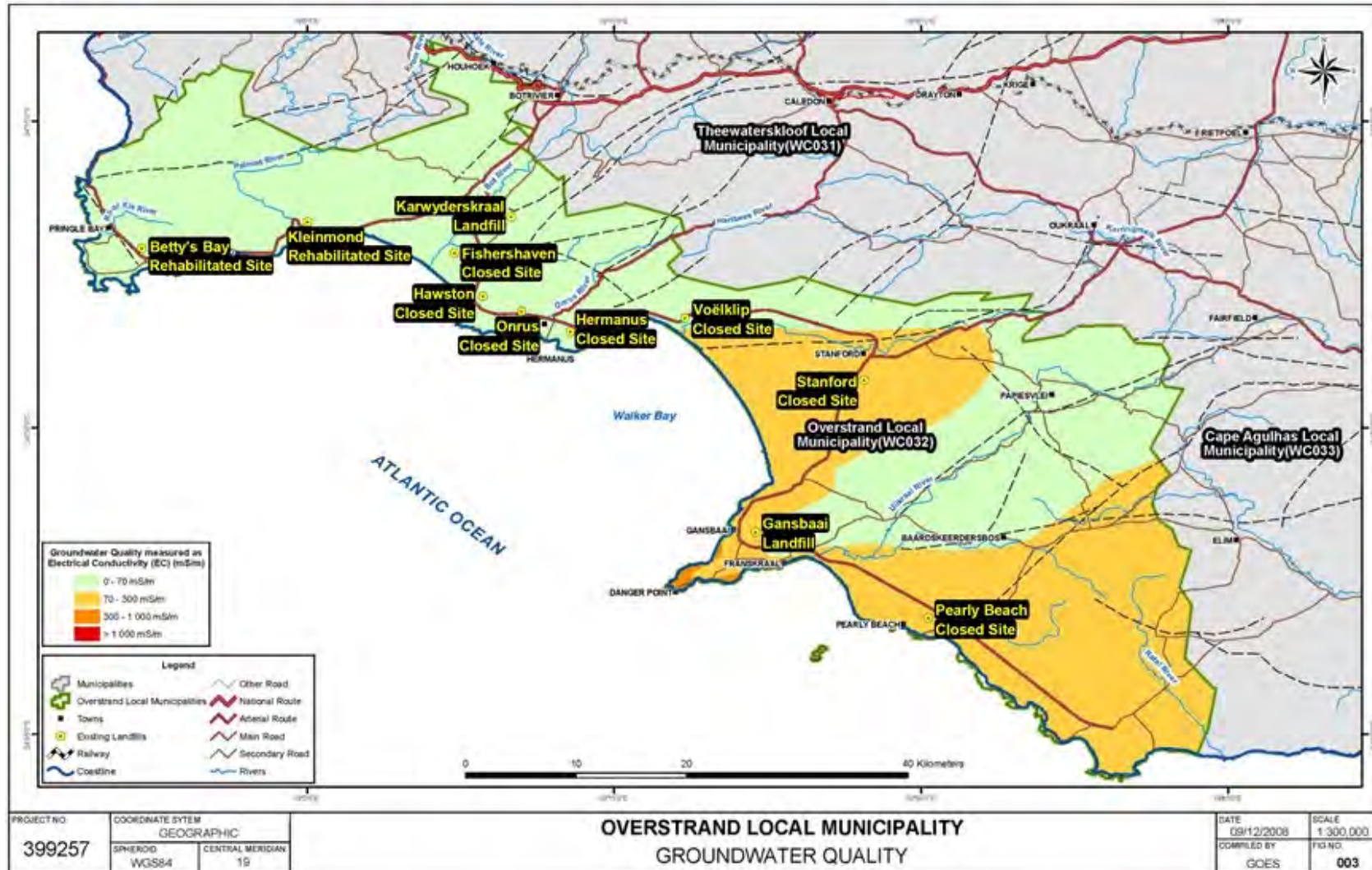


Figure 1:4: Groundwater Quality of the Overstrand Municipal Area

1.4 DEMOGRAPHICS

The statistics relating to population were taken from Statistics SA. The latest 2011 Census population figures were used. The 2011 census shows the total Overstrand Municipality population as 80,433 people with an annual growth rate of 3.8% since the 2001 Census. This growth rate was applied to the population figures per sub-area to estimate the 2015 sub-area numbers, 2015 total population and future population projections. These are shown in Table 1-1 below.

The population profile according to household income in Table 1-2 below reflects census 2011 distributions. The income groups are divided as following Very Low Income: R0 - R9 600; Low Income: R9601 – R38 200; Middle Income: R 38 201 – R 76 400; High Income: R76 401 – R153 800; Very High Income: R 153 801 and more. The 2001 ratio of Low & Very low income: Mid Income: High & Very high income was 63.2%: 17.8%: 19.3%. (Total average) The average percentage distribution of Low & Very low income: Mid Income: High & Very high income groups from the 2011 Census figures were 52.8%: 15.6%: 31.6% (Total average), showing an overall decline (in percentage) in the Low & Very Low income groups.

Of those aged 20 years and older, 5% have completed primary school, 37.7% have some secondary education, 27.7% have completed matric and 16.8% have some form of higher education. 2.5% of those aged 20 years and older have no form of schooling.

