CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

State of Cape Town Report 2016

Making progress possible. Together.

Document navigation shortcuts

- Entries on the contents page link to the relevant page.
- The tabs on the right-hand pages link to the first page of each section.
- The title in the footer of each page links to the first contents page of the section.

About this report

The State of Cape Town report is a biennial publication produced by the Development Information and GIS Department of the City of Cape Town. The 2016 edition is the sixth, following on similar reports produced in 2006, 2008, 2010, 2012 and 2014. The report is designed to provide an overview of the city's development status at a particular point in time by giving an updated snapshot of the most pertinent issues influencing the state of Cape Town. The report highlights opportunities and challenges that the City of Cape Town administration (hereinafter the City) faces, contextualised within a broader context, and gives a real and current sense of the city and its inhabitants.

The production of this report was informed by two key contextual factors important to urban development in 2016:

- This is the first year in which the United Nations (UN) Sustainable Development Goals (SDGs) will be officially implemented. The SDGs follow on the Millennium Development Goals (MDGs), which lapsed in 2015. The SDGs comprise 17 goals with a total of 169 targets to be achieved by countries all over the world in the next 15 years. Importantly for cities, an urban sustainable development goal has been developed and introduced as Goal 11, "Make cities inclusive, safe, resilient and sustainable" (or "the urban goal"). This is highly significant, as it highlights and embeds the importance of cities and urban areas in the flagship UN sustainable development and international agenda, and is the first time that subnational units feature in this way.
- The New Urban Agenda – the outcome document of the UN Habitat III conference on housing and sustainable urban development in Quito, Ecuador – will be officially launched in October 2016. It will guide a wide range of organisations and stakeholders' efforts around urbanisation over the next 20 years and will also serve as the foundation for policies and approaches that will affect urban areas and those active in them far into the future.

This report presents information and analyses on Cape Town's developmental context across five themes, namely social, economic, natural wealth, urban growth and form, and urban governance. Additional inclusions are two short specialist inputs that are of particular importance for the City of Cape Town, namely on transversal management and resource efficiency. The former supports integrated planning, alignment and collaboration within the City, while the latter reflects the current status of sustainability in the city. Case studies that outline cross-cutting urban development programmes and projects, as well as the supportive tools and processes, are presented throughout the report.

> Make cities inclusive, safe, resilient and sustainable.

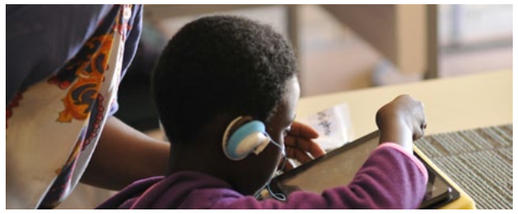
For an extract of key selected statistics from this report, see the accompanying overview document.

Table of contents

About this report 3
List of figures and tables 6
List of acronyms 8
Foreword by the City Manager 10
Acknowledgements 11
Disclaimer/Exclusion of Claims 11

Introduction 13

Chapter 1: Social 15



1. Introduction 16
2. Demographic trends 17
   2.1 Population 17
   2.2 Households 17
   2.3 Age 18
3. Health trends 19
   3.1 Health trends in Cape Town 19
   3.2 Foetal alcohol spectrum disorder 24
4. Education 24
   4.1 Literacy 25
   4.2 Adult education 25
   4.3 Youth education 25
5. Poverty and food security 26
   5.1 Poverty and inequality 26
   5.2 Food security 28
6. Crime 30
   6.1 Murder 31
   6.2 Total sexual crime 31
   6.3 Driving under the influence of alcohol or drugs 32
   6.4 Substance abuse 32
7. Future Cape Town 34
Chapter 1: Social reference list 36
Case study 38

