



Windhoek is the capital and largest city of the Republic of Namibia. It is located in central Namibia at around 1,700 metres above sea level, almost exactly at the country's geographical centre. The population of Windhoek is around 368,000 and growing continually due to an influx from all over Namibia.

SWM services are directly provided by the local government. The local government also has a contract with the private sector for operating some SWM services. From a technical perspective, the SWM system is well modernised: compactor trucks are mainly used for waste collection, two transfer stations are established, and the disposal site is well equipped as a sanitary landfill, except for leachate and landfill gas treatment.

Information

Population*	367,802 (2015)
Population growth (annual %)*	3.2 (2010-2015)
Area (km ²)**	5,133
Climate**	Hot semi-arid climate
Main industries**	Administrative, commercial, and industrial centre of Namibia
Currency***	USD 1: NAD 15.17 (Namibian dollar) (September 2019)

Sources: * United Nations, Department of Economic and Social Affairs, Population Division (2018). World Urbanization Prospects: The 2018 Revision, Online Edition.

** Wikipedia, Windhoek, accessed 6 March 2019, <<https://en.wikipedia.org/wiki/Windhoek>>

*** Oanda.com

Current SWM Situation

Item	Outline
Institutional System	
Legal system	<ul style="list-style-type: none"> ● The governing legislation for municipal services is the Local Authorities Act 34 of 1992. It empowers service provision. ● Environmental Act 7 of 2007. ● Waste Regulations of 2011. ● Waste Management Policy of 2007.
Policy/Plan	<ul style="list-style-type: none"> ● Integrated Waste Management Plan 2011-2017 (under review). The heart of the policy is the waste management hierarchy: avoid, reduce, reuse, recycle, and dispose.
Implementation system	<ul style="list-style-type: none"> ● The local government directly provides solid waste services, such as collection, transport and final disposal. ● The private sector also provides SWM services, such as sweeping, collection, recycling, and final disposal. ● Ward contractor system: the city is divided into 38 wards and three-year contracts are allocated to community-based organisations in each ward to keep the area clean. ● The Ministry of Environment and Tourism is responsible for all issues related to the environment.
Technical System	
Waste generation amount & characteristics	<ul style="list-style-type: none"> ● Waste characteristics: <ul style="list-style-type: none"> » Food 19%, plastics 16%, paper 16%, textile 2%, wood 1%, rubber & leather 2%, metals 3%, glass 12%, other 29% (garden 15%, stone 5%, and miscellaneous 9%).
Storage and discharge/ Collection and transportation/ Road sweeping	<ul style="list-style-type: none"> ● Sweeping is carried out in the city centre, public areas, and residential areas. ● Waste amount collected is 7,000 tons/month (233 tons/day). ● The collection service covers 100% of the formal sector and 30% of the informal sector. ● The collection service is provided once a week, both in the city centre and in the residential areas. ● The service uses 25 compactor trucks with a capacity of 22 m³ and 4 tippers with a capacity of 10 m³. ● There are two transfer stations. ● Pruning of parks and storm water management are important.
Intermediate treatment/ Recycling	<ul style="list-style-type: none"> ● There is one MRF, which is owned and operated by a private company. ● For recycling, waste separation is practiced in markets, shops/businesses, factories, and households. ● The recycling service covers around 2-5% of the city. ● In addition to the private sector, the informal sector is also involved in recycling.

Item	Outline
Final disposal	<ul style="list-style-type: none"> ● Final disposal amounts are as follows: <ul style="list-style-type: none"> » General Waste 7,500 tons » Hazardous Waste 650 tons » Building rubble 12,500 m³ » Garden refuse 7,500 m³ » HCRW (medical waste) 700 tons (estimated) ● There is one final disposal site, Kupferberg, which is located at S 22°38'14.6" E 17°01'35.9" ● The final disposal site has a capacity of 190,000 tons, is open between 7:00 and 16:30, and receives 7,000 tons of waste per month (233 tons/day). ● The final disposal site is a sanitary landfill with bottom liner, leachate collection pipe, enclosed bund, weighbridge, tyre washer, gate, fence, and rainwater drainage. ● There is a long-term operation plan. ● Waste is compacted. Daily and intermediate covers are applied. ● In addition to Kupferberg landfill, 6 sites are designated for the disposal of garden waste, and construction and demolition waste.
Financial system	<ul style="list-style-type: none"> ● Annual operation budget: NAD 450 million. ● Capital budget: NAD 25 million (for construction and procurement of equipment, etc.). ● Waste services are charged. Tariff is set for various types of services. <ul style="list-style-type: none"> » Household/Business Refuse Removal Tariffs: NAD 118.00/407.03 per bin per month. » Institutions not for gain: NAD 134.84 per bin/month. » Availability charge: NAD 78.61 per bin/month. » Bulk removal: NAD 1150.80 per load/portion of load. » Solid Waste Management Charge for extra bins. ● Tipping fee at the disposal site is applied.
Environmental and social considerations	<ul style="list-style-type: none"> ● 25 waste pickers collect recyclable materials. ● Communities are informed about waste collection day and time, how to separate waste, etc. through public consultation meetings, in school, flyers/brochures, etc.
Donor support	<ul style="list-style-type: none"> ● There is no donor support.
Areas for improvement (in order of priority)	<ul style="list-style-type: none"> ● Establishment and implementation of an integrated waste management system. ● Compilation of strategies and guidelines for priority waste (e-waste, tyres, hazardous waste, HCRW, recyclables). ● Implementation of a licencing & registration system for the industry. ● Waste Information System (WIS). ● Education and awareness raising programmes within schools, industries, institutions, and in public places. ● Provision of infrastructure: new transfer station, extension of the landfill. ● Research and Investigations. ● Improved inspection, monitoring, and control of illegal dumping and littering.

Waste Amount at Each Stage of Waste Flow*

Waste flow	Amount** (ton/day)	Remarks
1 Waste generation	N/A	Waste generated at houses, offices, shops, restaurants, etc.
2 Discharge to collection	N/A	Waste discharged for collection services.
3 Self disposal	N/A	Disposal at generation sources, such as burning and burying.
4 Recycling at source	N/A	Reuse of materials, composting, sold to recyclers.
5 Collection and transport	233	Waste amount collected and transported.
6 Clandestine dumping	N/A	Waste illegally disposed of in unknown location.
7 Treatment	N/A	Material recycling, composting, incineration, etc.
8 Recycling/Reduction	N/A	Recycled and/or reduced waste amount by material recycling, composting, incineration, etc.
9 Residue	N/A	Residue from treatment facilities.
10 Final disposal site	N/A	Waste amount brought into disposal sites.
11 Recycling	N/A	Recycled at disposal sites.
12 Final disposal	233	Waste amount finally disposed of at disposal sites.

* Based on the waste flow chart on page.

** Figures include estimated value.

Location of Waste Management Facility and Related Photographs:



Collection



Recycling



Final disposal (coordinates: S 22°38'14.6" E 17°01'35.9")



Education materials