The 2015 number of households in Table 1-2 were estimated from the 2011 figures, with the assumption that the average household size per sub-area would remain constant

Table 1-1: Population Figures

Sub-area	2011	2015	2020
Rural			
Lebanon State Forest	72	84	101
Highlands State Forest	75	87	105
Overstrand NU	5 076	5 893	7 101
Walker Bay State Forest	27	31	38
Betty's Bay			
Betty's Bay SP	1 380	1 602	1 930
Rooi-Els & Pringle Bay			
Rooi-Els SP	126	146	176
Pringle Bay SP	804	933	1 125
Kleinmond			
Arabella Country Estate SP	66	77	92
Kleinmond SP	6 633	7 700	9 279
Hermanus & Surrounds			
Fisherhaven SP	723	839	1 011
Hawston SP	8 214	9 536	11 490
Onrus River SP	3 159	3 667	4 419
Vermont	1 992	2 312	2 787
Fernkloof Estate	114	132	159
Voëlklip	1 155	1 341	1 616
Hermanus SP 2	24	28	34
Hermanus SP	4 314	5 008	6 035
Mount Pleasant	4 848	5 628	6 782
Hemel en Aarde	513	596	718
Sand Bay SP	3 591	4 169	5 023
Zwelihle SP	18 210	21 140	25 473
Stanford			
Stanford SP	4 797	5 569	6 710
Gansbaai & Surrounds			
Die Kelders	1 074	1 247	1 502
Gansbaai SP	10 527	12 221	14 726
Birkenhead SP	54	63	76
Van Dyks Bay SP	501	582	701
Uilenkraalsmond	102	118	143
Franskraalstrand SP	1 068	1 240	1 494
Baardscheeders Bosch SP	105	122	147
Pearly Beach SP	1 041	1 208	1 456
Viljoenshof	48	56	67
Total	80 433	93 374	112 515

The socio-economic profile of the population in 2011, according to annual household income, is displayed in Table 1-2 along with the 2015 estimates per sub-area. Note that rural households are included.

Table 1-2: Population Profile According to Household Income (2011 & estimated 2015)

Sub-area	No of Households 2011	Population (2011)	Persons per Household	Very Low and Low Income R0 - R38400	Middle Income R38401 - R76800	High and Very High Income R76801 or more	No of Households 2015	Population (2015)
Rural								
Lebanon State Forest	27	72	2.7	55.6%	22.2%	22.2%	32	84
Highlands State Forest	18	75	4.2	50.0%	16.7%	33.3%	21	87
Overstrand NU	1 713	5 076	3.0	49.9%	18.2%	31.9%	1 989	5 893
Walker Bay State Forest	15	27	1.8	40.0%	20.0%	40.0%	18	31
Betty's Bay								
Betty's Bay SP	660	1 380	2.1	25.5%	16.4%	58.2%	767	1 602
Rooi-Els & Pringle Bay								
Rooi-Els SP	66	126	1.9	13.6%	13.6%	72.7%	77	146
Pringle Bay SP	432	804	1.9	26.4%	19.4%	54.2%	502	933
Kleinmond								
Arabella Country Estate SP	36	66	1.8	25.0%	0.0%	75.0%	42	77
Kleinmond SP	2 733	6 633	2.4	56.2%	12.7%	31.1%	3 173	7 700
Hermanus & Surrounds								
Fisherhaven SP	309	723	2.3	23.3%	21.4%	55.3%	359	839
Hawston SP	1 935	8 214	4.2	53.8%	23.7%	22.5%	2 247	9 536
Onrus River SP	1 440	3 159	2.2	25.6%	12.5%	61.9%	1 672	3 667
Vermont	867	1 992	2.3	20.8%	15.9%	63.3%	1 007	2 312
Fernkloof Estate	54	114	2.1	16.7%	5.6%	77.8%	63	132
Voëlklip	540	1 155	2.1	12.8%	8.3%	78.9%	627	1 341
Hermanus SP 2	9	24	2.7	66.7%	0.0%	33.3%	11	28
Hermanus SP	1 629	4 314	2.6	21.2%	13.6%	65.2%	1 892	5 008
Mount Pleasant	936	4 848	5.2	46.2%	25.3%	28.5%	1 087	5 628
Hemel en Aarde	207	513	2.5	23.2%	7.2%	69.6%	241	596
Sand Bay SP	1 431	3 591	2.5	34.0%	12.6%	53.5%	1 662	4 169
Zwelihle SP	6 282	18 210	2.9	79.8%	12.8%	7.4%	7 293	21 140
Stanford								
Stanford SP	1 488	4 797	3.2	69.8%	15.3%	14.9%	1 728	5 569
Gansbaai & Surrounds								
Die Kelders	495	1 074	2.2	20.6%	18.8%	60.6%	575	1 247
Gansbaai SP	3 294	10 527	3.2	69.4%	15.8%	14.8%	3 824	12 221
Birkenhead SP	12	54	4.5	0.0%	25.0%	75.0%	14	63
Van Dyks Bay SP	261	501	1.9	19.5%	26.4%	54.0%	303	582
Uilenkraalsmond	45	102	2.3	40.0%	40.0%	20.0%	53	118
Franskraalstrand SP	546	1 068	2.0	33.0%	18.7%	48.4%	634	1 240
Baardscheerders Bosch SP	39	105	2.7	38.5%	15.4%	46.2%	46	122
Pearly Beach SP	489	1 041	2.1	63.8%	17.8%	18.4%	568	1 208
Viljoenshof	24	48	2.0	37.5%	25.0%	37.5%	28	56
Total	28 032	80 433	2.9	52.80%	15.55%	31.65%	32 555	93 374