Chapter 2: Economy 41

1. Introduction 42
2. Global trends: Headwinds for emerging economies 42
3. The power and responsibility of cities 43
4. Cape Town's economic growth performance 44
5. The sectoral drivers of Cape Town's economy 46
   5.1 Sectors attracting the most foreign direct investment 46
6. Cape Town's labour market 48
   6.1 A disproportionately low number of discouraged work seekers in Cape Town 49
   6.2 Youth unemployment in Cape Town 50
   6.3 Employment-creating sectors 52
7. Size and impact of the informal sector in Cape Town 52
8. Leveraging strategic infrastructural assets 53
   8.1 The Port of Cape Town 54
   8.2 Cape Town International Airport 56
9. Spatial characteristics of Cape Town's economy 57
   9.1 Inward growth 60
   9.2 Land value gradients and congestion 60
   9.3 What to expect up until 2020 63
10. Economic outlook for Cape Town: Key emerging trends 63
   10.1 Short-term outlook 63
   10.2 Beyond the short term – key trends that will affect industries in Cape Town 65
Chapter 2: Economy reference list 67
Case study 68

Chapter 3: Natural wealth 71

1. Introduction 72
2. Cape Town's environmental challenges 72
3. Air quality 73
   3.1 Key issues 73
   3.2 Data, trends and analysis 73
4. Energy 74
   4.1 Key issues 74
   4.2 Data, trends and analysis 75
   4.3 Cape Town's energy breakdown by sector, 2012 77
5. Biodiversity 78
   5.1 Key issues 78
   5.2 Data, trends and analysis 78
6. Water quality 82
   6.1 Coastal water quality 82
   6.2 Inland water quality 84
   6.3 Drinking water quality 85
7. Water resources and use 86
   7.1 Key issues 86
   7.2 Data, trends and analysis 87
8. Solid waste management 87
   8.1 Key issues 87
   8.2 Data, trends and analysis 88
9. Future Cape Town 90
   9.1 The future outlook for air quality 90
   9.2 The future outlook for energy 91
   9.3 The future outlook for biodiversity 91
   9.4 The future outlook for water quality (including coastal water quality, inland water quality and drinking water) 91
   9.5 The future outlook for water resources and use 92
   9.6 The future outlook for solid waste management 92
   9.7 Summary 93
Chapter 3: Natural wealth reference list 93
Specialist analysis 94
Case study 96

Chapter 4: Urban growth and form 99

1. Introduction 100
2. The urbanisation challenge and the role of cities 100
3. Sustainable urban development in South Africa 100
4. The Cape Town context – urban development policy and strategies 101
5. Urban growth in Cape Town – access to services and urban mobility 101
   5.1 Access to services 102
   5.2 Urban mobility – transport in Cape Town 112
6. Implications for Cape Town's urban form 117
7. Future Cape Town and the New Urban Agenda 117
8. Conclusion 118
Chapter 4: Urban growth and form reference list 122
Case study 124

Chapter 5: Urban governance 127

1. Introduction 128
   1.1 What is "urban governance"? 128
   1.2 Governance within the New Urban Agenda 128
2. Urban governance in South Africa: A high-level overview 129
   2.1 Driving local government transformation, 1996 to 2016 129
   2.2 Evolving municipal mandates globally and locally 130
3. Emerging perspectives on urban governance in South Africa 131
4. Configuring local government in Cape Town, 2000 and since 132
   4.1 Internal structures, external partnerships and ways of working 132
   4.2 Local government planning, policies and implementation tools 136
   4.3 Tools for improving the City's effectiveness and responsiveness 137
5. Building urban governance practice for the future 139
6. Conclusion 142
Chapter 5: Urban governance reference list 142

Conclusion 145
Social 145
Economy 146
Natural wealth 146
Urban growth and form 147
Urban governance 147
Summary 148
Conclusion reference list 148
Specialist analysis 150
Case study 152

List of figures

Figure 1.1: Rate of urbanisation by major area, 1950 to 2050 ..... **16**

Figure 1.2: Average household size in Cape Town, 1996 to 2011 ..... **18**

Figure 1.3: Cape Town population by age, 2002 to 2015 ..... **19**

Figure 1.4: Infant mortality rate in South Africa, 2009 to 2014 ..... **20**

Figure 1.5: Causes of child death in Cape Town, 2010 ..... **20**

Figure 1.6: All Cape Town TB cases per 100 000 population, 1997 to 2014 ..... **22**

