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SUSTAINABILITY REPORT 2005

ACKNOWLEDGEMENTS

Cape Town Sustainability Report 2005

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Dr. Wallace Mgoqi
City Manager, City of Cape Town

FOREWORD

Cape Town is one of the most beautiful and diverse cities in the world. In order to sustain this status, it has made a commitment to ensuring environmental sustainability, while striving to provide a better life for all Cape Town residents. The City of Cape Town (CCT) believes that achieving this requires working at improving social, economic and ecological conditions in the City, within a framework of good governance.

The CCT has made significant progress in environmental reporting over the past few years, having produced five State of the Environment (SoE) Reports since 1998. However, in order to report more accurately on the City's progress towards its goal of sustainability, it has decided this year to produce a Sustainability Report instead. This is in line with international trends in State of the Environment reporting, as it aims at providing a more holistic picture of Cape Town, the problems the City faces, and the achievements it has made.

However, after six years of SoE reporting, there is an indication that Cape Town is moving away from our vision of a Sustainable City. High levels of population growth, increasing unemployment and associated poverty, and high levels of waste generation are problems that must be faced if we are to build a better City.

The value of this Sustainability Report is that it provides a core set of information to decision-makers, interested parties and the general public on the progress that is being made towards sustainability, and it does so in a manner that is understandable and accessible. It will also provide a reference for decision-makers that will show improvements or declines over time. In this way it will highlight critical issues and allow decision-makers to react in good time.

The upcoming ICLEI 2006 conference taking place in Cape Town provides an opportunity for Cape Town to showcase its achievements on the road to sustainability, as well as set a new standard for local environmental reporting. We urge you, the reader, to become more involved in ensuring a sustainable environment in Cape Town. The future of Cape Town as a Sustainable City is in our hands.



Cllr Carol Beerwinkel
Mayoral Committee Member
Planning & Environment:
City of Cape Town

INTRODUCTION

This document is the first City of Cape Town Sustainability Report. It has been prepared in lieu of the sixth State of the Environment Report for the City.

This report illustrates a subtle shift in reporting from a traditional focus on the natural, built and socio-economic environments (as in previous State of the Environment reports¹) towards assessing the relationships between the biophysical environment and the economy and society. This change is in keeping with international best practice².

Sustainability reporting will enable the City of Cape Town to report in a holistic manner on the whole environment of the city, whilst linking the reporting to the City's Integrated Development Plan³ (IDP) and Integrated Metropolitan Environmental Policy⁴ (IMEP). These policy linkages can be found within the document and within each indicator, in a highlighted box. This report also focuses on the extent to which Cape Town has contributed to the UN Millennium Development Goals (MDG), which South Africa has pledged to achieve by 2015.

The Integrated Metropolitan Environmental Policy was developed during a period of great change in Cape Town, during the restructuring of local government. However, this document was intended to cut across political boundaries, and provide a practical guideline document to all government departments as to how they can best implement sustainable development in their operations. The document lays out the City's vision of the Environment for 2020, and then goes on to provide details of various methods for implementation of these policies, and sectoral approaches to sustainability. These goals can be found in Annexure A.

The CCT's Integrated Development Plan is a detailed document which puts forward an action plan for implementing sustainable development in Cape Town, and achieving the goals it has set for itself by 2020 (See Annexure B). In doing so it focuses on five themes, namely: creating integrated human settlements, promoting economic growth and job creation, promoting access and mobility, building strong communities, and providing equitable and effective service delivery. The key overarching theme of the IDP is creating a sustainable city, and therefore this report offers some insight into the success of the implementation of the IDP.

METHODOLOGY

Sustainability

Sustainability is perhaps one of the most difficult concepts to define. Numerous definitions have been put forward; however, for the purposes of this report the meaning of sustainability will focus on three points:

- living within limits;
- equitable distribution; and
- recognition of the interconnected nature of the world⁵.

The notion of sustainability can perhaps be best encapsulated in the following definition: meeting the needs of the present without compromising the ability of future generations to meet their needs ⁶. This includes a commitment to environmental conservation, while working to improve the quality of life of those living in poverty.

Indicators

In order to report on our progress towards sustainability, it is useful to have common measurements that can be tracked over time. These measurements, more commonly known as 'indicators' allow us to quantify, monitor and report on changes in our world⁷.

Sustainability reporting focuses on those indicators which give information about four key areas of the environment – social, economic, ecological/biophysical and governance. A good indicator will provide data about a number of these areas. For example, air quality exceedances have a social and biophysical component, as exceedances of air quality guidelines negatively affect both the health of people and the quality of the natural environment. In order to make this clear to all readers of this document, each indicator within this report will be described in terms of the areas of sustainability it incorporates, and visually illustrated with a diagram.

The report makes use of a relatively small set of indicators to track trends over time. These indicators have been developed through scientific research and consultation with key stakeholders. The indicators are arranged according to a sustainability framework, indicated below.



Figure 1: Sustainability Framework⁸

It is important to remember that indicators are used to provide a 'snap-shot' of progress to sustainability at a certain point in time. They do not provide the 'whole movie'. However, noting trends in indicators over time can provide decision-makers with important information about where the City is going, and what problems need to be addressed.

These trends, where data allows, have been illustrated per indicator in the following way:

	situation improving
	no change
	situation deteriorating
	insufficient data available (no trend)

The selected indicators are aligned with the IDP and IMEP, and represent issues that are relevant to Cape Town and its residents. The selection of indicators was also guided by international and local experience in this field.



PARTICULATE MATTER EXCEEDANCES



Indicator

The number of times per year that the United Kingdom 24-hourly running mean particulate matter (PM¹⁰) guideline is exceeded.



Results

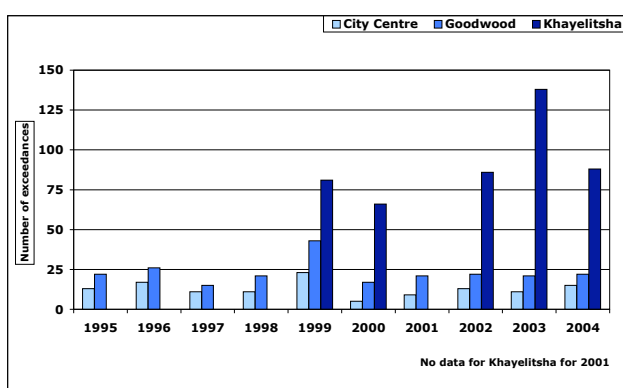
PM¹⁰ was chosen as an indicator of air quality because it is a priority in the CCT's draft Air Quality Management Plan. It has been prioritised because of the negative health effects which are associated with this type of air pollution, as well as the significant contribution it makes to the unsightly "brown haze" which hangs over the Cape Town skyline.

The indicator results are displayed in the figure below for three sites in Cape Town: the City Centre, Goodwood and Khayelitsha. Results have been collected in Cape Town and Goodwood annually since 1995, and in Khayelitsha since 1999. Unfortunately, no data was collected for Khayelitsha in 2001. The results show that the UK 24-hour guideline for particulate matter (PM¹⁰) has been exceeded at all stations, while Khayelitsha has experienced the highest number of exceedances.

It is interesting to note the high levels of particulate matter pollution in Khayelitsha, in contrast to the rest of the City. Frequent air quality exceedances in Khayelitsha point to the burning of wood and paraffin by residents, primarily those living in informal settlements, in order to warm houses or as fuel for cooking fires. The burning of household waste also contributes to air pollution, especially in areas where waste removal services are minimal. A higher usage of older vehicles, especially taxis, may also contribute to pollution levels. Similar levels of particulate matter pollution are likely to be seen in other areas of densely populated informal settlements.

According to the UK National Air Quality Information Archives, more than 75 exceedances of the guideline per year represent a moderate to high risk of negative health effects being experienced by sensitive individuals. Less than 25 exceedances per year represent a low risk. Particulate matter air pollution is especially detrimental to those who suffer from existing respiratory complaints, as PM¹⁰ pollution can aggravate existing respiratory conditions, and even lead to premature death amongst sufferers. In an area such as Khayelitsha, where tuberculosis incidence is high, this is especially problematic, as many people in this area already have compromised respiratory systems. Particulate matter pollution can also trigger asthma attacks and contribute to the incidence of chronic bronchitis.

In low-income areas such as Khayelitsha, emissions pose a particularly serious health risk to residents. For these people medical care is often expensive, and access limited. The reliance on polluting energy sources by poor residents of Cape Town is a critical health issue.



COMPONENTS OF SUSTAINABILITY

Biophysical – Air pollution negatively affects the proper functioning of ecological systems.

Social – Air pollution negatively affects the health of residents.

POLICY LINKAGES

IMEP: Air – commitment to reducing all forms of air pollution.





RENEWABLE ENERGY VS. TOTAL ENERGY SUPPLY

Indicator

The amount of renewable energy supplied to the City of Cape Town, as a percentage of the total energy supplied to the City per year



Results

Unfortunately no data is available for 2004, but estimates indicate that the use of renewable energy is still very low. However, as part of the City's Energy and Climate Change Strategy, various options for implementing the use of renewable energy sources are being considered.

Renewable energy is defined as energy that is obtained from sources that can be replenished within human lifetimes. Although fossil fuels (such as oil, coal and natural gas) are renewable over millions of years, we are using them much faster than the rate at which they are replenished. The burning of fossil fuels has also contributed greatly to climate change. Therefore, alternative means of energy must be found so that our energy supply for the future is ensured. The use of renewable energy incorporates aspects of biophysical and economic sustainability, as an increased use of renewable energy will be more environmentally friendly, while also being more cost-effective as fossil fuel prices continue to increase.

Renewable energy for electricity generation can take many forms. Perhaps the most promising of these is solar power, which works by collecting sunlight through the use of photo-voltaic cells which can be mounted on the roof of any building. Solar water heaters are also available which provide hot water by directly heating water pumped through a roof-mounted unit. This form of power is ideal in the southern African context where there are long hours of sunlight in summer. Similarly, wind power generated by the turning of wind turbines is well suited to the Cape coast area, where wind speeds are high and windy days frequent. Wave power, produced by waves and tides, driving a generator, is another method for the Cape Town area with our long and often rough coastline. Energy obtained from biomass is also being considered.

As part of its commitment to renewable energy, the CCT has implemented a number of community-based projects. The most promising of these is the project taking place in Kuyasa in Khayelitsha where solar water heaters were installed to provide residents with a cheap, non-polluting source of hot water.

It is important that Cape Town implements substantial renewable energy schemes in the next decade. It is clear that fossil fuels cannot continue to be used indefinitely. At some point in the future we will be compelled to find alternative means of energy, and adapt to a world in which fossil fuels are no longer used for energy purposes.

COMPONENTS OF SUSTAINABILITY

Biophysical – Using renewable energy plays a vital role in reducing air pollution and carbon dioxide emissions.

Economic – As the price of oil rises, renewable energy will play an increasingly important role.

POLICY LINKAGES

IDP: 2020 Goal – Renewable energy share equal to 10% of energy consumed.

IMEP: Energy – A commitment to sources of energy with the least impact on the environment and health of communities.



ENERGY USE PER SECTOR



Indicator The amount of energy used per sector each year.

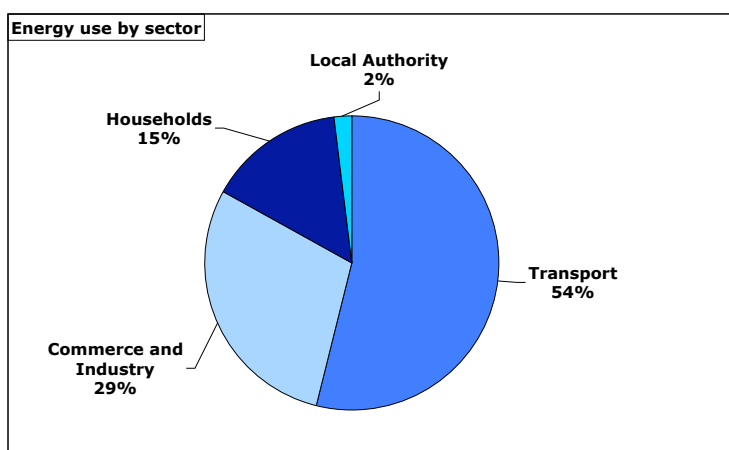


Results

Energy use in Cape Town is dominated by three main sectors: transport, commerce and industry, and households. The CCT is also a significant user of energy.

The Transport sector is clearly the greatest user of energy in Cape Town, being responsible for using more than half of the energy used in the city. The Commerce and Industry sector is the second largest user, at 29%, with Households using 15%. The CCT uses the least energy at 2%, although it is the single largest user of energy in Cape Town. Energy use includes streetlights, buildings, water and waste treatment, and the vehicle fleet.

Transport is the largest sectoral energy user and this has far reaching consequences for every resident of Cape Town. Firstly, roads are becoming increasingly congested as many use private vehicles for commuting purposes. It also points to an under-utilisation of the public transport system. Furthermore, it has negative implications for air quality and greenhouse gas emissions levels in Cape Town, as the burning of petrol and diesel is a significant contributor to carbon dioxide and PM¹⁰ emissions, and thus climate change.



COMPONENTS OF SUSTAINABILITY

Biophysical – Reducing energy use and limiting the use of polluting energy sources play a vital role in reducing air pollution and carbon dioxide emissions.

Economic – Understanding which sectors use the most energy allows the development of plans to reduce energy usage without negatively impacting on the economy.

POLICY LINKAGES

IDP: 2020 Goal – Renewable energy share equal to 10% of energy consumed.

IMEP: Energy – A commitment to sources of energy with the least impact on the environment and health of communities.

MDG Goal 7: Ensure Environmental Sustainability.



CARBON DIOXIDE PER CAPITA

Indicator

The total amount of carbon produced through energy consumption (for domestic and all other purposes) in Cape Town, per person.



Results

Carbon dioxide (CO₂) emissions per capita were calculated by incorporating figures on the use of a number of different types of energy consumed in Cape Town. These included electricity use, petrol and diesel, coal, illuminating kerosene (paraffin), wood, heavy fuel oil, LPG (liquid petroleum gas), and jet fuel used by aircraft leaving Cape Town International Airport. This calculation also includes the carbon dioxide equivalent of the greenhouse gases emitted by landfills each year.

The emission of carbon dioxide is the primary contributor to an increased greenhouse effect, which in turn leads to global warming. Likely consequences of global warming include sea level rise, hotter average temperatures, a higher incidence of extreme weather events and an increased rate of natural disasters such as tropical storms which can be damaging to human health and the environment.

Each form of energy has a corresponding conversion factor which allows one to determine how much carbon dioxide is emitted for each unit of energy used, and this can differ dramatically between different energy sources. For example, LPG emits far less carbon dioxide when burned than coal does. The total emissions produced through the use of these conversion factors is 6.27 tonnes of carbon dioxide per capita per year in Cape Town, up from 5.8 tonnes per capita in 2001. This is high when compared to worldwide average of 3.93 tonnes of CO₂ per capita and an African average of 1.1 tonnes of CO₂ per capita.

South Africa was ranked 14th highest in carbon dioxide emissions in the world in 2000, making South African per capita CO₂ emissions substantially higher than most developing countries. A large percentage of these emissions stems from the use of coal (almost exclusively) to produce electricity. Another major contributing factor is the presence of a large number of energy intensive heavy industries in South Africa, such as aluminium and steel smelting⁹. Most of Cape Town's electricity is imported from the national Eskom grid and is thus primarily produced by the burning of coal, although a small amount is produced by nuclear and hydroelectric sources.

South Africa is a signatory to the Kyoto Protocol, which is committed to reducing greenhouse gas emissions worldwide, and as such we have undertaken a responsibility to reduce greenhouse gas emissions. Although South Africa is technically classified as a "developing country" and as such not required to reduce emissions under the Kyoto agreement we are in fact the 14th highest carbon dioxide polluter in the world, far outstripping many "developed" nations.

Cape Town's CO₂ per capita emissions of 6.27 tonnes appears to be significantly less than the South African average figure of 8.44 tonnes (in 2002)¹⁰. This could be due to the relatively low occurrence of heavy industry in Cape Town.

As part of its dedication to addressing this issue, Cape Town is a member of Cities for Climate Protection (CCP). CCP is a global ICLEI initiative which involves more than 550 cities working to reduce their carbon dioxide emissions, and thus reduce the effects of climate change.

COMPONENTS OF SUSTAINABILITY

Biophysical – Carbon dioxide emissions negatively affect ecosystems by reducing air quality.