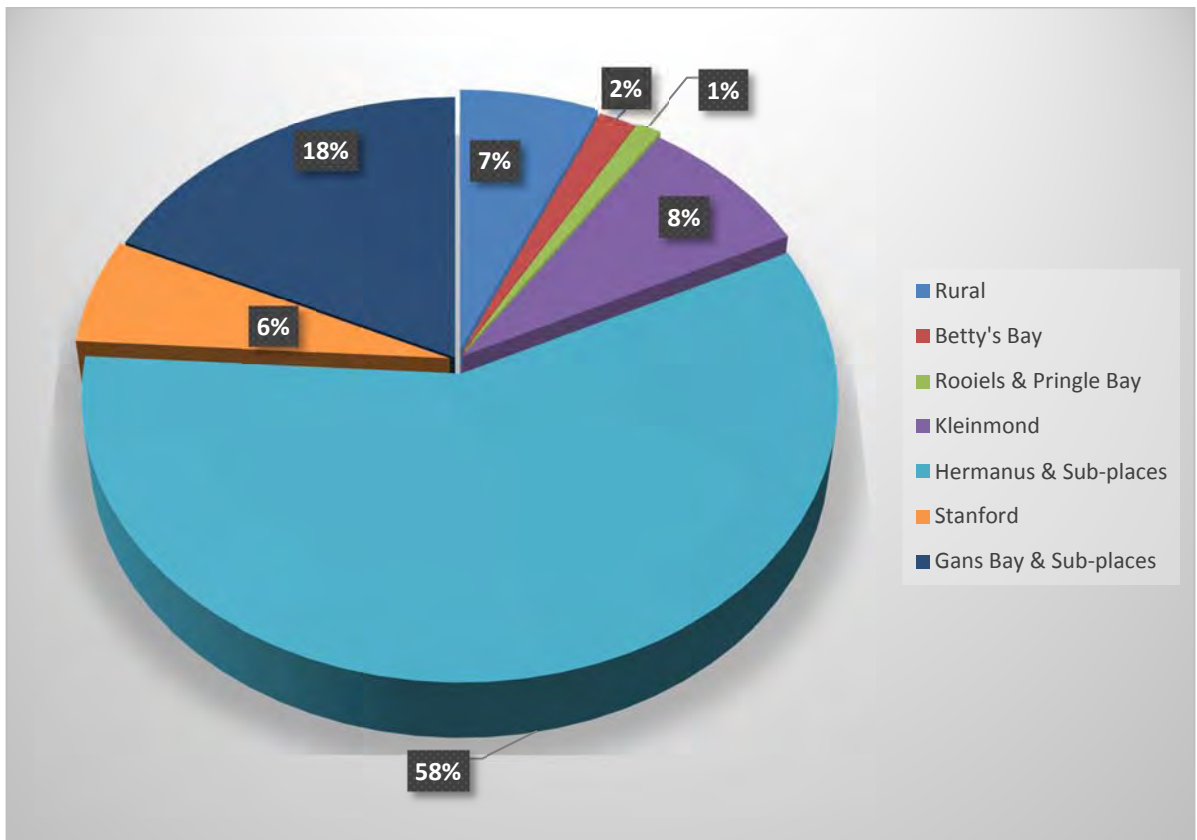


Figure 1:5: Graphical Display of Population Distribution 2015 (Source data: Census 2011 information extrapolated)