Figure 1.7: Drug-resistant TB cases in Cape Town, 2010 to 2013 ..... **22**

Figure 1.8: Cape Town HIV prevalence trend, 2001 to 2013 ..... **23**

Figure 1.9: Number of ART clients registered for treatment in Cape Town **23**

Figure 1.10: Causes of death (per 100 000 population), Cape Town, 2010 ..... **24**

Figure 1.11: Cape Town's Gini coefficient, 2001 to 2014 ..... **28**

Figure 1.12: South Africa's HDI trends, 1980 to 2014 ..... **28**

Figure 1.13: Food security among adults in Cape Town, 2005 to 2014 ..... **30**

Figure 1.14: Food security among children in Cape Town, 2005 to 2014 ..... **30**

Figure 1.15: Crime rate – all reported crimes in Cape Town, and trend for South Africa, 2005/6 to 2014/15 ..... **31**

Figure 1.16: Murder rate (per 100 000) for Cape Town and South Africa, 2005/6 to 2014/15 ..... **32**

Figure 1.17: Total sexual crime rate (per 100 000) for Cape Town, Western Cape and South Africa, 2005/6 to 2014/15 ..... **32**

Figure 1.18: Rate of driving under the influence of alcohol or drugs (per 100 000) for Cape Town and South Africa, 2005/6 to 2014/15 ..... **33**

Figure 1.19: Drug-related crime rates in Cape Town, and trend line for South Africa, 2005/6 to 2014/15 ..... **33**

Figure 2.1: Economic growth trends in developed economies, 2008 to 2015 ..... **43**

Figure 2.2: Economic growth trends in developing economies, 2008 to 2015 ..... **43**

Figure 2.3: GDP annual growth rates for Cape Town and South Africa, 1997 to 2014 ..... **44**

Figure 2.4: Comparison of GDP contributions of Cape Town and other South African metros, 2004 and 2014 ..... **45**

Figure 2.5: GDP per capita and GDP per-capita growth rates for Cape Town and South Africa, 2004 to 2014 ..... **45**

Figure 2.6: Sectoral contributions to GVA growth in Cape Town, 2005 to 2014 ..... **46**

Figure 2.7: FDI distribution by industry in Cape Town, 2003 to 2015 ..... **48**

Figure 2.8: Employment levels in Cape Town, 2008 to 2015 ..... **49**

Figure 2.9: A comparison of the strict and broad rate of unemployment for Cape Town and South Africa, 2008 to 2015 ..... **49**

Figure 2.10: Discouraged work seekers as a proportion of the broadly unemployed in South African metros, 2015 ..... **50**

Figure 2.11: Broad rate of unemployment and proportion of NEET (not in education, employment or training) among those aged 15 to 24 ..... **50**

Figure 2.12: Sectoral employment levels in Cape Town, 2013 to 2015 ..... **52**

Figure 2.13: Total containers handled (20 ft.-equivalent units) in South Africa and the ports of Ngqura, Durban and Cape Town, 2012 to 2015 ..... **54**

Figure 2.14: Total passengers at South Africa's major international airports, 2012 to 2015 ..... **56**

Figure 2.15: Freight movement between business nodes in Cape Town **57**

Figure 2.16: Employment densities in Cape Town, 2015 ..... **58**

Figure 2.17: Building activity and gross value added in Cape Town, 2005 to 2015 ..... **58**

Figure 2.18: Business nodal performance in Cape Town, 2005 to 2015 ..... **59**

Figure 2.19: Location potential of businesses in Cape Town, 2015 ..... **59**

Figure 2.20: Industrial location potential in Cape Town, 2015 ..... **61**

Figure 2.21: Nodal growth in Cape Town: Mixed-use, commercial and industrial, 2005 to 2015 ..... **61**

Figure 2.22: Nodal regeneration – redevelopment and flats in Cape Town, 2005 to 2015 ..... **62**