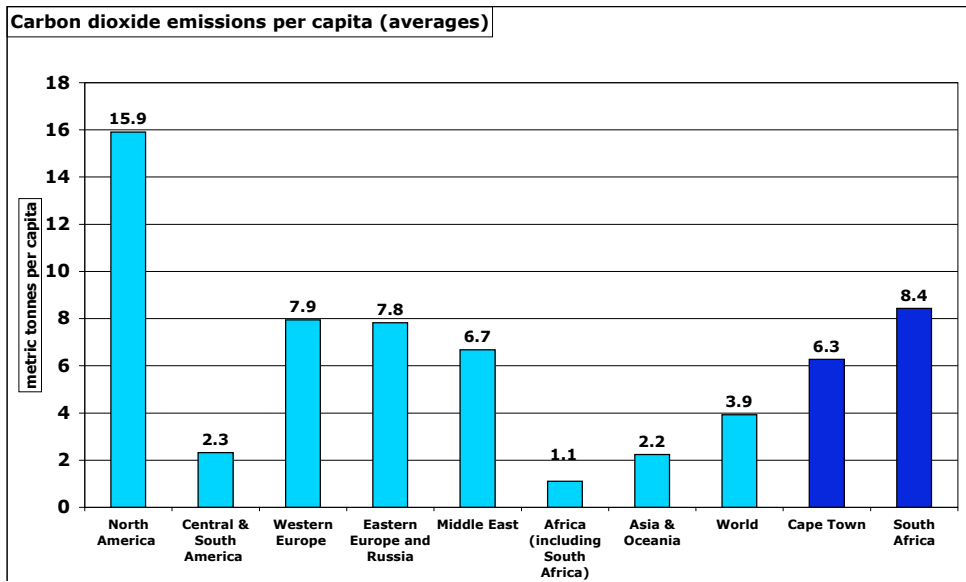
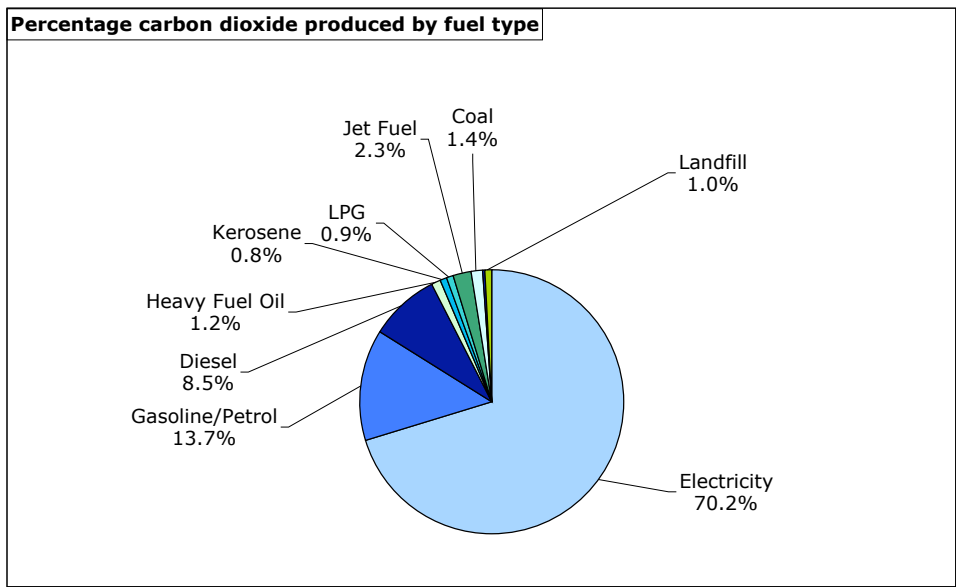
Social – Carbon dioxide emissions contribute to global warming and climate change, which will have negative implications for all citizens.

POLICY LINKAGES

IMEP: Energy – A commitment to sources of energy with the least impact on the environment and health of communities.

MDG Goal 7: Ensure Environmental Sustainability.







PUBLIC VS. PRIVATE TRANSPORT

Indicator

The number of passengers per type of public transport mode, in comparison with the number of private vehicles registered in Cape Town.



Results

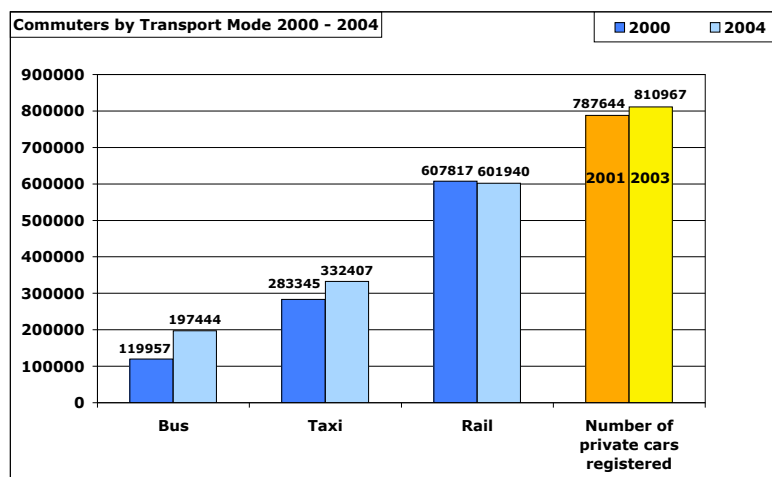
The increased use of public transport is seen as a method of reducing air pollution in a city. Traditionally in South Africa there has been a large reliance on private vehicle use in urban areas, with few middle to high-income residents relying on public transport. In a city like Cape Town where traffic flow is restricted by the geography of the City, an increased reliance on public transport will be required in future years.

The split between private vehicle and public transport use is approximately 50%, and is expected to remain unchanged in future. The rising cost of petrol and diesel fuel is an important factor which could create a change in this modal split. By 2001, 787 644 vehicles had been registered in Cape Town, and by 2003 this number had grown to 810 967 – an increase of 23 323 vehicles. Not all of these vehicles are for private use, but most are, and they all contribute to the congestion experienced on the roads in Cape Town.

The graph below indicates that most passengers travel by rail (approximately 600 000 passengers), while fewer passengers travel by taxi (approximately 330 000) and bus (approximately 197 000) respectively.

Since 2001 the number of rail passengers has actually decreased by nearly 1%. When population growth is taken into account, this amounts to a significant decrease in ridership. However, rail still remains by far the most popular form of transport in Cape Town for a number of reasons. Rail is a much faster form of transport, as it is not subject to traffic congestion, is significantly cheaper than buses or taxis, and during peak hours a large number of trains depart regularly from all stations. However, rail transport does have a reputation for being unsafe with regard to criminal activity which takes place aboard the trains. This may explain the decrease in passengers since 1999.

If Cape Town is to manage its traffic congestion problem, and address its air quality issues, it will need to promote the use of safe, affordable and reliable public transport.



COMPONENTS OF SUSTAINABILITY

Biophysical – Increased traffic volumes negatively affect air quality and ecology by harmful emissions in vehicle exhausts.

Social – Congestion and noise pollution in the city negatively impacts commuter times and thus on people's quality of life and stress levels.

POLICY LINKAGES

IDP: Access and Mobility Plan.

IMEP: Transportation – a recognition that transportation is needed for access to facilities and work opportunities.



GREEN SPACE PER CAPITA



Indicator



The extent of green spaces within Cape Town, per person. Green spaces are defined as formally protected areas (provincial and local) and provincial and municipal parks and gardens. This indicator excludes the Table Mountain National Park.

Results

Green areas have been termed the “lungs of a city”, including vegetation, which plays a significant role in keeping the air clean, and processing environmental waste products. Green areas can either be open spaces, such as municipal parks and gardens, or nature areas. Open spaces are areas in which people living in the City can find place for recreation and relaxation, as well as enjoy the natural beauty of the Cape landscape.

Nature areas represent spaces in which (most often indigenous) flora and fauna are protected and conserved. Nature areas are those areas with formal conservation status (excluding Table Mountain and Robben Island, but including proclaimed water bodies such as Rondevlei, Zeekoevlei and Rietvlei), with the purpose of conserving the biodiversity of this City, as well as providing environmental education to a variety of learners and adults. Examples of nature areas in Cape Town include the Blaauwberg Conservation Area, Rondevlei Nature Reserve, Tygerberg Nature Reserve and the Rietvlei Wetland Reserve.

The total extent of green space in Cape Town is 195 km², 39 km² being part of the Cape Town Metropolitan Open Space System (or CMOSS) and 156 km² being part of nature areas.

Using a population figure of 3 088 433 in 2004, the green space can be calculated on a per capita basis. The results indicate that there is approximately **12.6 m²** of open space per capita in the CMOSS, while there is **50.5 m²** per capita of nature areas. There is therefore, a total of **63.1 m²** of green space per capita in Cape Town.

COMPONENTS OF SUSTAINABILITY

Biophysical – Green spaces within the city are vital to conserving wildlife.

Economic – Entrance fees generated by parks, gardens and reserves provides important funding to the City.

Social – Access to green spaces is a vital part of promoting a dignified, beautiful city.

POLICY LINKAGES

IDP: 2020 Goal – Access to safe green space within walking distance for all.

IMEP: Urbanisation and Housing – A recognition that environmental features and systems need protection from urbanisation.



EXTENT OF NATURAL VEGETATION CONSERVED

Indicator



The extent of vegetation types secured within Cape Town as a percentage of the target for each vegetation type as defined in the City's proposed biodiversity network. The overall target for each vegetation type is the minimum extent of that vegetation type needed to ensure its long-term viability within the City.

Results

Cape Town is located within an area of world-class biodiversity and unique conservation value, and is a global urban biodiversity hotspot without parallel. This is a result of both the inland aquatic and terrestrial ecosystems and the diverse coastal and marine habitats created by the warm waters of False Bay and the colder waters of the Atlantic Ocean. The City is located within the Cape Floristic Kingdom, the smallest of only six floral kingdoms in the world. The Cape Floristic Kingdom is not only the smallest of the world's floral kingdoms but is also one of the richest, with a high proportion of endemic (i.e. species which occur nowhere else in the world) and endangered species. As a result, the Cape Floristic Kingdom is known as a "global hotspot", placing an international responsibility on the CCT, Provincial Government and National Government to ensure the adequate conservation thereof. The Cape Town Lowlands (Cape Flats), an area that to date has been under-conserved and has experienced massive urban sprawl, supports more than 1 466 different plant species.

Urban growth and sprawl is placing greater pressure on the vegetation remnants with many under threat for survival. Biodiversity facts include:

- South Africa has the second highest number of plant extinctions in the world.
- Cape Town contains remnants of the threatened Renosterveld vegetation, of which only 3% of its original extent remains, making it one of the most endangered vegetation types in South Africa, if not in the world.
- 70% of the Cape Floral Kingdom's 9 600 plant species are found nowhere else on earth.
- The Cape Town Lowlands (Cape Flats) has the highest concentration of threatened plants per area of remaining vegetation in the world.
- The Cape Town Lowlands (Cape Flats) support more than 1 466 plant species in 1 874 km² of which 76 are endemic and 131 red data species.
- The Cape Peninsula Mountain Chain supports 2 285 plant species in 471 km² of which 90 are endemic.

The following table shows conservation targets set by the City. In order to preserve rare vegetation types, these targets must be met. Base targets have been set in order to ensure the realisation of final targets.

Targets

Veg. Type	Historical Extent km ²	Remaining extent km ²	Extent Transformed %	Base Target %	Final Target %	Target in km ²	Percentage of remaining that must be conserved
Wsh	469,3	46,1	90,2	10	19	89,26	100%
Wg	74,5	18,5	75,1	16	28	20,87	100 %
Wq	0,3	0,3	0	20	20	0,07	23%
Dc	356,7	136,5	61,7	13	21,03	74,99	54.9%
DI	53	31,6	40,4	16	22,4	11,88	37.6%
DS	95,6	95,4	0,2	16	16,03	15,33	16%
Si	94,9	11,6	87,8	16	30,1	28,52	100%
Sm	630,7	123	80,5	10	18,1	113,84	92.5%
Sq	232,9	58,1	75	13	22,8	52,98	91.2%
Mq	5,9	5,8	1,3	20	20,3	1,19	20.5%
Mgk	3,4	1,5	55,4	20	31,1	1,05	70%
Ms	358,7	330,3	7,9	13	14	50,32	15.2%
Mshm	9,8	8,2	16,1	20	23,22	2,27	27.7%
Mg	69	29	58,1	16	25,3	17,46	60.2%



Key:14 Vegetation Types

Wsh	West coast renosterveld on shale (critical)
Wg	West coast renosterveld on granite (critical)
Wq	West coast renosterveld on inland non-marine derived clay loam, loam and sand loam (granite and shale)
Dc	Dune thicket on sands
DI	Dune thicket on sands over or on limestone
DS	Dune thicket/sand plain fynbos transition (slightly calcareous to acidic/neutral sands)
Si	Sand plain fynbos on inland non-marine derived acid sands (critical)
Sm	Sand plain fynbos on marine-derived acid sands
Sq	Sand plain fynbos on non-marine derived acid sands (recent non-aeolian colluvium)
Mq	Mountain fynbos on inland non-marine derived acid sands (older non-aeolian colluvium)
Mgk	Mountain fynbos on granite koppies
Ms	Mountain fynbos on sandstone
Mshm	Mountain fynbos on shale > 800 mm rainfall per annum
Mg	Mountain fynbos on granite

Targets achieved as of July 2005: 0

COMPONENTS OF SUSTAINABILITY

Biophysical – Conserving natural vegetation is a pivotal part of protecting and promoting biodiversity in Cape Town.

Social – Natural vegetation plays an important role in creating recreational space. Conservation initiatives support job creation.

POLICY LINKAGES

IMEP: Fauna and Flora – A commitment to the conservation of biodiversity in Cape Town.

MDG Goal 7: Ensure environmental sustainability.





Biodiversity

EXTENT OF INVASION BY ALIEN INVASIVE SPECIES

Indicator



The spatial extent of infestation by alien invasive plants as both the geographical extent of infestation as well as the percentage gain on the previous year's extent

Results

Invasive alien plant species pose one of the greatest threats to the globally unique, highly threatened and rare biodiversity found within the boundaries of the Cape Town. Furthermore, alien invasive plant species are major contributors to destructive and devastating wildfires and pose a significant threat to the already over-utilised freshwater supply within the metropolitan area.

Alien invasive plant populations grow at a much faster rate than indigenous vegetation, and where they become established they easily out-compete indigenous vegetation for space and resources. This is particularly evident along watercourses and where terrestrial disturbance has occurred. Invasive alien vegetation can double in size every five years with the concomitant increase in costs. Invasive alien vegetation clearing requires a dedicated approach with regular follow-ups and monitoring. As can be seen from the above information, alien invasive removal will remain a long-term management issue for the City of Cape Town.

Of the 40 000 hectares mapped to date, a total of 19 456 hectares of land is invaded, representing 48.6% of the total. A further 30 000 hectares need to be mapped, which will include the heavy infestation on and around the Atlantis aquifer. It is estimated that a minimum of 25 000 hectares of invasive alien infestation needs to be tackled through a range of strategies involving the different landowners.

While the Ukuvuka campaign undertook significant work in recent years in the Table Mountain National Park, unfortunately, results for the percentage of alien vegetation removed city wide are not available yet.

COMPONENTS OF SUSTAINABILITY

Biophysical – Alien invasive species crowd out local indigenous plants, having a devastating impact on ecosystems.

Economic – Alien invasive plants use up local water resources, and promote and fuel forest fires, at a huge cost to the city.



POLICY LINKAGES

IMEP: Fauna and Flora – A commitment to the conservation of biodiversity in Cape Town.

MDG Goal 7: Ensure Environmental Sustainability.



EXTENT OF URBAN SPRAWL



Indicator

The average number of undeveloped hectares transformed in Cape Town per year.



Results

The data reflects a growing recent trend to developing larger amounts of land in Cape Town. The indicator reflects a longer time period of data than has been found in any of the other indicators, and shows the recent rapid growth in development.

During the period 1977 to 1988, an average of 701 ha were developed each year. In the period 1988 to 1993 this average dropped to 475 ha per year, most likely reflecting apartheid influences in development in South Africa. From 1993 to 1996 the average increased again to 747 ha per year (dropping slightly to 648 ha during 1996 to 1998).

During the period 1998 to 2002, development has significantly increased to an average of 1 232 ha of land being developed each year. This figure is almost double previous averages, and reflects the tremendous development boom that Cape Town is currently experiencing.