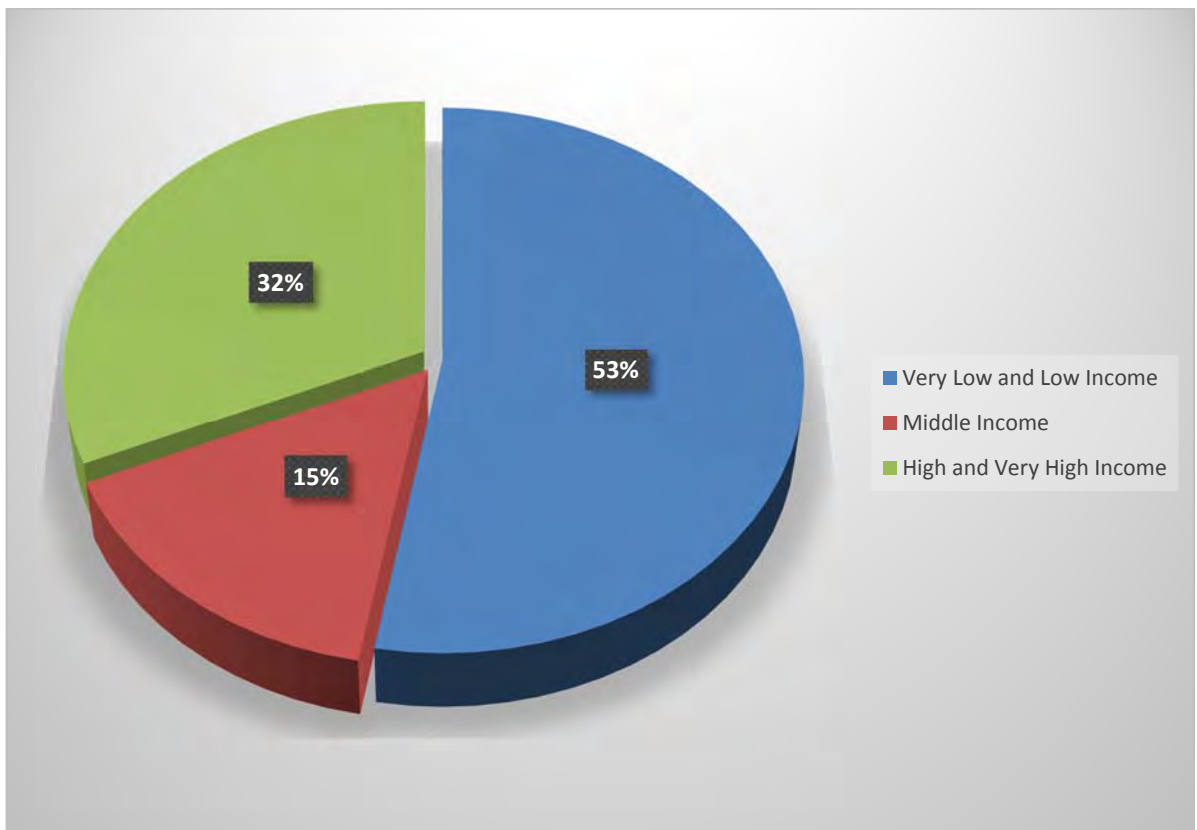


Figure 1:6: Graphical Display of Socio-Economic Distribution (2011, Source data Census 2011)

1.4.1 Future development

Future development areas and urban densification strategies are discussed in detail in the Municipal Spatial Development Framework, Integrated Development Framework and Strategic Environmental Framework and is not repeated in this document. The solid waste management departments (Infrastructure & planning and community services) is aware of all new developments which will require solid waste services and plans accordingly.

1.5 TRANSPORT INFRASTRUCTURE

The major roads in the Overstrand are the R43 and the R44, which effectively link most of the towns within the Municipal boundary. The R326 links Stanford with the N2 as well as with the R316 road between Caledon and Napier. All waste is transported by road.

1.6 STRATEGIC LINKAGES

Table 1-3: Strategic Linkages

Western Cape IWMP	NWMS (2011)	Overstrand IWMP	Overstrand SDF	Overstrand IDP
Goal 1: Educate, strengthen capacity and raise awareness in integrated waste management	Goal 4: Ensure that people are aware of the impact of waste on their health, well-being and the environment	Goal 1: Public Awareness & Education		KPA OS 4 (b): Effective communication and community involvement
Goal 2: Improve waste information management	Goal 5: Achieve integrated waste management planning	Goal 2: Waste Quantification & Information		KPA OS 1 (a): Effective Development of Municipal Infrastructure
Goal 3: Promote sound, adequate and equitable waste management	Goal 2: Ensure the effective and efficient delivery of waste services	Goal 3: Effective Solid Waste Service Delivery	6.2.2 Housing Strategy: - ensuring bulk services development and provision is co-ordinated with the housing plan	KPA OS 1 (a): Effective Development of Municipal Infrastructure
			6.2.3 Bulk Service Infrastructure Provision	KPA OS 1 (b): Effective Management, Operation and Maintenance of Municipal Infrastructure
Goal 4: Mainstream Integrated Waste Management Planning in municipalities and industry	Goal 5: Achieve integrated waste management planning	Goal 4: Promote and Ensure Waste Minimisation		KPA OS 5: Safe and healthy environment
	Goal 1: Promote waste minimisation, re-use, recycling and recovery of waste	Goal 1: Public Awareness & Education		
Goal 5: Mainstream sustainable waste management practices	Goal 1: Promote waste minimisation, re-use, recycling and recovery of waste	Goal 4: Promote and Ensure Waste Minimisation	6.2.3 Bulk Service Infrastructure Provision	KPA OS 1 (a): Effective Development of Municipal Infrastructure

Western Cape IWMP	NWMS (2011)	Overstrand IWMP	Overstrand SDF	Overstrand IDP
	Goal 3: Grow the contribution of the waste sector to the green economy	Goal 3: Effective Solid Waste Service Delivery		
Goal 6: Strengthen the waste regulatory system/framework	Goal 8: Establish effective compliance with and enforcement of the Waste Act	Goal 5: Improve Regulatory Compliance		KPA OS 1 (a): Effective Development of Municipal Infrastructure
	Goal 2: Ensure the effective and efficient delivery of waste services			KPA OS 4: Good governance
	Goal 7: Provide measures to remediate contaminated land			
Goal 7: Ensure the safe and integrated management of hazardous waste	Goal 7: Provide measures to remediate contaminated land	Goal 6: Ensure the safe and integrated management of hazardous waste	6.2.5 Priority areas for biodiversity conservation	KPA OS 5: Safe and healthy environment
		Goal 5: Improve Regulatory Compliance		
		Goal 1: Public Awareness & Education		
Goal 8: Facilitate access to funds to implement Integrated Waste Management	Goal 6: Ensure sound budgeting and financial management for waste services	Goal 7: Ensure sound budgeting for integrated waste management	6.2.4 Initiate: place specific key economic development projects/drivers	KPA OS 3: Effective financial management