Figure 2.23: Urban land values and congestion in Cape Town **62**

Figure 2.24: Expected changes to density, 2015 to 2020 ..... **64**

Figure 3.1: PM_{10} exceedances in Cape Town following the United Kingdom guideline, 1995 to 2015 ..... **74**

Figure 3.2: PM_{10} exceedances in Cape Town following the South African standard, 1995 to 2015 ..... **75**

Figure 3.3: Electricity consumption in Cape Town, 2013 ..... **76**

Figure 3.4: Cape Town's economy vs electricity sales growth, 1996 to 2012 ..... **76**

Figure 3.5: Energy use by sector, 2012 ..... **78**

Figure 3.6: $C0_2$ emissions by sector, 2012 ..... **78**

Figure 3.7: Biodiversity and city development for Cape Town **81**

Figure 3.8: Results meeting the Department of Water and Sanitation's 80th-percentile coastal recreational guideline for Cape Town's False Bay and Atlantic coastline beaches, 1992 to 2015 ..... **82**

Figure 3.9: Percentage results meeting the Department of Water and Sanitation's intermediate-contact recreational guideline for all inland aquatic systems: Annual medians 2000 to 2015 ..... **84**

Figure 3.10(a): Total phosphorus (annual median) measured in various Cape Town wetlands, 2010 to 2015 ..... **84**

Figure 3.10(b): Total phosphorus (annual median) measured in various Cape Town rivers, 2010 to 2015 ..... **85**

Figure 3.11: Daily water use per capita (in litres) in Cape Town, 1996 to 2015 ..... **87**

Figure 3.12: Total waste disposed (tonnes) in Cape Town, 2006 to 2015 ..... **88**

Figure 3.13: Waste minimisation (%) in Cape Town, 2006 to 2015 ..... **91**

Figure 4.1: Household access to basic services in Cape Town, 1996, 2001, 2011 to 2014 ..... **102**

Figure 4.2: Cape Town household access to telephones, 2014 ..... **106**

Figure 4.3: Household access to types of housing in Cape Town, 1996 to 2014 ..... **112**

Figure 4.4: Transport modes to travel to and from work in Cape Town, 2009 to 2014 ..... **113**

Figure 4.5: Travel time to work* in Cape Town, 2009 to 2014 ..... **114**

Figure 4.6: Transport mode to travel to work, by population group, 2014 ..... **114**

List of case study figures

Figure 1: Design process for City's UN Safe City programme M&E baseline survey **39**

Figure 1: Resource efficiency – Cape Town, 2005 to 2015 ..... **94**

Figure 2: Transport in Cape Town, 2012 ..... **95**

Figure 3: Annual land consumption in Cape Town 1652 to 2032 ..... **95**

Figure 1: Knowledge generation, sharing and utilisation via the Development Information Resource Centre on the City's Intranet (Cityweb) **96**

Figure 2: Role players in the City's eGIS, at a glance **97**

Figure 3: Screenshot of the CityMap viewer showing some of the spatial tools available to all staff members **97**

Figure 4: Corporate GIS vision **97**

Figure 1: Various stages of building developments in Cape Town CBD (green: completed, yellow: under construction, red: in planning, orange: proposed) **124**

Figure 2: Visualisation of zoning rights vs. existing buildings – Blouberg beachfront **125**

Figure 1: The City's transversal management system structure **151**

Figure 1: A screenshot of the City's open-data portal **153**

List of tables

Table 1.1: Households in Cape Town, 1996 to 2011 ..... **17**

Table 1.2: Labour absorption rate of Cape Town's economically active population, 2008 to 2015 ..... **19**

Table 1.3: Cape Town infant mortality rate (IMR) trends (per 1 000 live births), 2003 to 2012 ..... **20**

Table 1.4: Skills needed in the 21st century **25**

Table 1.5: Adult literacy levels in Cape Town, 2011 to 2014 ..... **25**

Table 1.6: Learner enrolment numbers (Grade 7, 10 and 12) in ordinary public schools in Cape Town, 1995 to 2015 ..... **26**

Table 1.7: Impact of rebased food, lower-bound and upper-bound poverty lines on poverty estimates in South Africa, 2011 ..... **27**