If this development is not managed correctly, it could lead to severe environmental and social consequences for the City. These may include the loss of large areas with high biodiversity conservation potential, as well as the loss of viable agricultural land. Cape Town's urban edge – the line outside of which development should not occur – and zoning laws need to be strictly enforced. This will ensure that development does not spread unchecked, and that developments are designed in sympathy with their surroundings.

COMPONENTS OF SUSTAINABILITY

Biophysical – Urban sprawl into natural areas destroys local ecosystems.

Economic – The outward spreading of a city has negative economic impacts in terms of increased travel costs for those on the periphery and high costs for the provision of services to those areas.

Social – The loss of land used for recreational or aesthetic enjoyment negatively impacts on people's quality of life.

POLICY LINKAGES

IMEP: Urbanisation and Housing – A recognition that environmental features and systems need protection from urbanisation.





WATER USE PER CAPITA

Indicator

The volume of water used/consumed by all categories of water users within Cape Town, per person.



Results

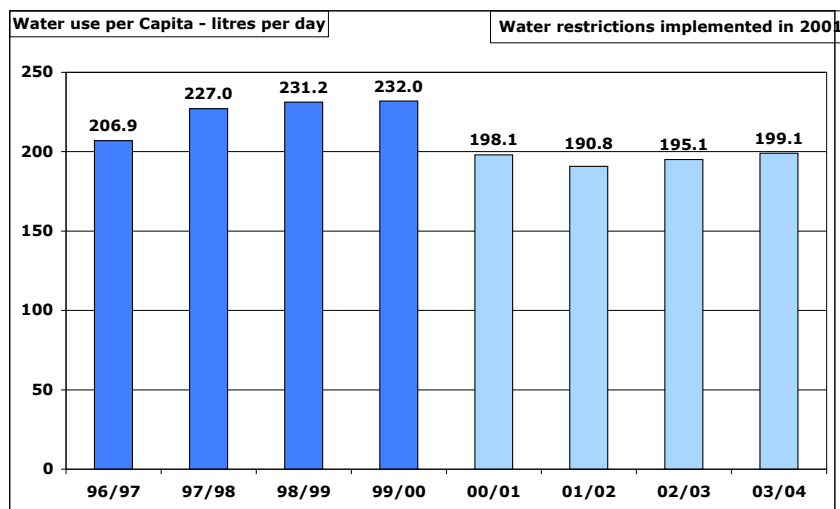
Water use per capita in Cape Town is estimated to be 199 litres per day (after losses through the bulk water system and reticulation). The total amount of water supplied to customers in Cape Town is 303 million cubic metres of water, with an estimated population of 3 088 433 people in 2004/5. Per capita water consumption has been reduced by approximately 15% since water restrictions were implemented in 2001.

The World Health Organisation recommends a minimum per capita water requirement of 50 litres per day. At this level a person is ensured of enough water for consumption (both for drinking and cooking), for hygiene purposes (bathing and hand washing) and washing (both laundry and dish washing).

Although per capita water consumption in Cape Town stands at 199 litres per day, it is likely that many of the people living in informal settlements in Cape Town are using substantially less than this amount per day. Although these figures suggest that everyone in Cape Town has enough water, in reality many may not. In the future it will be important to examine the distribution of water usage in Cape Town, and correct the imbalance in the provision of this basic service.

In South Africa poor households are entitled to a free monthly amount of water of 6 000 litres per month. This translates into an amount of 50 litres per person per day, for a household of four people.

The Department of Water Affairs and Forestry believes that the provision of a minimum monthly amount of free water to poor households is one of the ways in which poverty alleviation can be achieved. In addition, this water will assist in improving community health, and will free women of the arduous, and sometimes dangerous task of collecting water each day.



COMPONENTS OF SUSTAINABILITY

Biophysical – Overuse of water resources by humans impacts on natural inland water systems.

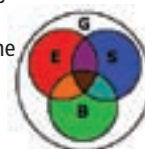
Economic – Business and industry require water, and the accessibility of this must be ensured.

Social – Adequate access to safe water (including free access to water for the poor) is essential for ensuring a decent quality of life.

POLICY LINKAGES

IDP: 2020 Goal – Universal access to basic services.

IMEP: Water resources – An acknowledgement that all Cape Town inhabitants have the right to clean, potable and adequate water sources.



FRESHWATER QUALITY



Indicator



Water quality in aquatic ecosystems. This indicator uses the South African Scoring System (SASS) for aquatic invertebrate fauna as a biological indicator of water quality.

Results

During two recent (2003 and 2004/5) River Health Programme surveys of rivers in the Cape Town area, the following invertebrate biological monitoring results were obtained. The rivers have been divided into the four management areas used by the City's Catchment, Stormwater and River Management Branch.

Almost two thirds (65%) of the sampling points fall into the 'Fair' and 'Poor' categories, indicating that sensitive species may be lost or that mostly tolerant or opportunistic species dominate. In the 'Poor' category, infestation by invasive alien species is common.

Rivers and wetlands are an integral part of any ecosystem, and provide habitat for a diverse variety of plants, fish, birds and insects. The associated riparian zone along rivers and around wetlands also supports a rich community of plants and animals adapted to this transitional environment. Our aquatic biodiversity is dependant on the maintenance of healthy aquatic ecosystems. Furthermore, these ecosystems are capable of providing important goods and services (e.g. flood attenuation, sediment control, dilution of pollutants, recreational opportunities) to the people of Cape Town if their structural and functional integrity is maintained. It is therefore critical to manage or rehabilitate these ecosystems to a state where they are able to continue functioning.

ASSESSED RIVER HEALTH	NATURAL	GOOD	FAIR	POOR
Southern Management Area (14 sites)	1	6	5	2
Eastern Management Area (11 sites)	2	2	4	3
Central Management Area (11 sites)	3	0	3	5
Northern Management Area (7 sites)	0	1	2	4
Total per category (43 sites)	6	9	14	14
Percentage per category (%)	14.0	20.9	32.6	32.6

RIVER HEALTH	ECOLOGICAL INTERPRETATION	MANAGEMENT INTERPRETATION
Natural	No or negligible modification	Relatively little human impact
Good	Biodiversity and integrity largely intact	Some human-related disturbance, but ecosystems generally in good state
Fair	Sensitive species may be lost; tolerant or opportunistic species dominant	Multiple disturbances associated with the need for social-economic development
Poor	Mostly tolerant or opportunistic species dominating; alien species invasion, individuals often diseased	High human densities or extensive resource depletion

COMPONENTS OF SUSTAINABILITY

Biophysical – The quality of freshwater systems is a vital part of maintaining healthy ecosystems and ensuring biodiversity.

POLICY LINKAGES

IDP: Environmental Management Framework.

IMEP: Water Resources – A commitment to ensuring the quality of coastal, marine and inland waters.



COASTAL WATER QUALITY

Indicator Microbial water quality (using recreational use guidelines) in coastal waters.



Results

Coastal water quality is measured fortnightly on the Atlantic Coast and False Bay. The indicator is based on the South African Water Quality Guidelines for Coastal Marine Waters (Volume 2: Recreational Use). This guideline uses both stringent and relaxed guidelines for faecal coliform counts. In order for a beach to comply, it must meet both guidelines. The stringent guideline states that 80% of samples must contain not more than 100 faecal coliforms per 100 ml, while the relaxed guideline states that 95% of samples must not contain more than 2 000 faecal coliforms per 100ml. Faecal coliform concentrations are an excellent indicator of poor water quality.

The results reflected in the graphs alongside represent the percentage compliance with the Recreational Use guidelines. The results indicate that 100% compliance with the stringent guideline is reached only once in 1994 on the Atlantic coast. The relaxed guideline was met twice on the Atlantic Coast (1994 and 1996) and three times in False Bay (2001, 2003 and 2004). When trend lines are used on the results for each site, coastal water quality at False Bay reflects an improvement in compliance (with both stringent and relaxed guidelines) while the Atlantic Coast reflects a gradual decline in compliance (both guidelines).

The most polluted sites in False Bay include the ex-Sandowne Hotel site, Fish Hoek beach and Monwabisi beach. These three areas are considered pollution hotspots on the False Bay coastline. Investigations have indicated possible sources of pollution at these sites, and if the proposed solutions – such as diverting stormwater low flows to a nearby pump station – can be implemented, the compliance level may improve further.

The worst site on the Atlantic Coast is Green Point; however, the public do not have access to sites in Green Point, and therefore this does not pose a public health risk. A study done by the CSIR concluded that the state of the ageing stormwater drains in the area is one of the main sources of pollution.

Poor water quality at a number of beaches on both the False Bay and Atlantic Coasts is a problematic issue in terms of both environmental sustainability and tourism potential. Maintaining our coastal ecosystems is an important part of preserving biodiversity in the City and ensuring that marine ecosystems remain viable in the future. Furthermore, Cape Town's beaches are one of the main tourist attractions for the City, and ensuring that the beaches are clean and do not pose a health risk to users is fundamental to securing this tourist resource.

COMPONENTS OF SUSTAINABILITY

Biophysical – The quality of coastal water systems is a vital part of maintaining healthy coastal ecosystems and ensuring biodiversity.

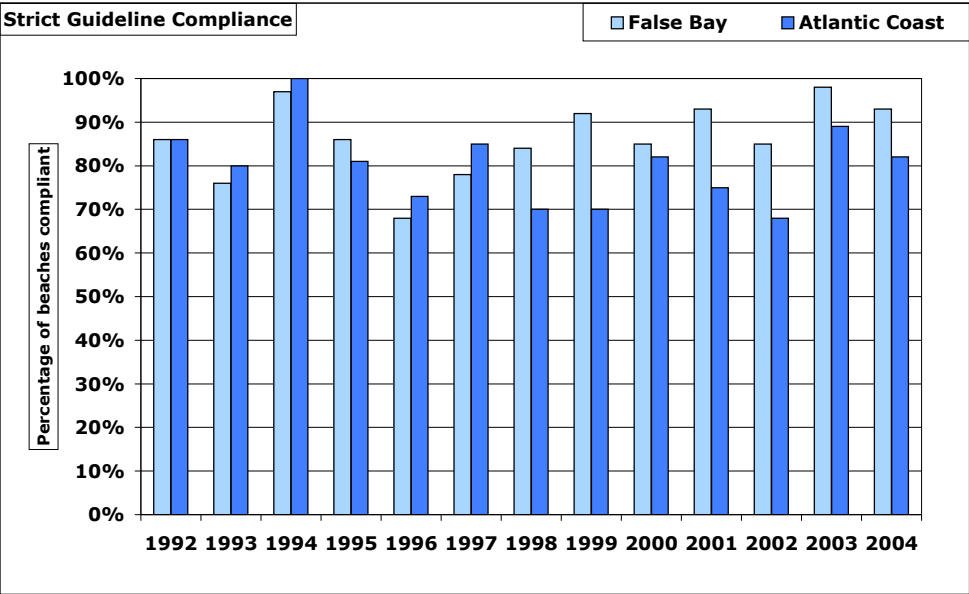
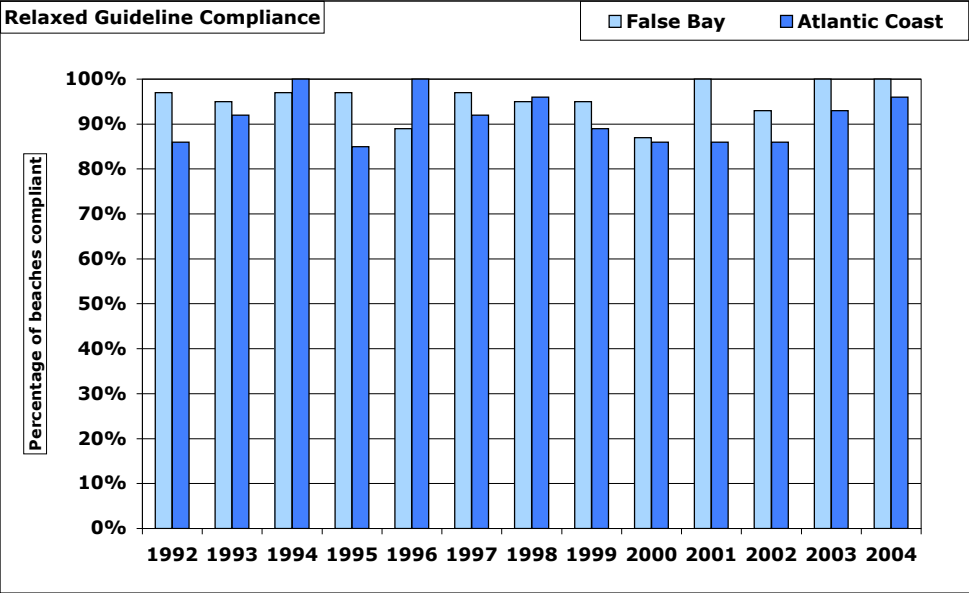
Social – Healthy beaches are important for safe recreational use and tourism.

POLICY LINKAGE

IDP: Environmental Management Framework.

IMEP: Water Resources – A commitment to ensuring the quality of coastal, marine and inland waters.







PROPORTION OF EFFLUENT RE-USED

Indicator

The proportion of treated effluent (wastewater) that is re-used as compared to the total amount of treated effluent received.



Results

A proportion of treated sewage effluent in Cape Town is currently being re-used, thus serving to reduce the demand placed on available potable (drinking) water. Approximately 6%, or 30.8 million litres per day, of the total treated sewage effluent is re-used. This, of course, excludes informal use such as withdrawal from the river downstream of the water works (when effluent is the only flow in the river).

Effluent is often re-used by industries trying to save money by reducing their water costs. Often the water used in industrial processes does not need to be of potable quality, as it is used as a coolant and not for the production of consumable items. Effluent re-use is a viable money-saving strategy for many industries; an increased use of effluent by these industries would significantly reduce the amount of water that needs to be supplied to the Cape Town area.

Treated effluent has been re-used successfully in other cities around the world. For example in Maui, (Hawaii) between 40% and 50% (approx. 6 to 7.5 million litres per day) of the treated effluent produced is re-used by local farmers and industries, after having been treated at the Kihei Waste Water Reclamation Facility.¹¹ Treated effluent is also commonly used for watering golf courses, a highly water-intensive activity.

Cape Town has established an economically feasible target for re-use of treated sewage effluent of 23%, or 117 million litres a day, by 2015.

COMPONENTS OF SUSTAINABILITY

Biophysical – Re-using effluent means that less water needs to be drawn out of natural systems.

Social – Re-using effluent means that less potable tap water is used for industrial activities, meaning more is available to the residents of Cape Town.

POLICY LINKAGES

IDP: 2020 Goal – Water use and waste production down 30%.

IMEP: Water Resources – An acknowledgement that all Cape Town inhabitants have the right to clean, potable and adequate water sources.



LANDFILL LIFESPAN



Indicator

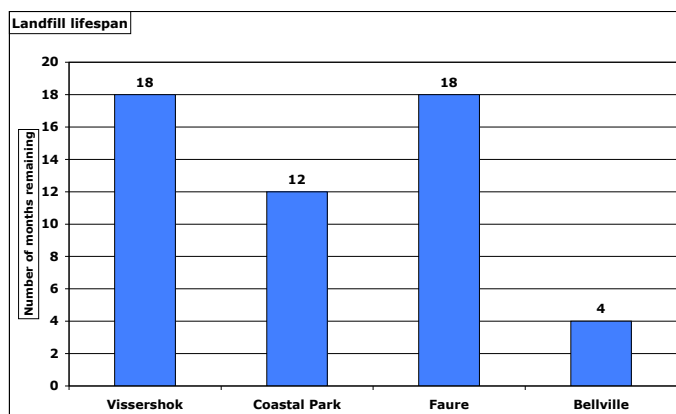


The remaining available space or 'lifespan' for both general and hazardous waste in Cape Town's landfill sites. The indicator is calculated by dividing the total available airspace volume by the incoming volume of waste per year. This provides a number that represents the number of remaining months or years in which the landfill can be operational.

Results

There are currently only four operational waste landfill sites in Cape Town, namely Vissershok, Coastal Park, Faure and Bellville. Both the Brackenfell and Swartklip landfill sites are considered closed. The results from the graph are alarming when one considers that no landfill in Cape Town has a remaining lifespan of longer than 18 months.

However, three of the four operational landfills do have plans for expansion, some of which are to be completed by the end of 2005. These expansion projects will obviously increase the lifespan of each landfill to some extent, however the amount of space in Cape Town that can be used for landfills is finite – the landfill sites cannot go on constructing new cells indefinitely. This indicator highlights the critical need for the City to address current waste generation rates.