2. **BACKGROUND POLICY AND LEGISLATION**

The fragmented and uncoordinated way pollution and waste has been dealt with, as well as insufficient resources to implement and monitor existing legislation, contributes largely to the unacceptably high levels of pollution and waste in South Africa. Through the promulgation and implementation of various pieces of policies, legislation, standards and guidelines as well as the implementation of co-operative governance as envisaged in the Constitution this situation will be improved. The current fragmentation, duplication and lack of co-ordination will be eliminated.

Pollution and waste management is not the exclusive preserve of government. The private sector and civil society have crucial roles to play. The fostering of partnerships between government and the private sector is a prerequisite for sustainable and effective pollution and waste management to take place. Similarly, the spirit of partnerships and co-operative governance between organs of state is equally important due to the crosscutting nature of pollution and waste management.

2.1 **CONSTITUTION OF THE REPUBLIC OF SOUTH AFRICA 1996 (ACT 108 OF 1996)**

In 1996 the new Constitution created the right to the environment as a fundamental right. This fundamental right to the environment ensures everyone's right to an environment that is not harmful to their health or well-being. South African law, the environment and all South Africans have a constitutional right to have the environment protected for present and future generations.

This means that there must be reasonable legal and other measures to prevent ecological degradation, promote conservation and secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

All legislation has to fall within the stipulations of the Constitution. The following sections are of particular relevance where waste is concerned:

- **Section 24(a)**

Provides everyone the right to an environment that is not harmful to a person's health and well-being.

- **Section 24(b)**

Provides everyone the right to have the environment protected through reasonable legislative and other measures. The implementation of section 21, 22 and 26 of the Environment Conservation Act, 1989 is such a legislative measure to protect the environment.

- **Section 25**

Provides for property rights. The Constitution makes provision for both property rights and the right to a healthy environment. A situation may arise in extreme cases where there is a conflict due to rejecting an application for a listed activity from taking place. In such cases it will be up to the court to decide whether the interest of the community (right to a healthy environment) weights heavier than the right of the individual.

- **Section 32**

Provides the right to access to information. The lack of information is one of the major obstacles in environmental impact management. Provision has been made in the regulations in terms of section 26 of the Environment Conservation Act, 1989, that any report submitted becomes a public document.

- **Section 38**

Provides locus standii or the 'right to get involved' to any member of the public. This means that any member of the public has the right to take appropriate action to prevent environmental damage. This may include taking action against the relevant authority for failing to perform its duties in preventing environmental damage or an individual or authority who is in the process of undertaking listed activities in terms of section 21 of the Environment Conservation Act, 1989, without the necessary authorisation to undertake such activities.

- **Section 41**

Provides principles for co-operative governance and intergovernmental relations. The Constitution allocates legislative authority as well as executive and administrative powers to all three levels of government. Schedules 4 and 5 determine the functional areas of government. The environment is a cross-sectoral matter and it is therefore important that co-operation between government on all levels is necessary. Furthermore, Chapter 7 of the Constitution of South Africa (Act 108 of 1996) describes the role and responsibilities of Local Government, which include the objectives in Section 152:

"The objects of local government are:

- to promote social and economic development.
- to promote a safe and healthy environment..."

These principles are further developed in the National Environmental Management Act 1998 (Act 107 of 1998).

The Constitution (Act No. 108 of 1996) is relevant to pollution and waste management for two reasons. Firstly, the Bill of Rights (Chapter Two of the Constitution) contains a number of rights relevant to integrated pollution and waste management, to the extent that an Act or particular statutory provision that does not uphold these rights, is unconstitutional. Secondly, the Constitution provides the legal basis for allocating powers to different spheres of government, and is thus relevant to the institutional regulation of integrated pollution and waste management.

Sovereign

The Constitution states that South Africa is a sovereign, democratic State. In terms of environmental management, it is important to recognize that sovereignty includes the ability to limit sovereign powers by entering into international agreements where the need arises.

The Bill of Rights

The most pertinent fundamental right in the context of integrated pollution and waste Management is the Environmental Right (Section 24), which provides that:

“Everyone has the right

- (a) to an environment that is not harmful to their health or well-being; and***
- (b) to have the environment protected, for the benefit of present and future generation through reasonable legislative and other measures that –***
 - (i) prevent pollution and ecological degradation;***
 - (ii) promote conservation; and***
 - (iii) secure ecologically sustainable development and the use of natural resources while promoting sustainable economic and social development. ”***

This section of the Bill of Rights specifically imposes a duty on the State to promulgate legislation and take other steps to ensure that the right is upheld and that, among other things, pollution and ecological degradation are prevented.

2.2 NATIONAL ENVIRONMENTAL MANAGEMENT ACT 1998 (ACT 107 OF 1998)

The NEMA provides for co-operative environmental governance by establishing principles for decision making on matters affecting the environment, institutions that will promote co-operative governance and procedures for co-ordinating environmental functions exercised by organs of state; and to provide for matters connected therewith.