Table 1.8: Households living in poverty in Cape Town, 2012 to 2014 ..... **27**

Table 1.9: Indigent households in Cape Town, 2003 to 2015 ..... **27**

Table 2.1: Metro comparison of strict (official) and expanded (broad) unemployment rates **50**

Table 2.2: Employment and wage estimates for the informal sector in Cape Town **53**

Table 2.3: Ranking of international flight routes by total passenger movements **56**

Table 3.1: Remaining natural vegetation in Cape Town, by type, 2015 ..... **80**

Table 3.2: Breakdown of conserved land in Cape Town **81**

Table 3.3: Breakdown of results of Cape Town beaches meeting the 80th-percentile guideline, 2012 to 2015 ..... **82**

Table 3.4: Drinking water quality in Cape Town, 2009 to 2015 (SANS 241 requirements per population size; one sample: 20 000 population) **86**

Table 3.5: City of Cape Town major dam levels (in million kℓ), 2012 to 2016 ..... **87**

Table 4.1: Household access to piped water in Cape Town, 1996, 2001, 2011 to 2014 ..... **104**

Table 4.2: Household access to toilet facilities in Cape Town, 1996, 2001, 2011 to 2014 ..... **104**

Table 4.3: Household access to energy in Cape Town, 1996, 2001, 2011 to 2014 ..... **104**

Table 4.4: Household access to refuse removal in Cape Town, 1996, 2001, 2011 to 2014 ..... **105**

Table 4.5: Cape Town household access to the internet, 2014 ..... **107**

Table 4.6: City sports and recreational facilities by type, 2016 ..... **108**

Table 4.7: City public open spaces by type, 2014 ..... **109**

Table 4.8: City and provincial health-care facilities in Cape Town, 2015/16 ..... **109**

Table 4.9: City and provincial health-care facilities in Cape Town, 2015/16 ..... **110**