COMPONENTS OF SUSTAINABILITY

Biophysical – Expanding landfills into unused land negatively impacts on the ecology of those areas.

Social – Expanding landfills into unused land negatively affects people's enjoyment of natural open space, and reduces land that can be used for housing or agriculture.



POLICY LINKAGES

IMEP: Waste – A commitment to the need for an integrated waste management strategy.





WASTE DISPOSAL PER CAPITA

Indicator

The amount of waste disposed per capita per year in Cape Town.



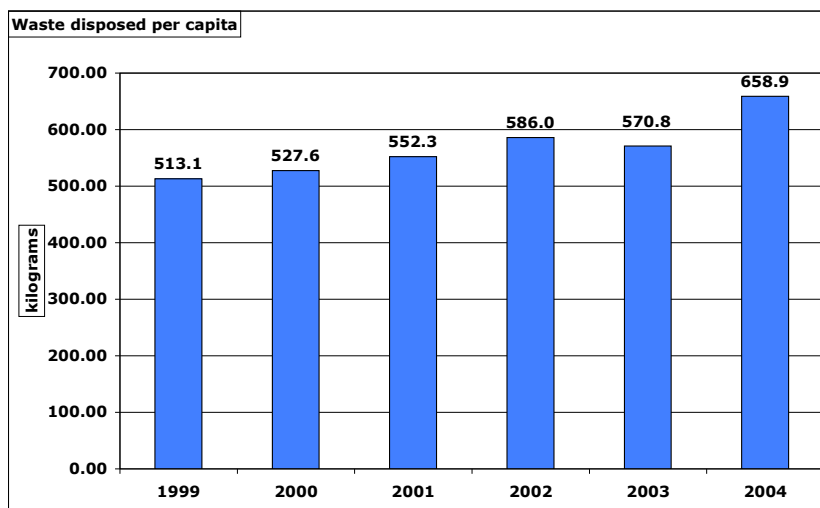
Results

Waste disposal per capita for Cape Town is reflected in the figure below. However the figures are based on waste disposed at landfill sites only.

There has been a steady increase in waste disposal per capita over the period 1999 to 2004, increasing from 513 kg per person in 1999 to 659 kg per person in 2004. This is equal to approximately 1.8 kg of waste per person per day. These figures simply highlight a growing problem in Cape Town, which needs to be dealt with immediately. The most effective way to reduce the amount of waste sent to landfills would be to institute a mandatory recycling system for all residents of Cape Town, integrated into the current solid waste removal system.

Regulation within the consumer goods industry that aims to reduce unnecessary packaging of goods for sale would be another effective way to reduce the large volumes of waste generated by the average Cape Town resident.

The total amount of waste disposed of through landfill has also increased from 1 420 000 tonnes in 1999 to 2 034 837 tonnes in 2004, or approximately 5 574 tonnes per day. Most of the waste is sent to landfill at Coastal Park and Bellville. This is equal to a 43% increase in waste disposal since 1999, and an 18% increase since 2003 alone.



COMPONENTS OF SUSTAINABILITY

Biophysical – Expanding landfills into unused land negatively impacts on the ecology of those areas.

Social – Expanding landfills into unused land negatively affects people's enjoyment of natural open space, and reduces land that can be used for housing or agriculture.

POLICY LINKAGES

IDP: 2020 Goal – Water use and waste production down 30%.

IMEP: Waste – A commitment to the need for an integrated waste management strategy.



HIV/AIDS PREVALENCE



Indicator

The prevalence of HIV/AIDS in Cape Town per year, as determined by the Department of Health antenatal survey.

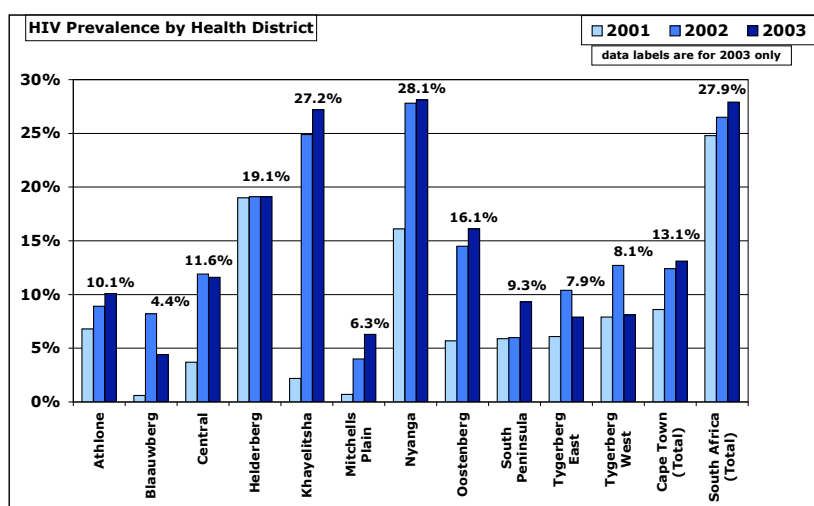


Results

The results below show the prevalence of HIV/AIDS in Cape Town for the period 2001 to 2003, as data for 2004 was not available at the time of writing this report. Prevalence reflects the proportion (persons per 100 000 population) of population infected with HIV/AIDS.

Unfortunately, it is clear from the data that the prevalence of HIV/AIDS in Cape Town has been increasing steadily over the past few years. HIV/AIDS prevalence is highest in Nyanga and Khayelitsha. While HIV/AIDS prevalence in Cape Town (13.1%) is well below the national figure (27.9%), HIV/AIDS prevalence in Nyanga and Khayelitsha is as high as, or higher than the national prevalence. Nyanga and Khayelitsha are two areas in Cape Town which have a high poverty rate and are largely informal in nature. The high HIV/AIDS prevalence in those areas may be explained by the fact that many residents are likely to be poor and uneducated, and may have had little HIV/AIDS prevention education. Access to health care and clinics is also poor, which is a two-fold problem. Firstly, people are less likely to be able to access free condoms dispensed by government clinics, which contributes to the high HIV/AIDS rate. Secondly, those living with HIV/AIDS are less able to access medical care than those in wealthier areas, and so are likely to suffer from many complications before succumbing to the virus.

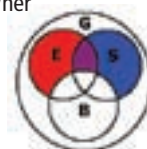
This high HIV/AIDS rate in large parts of Cape Town is worrying for a number of reasons. Such a high number of sick people will place a burden on the already overstrained public health system. There are also far-reaching social and economic consequences for the City, as the number of economically inactive child-headed (AIDS orphans) households increases and a large percentage of the economically active population becomes unable to work due to illness. The high level of HIV/AIDS prevalence in Cape Town is a serious public health and economic issue, which needs to be urgently addressed.



COMPONENTS OF SUSTAINABILITY

Economic – Living with HIV/AIDS reduces people's capacity to work and thus negatively affects the wider economy and the individual's ability to meet his/her basic needs.

Social – HIV/AIDS is often stigmatised and infected individuals may find it hard to be accepted in their community; the psychological burden of coming to terms with the illness is also a concern.



POLICY LINKAGES

MDG Goal 6: Combat HIV/AIDS, malaria and other diseases.





TUBERCULOSIS INCIDENCE

Indicator

The incidence of all forms of tuberculosis (TB) in Cape Town per year



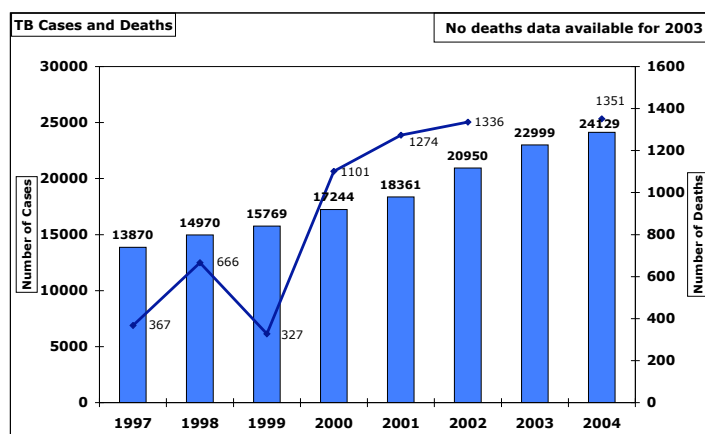
Results

Incidence of tuberculosis in Cape Town is represented in the figure below. Incidence reflects the number of new occurrences of a disease in a population over a period of time.

The graph below shows the number of cases recorded for each year, as well as the number of TB-related deaths. A growing number of new cases of TB is recorded in all areas in Cape Town over the period 2001 to 2004. TB is a contagious disease caused by bacteria known as *Mycobacterium tuberculosis*, which most commonly affects the lungs, but can also infect the kidney, brain and spine, as well as other body parts. Symptoms of TB infection of the lungs include persistent coughing and wheezing, chest pain, and in late stages, coughing up blood and sputum (phlegm) is not uncommon. TB is diagnosed when a patient's chest x-ray shows abnormalities or if a sputum culture tests positive for the bacteria. TB is treated with antibiotics, and is generally considered curable, however, if TB is left untreated it can often be fatal. The number of deaths due to TB appears to be levelling-off, in comparison to the number of cases diagnosed. This may indicate improved health care for infected individuals and is an encouraging statistic.

The highest incidence is found in Khayelitsha and Nyanga. There are a number of factors which contribute to this high incidence of TB infection. The crowded, poorly ventilated conditions households in informal settlements, as well as the high density of the settlement itself, increases the likelihood of transmission of TB from one person to another. The damp and sometimes unsanitary conditions in many informal settlements also provide an ideal breeding environment for the bacteria.

The high rate of TB infection in informal and poor areas is of particular concern. TB is a treatable and curable disease if antibiotics are taken correctly – usually once a day for up to six months. However, many people in Khayelitsha, Nyanga and other informal settlements lack access to proper medical care, and may be unable to receive treatment. Those who do receive treatment may be unable to return for follow-up care, an essential part of TB treatment, due to lack of transport or inflexible working hours. What is interesting to note is that Khayelitsha and Nyanga also show the highest HIV prevalence. It is well documented that people suffering from HIV/AIDS are more susceptible to diseases, and that people with weak or compromised immune systems are more likely to develop an active TB infection. TB is in fact the leading cause of death amongst people infected with HIV/AIDS¹².



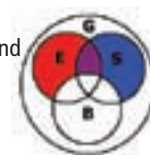
COMPONENTS OF SUSTAINABILITY

Economic – Having a large percentage of the workforce infected with TB reduces people's capacity to work and thus negatively affects both the wider economy, and their ability to meet their basic needs, as well as puts a strain on the public health system.

Social – TB negatively affects one's health, often for long periods of time, and therefore reduces people's quality of life.

POLICY LINKAGES

MDG Goal 6: Combat HIV/AIDS, malaria and other diseases.



INCIDENCE OF MURDER



Indicator The number of murders reported per 100 000 population per year.



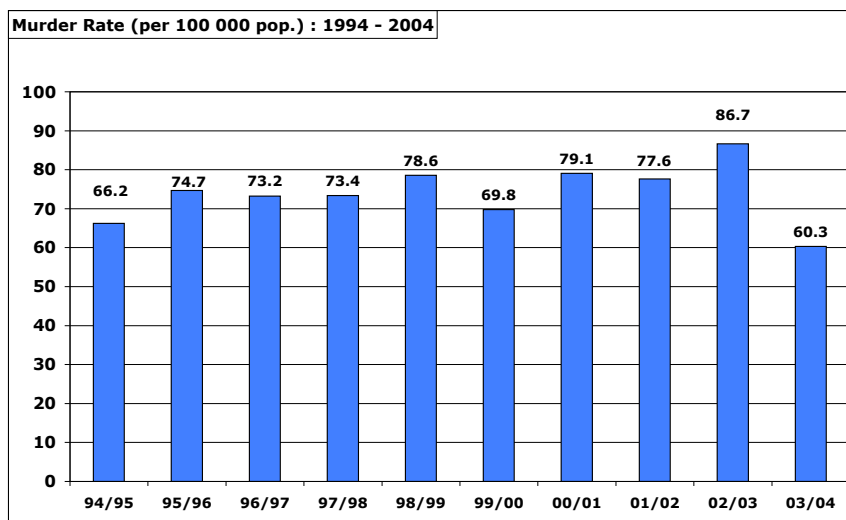
Results

The incidence of murders in Cape Town shows an increasing trend over the period 1994 to 2004, although the actual numbers in 2003/4 appear to be lower than in 2002/3.

There was an average of 74 murders per 100 000 population per year in Cape Town in 2004, and an average of 2 075 murders per year over the period 1994 to 2004. 1 863 murders took place in 2004 at a murder rate of 60 per 100 000 population. These figures produce an average of 5.5 murders per day in Cape Town over this period. New York City, which is home to over eight million people (compared to Cape Town's approx. three million), experienced comparatively few murders – 528 in 2004, producing a murder rate of approximately 6 per 100 000 population.¹³

The social and psychological consequences of such crimes occurring in our society today should not be underestimated. Studies¹⁴ show that the high levels of violent crime in South Africa have left few South Africans unaffected in some way. This leads to many people having increased levels of fear, suspicion, stress and aggression, all of which can negatively affect our daily lives.

Furthermore, the high rate of murder in this City negatively affects the economy as tourists are put off by the high crime rate, and international businesses are discouraged from investing in Cape Town. The drop in the crime rate since 2003 is encouraging, and hopefully future statistics will reflect further decreases. However, in order to be truly sustainable, the City, residents and police services must address this problem without delay.



COMPONENTS OF SUSTAINABILITY

Economic – High levels of crime discourage international investment in Cape Town.

Social – High levels of crime increase stress levels among residents and create an atmosphere of fear and distrust.

POLICY LINKAGES

IDP: 2020 Goal – Levels of violent crime reduced by 90%.

IMEP: Safety and Security – A commitment to crime prevention and reduction.





INCIDENCE OF RAPE

Indicator

The number of rape cases reported per 100 000 population per year.



Results

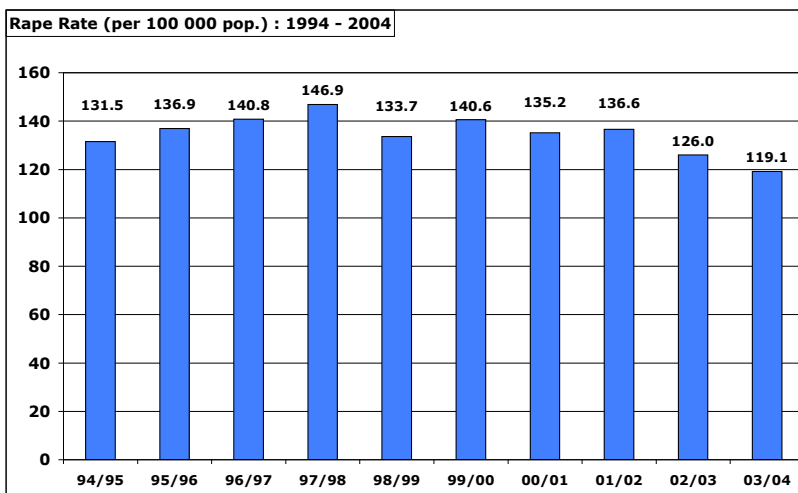
The incidence of rape in the City of Cape Town shows a very slowly decreasing trend, with an average of 135 rape cases reported per 100 000 population for the period 1994-2004, and a rate of 119 per 100 000 in 2004. On average, over the 10-year period, a total of 3 769 rape cases were reported each year in Cape Town, with 3 679 occurring in 2004.

However, according to Rape Crisis¹⁵, a non-profit organisation which offers counselling to rape survivors, in reality these numbers are likely to be at least twice as high, as their records show that only 50% of their clients report their rape to the police. It is also well known that those who seek counselling are more likely to report a rape than those who do not, and therefore the number of actual rapes could be as high as three times the number of reported cases.

South Africa has the highest reported rape rate in the world, with Cape Town following national trends with regard to this crime. In comparison, the United States of America has only 34.4 reported rapes per 100 000 population¹⁶, making Cape Town's rape rate roughly three and a half times as high.

The effects of rape can be devastating, and in most cases long-lasting. With a high HIV/AIDS incidence in many areas of Cape Town, rape is not only a brutal crime, but also a possible death sentence for many women. The possibility of contracting other sexually transmitted diseases, such as Hepatitis B, is also high. Rape by a husband or boyfriend is the most under-reported category, and can have a serious long-term impact on a woman's self-worth and ability to form stable, healthy relationships.