As the principal framework act for environmental issues, it has direct relevance to the implementation of the National Waste Management Strategy, one of the key implications being the designation of the DEAT as lead agent for the environment. Chapter 7 of NEMA has important direct implications for the achievement of the NWMS initiative.

The environment as defined in NEMA is the natural environment along with its physical chemical, aesthetic and cultural properties that influence human health and well-being.

NEMA contains the following environmental principles:

- Environmental management must put people and their needs at the forefront, and must serve their interest fairly.
- Development must be socially, environmentally and economically sustainable. This means that the following things must be considered before there is development:
 - a) Disturbance of ecosystems and loss of biodiversity
 - b) Pollution and degradation of the environment
 - c) Disturbance of landscapes and sites where the nation’s cultural heritage is found
 - d) Non-renewable resources must be used responsibly
 - e) The precautionary principle must be applied
 - f) Negative impacts must be anticipated and prevented and if they can’t be prevented they must be minimized or remedied.
- Environmental management must be integrated. The best practical environmental option must be pursued.
- Environmental justice must be pursued so that there is not unfair discrimination in the way that negative environmental impacts are distributed
- There should be equitable access to environmental resources, benefits and services to meet basic human needs. Special measures may be taken to ensure access for persons disadvantaged by unfair discrimination.

- Responsibility for environmental health and safety of any policy, programme or project must continue throughout the life cycle of a project
- Public participation in environmental decision-making must be promoted. The participation of vulnerable and disadvantaged groups must be ensured
- Decisions must take into account the interests, needs and values of all interested and affected parties. This includes recognizing all forms of knowledge including traditional and ordinary knowledge
- Community well-being and empowerment must be promoted through environmental education
- The social, economic and environmental impacts of the activities must be assessed
- The rights of workers to refuse to do work that is harmful to human health or the environment and to be informed of dangers must be respected
- Decisions must be taken in an open and transparent manner and access to information provided in accordance with the law
- There must be inter government co-ordination and harmonization of policies and laws
- Actual or potential conflicts of interest between organs of state must be resolved through conflict resolution procedures
- Global and international responsibilities relating to the environment must be discharged in the national interest
- The environment is held in a public trust for the people and the use of environmental resources must serve the public interest, and be protected as the people's common heritage
- The polluter must pay for the costs of remedying pollution, environmental degradation and adverse health impacts
- The vital role of youth and women in environmental management must be recognized and their full participation promoted
- Sensitive or stressed ecosystems must receive special attention in planning which might affect them especially when they are subject to significant resource usage and development pressure.

NEMA also stipulates in Section 24 that there must be an environmental impact assessment before any activity or development that needs permission by law and which may significantly affect the environment.

Section 28 places a specific duty of care on every person to prevent, or mitigate and remediate, environmental damage and pollution. Any person, who was responsible for, or directly or indirectly contributed to the pollution, can be held liable. This includes the owner of the land at the time the pollution occurred or their successor in title, a person in control of the land at that time, or any person who negligently failed to prevent the situation.

The public can use NEMA to exercise their rights when they believe that the right procedures were not followed. Therefore it is extremely important to make sure that when there is a proposed development where the municipality is involved e.g. change of land-use – to make sure that the consultant and/or developers follow the right procedures.

The NEMA Environmental Impact Assessment Regulations

Sections 24 and 44 of NEMA make provision for the promulgation of regulations that identify activities that may not commence without environmental authorisation or existing activities in respect of which an application for environmental authorisation is required. In this context, EIA Regulations contained in three General Notices in terms of NEMA (GN R385, 386 and 387) (came into force on 3 July 2006.)

The 2006 Regulations were repealed by the June 2010 EIA Regulations (GN R543). The purpose of the Regulations is to regulate the procedure and criteria as contemplated in Chapter 5 of the Act relating to the submission, processing and consideration of, and decision on, applications for environmental authorisations for the commencement of activities in order to avoid detrimental impacts on the environment, or where it can be avoided, ensure mitigation and management of impacts to acceptable levels, and to optimise positive environmental impacts, and for matters pertaining thereto.

2.3 NATIONAL ENVIRONMENTAL MANAGEMENT ACT: FEES FOR CONSIDERATION AND PROCESSING OF APPLICATIONS FOR ENVIRONMENTAL AUTHORISATIONS AND AMENDMENTS THERETO (GOVERNMENT NOTICE 28 FEBRUARY 2014)

These regulations apply to the above applications excluding community based projects funded by government grants or applications made by organs of state. The commencement date is 1 April 2014. Payment details are discussed regarding the different applicable fees which are listed as follows:

Application	Fee
Application for an environmental authorisation for which basic assessment is required in terms of the Environmental Impact Assessment Regulations	R2 000.00
Application for an environmental authorisation, for which a S&EIR is required in terms of the Environmental Impact Assessment Regulations	R10 000.00
Application dealt with in terms of section 24L of the Act	(a) 100% of the most expensive application, namely, R10 000 (Ten Thousand Rand) if S&EIR is triggered and R2000 (Two Thousand Rand) if the basic assessment is triggered;
	(b) 50% of the other application, namely, R5000 (Five Thousand Rand) if the S&EIR is triggered or R1000 (One Thousand Rand) if the basic assessment is triggered)
Amendment of an environmental authorisation on application by the holder of an environmental authorisation.	R2 000.00

2.3.1 **Environment Conservation Act, 1989 (Act No. 73 of 1989)**

On 1 July 2009 the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) ("the Waste Act") came into effect. The Waste Act repealed Section 20 of the Environment Conservation Act, 1989 (Act No. 73 of 1989) ("ECA") and introduces new provisions regarding the licensing of waste management activities.