Table 5.1: Number of ward councillors by term of office **132**

Table 5.2: Number of subcouncils in Cape Town **133**

List of acronyms

3D	three-dimensional
3DCIM	three-dimensional city information model
ACSA	Airports Company South Africa
ART	antiretroviral therapy
BEPP	Built Environment Performance Plan
BioNet	biodiversity network
BPO	business process outsourcing
BRIC	Brazil, Russia, India and China
BRT	bus rapid transit
CBD	central business district
CCCC	Century City Conference Centre
CDS	City Development Strategy
CFR	Cape Floristic Region
CHC	community health centre
CID	city improvement district
City	City of Cape Town administration
CO_2	carbon dioxide
COGTA	(National Department of) Cooperative Governance and Traditional Affairs
Convenco	Cape Town Convention Centre Company (Pty) Ltd
CPI	consumer price index
CPMS	Capital Programme Monitoring Support (Unit)
CR	critically endangered
CSIR	Council for Scientific and Industrial Research
CSP	Cities Support Programme (of National Treasury)
CTICC	Cape Town International Convention Centre
CTSDF	Cape Town Spatial Development Framework
DI&GIS	Development Information & Geographic Information Systems (Department)
DWI	driving while intoxicated
DWS	(National) Department of Water and Sanitation
ECD	early childhood development
eGIS	enterprise geographic information system
EN	endangered
EPWP	Expanded Public Works Programme
FASD	foetal alcohol spectrum disorders
FDI	foreign direct investment
FNB	First National Bank
FPL	food poverty line
GDP	gross domestic product
GGP	gross geographic product
GHS	General Household Survey (conducted by Statistics South Africa)
GJ	gigajoule
GIS	geographic information systems
GNI	gross national income
GVA	gross value added
GWh	gigawatt per hour
HCT	HIV counselling and testing
HDI	human development index
HIV	human immunodeficiency virus
HSRC	Human Sciences Research Council
ICDG	Integrated City Development Grant (of National Treasury)
ICT	information and communications technology
ICT4D	information and communications technology for development
IDP	Integrated Development Plan
IDZ	industrial development zone
IHSF	Integrated Human Settlements Framework
IMEP	Integrated Metropolitan Environmental Policy
IMF	International Monetary Fund
IMR	infant mortality rate
IPTN	Integrated Public Transport Network
IRT	integrated rapid transit
IT	information technology
ITP	Integrated Transport Plan
IUDF	Integrated Urban Development Framework
IWEX	Integrated Waste Exchange
IWM	integrated waste management
LBPL	lower-bound poverty line
LPG	liquid petroleum gas
LT	least threatened
Mayco	Mayoral Committee
MDGs	Millennium Development Goals
MDR-TB	multidrug-resistant tuberculosis
M&E	monitoring and evaluation
MIG	Municipal Infrastructure Grant
MRC	Medical Research Council
MTREF	Medium-Term Revenue and Expenditure Framework
NDP	National Development Plan
NEET	not in education, employment or training
NGO	non-governmental organisation
NMT	non-motorised transport
NO_2	nitrogen dioxide
ODTP	Organisational Development and Transformation Plan
PEPFAR	United States President's Emergency Plan For Aids Relief
PHASA	Public Health Association of South Africa
PHC	primary health care
PM_{10}	particulate matter smaller than ten microns in size
PMTCT	prevention of mother-to-child transmission of HIV
PR	proportional representation (councillor)
PRASA	Passenger Rail Agency of South Africa
Province	Western Cape Provincial Government
PV	photovoltaic
QLFS	Quarterly Labour Force Survey (conducted by Stats SA)
REI4P	Renewable Energy Independent Power Producer Procurement Programme
SAPS	South African Police Service
SDGs	Sustainable Development Goals (of the United Nations)
SESE	Survey of Employers and the Self-Employed (conducted by Stats SA)
SEZ	special economic zone
SO_2	sulphur dioxide
SPELUM	Spatial Planning, Environment and Land Use Management Committee
SPU	Strategic Policy Unit
SRA	special rating area
Stats SA	Statistics South Africa
TB	tuberculosis
TCT	Transport for Cape Town
TMS	transversal management system
TOD	transit-oriented development
ToO	term-of-office (plan)
UCLG	United Cities and Local Governments
UN	United Nations
UBPL	upper-bound poverty line
UNCTAD	United Nations Conference on Trade and Development
UNESCO	United Nations Educational, Scientific and Cultural Organization
USDG	Urban Settlements Development Grant
VU	vulnerable
WCWDM	water conservation and water demand management
WCWSS	Western Cape water supply system
WDM	water demand management
WEF	World Economic Forum
WHO	World Health Organization
WMA	water management area
WISP	Western Cape Industrial Symbiosis Programme
XDR-TB	extensively drug-resistant tuberculosis

Foreword by the City Manager

It is my privilege to present the sixth edition of the City of Cape Town's biennial State of Cape Town report. The key objective of this 2016 edition, similar to past reports, is to provide a snapshot of the city, with up-to-date information and analyses of the most pertinent issues influencing Cape Town, its residents and businesses. It highlights the opportunities and challenges facing the city and helps inform a range of activities in relation to urban development for the administration, its partners and stakeholders.

This report provides an overview of current urban development – its challenges as well as opportunities – in Cape Town and for the City of Cape Town as an organisation. This is viewed through the lens of population and social development issues, the Cape Town economy, the city's natural wealth, urban growth and form, as well as urban governance, with the theme chapters, case studies and specialist analyses offering informative insights.

Cape Town continues to be one of the top-performing cities in South Africa and Africa. However, the City continues to review its context to find ways of improving and innovating in managing the persistent challenges of unemployment, poverty, a relatively high incidence of HIV/Aids, and crime.

As the City nears the completion of its Integrated Development Plan (IDP) for the 2012-2017 term of office and prepares for the development of a new five-year IDP, it is encouraging to note positive progress as the City provides an enabling environment for economic growth and job creation, and the great strides made with key enablers such as broadband and energy management. The City's transversal management system supports improved delivery across a range of services, including joint planning for short, medium and longer-term outputs and outcomes. This has already yielded improvements, which will be further enhanced in the future.