In South Africa violence against women is often seen as a result of the political violence experienced in the past¹⁷. Rape is not a crime simply against one woman, the victim, but against all women in society, as many women feel unsafe in the City.



COMPONENTS OF SUSTAINABILITY

Economic – High levels of crime discourage international investment in Cape Town.

Social – High levels of crime increases stress levels among residents and create an atmosphere of fear and distrust.

POLICY LINKAGES

IDP: 2020 Goal – Levels of violent crime reduced by 90%.

IMEP: Safety and Security – A commitment to crime prevention and reduction.



INCIDENCE OF COMMERCIAL AND INDUSTRIAL CRIME



Indicator



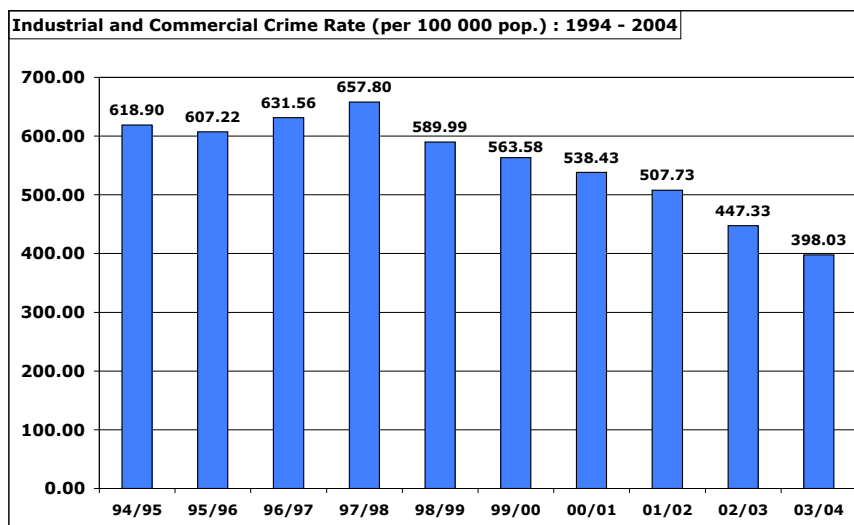
The number of commercial and/or industrial crimes and thefts reported per 100 000 population per year. Crime and theft in this indicator refers to both white-collar crime and armed robberies and burglaries at business premises.

Results

Reported incidents of commercial and industrial theft have shown a steady declining trend over the past 10-year period.

On average 556 cases of commercial and industrial theft were reported per 100 000 population each year in Cape Town for the period 1994-2004. The average number of cases over the 10-year period is 15 458 cases per year.

This type of crime has obvious implications for the economic development in the City. If business premises are perceived to be unsafe and insecure by national and international companies, they are less likely to invest in Cape Town. It is therefore encouraging to note that this type of crime is being brought under control in Cape Town.



COMPONENTS OF SUSTAINABILITY

Economic – High levels of crime discourage international investment in Cape Town.

Social – High levels of crime increase stress levels among residents and create an atmosphere of fear and distrust.



POLICY LINKAGES

IDP: 2020 Goal – Levels of violent crime reduced by 90%.

IMEP: Safety and Security – A commitment to crime prevention and reduction.





ACCESS TO WATER

Indicator



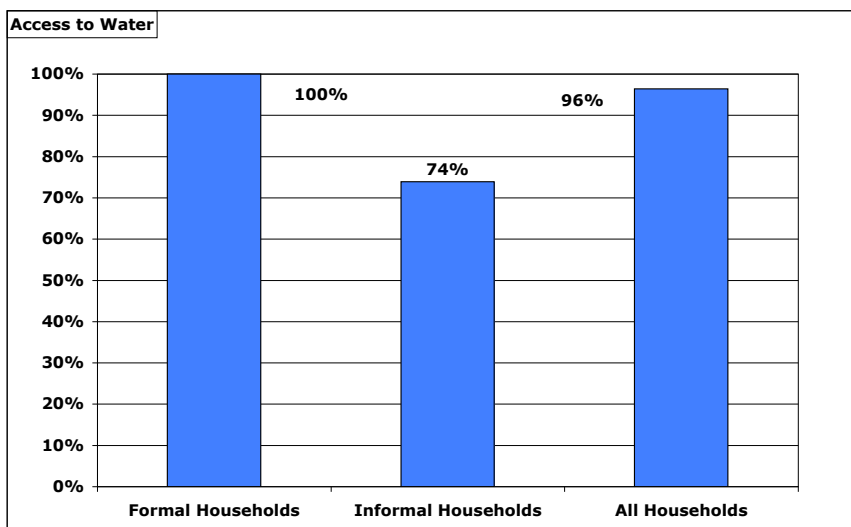
The percentage of both formal households and informal households with access to safe drinking water at the basic service level in Cape Town. The 'basic service level' is defined as dwelling units being less than 200 m from a tap, and having one tap for every 25 dwelling units.

Results

There are approximately 834 000 households in Cape Town, with 115 000 of these households being classified as 'informal'. Although informal in nature, over 74% of these households have access to safe, clean drinking water, within a 200 m walking distance.

It is assumed that 100% of all formal households are metered and therefore serviced.

About 30 000 households remain unserved with respect to water supply. The World Health Organisation guidelines¹⁸ state that those who do not have this basic level of service, run the risk of developing serious health problems. If water is too far away from one's dwelling, people are far less likely to be able to collect enough to meet their basic requirements in terms of washing of clothes, hands, and utensils, which in turn allows dirt and bacteria to build up in the living environment. Not washing hands before preparing food is a major contributor to the contraction and spreading of diarrhoeal illnesses.



COMPONENTS OF SUSTAINABILITY

Biophysical – The use of water resources for human consumption negatively affects the natural environment, unless it is monitored and controlled.

Social – It is essential for all people in Cape Town to have adequate access to safe water, including free access to water for the poor.



POLICY LINKAGES

IDP: 2020 Goal – Universal access to basic services.

IMEP: Water Resources – An acknowledgement that all Cape Town inhabitants have the right to clean, potable and adequate water sources.

MDG Goal 7: Ensure environmental sustainability.

ACCESS TO SANITATION



Indicator



The percentage of both formal households and informal households with access to adequate sanitation (flush toilets connected to the sewerage system) within Cape Town.

Results

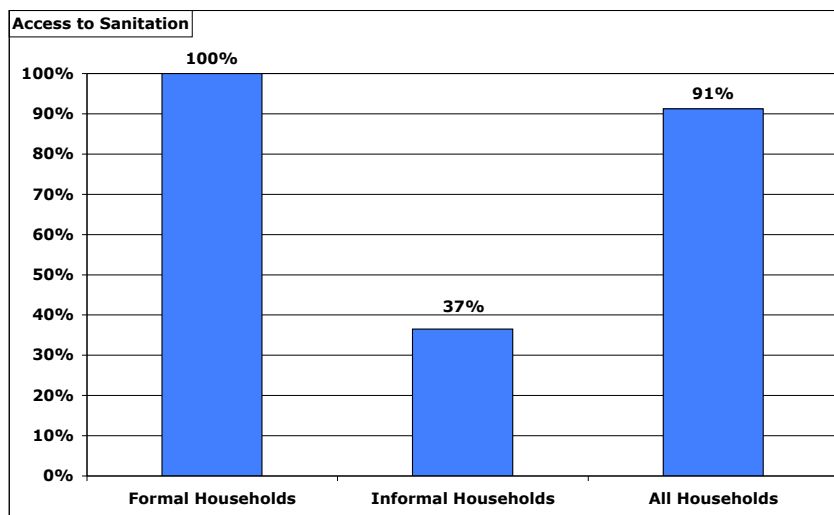
All formal households in Cape Town are serviced with sanitation facilities. A total of 37% of informal households have access to sanitation services, where the basic level of service is set at five dwelling units per flush toilet (or one dwelling unit per dry sanitation toilet).

The total backlog in supplying sanitation services in Cape Town is 73 000 households. This is significantly higher than the number of households requiring water supply.

Provision of clean, accessible water without the provision of adequate sanitation facilities does little to reduce the incidence of water-related illnesses, especially diarrhoeal illnesses. This is due to a number of reasons.

Firstly, if no toilets are provided, people are likely to be living in an environment that is constantly contaminated by faecal matter, even if it is only in trace amounts. This is because bucket latrines are inherently unsanitary, and impossible to keep clean. Secondly, if water services have been provided, but without sewerage or drainage, people are unable to adequately dispose of the waste water that has been generated by washing activities (greywater). This water is then disposed of simply by pouring it on the ground and, in areas with poor drainage, it often remains in the living environment for long periods of time. Greywater itself often has high levels of coliform bacteria, and provides a vector for the transmission of waterborne diseases.

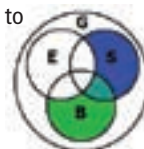
In order to ensure a healthy population, and create a dignified living space for many poor residents of Cape Town, it is essential that sanitation be provided to all households.



COMPONENTS OF SUSTAINABILITY

Biophysical – Lack of sanitation impacts negatively on the natural environment, as excess nutrients from human waste leads to nutrient overloading of inland water systems.

Social – Lack of access to sanitation means that many are more susceptible to disease, and live under undignified conditions.



POLICY LINKAGES

IDP: 2020 Goal – Universal access to basic services.

IMEP: Urbanisation and Housing – A recognition that shelter and services are needed for a growing population.

MDG Goal 7: Ensure environmental sustainability.





PERCENTAGE OF INFORMAL HOUSING

Indicator

The percentage of informal housing in relation to formal housing within the City of Cape Town.



Results

Some form of shelter is considered to be a basic human need. Obviously the quality of shelter and the degree of protection and comfort it provides can vary a lot. Approximately 14% of all housing in Cape Town is classified as informal housing, although in reality this figure is thought to be higher. An informal house is defined as a wood and iron structure, which does not meet basic standards of safety in building. They may be completely unserviced (although few in Cape Town are) or serviced through the RDP site and service scheme. Backyard shacks built adjacent to formal housing are also included in this figure.

Informal settlements are known to be at greater risk from the effects of disasters (natural, technological or environmental). In Cape Town, many informal settlements are built on inappropriate sites such as former rubble dumps (e.g. Sweet Home Farm in Philippi) and wetlands (e.g. parts of Masiphumelele). These factors, coupled with high winter rainfall, make informal settlements in Cape Town especially prone to flooding. The sub-standard level of housing in informal settlements means that residents are particularly susceptible to the extreme weather that often occurs in Cape Town. Strong winds and freezing temperatures are other environmental factors which pose a risk to informal households. Fires are also a risk to informal dwellings, as the high level of densification and inflammable building materials contribute to the spread of fires.

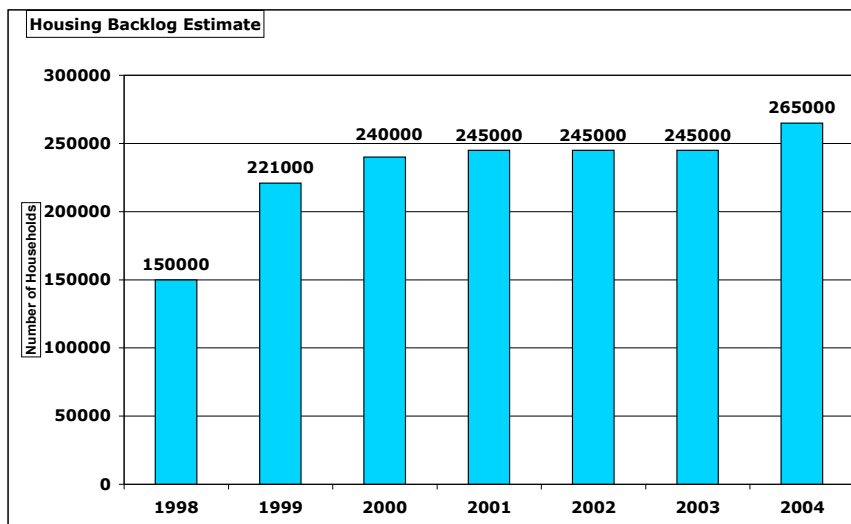
These disasters lead to loss of life as well as loss of homes and possessions. In a situation where an individual lives in an informal settlement, it is often the case that his/her entire home is destroyed, and all possessions lost. Individuals may experience trauma, depression and grief at their loss, as well as severe economic hardship due to the loss of their possessions.

Residents of informal settlements also experience economic disadvantages in their day-to-day lives, as these settlements are far from the commercial and residential centres of Cape Town. Access to transport is also often limited in these areas, as bus and train routes do not necessarily include them. This means that residents often have to spend large percentages of their income commuting the long distance to work and may be dependent on unreliable transport.

Informal settlements themselves have a negative impact on the environment, such as pollution of the environment by wastewater and the burning of dirty fuels. This environmental degradation aggravates the situation of poverty found in such settlements.

Unfortunately, the number of people in Cape Town without access to proper housing is growing, although local and provincial governments are working on the problem. In 2000, the housing backlog in Cape Town was estimated to be 240 000. The number is now estimated to be 265 000. This problem is exacerbated by the large number of migrants moving to Cape Town from rural areas each year.





COMPONENTS OF SUSTAINABILITY

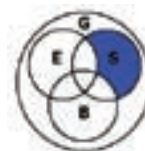
Social – Life in informal settlements can be extremely hard for residents; the number of people who live under substandard conditions should be reduced.

POLICY LINKAGES

IDP: 2020 Goal – Less than 5% of population in informal settlements.

IMEP: Urbanisation and Housing – A recognition that shelter and services are needed for a growing population.

MDG Goal 7: Ensure environmental sustainability.





INCIDENCE OF FIRES IN INFORMAL SETTLEMENTS

Indicator



The incidence of fires in informal settlements, as measured by the number of units damaged or destroyed by fire each year. The term 'informal dwelling' is defined as 'a wood and iron structure', and therefore includes backyard shacks.

Results

The information provided below on the number of informal dwellings affected by fire is an estimate based on initial assessments. Data for 2004 is also incomplete. The figure indicates that an increasing number of informal dwellings and backyard shacks in Cape Town are being destroyed and damaged by fire each year.

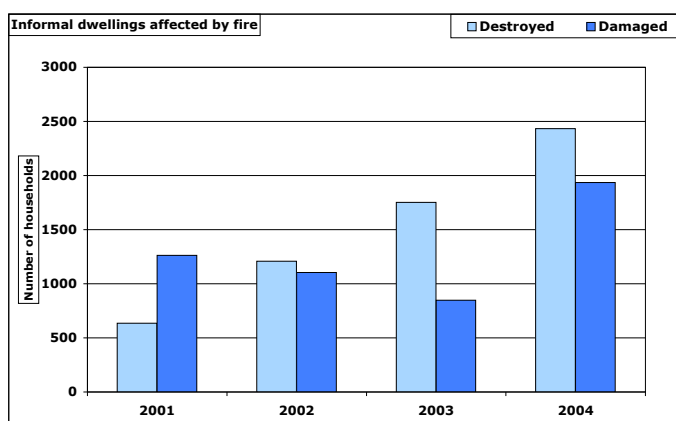
These fires are primarily caused by the unsafe use of non-electric sources of energy. In informal settlements paraffin is the most common form of energy used, for both cooking and space heating. Paraffin stoves are often old, and are easily knocked over, thus spilling the fuel and igniting the surrounding area. Candles, used for lighting are also easily knocked over and play a significant role in starting household fires.

The increase are not clear, there are some opinions as to why the incidence of fires has increased.

A small role may be played by the improved reporting of fires since the amalgamation of all fire services into one system. However, the rapid rate of densification in informal settlements may play a larger role, as fires can spread more easily between dwellings. This densification also hampers emergency personnel and fire department vehicles, as shacks are often built too close to each other to allow large fire-trucks to pass.

In addition, there are increasing numbers of people migrating into informal settlements from other areas in Southern Africa. These individuals may not be familiar with the strong winds experienced in Cape Town, and therefore may be more susceptible to starting fires than would local people.

The social and economic consequences of these fires are often devastating for the residents concerned. Many families lose loved ones in the fires, and many are often left with no possessions. Those who do survive the fires are often injured or disfigured, and face many difficulties as they have to deal with the trauma of their experience while attempting to rebuild their lives.



COMPONENTS OF SUSTAINABILITY

Social – The incidence of fires in informal settlements is a problem which needs to be addressed if the residents are to live in safety.

POLICY LINKAGES

IMEP: Energy – A commitment to sources of energy with the least impact on the environment and health of communities.