The Environment Conservation Act, 1989 Waste Tyre Regulations (2009) which were published on 13 February 2009 came into effect on 30 June 2009, and makes provision for effective and integrated management of waste tyres in the country. It provides regulations for tyre producers, tyre dealers and waste tyre stockpile owners.

The regulations furthermore require the compilation of industry waste tyre management plans and waste tyre stockpile abatement plans and details the requirements for waste tyre storage areas.

2.4 **THE WESTERN CAPE HEALTH CARE WASTE MANAGEMENT AMENDMENT ACT, 2007 (NO 6 OF 2010)**

Act 7 of 2007 was amended in 2010 so as to align the terminology with that used in the National Environmental Management: Waste Act, 2008; to define or redefine certain expressions; to delete certain unnecessary definitions; to provide for the issuing of compliance notices; to amend the provisions relating to offences and penalties; to make further provision regarding regulations; to effect certain textual changes; and to provide for matters incidental thereto. The Health Care Management Bill provides for the effective handling, storage, collection, transportation, treatment and disposal of health care waste by all persons in the Province of the Western Cape; and provides for matters incidental thereto.

The object of this Act is to promote integrated health care waste management and thereby—

- (a) reduce the risks of health care waste to human health;
- (b) prevent the degradation of the environment;
- (c) prevent the illegal dumping of health care waste;
- (d) promote sustainable development, and
- (e) ensure responsible management of health care waste within the Province.

Under this Act a Municipality must:

- (a) enforce the relevant provisions of this Act within its area of jurisdiction;
- (b) perform audits of generators, transporters, treaters or disposers of health care waste within its area of jurisdiction to ensure compliance with the provisions of this Act;

- (c) report annually to the Provincial Minister on the number of incidents of illegal dumping of health care risk waste within its area of jurisdiction, the number of incidents of illegal dumping of health care risk waste pursued in a court of law, and the number of incidents of illegal dumping of health care risk waste successfully convicted in a court of law.

Health Care Waste is produced by hospitals, clinics, physicians, offices, dentists, funeral homes, veterinary clinics and medical- and research laboratories.

Currently only 10-15% of medical waste is considered infectious. The enormous volumes of health care waste requiring special handling and disposal for all infectious and pathological waste are responsible for the current re-evaluation of the terminology for health care waste.

The modern trend in infection control is dictated by the risk posed by the procedure and not by the diagnoses. Thus health care waste is divided into Health Care General Waste (HCGW) and Health Care Risk Waste (HEALTH CARE RISK WASTE). Health Care Risk Waste generally indicates infectious waste, pathological waste, sharps, chemical and pharmaceutical waste, radioactive and cytotoxic waste.

2.5 THE WESTERN CAPE HEALTH CARE WASTE MANAGEMENT AMENDMENT ACT, 2007: WESTERN CAPE HEALTH CARE RISK WASTE MANAGEMENT REGULATIONS, 2013

These regulations were published in the Western Cape: Provincial Gazette Extraordinary 15 March 2013. These are the regulations set out in the Schedule under section 14 of the Western Cape Health Care Waste Management Act, 2007.

The regulations address the requirements for packaging, storage, internal transport, external transport, vehicles, drivers, treatment and disposal of health care risk waste. Furthermore the required training, registration of health care risk waste generators, transporters, treaters and disposers, reporting, auditing and record keeping is discussed. Health care waste management plans must be prepared by those who meet the criteria listed. The required actions regarding compliance notices are also listed.

All addressed forms in the regulations are given in the Annexures:

- Annexure 1: Minimum Requirements for health care risk waste containers
- Annexure 2: Minimum Requirements for storage of health care risk waste in terms of regulation 3
- Annexure 3: Form 1, Minimum Requirements for a tracking document
- Annexure 4: Minimum Requirements for information to be contained in a Health Care Waste Management Plan
- Annexure 5: Form 2.1, IPWIS registration form for health care risk waste generators, transporters, treaters and disposers
- Annexure 6: Form 2.2, Registration Certificate; Form 3.1, Monthly record keeping form for generators; Form 3.2 Monthly record keeping form for transporters, treaters and disposers
- Annexure 7: Form 4.1, Compliance Notice; Form 4.2, Compliance certificate

2.6 NATIONAL WATER ACT (ACT NO. 36 OF 1998)

The purpose of the Act is to ensure that the Municipality's water resources are protected, used, developed and conserved in ways which take into account the protection of aquatic and associated ecosystems; that addresses basic human needs; that ensures the reduction and prevention of pollution; and that meets international obligations.