ADULT LITERACY



Indicator

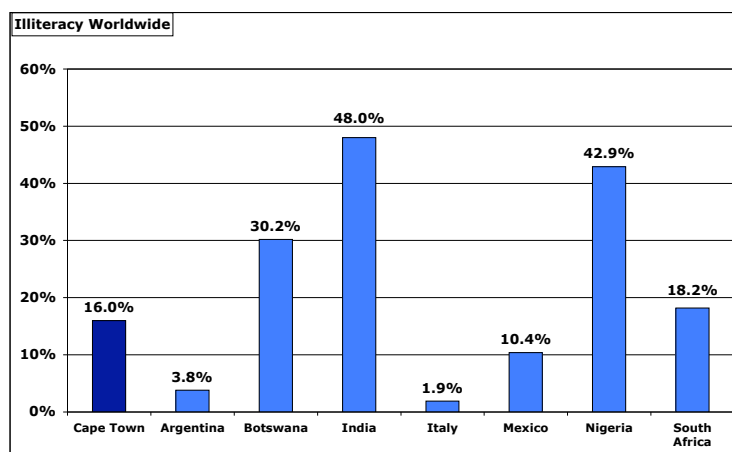
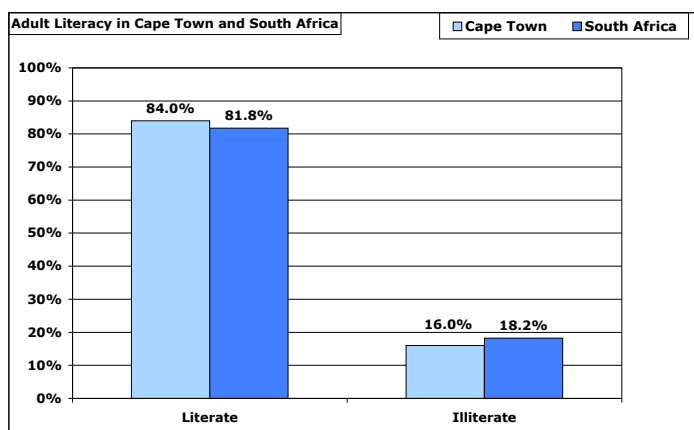
The percentage of people aged 18 years and above with a Grade 4 level of education or higher.



Results

The figure below shows that 84% of the adult population of Cape Town has achieved a Grade 4 level of education or higher, and is therefore classified as being literate. Sixteen percent of the population is classified as illiterate. In South Africa a total of 82% of the population is classed as literate, showing that Cape Town only slightly out-performs the rest of the country.

Combating adult illiteracy is a vital part of creating a strong workforce. Being able to read allows one to better one's skills, as well as undertake more skilled tasks in the workplace. This relatively high rate of adult illiteracy is a major contributor to the increasing levels of unemployment experienced in Cape Town, as many illiterate people are unable to find jobs.



Source: International Literacy Explorer (<http://literacy.org/explorer/statistics.html>)

COMPONENTS OF SUSTAINABILITY

Economic – Having high levels of adult literacy means a more skilled workforce able to build a better economy.

Social – Being literate allows one to function properly in modern society and allows people to get better jobs and improve their quality of life.

POLICY LINKAGES

IDP: 2020 Goal – Less than 5% of the population illiterate.

MDG Goal 2: Achieve universal primary education.





HIGHEST LEVEL OF EDUCATION ACHIEVED

Indicator

The highest level of education achieved by residents of Cape Town.

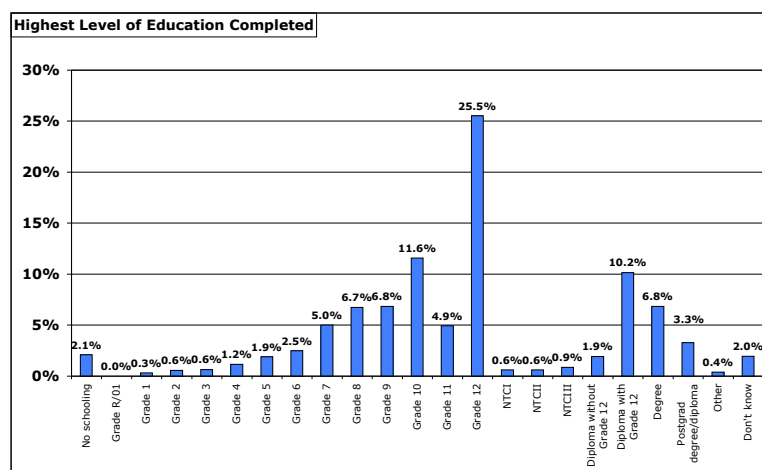


Results

The figure below reflects the level of education achieved by residents of Cape Town.

Two percent of the population of Cape Town has received no formal schooling at all, while approximately 25% of residents have achieved a Grade 12 (matriculation). 10% of Cape Town's residents has completed some form of tertiary education (a degree, post-graduate degree, certificate, or diploma). Almost half the population started school but did not succeed in completing matric.

This is problematic, as it means that half of the adult population of Cape Town do not have the requisite skills and level of education to obtain a skilled job. If Cape Town is to build its economy, it is important for more people to complete matric and tertiary education so that they have the required knowledge and proficiency to become productive members of a skilled economy.



COMPONENTS OF SUSTAINABILITY

Social – Having a higher level of education allows people to get better jobs, and thus improve their quality of life.

POLICY LINKAGES

MDG Goal 2: Achieve universal primary education.



LABOUR FORCE: UNEMPLOYMENT



Indicator The percentage of the economically active population that is unemployed.



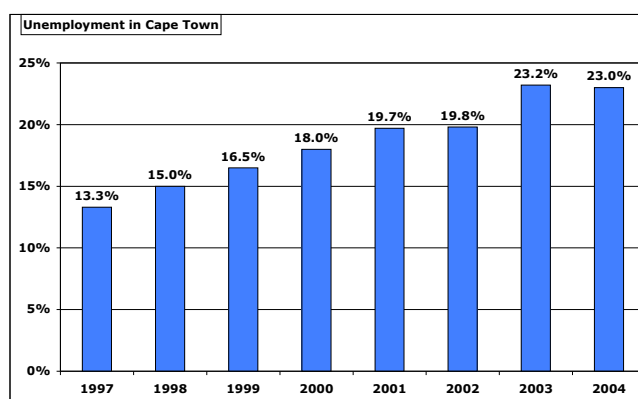
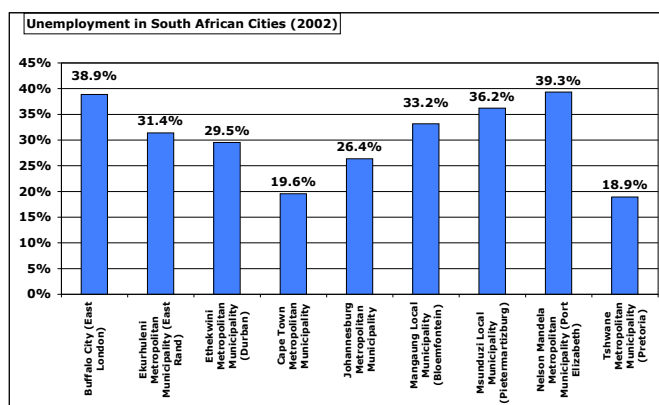
Results

Approximately 23% of the adult population living within Cape Town was unemployed in 2004. These figures are based on Statistics South Africa's official definition of unemployment. The unemployed are those people within the economically active population who are not currently working, who want to work, and who have taken active steps to look for work or start some form of self-employment. Those who have given up looking for work, or are not actively looking but would take a job if it was offered, are not included in this figure.

According to data from 2002 (the most recent comparative data available)¹⁹, Cape Town has one of the lowest unemployment rates of the nine largest cities in South Africa, second only to the Tshwane Metropolitan Municipality (Pretoria). It is encouraging to know that Cape Town is not experiencing the same high levels of unemployment seen in other South African cities, such as the almost 40% unemployment level in the Nelson Mandela Metropolitan Municipality (Port Elizabeth).

However, the unemployment rate is still rising, having risen 10% since 1997. In order for Cape Town to be a sustainable City, it is important that unemployment begins to decrease over the next decade. Having more people employed would mean sustainable revenue growth for the City to use in reducing poverty, and a more productive and wealthier City, something which would benefit all citizens. Accelerating economic growth to 5-7% will continue to see a reduction in the number and percentage of those unemployed, but requires skills levels, especially matric and adult literacy levels to be drastically improved.

Hopefully, government programmes such as the Expanded Public Works Programme, which aims to create employment by building skills and capacity through short term public works jobs, will allow those members of society who cannot find work the opportunity to gain employment in the future. Unemployment has also been linked to crime in cities around the world, as those desperate for money, food and shelter will sometimes resort to crime in order to meet their wants and needs. It would therefore be in everyone's best interests to reduce the level of unemployment in this City.



COMPONENTS OF SUSTAINABILITY

Economic – Having a high level of unemployment means that a large amount of the workforce is not utilised; creating sustainable jobs brings more money into the economy.

Social – Being unemployed means that people often cannot achieve an acceptable quality of life, and cannot meet their basic needs.



POLICY LINKAGES

IDP: 2020 Goal – Unemployment less than 8%.

IMEP: Economy – A commitment to the creation of jobs and the reduction of poverty.

MDG Goal 1: Eradicate extreme poverty and hunger.





GROSS GEOGRAPHIC PRODUCT

Indicator



The total value of goods and services by sector per annum.
The indicator reflects the gross geographic product (GGP) for the City for the period 1993 to 2004, based on 2000 prices.

Results

The GGP for Cape Town has steadily increased over the period 1993 to 2004. In 1993 the GGP was more than R70 billion at 2000 constant prices, rising to over R107 billion in 2004. There has been an average growth in GGP of around 4% since 1993.

This means that each year there is more money per capita in the local economy than in previous years, which is encouraging for the future of Cape Town's economic development.

Cape Town's Economy contributed about 11.2% to national GDP or R106.96 billion in 2004 (2000 prices). Between 1995 and 2004, Cape Town contributed 15.9% of South Africa's economic growth, and 82% of new provincial economic growth.

Economic growth has gradually strengthened from 2% to 4% per year over the past decade. This is still short of the 6-7% needed to reduce the absolute number of unemployed people. Financial and business services and wholesale and retail trade contributed 63% of new economic growth.

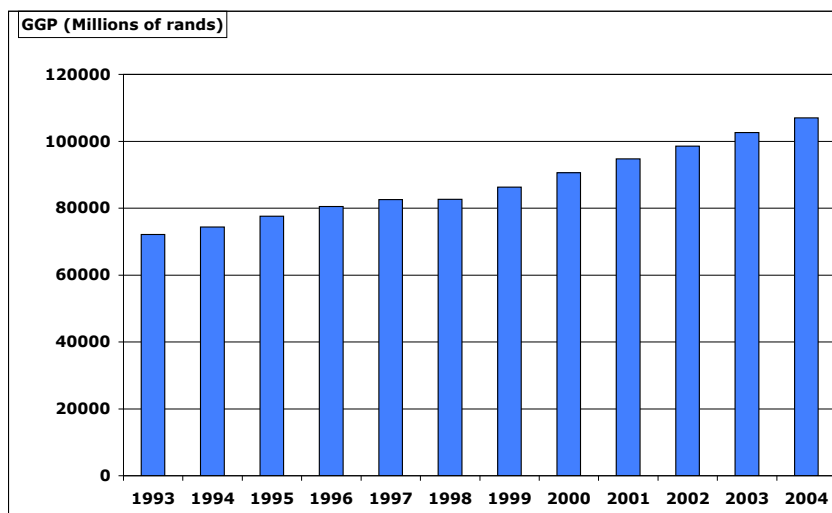
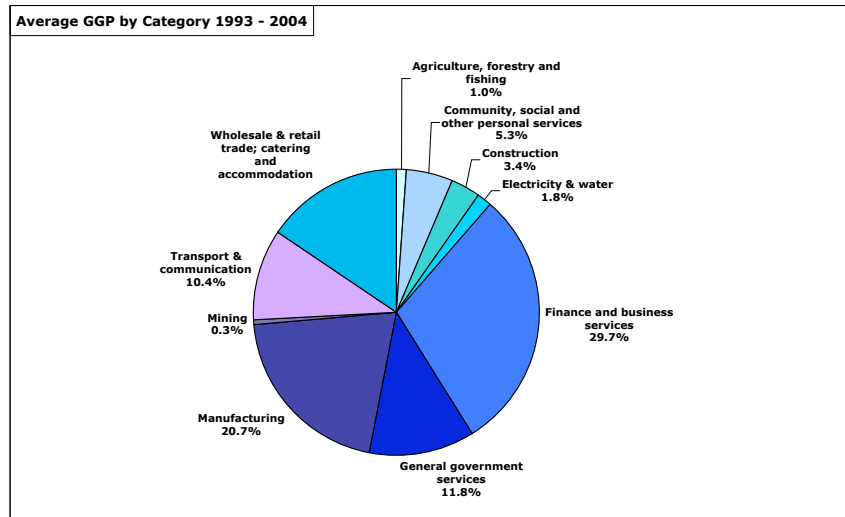
The finance and business services sector is the largest contributor to the local economy, at one third of the share. The manufacturing sector has the second largest share, with the wholesale and retail trade; catering and accommodation sector coming third. Manufacturing contributed 7.9%, Transport and Communication 20.2%, and Construction 3.3%, towards new economic growth. Government, manufacturing, and construction's contribution to formal employment declined in absolute and proportional terms over this period.

Cape Town's sectoral economic growth: 1995 – 2004

Sector	1995 GGP (bn)	2004 GGP (bn)	Absolute Change 95 – 04 (bn)	1995 - 2001 % change	2001 - 2004 % change	2003 - 2004 %
Finance and business services	22,1	33,7	11,65	2.68	4.56	3.78
Wholesale & retail trade; catering and accommodation	11,3	18,2	6,89	3.14	4.46	6.40
Transport & communication	7,1	13,1	5,98	3.82	5.82	5.34
Manufacturing	17,2	19,4	2,33	1.10	0.77	2.55
Community, social and other personal services	4,1	5,6	1,50	1.91	3.79	4.80
Construction	2,7	3,7	0,98	-0.49	9.87	6.06
Electricity & water	1,4	1,8	0,45	1.72	3.44	2.05
Agriculture, forestry and fishing	0,7	0,9	0,20	2.10	1.06	2.06
General government services	10,3	10,1	-0,21	-0.79	1.55	1.23
Mining	0.48	0,17	-0,30	-24.15	4.56	12.60
Total	77,48	106,96	29,47	2.02	3.81	4.06

Source: Quantec Research (May, 2005)





COMPONENTS OF SUSTAINABILITY

Economic – A real growth in GGP means that there is more money circulating in the economy, creating better opportunities for all residents.

POLICY LINKAGES

IDP: 2020 Goal – Average real per capita income doubled while reducing inequality.

IMEP: Economy – A commitment to the creation of jobs and the reduction of poverty.





INCOME DISPARITY

Indicator

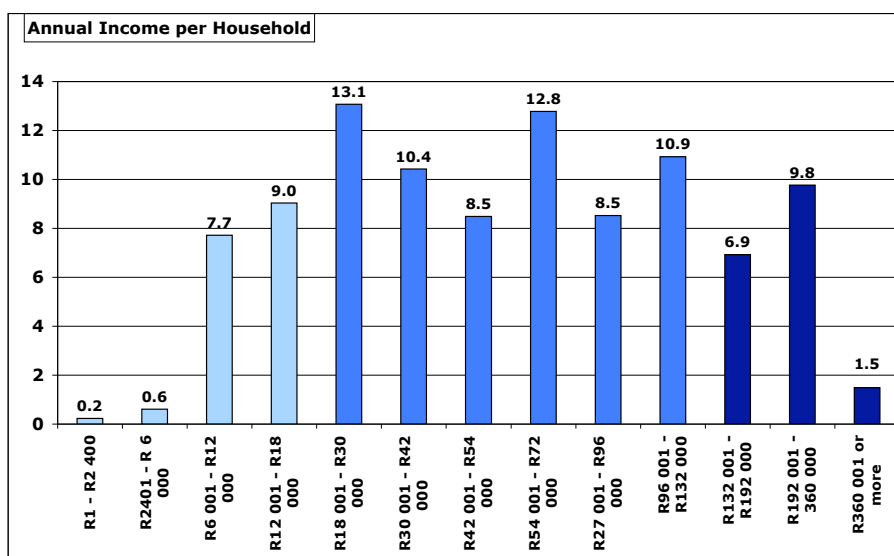


The percentage of households earning below R18 000 per annum, between R18 001 and R132 000, and those households earning above R132 001 per annum. This provides an indication of income disparity in the City.

Results

The graph below shows the income distribution amongst households in Cape Town. Over 17% of households earn less than R18 000 per annum, which amounts to R375 per person per month, or a little over R12 a day. Approximately two thirds of the population receive between R18 001 and R132 000 per annum. Slightly more than 18% earn over R132 000 per annum, amounting to R2 750 per person per month, or a little over R90 a day.

While income per capita may be a commonly used measure of wealth in an area, the distribution of income provides a more realistic measure. It shows that although the average (mean) household income in Cape Town may be R87 811 per year²⁰, many households actually bring in far less than this amount.



COMPONENTS OF SUSTAINABILITY

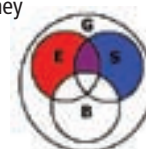
Economic – Having a large number of people living in poverty means that many are economically inactive. This impacts on the wider economy of the area.

Social – It is extremely difficult for people to live a dignified lifestyle when they are often unable to meet their basic needs.

POLICY LINKAGES

IDP: 2020 Goal – Average real income per capita doubled while reducing inequality.

IMEP: Economy – A commitment to the creation of jobs and the reduction of poverty.



EDUCATION AND AWARENESS PROGRAMMES



Indicator

The total number of participant person days for education and awareness programmes in which the City of Cape Town is involved each year.



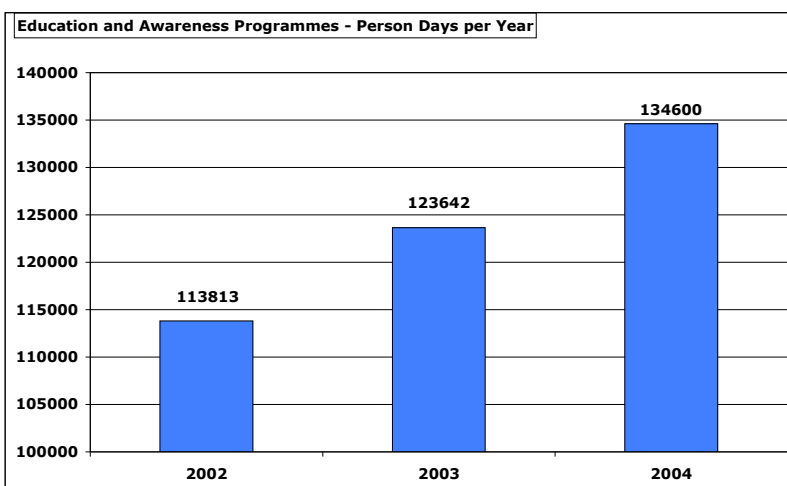
Results

Increasing environmental education and awareness is critical to ensuring a well cared for City. In order to properly implement sustainable development in the City, it is necessary for each and every citizen to have an understanding of why sustainability is important, and how he or she can contribute to ensuring a better environment for the future.

The indicator reflects results for the line functions of Catchment Management and Environmental Management only, as these departments had readily available data. Future reports will aim to include projects run by other line functions in the City. The results show a growing number of participant person days (the number of people involved in each event) involved in education and awareness programmes run by the City of Cape Town. The number of person days has increased from 113 913 in 2002 to 134 600 in 2004, a growth of 18%.

Programmes reflected in these results include a number of ongoing programmes, exhibitions and displays conducted by the City of Cape Town, as well as a number of specific annual projects, such as the Two Oceans Partnership, the Cheetah Challenge, the MTN Sciencentre Wetlands Programme, and the Zeekoevlei Environmental Education Programme.

The YES (Youth Environmental School) Programme is perhaps the largest of these specific projects, with approximately 28 000 learners attending in 2004. This programme runs over the course of a week in early June and is aimed at providing learners (Grades R to 7) from all walks of life with environmental education. Topics include, amongst others, conservation, climate change, personal hygiene and health care, sustainable lifestyles, and saving water, as well as a number of field trips offered to various nature reserves around the City. The aim of this programme is to make youth aware of the environmental problems that Cape Town and the rest of the world face, and provide them with practical knowledge that they can take home and pass on to others.



COMPONENTS OF SUSTAINABILITY

Social – Education and training programmes promote social development, especially amongst disadvantaged youth.

Governance – The implementation of education and awareness programmes is a key aspect of good governance.

Economic – Education and training programmes teach people to use natural resources for profit in a sustainable manner.

Biophysical – Education on environmental issues contributes to ecological protection in the City.



POLICY LINKAGES

IMEP: Environmental Education – A commitment to promoting environmental education and awareness.

MDG Goal 7: Ensure environmental sustainability.



LOCAL AGENDA 21 PROJECTS

Indicator



The number of Local Agenda 21 (LA21) projects undertaken by the City of Cape Town, specifically supporting joint initiatives with civil society and business. Local Agenda 21 is seen as a means through which cities can promote sustainable development.

Results

Agenda 21 is a product of the 1992 United Nations Conference on Environment and Development (UNCED), more commonly known as the Earth Summit, which took place in Rio de Janeiro in 1992. Local Agenda 21 (LA21) is the process that is used to translate global policies on sustainable development into local action plans to make a real difference at a city scale – “think global, act local”.

The following principles are fundamental to LA21²¹:

- integration of social, economic and ecological issues;
- a multi-sectoral approach to problem-solving, involving all sectors of the community;
- taking a long-term view of society and its problems;
- working within ecological limits to produce sustainable societies;
- local government and civil society partnerships;
- linking local issues to global problems and impacts;
- promoting equity, justice and accountability.

Aachen – Cape Town LA21 Partnership

A Local Agenda 21 Partnership was established in 2000 between the cities of Cape Town and Aachen, Germany, to promote sustainable development through facilitating partnerships and projects that improve environmental, social and economic conditions. The objectives of the partnership agreement include the implementation of projects, networking, awareness raising, and learning through exchanges.

The number of LA21 projects being undertaken through the Cape Town/Aachen LA21 Partnership has steadily increased each year. After starting with only 4 projects in 2000, the agreement boasted 12 projects in 2004. These figures include school partnerships, which may involve multiple events and multiple schools.

Each of the projects within this partnership is reviewed at the end of each year in order to ensure that the project adheres to the LA21 principles listed above. Successful projects have been repeated and maintained over the years. The following examples are only a small selection of the projects that took place in 2004 that have had a positive impact on the sustainability of communities.

Wolfgat 21 Households Project

Residents from Khayelitsha and Mitchell's Plain are participating in a community capacity-building programme to learn how to implement a more sustainable lifestyle at a household level. Each month has a different theme, presented by a partner organisation. Themes include: water, waste, energy and culture.

Bicycle Recycle

This project started in 2001 when disused bicycles were collected in Aachen and sent to Cape Town. Here in Cape Town the Bicycling Empowerment Network (BEN) refurbishes the bicycles and then distribute them to disadvantaged communities, which are linked to a workshop on bicycle maintenance and road safety. In December 2004 another 501 bicycles were received from Aachen and they are currently being refurbished.

Mural Global

This project aims to promote sustainable development through art and specifically through mural paintings. The latest mural was painted at the Zenzeleni School for Creative Education in Khayelitsha. The purpose of this project was to improve the school environment and included tree planting and the mural, which was done with the participation of the local teachers and parents.

LA21 Forum Event

A Local Agenda 21 Forum Event is held twice a year to provide a platform for capacity building and networking around sustainable development issues, and links up with the main forums in the City such as the City-Wide Forum. Community-Based Organisations are given the opportunity to share their projects and experiences.

City Improvement Districts

A City Improvement District (CID) is a forum of business people in a specific geographical area that is established to improve the conditions within that specific area. Thirteen CIDs have been established in Cape Town over the last few years with the assistance of the municipality. The main tasks of the CIDs are to assist with the co-ordination of the interests of the landowners within a geographical area.

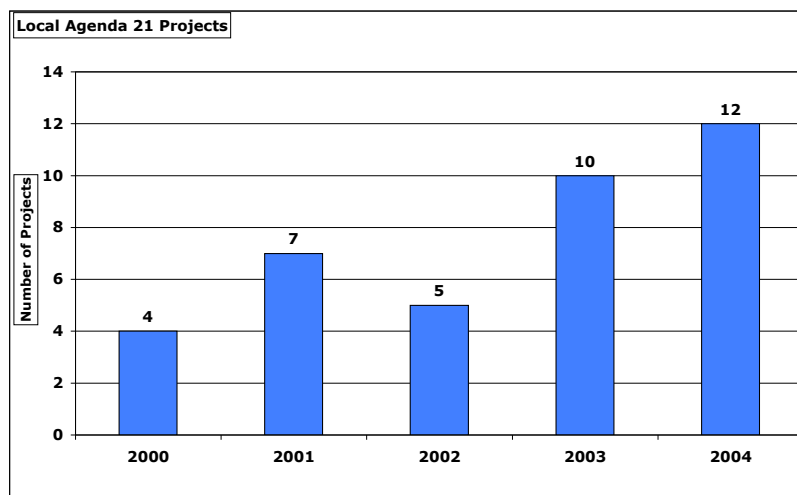


Atlantis Craft and Tourism Centre

The West Coast Environmental Co-operative was established to promote environmental awareness in the Atlantis area, but focuses on integration with job creation opportunities. Their projects include training initiatives, tourism promotion and the development of the Atlantis Craft and Tourism Centre.

Other LA21 Initiatives

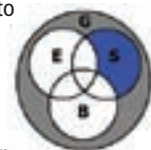
Various other projects have also been implemented to promote sustainable development, such as the Cape Care Route, fair-trade, conference greening and community capacity-building in informal settlements. These local initiatives all promote a balance between economic and social development as well as environmental protection, in a practical way.



COMPONENTS OF SUSTAINABILITY

Social – It is important for social development in this cCity that government and civil society continue to grow their LA21 programmes.

Governance – Engaging with communities is a key aspect of good governance.



POLICY LINKAGES

IMEP: Environmental Governance – A commitment to effective environmental governance in Cape Town.





CAPITAL BUDGET SPENT

Indicator



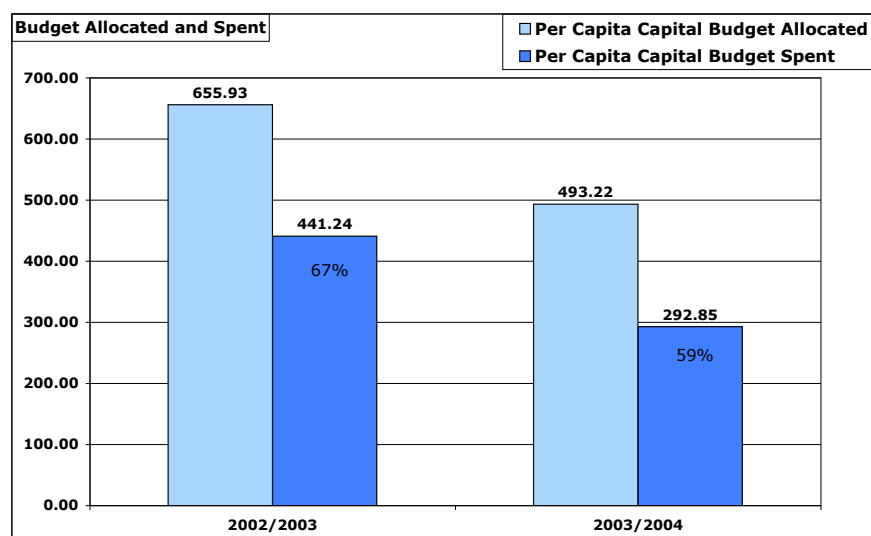
The proportion of the total capital budget allocated to the City of Cape Town in relation to the amount of the budget spent within a financial year.

Results

Capital budget expenditure represents expenditure that is likely to have a direct impact on the lives of those living in Cape Town through, for example, infrastructural benefits such as electricity, housing, sanitation and water. Operating expenditure is largely taken up by salaries and other fixed costs, and is therefore not easy to reallocate to areas of greatest need.

The total capital budget for the City of Cape Town reduced from R1.982 billion in 2002/3 to R1.523 billion in 2003/4. The reasons for this include the restructuring of local government to incorporate all the old sub-councils into one organisation, thus streamlining the budget. The change in political leadership of this City, and the accompanying ideology has also led to a shift in budget priorities. The capital budget for 2003/4 represents 12% to 13% of the total City budget, or approximately R440 per person.

In 2002/3 67% of the allocated capital budget was spent, whereas in 2003/4 only 59% of the allocated budget was spent. There are many needy people and causes in Cape Town which would benefit greatly if more of the capital budget was spent on social, environmental and economic development projects. In order for Cape Town to become a more sustainable City it is important that City departments spend a high percentage of their capital budget allocated for a certain year, and ensure that it is spent on projects which will contribute to building a more sustainable and more equitable City.



COMPONENTS OF SUSTAINABILITY

Economic – In order for economic and social development to take place in a sustainable manner, government must make the most of its capital budget.

Governance – Proper spending of the capital budget is a key aspect of good governance.



POLICY LINKAGES

IDP: 2020 Goal – a top corporate governance city.

CONCLUSION



While this is the first Sustainability Report published for Cape Town, this has been preceded by five State of the Environment reports, which allow for the identification of trends for many of the indicators. We can identify aspects of sustainability in which Cape Town has improved and those in which it has declined.

Indicators which show improvement are:



- Crime: Murder, rape and commercial and industrial crime rates are all down for the year 2004. This points to more effective policing and law enforcement.
- Coastal Water Quality: In general there is an increasing number of beaches and coastal areas meeting coastal water quality guidelines.
- Gross Geographic Product: The economy of Cape Town has steadily increased each year, bringing more money to the area and helping to create work opportunities.
- Local Agenda 21 Projects and Education and Awareness Programmes: These have increased over the years, providing a valuable service to communities and creating a mechanism for local environmental problems to be addressed.
- Water Use: Water use per capita has gradually decreased, especially since 2001 when water restrictions were put in place. This is a positive step, as Cape Town is a water scarce area.

Indicators which show no change or decline are:



- Air Quality Exceedances: Particulate matter pollution in the City has remained at an almost constant level since 2001.
- Percentage Informal Settlements: The housing backlog has increased since 2000, as more people move to Cape Town with the hopes of a better future.
- Informal Settlement Fires: Fires in informal areas have increased since 2001 with many more homes being damaged and destroyed each year.
- Unemployment: The unemployment rate has risen by 10% since 1997. Many people are unable to find work, and thus live in a state of poverty.
- Waste Disposed: The amount of waste disposed per capita is increasing at an alarming rate, showing a 43% increase since 1999. In 2004 each person in Cape Town disposed of on average 145 kg more than in 1999.
- HIV/AIDS and TB: Rates of HIV/AIDS and TB infection have steadily increased since measurement began. These are critical health issues which must be urgently addressed.

The City of Cape Town is committed to creating a better, more sustainable City. Through the application of the City's IDP and IMEP, we hope to achieve improvement in these key areas of sustainability in the coming years. Because these policies have a long-term view, it is important to acknowledge that many changes may take some time to manifest themselves. However, the CCT is confident that the ultimate goal of creating a Sustainable City will be achieved.

For future Sustainability Reports and previous State of the Environment Reports, please visit www.capetown.gov.za/soe.