Section 19 of the NWA deals with landowners and users involved in any activity or process which causes, has caused or is likely to cause pollution of water resources. Such landowners and users are obliged to take all reasonable measures to prevent any such pollution from occurring, continuing or recurring. This includes measures to comply with any prescribed waste standard or management practice.

Furthermore, the NWA requires anyone who intends undertaking a water use, as defined, to obtain a licence. The water uses that may be relevant to waste management activities are:

- discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit; and
- disposing of waste in a manner which may detrimentally impact on a water resource.

The applications for permits, licenses and exemptions made before the promulgation of this Act could still be dealt with in terms of the Water Act 1956 (Act No. 54 of 1956).

2.7 NATIONAL ENVIRONMENT MANAGEMENT: AIR QUALITY ACT 2004 (ACT NO. 39 OF 2004)

This Act has been promulgated in order to reform the law regulating air quality in order to protect the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development while promoting justifiable economic and social development. It also provides for national norms and standards regulating air quality monitoring, management and control by all spheres of government; for specific air quality measures; and for matters incidental thereto.

The object of this Act is:

- a) to protect the environment by providing reasonable measures for-
 - (i) the protection and enhancement of the quality of air in the Republic;
 - (ii) the prevention of air pollution and ecological degradation; and
 - (iii) securing ecologically sustainable development while promoting justifiable economic and social development; and
- b) generally to give effect to section 24(b) of the Constitution in order to enhance the quality of ambient air for the sake of securing an environment that is not harmful to the health and well-being of people.

2.8 NATIONAL WASTE MANAGEMENT STRATEGY 2011

The National Waste Management Strategy (2011) presents Government's strategy for integrated waste management for South Africa and is a legislative requirement of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) The purpose of the Strategy is to achieve the objectives of the Waste Act.

The National Waste Management Strategy presents a long-term plan (up to the year 2016) for addressing key issues, needs and problems experienced with waste management in South Africa. The strategy gives effect to the Bill of Rights, Constitution of South Africa, Act 107 of 1998, on the basis of which the people of South Africa have the right to an environment that is not detrimental to their health. Furthermore, the strategy translates into action Government's policy on waste as set out in the Draft White Paper on Integrated Pollution and Waste Management for South Africa (published in 1998).

The objective of integrated pollution and waste management is to move away from fragmented and uncoordinated waste management to integrated waste management. Such a holistic and integrated management approach extends over the entire waste cycle from cradle to grave, and covers the prevention, minimisation, generation, collection, transportation, treatment and final disposal of waste. Integrated waste management thus represents a paradigm shift in South Africa's approach to waste management, by moving away from waste management through impact management and remediation and establishing instead a waste management system which focuses on waste prevention and waste minimisation.

The Strategy is built around a framework of eight goals, as listed below, along with specific goals that must be reached by 2016. All listed targets must be reached by 2016:

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

- 25% of recyclables diverted from landfill sites for re-use, recycling or recovery.
- All Metropolitan Municipalities, secondary cities and large towns have initiated separation at source programmes.

Goal 2: Ensure the 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.

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 IWMPs with their IDPs and have met the targets set in the IWMPs.
- All waste management facilities required to report to SAWIS have waste quantification systems that report information to WIS.

Goal 6: Ensure sound budgeting and financial management 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 confirmed contaminated sites.

Goal 8: Establish effective compliance with and enforcement of the Waste Act.

- 50% increase in the number of successful enforcement actions against non-compliant activities.
- 800 EMIs appointed in the three spheres of government to enforce the Waste Act.

The strategy aims to reduce both the generation and the environmental impact of waste. It presents a plan for ensuring that the socio-economic development of South Africa, the health of its people and the quality of its environmental resources are no longer adversely affected by uncontrolled and uncoordinated waste management. It establishes a waste management system that concentrates on avoiding, preventing and minimising waste and makes provision for waste management services for all by extending an acceptable standard of waste collection, as well as transportation, treatment and disposal services to all communities.

While the long-term objective of the strategy is waste prevention and minimisation, a number of remedial actions such as improved waste collection and waste treatment are required in the shorter term due to prevailing inadequate waste management practices.

The Strategy is an institutionally inclusive strategy because its achievement relies on participation by numerous role-players in the public sector, private sector and civil society.

To implement the Waste Act, government must:

- Draft legislation, regulations, standards and Integrated Waste Management Plans.
- Regulate waste management activities through licenses and enforce their conditions.
- Implement the South African Waste Information System (SAWIS)
- Coordinate waste management activities using a system of Waste Management Officers.
- Give effect to multilateral agreements and ensure proper import and export controls.
- Progressively expand access to at least a basic level of waste services and plan for future needs.
- Facilitate the establishment of a national recycling infrastructure.
- Provide the framework for the remediation of contaminated land.
- Work in partnership with the private sector and civil society.

2.9 WHITE PAPER ON EDUCATION AND TRAINING (1995)

The 1995 *White Paper on Education and Training* states that “environmental education, involving an interdisciplinary, integrated and active approach to learning, must be a vital element of **all levels and programmes of the education and training system**, in order to create environmentally literate and active citizens and ensure that all South Africans, present and future, enjoy a decent quality of life through the sustainable use of resources”.

The White Paper advocates environmental education and training **at all levels**. This would include the local government sphere, particularly when it comes to the environmental education & training of government officials and workers.