ANNEXURE A:

Goals of the Cape Town Integrated Metropolitan Environmental Policy

See website: www.capetown.gov.za/IMEP

Goal	Description
1. Air	A commitment to reducing the incidence of all forms of air pollution and the potential environmental health risks associated with air pollution
2. Water resources	A commitment to ensuring that the quality of the coastal, marine and inland waters of Cape Town is suitable for the maintenance of biodiversity, the protection of human health and a commitment to the principle that all Cape Town inhabitants have the right to clean, potable and adequate water sources
3. Landforms & soils	A commitment that recognises that the conservation and enhancement of landforms and soils in Cape Town is essential
4. Fauna & flora	A commitment to the conservation of biodiversity in the CCT
5. Cultural heritage	A commitment to ensuring that the diverse cultural heritage of this City of Cape Town is preserved, protected and enhanced
6. Urbanisation & housing	A commitment to recognising that shelter and services are needed for a growing population, whilst at the same time recognising that environmental features and systems need protection
7. Infrastructure	The recognition that the supply and delivery of infrastructure can both improve our living conditions and cause positive environmental impacts
8. Transportation	A commitment to the recognition that transportation is needed for access to facilities and work opportunities, but consumes valuable resources and contributes to environmental degradation
9. Energy	Recognising the importance of energy and its role in development and the negative effects that energy production may have on the environment, a commitment to sources of energy with the least impact on the environment and health of communities
10. Waste	A commitment to the need for an integrated waste management strategy that addresses both the production and disposal of solid and liquid wastes, as well as the safe collection, transport and disposal and reduction of illegal dumping
11. Economy	A commitment to the recognition that the environment of Cape Town is its greatest asset and that sustainable development requires economic growth, the creation of jobs and the reduction of currently high levels of poverty in the City of Cape Town
12. Environmental health	A commitment to the Constitution of South Africa which guarantees the right of all South Africans to an environment which is not detrimental to their health and well being
13. Environmental education	A commitment to supporting and promoting appropriate environmental education and awareness throughout Cape Town and within local government structures
14. Safety & security	A commitment to crime prevention and reduction, recognition that many CT communities experience an acceptable crime level
15. Environmental governance	Recognising that effective environmental governance in Cape Town is in the process of being established and a commitment to this establishment

ANNEXURE B:

Cape Town Integrated Development Plan 2004/2005

See website: www.capetown.gov.za/idp

OUR VISION

Our vision is to establish Cape Town as:

- a sustainable City that offers a future to our children and their children;
- a dignified City that is tolerant, non-racist and non-sexist;
- an accessible City that extends the benefits of urban society to all and builds the capacity of its people;
- a credible City that is well governed and trusted by its people;
- a competent City with skills, capabilities and a competitive edge;
- a safe and caring City that cares for its citizens, and values the safety and security of all who live, work and play in it;
- a prosperous City known for its ability to compete globally in the 21st century and its commitment to tackling the challenges facing South Africa, the Southern African Development Community and the African continent; and
- a City known for its leadership in Africa and the developing world.

OUR IDP 2020 GOALS

To give substance to our vision and to link our vision to our strategies, the City of Cape Town has embraced a bold set of goals to be achieved by the year 2020:

1. 100% improvement in key human development indicators;
2. less than 5% of population in informal settlements;
3. universal access to basic services;
4. levels of violent crime reduced by 90%;
5. water use and waste production down 30%;
6. access to safe green space within walking distance for all;
7. renewable energy share equal to 10% of energy consumed;
8. average real per capita doubled while reducing inequality;
9. unemployment less than 8%; and
10. less than 5% of the population illiterate.

STRATEGIC FRAMEWORK

In support of Council's vision and goals for 2020, five strategic themes are proposed focused on socio-economic development and improved service delivery:

- integrated human settlement;
- Economic growth and job creation;
- access and mobility;
- building strong communities; and
- Equitable and Effective Service Delivery.

Running through each of these strategic themes and in support of the first aspect of the City's vision, namely that of a Sustainable City, is the directive to ensure that sustainability runs through the City's broad development programme.

ANNEXURE C:

Goals and Targets of the United Nations Millennium Declaration

Millenium Development Goals

Goal #	Goal and Targets
Goal 1	Eradicate extreme poverty and hunger
	Halve, between 1990 and 2015, the proportion of people whose income is less than \$1 a day
	Halve, between 1990 and 2015, the proportion of people who suffer from hunger
Goal 2	Achieve universal primary education
	Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling
Goal 3	Promote gender equality and empower women
	Eliminate gender disparity in primary and secondary education preferably by 2005 and in all levels of education no later than 2015
Goal 4	Reduce child mortality
	Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate
Goal 5	Improve maternal health
	Reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio
Goal 6	Combat HIV/AIDS, malaria and other diseases
	Have halted by 2015 and begun to reduce the spread of HIV/AIDS
	Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases
Goal 7	Ensure environmental sustainability
	Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources
	Halve, by 2015, the proportion of people with sustainable access to safe drinking water
	Have achieved, by 2020, a significant improvement in the lives of at least 100 million slum dwellers
Goal 8	Develop a global partnership for development
	Develop further an open, rule-based, predictable, non-discriminatory trading and financial system (includes a commitment to good governance, development, and poverty reduction – both nationally and internationally)
	Address the special needs of the least developed countries (includes tariff and quota-free access for exports, enhanced programme of debt relief for and cancellation of official bilateral debt, and more generous ODA for countries committed to poverty reduction)
	Address the special needs of landlocked countries and small island developing states (through the Programme of Action for the Sustainable Development of Small Island Developing States and 22nd General Assembly provisions)
	Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term
	In co-operation with developing countries, develop and implement strategies for decent and productive work for youth
	In co-operation with pharmaceutical companies, provide access to affordable essential drugs in developing countries
	In co-operation with the private sector, make available the benefits of new technologies, especially information and communications technologies

ANNEXURE D:

Urban Environmental Accords

Vision and Implementation

THE 21 ACTIONS that comprise the Urban Environmental Accords are organised by urban environmental themes. They are proven first steps toward environmental sustainability. However, to achieve long-term sustainability, cities will have to progressively improve performance in all thematic areas.

Implementing the Urban Environmental Accords will require an open, transparent, and participatory dialogue between government, community groups, businesses, academic institutions, and other key partners. Accords implementation will benefit where decisions are made on the basis of a careful assessment of available alternatives using the best available science.

The call to action set forth in the Accords will most often result in cost savings as a result of diminished resource consumption and improvements in the health and general well-being of city residents. Implementation of the Accords can leverage each city's purchasing power to promote and even require responsible environmental, labour and human rights practices from vendors.

Between now and the World Environment Day 2012, cities shall work to implement as many of the 21 Actions as possible. The ability of cities to enact local environmental laws and policies differs greatly. However, the success of the Accords will ultimately be judged on the basis of actions taken. Therefore, the Accords can be implemented through programmes and activities even where cities lack the requisite legislative authority to adopt laws.

The goal is for cities to pick three actions to adopt each year. In order to recognise the progress of cities to implement the Accords, a City Green Star Program shall be created. At the end of the seven years a city that has implemented:

- 19 to 21 Actions shall be recognised as a **** City
- 15 to 18 Actions shall be recognised as a *** City
- 12 to 17 Actions shall be recognised as a ** City
- 8 to 11 Actions shall be recognised as a * City

SAN FRANCISCO

Urban Environmental Accords

United Nations Environment Programme
World Environment Day, June 5th, 2005

Energy

Action 1: Adopt and implement a policy to increase the use of renewable energy to meet ten per cent of the city's peak electric load within seven years.

Action 2: Adopt and implement a policy to reduce the city's peak electric load by ten per cent within seven years through energy efficiency, shifting the timing of energy demands, and conservation measures.

Action 3: Adopt a citywide greenhouse gas reduction plan that reduces the jurisdiction's emissions by twenty-five per cent by 2030, and which includes a system for accounting and auditing greenhouse gas emissions.

Waste Reduction

Action 4: Establish a policy to achieve zero waste to landfills and incinerators by 2040.

Action 5: Adopt a citywide law that reduces the use of a disposable, toxic, or non-renewable product category by at least fifty percent in seven years.

Action 6: Implement "user-friendly" recycling and composting programs, with the goal of reducing by twenty per cent per capita solid waste disposal to landfill and incineration in seven years.

Urban Design

Action 7: Adopt a policy that mandates a green building rating system standard that applies to all new municipal buildings.

Action 8: Adopt urban planning principles and practices that advance higher density, mixed use, walkable, bikeable and disabled-accessible neighborhoods which coordinate land use and transportation with open space systems for recreation and ecological restoration.

Action 9: Adopt a policy or implement a program that creates environmentally beneficial jobs in slums and/or low-income neighborhoods.

Urban Nature

Action 10: Ensure that there is an accessible public park or recreational open space within half a kilometer of every city resident by 2015.

Action 11: Conduct an inventory of existing canopy coverage in the city; and, then establish a goal based on ecological and community considerations to plant and maintain canopy coverage in not less than fifty per cent of all available sidewalk planting sites.

Action 12: Pass legislation that protects critical habitat corridors and other key habitat characteristics (e.g. water features, food-bearing plants, shelter for wildlife, use of native species, etc.) from unsustainable development.

Transportation

Action 13: Develop and implement a policy which expands affordable public transportation coverage to within half-a-kilometer of all city residents in ten years.

Action 14: Pass a law or implement a program that eliminates leaded gasoline (where it is still used); phases down sulfur levels in diesel and gasoline fuels, concurrent with using advanced emission controls on all buses, taxis, and public fleets to reduce particulate matter and smog-forming emissions from those fleets by fifty per cent in seven years.

Action 15: Implement a policy to reduce the percentage of commute trips by single occupancy vehicles by ten per cent in seven years.

Environmental Health

Action 16: Every year, identify one product, chemical, or compound that is used within the city that represents the greatest risk to human health and adopt a law and provide incentives to reduce or eliminate its use by the municipal government.

Action 17: Promote the public health and environmental benefits of supporting locally grown organic foods. Ensure that twenty per cent of all city facilities (including schools) serve locally grown and organic food within seven years.

Action 18: Establish an Air Quality Index (AQI) to measure the level of air pollution and set the goal of reducing by ten per cent in seven years the number of days categorized in the AQI range as "unhealthy" or "hazardous."

Water

Action 19: Develop policies to increase adequate access to safe drinking water, aiming at access for all by 2015. For cities with potable water consumption greater than 100 liters per capita per day, adopt and implement policies to reduce consumption by ten per cent by 2015.

Action 20: Protect the ecological integrity of the city's primary drinking water sources (i.e., aquifers, rivers, lakes, wetlands and associated ecosystems).

Action 21: Adopt municipal wastewater management guidelines and reduce the volume of untreated wastewater discharges by ten per cent in seven years through the expanded use of recycled water and the implementation of a sustainable urban watershed planning process that includes participants of all affected communities and is based on sound economic, social, and environmental principles.

ANNEXURE E:

Contact list for Sustainability Indicators

Indicator	Source	Organisation	Email
Particulate Matter Exceedances	Grant Ravenscroft	City of Cape Town	grant.ravenscroft@capetown.gov.za
Renewable Energy vs. Total Energy Supply	Craig Haskins	City of Cape Town	craig.haskins@capetown.gov.za
Energy Use Per Sector	Mark Borchers	Sustainable Energy Africa	info@sustainable.org.za
Carbon Dioxide per Capita			
•Petroleum product sales	Apie J Peens	PPNS	AJPeens@chevrontexaco.com
•City of Cape Town Electricity Supply	Manfred Kuster	City of Cape Town	mkuster@ctelec.co.za
•Eskom Electricity Supply	Joe Coelho	Eskom	coelhoj@eskom.co.za
•Coal and Wood Usage – Air Quality Database	Alison Hughes	UCT Energy Research Centre	ahughes@ebe.uct.ac.za
Public vs. Private Transport	John Spotten	City of Cape Town	john.spotten@capetown.gov.za
Green Space per Capita	Pauline van der Spuy	City of Cape Town	pauline.vanderSpuy@capetown.gov.za
Extent of Natural Vegetation Conserved	Gregg Oelofse	City of Cape Town	gregg.oelofse@capetown.gov.za
Extent of Invasion by Alien Invasive Species	Gregg Oelofse	City of Cape Town	gregg.oelofse@capetown.gov.za
Extent of Urban Sprawl	Ken Sinclair-Smith	City of Cape Town	ken.sinclair_smith@capetown.gov.za
Water Use per Capita	Jaco de Bruyn	City of Cape Town	jaco.de_bruyn@capetown.gov.za
Freshwater Quality	Candice Haskins	City of Cape Town	candice.haskins@capetown.gov.za
Coastal Water Quality	Ingrid Thomson	City of Cape Town	ingrid.thomson@capetown.gov.za
Proportion of Effluent Reused	Jaco de Bruyn	City of Cape Town	jaco.de_bruyn@capetown.gov.za
Landfill Lifespan	John Barlow	City of Cape Town	john.barlow@capetown.gov.za
Waste Disposal per Capita	Deon Rhode	City of Cape Town	deon.rhode@capetown.gov.za
HIV/AIDS prevalence	Dr. Ivan Toms	City of Cape Town	ivan.toms@capetown.gov.za
Tuberculosis Incidence	Dr. Ivan Toms	City of Cape Town	ivan.toms@capetown.gov.za
Incidence of Murder	SAPS Website	SAPS	http://www.saps.gov.za/statistics/reports/crimestats/2004/province.htm
Incidence of Rape	SAPS Website	SAPS	http://www.saps.gov.za/statistics/reports/crimestats/2004/province.htm
Incidence of Commercial and Industrial Crime	SAPS Website	SAPS	http://www.saps.gov.za/statistics/reports/crimestats/2004/province.htm
Access to Water	Jaco de Bruyn	City of Cape Town	jaco.de_bruyn@capetown.gov.za
Access to Sanitation	Jaco de Bruyn	City of Cape Town	jaco.de_bruyn@capetown.gov.za
Percentage of Informal Housing	Phillip Romanovsky	City of Cape Town	phillip.romanovsky@capetown.gov.za
Incidence of Fires in Informal Settlements	Leigh Sonn	UCT DiMP	sonn@enviro.uct.ac.za
Adult Literacy	Phillip Romanovsky	City of Cape Town	phillip.romanovsky@capetown.gov.za
Highest Level of Education Achieved	Phillip Romanovsky	City of Cape Town	phillip.romanovsky@capetown.gov.za
Working Population Unemployed	Phillip Romanovsky	City of Cape Town	phillip.romanovsky@capetown.gov.za
Gross Geographic Product	Rae Wolpe	City of Cape Town	rae.wolpe@capetown.gov.za
Income Disparity	Phillip Romanovsky	City of Cape Town	phillip.romanovsky@capetown.gov.za
Local Agenda 21 Projects	Grace Stead	City of Cape Town	grace.stead@capetown.gov.za
Education and Awareness Programmes			
•Environmental Planning	Lindie Buirski	City of Cape Town	lindie.buirski@capetown.gov.za
•Catchment Management	Randall Adriaans	City of Cape Town	randall.adriaans@capetown.gov.za
•Health	Ian Gildenhuys	City of Cape Town	ian.gildenhuys@capetown.gov.za
Capital Budget Spent	Robert Schultz	City of Cape Town	robert.schultz@capetown.gov.za

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GLOSSARY

- **Air Quality Exceedances:** Exceedances occur when daily air quality levels go over the limits set in recommended guidelines. These are counted and measured annually.
- **Biodiversity:** The rich variety of plants and animals that live in their own environment. Fynbos is a good example of biodiversity in the Cape.
- **Cape Town Metropolitan Open Space System (CMOSS):** A planned network of open space to facilitate conservation, agriculture and recreational and cultural enjoyment.
- **City of Cape Town (CCT):** The local authority that provides municipal services to the people of Cape Town (established in December 2000). There were six previous municipalities: Blaauwberg, Cape Town, Tygerberg, Helderberg, Oostenberg and South Peninsula. These municipalities are now part of the City of Cape Town.
- **Ecosystem:** A system involving the relationships and interactions between plants, animals and the non-living environment.
- **Environmental Governance:** Government's present and future duty to protect the environment through activities such as monitoring, control, management and creating legislation.
- **Faecal Coliform Bacteria:** Bacteria that are found in animal faeces and sewage. The presence of these bacteria usually indicates poor water quality
- **ICLEI:** An international organisation of cities dedicated to promoting environmental sustainability at the local level.
- **Infrastructure:** The network of facilities and services that are required for economic activities, for example roads, electricity, water, sewage treatment.
- **Integrated Metropolitan Environmental Policy (IMEP):** The environmental policy developed for the Cape Town area. The IMEP is a good example of Integrated Environmental Management – a way of managing the environment which also considers social, cultural and economic factors.
- **Integrated Development Plan (IDP):** A 5-year plan for development of municipalities that considers and combines all important elements and factors, e.g. land use planning, economic development, public investment and the monitoring of performance.
- **Invasive Alien Species:** Plants and animals that are not indigenous to Cape Town and have been brought here artificially. These species are often destructive to indigenous species.
- **Policy:** A framework or basis for action to overcome identified problems and achieve stated goals.
- **Recycling:** Collecting, cleaning and re-using waste materials
- **United Nations Millennium Development Goals (MDG):** This set of goals is aimed at improving basic human development indicators in all United Nations member countries, with the end goal of achieving a better quality of life for all. All 189 UN member states pledged in 2000 to achieve these goals by 2015.
- **Urban Sprawl:** The gradual and uncontrolled spread of urban areas into the surrounding natural areas



Cape Town's natural environment is known for its beauty and biodiversity, providing essential resources and offering natural assets on which much of our economy depends.



Our rich history of people and their culture, religious, political and economic practices has given us a particular and precious heritage in Cape Town.



Cape Town has an impressive and constantly evolving urban environment. We need to create a more equitable and harmonious living environment.



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