In the context of rapid urbanisation, the trends revealed in the State of Cape Town 2016 report highlight the need for continued investment in key enabling infrastructure, and to continue to work hard and ensure that its services are provided efficiently and effectively. Critical to the sustainable development of Cape Town will be the deepening of the transit-oriented development approach, which aims to lower travel costs and address the worsening road congestion along the city's main transport routes. This will be done through the provision of safe and reliable public transport infrastructure and services closer to places

of work and public housing. Through ensuring that new integrated human settlements are located near public transport and/or economic hubs, the City will continue to pursue a more inclusive Cape Town.

Cape Town is a special place, and I am confident that its residents and businesses will continue their hard work to together ensure that good progress continues to be made to make it a better place for all who live and work here.

Achmat Ebrahim
City Manager

Acknowledgements

This State of Cape Town 2016 report was compiled by the Development Information and Geographic Information Systems (DI&GIS) Department of the City of Cape Town and is stronger for the various contributors.

Carol Wright, Natasha Primo and Ameen Benjamin reviewed and provided editorial input to earlier drafts of the chapters and case studies. Ameen Benjamin was also responsible for overall project management of the report.

The DI&GIS Department would like to thank the following City of Cape Town colleagues who took responsibility for the production of the main chapters of the report:

- Chapter on the Cape Town economy: Paul Court, Meagan Jooste and Timothy Hadingham in Trade and Investment; Claus Rabe in Spatial Planning and Urban Design
- Chapter on Cape Town's natural wealth: Updated inputs from Amy Davison and Patricia Holmes from Environmental Resource Management; Othelie Muller from Solid Waste Management; Jaco de Bruyn from Water and Sanitation; Candice Haskins from the Stormwater & Sustainability Branch (Transport for Cape Town), and Ian Gildenhuys from City Health. Production of the chapter was coordinated by Maxine Newman and Ameen Benjamin in the DI&GIS Department.
- Chapters on the social issues and concerns, the urban form and growth, and urban governance in Cape Town were written by DI&GIS officials Ameen Benjamin, Sivuyile Vuyo Rilityane and Natasha Primo respectively.

Numerous City colleagues and others also assisted in providing updated and historical data or inputs for the various chapters – their contributions are all acknowledged.

In addition, we acknowledge the following authors for showcasing specific DI&GIS initiatives and how these support transversal work in the City:

- Carol Wright on monitoring and evaluation support
- Natasha Primo on the City of Cape Town's Urban Development Indicator Framework
- Mark van der Merwe on the City's spatial information portal
- Thomas Reiner on the three-dimensional city information model
- Neil Hoorn on the City's Open Data project

We also thank the following City colleagues for the production of the two "think pieces":

- Claus Rabe in Spatial Planning and Urban Design for the specialist analysis of urban resource efficiency
- Kathryn Schneider in the Strategic Policy Unit for an abbreviated overview of the City's transversal management system

Finally, we acknowledge the various other supportive contributions by colleagues in the DI&GIS Department and the rest of the City of Cape Town.

Author:
Department of Development Information and Geographic Information Systems, Development Information Branch

Photography:
Bruce Sutherland, Integrated Strategic Communications, Branding and Marketing, City of Cape Town

Design and layout:
Arc Cape Town

Production:
Publication Unit, Integrated Strategic Communications, Branding and Marketing

Published by:
Integrated Strategic Communications, Branding and Marketing Department

This document should be referenced as: City of Cape Town (2016), State of Cape Town Report 2016.

Any feedback, comments or suggestions on the report are welcomed and can be e-mailed to devinfo@capetown.gov.za.

Disclaimer/Exclusion of Claims

All efforts and due care have been taken to ensure the accuracy in the assembly, analysis and compilation of data and information in this report. However, the City of Cape Town is unable to warrant the accuracy of the data and information, analysis and compilations contained in this report. Readers of this publication are deemed to have waived and renounced all rights to any claim against the City of Cape Town Council, its officers, servants or agents for any loss or damage of any nature whatsoever arising from any use or reliance upon such data, information, analysis or compilations.

Information is presented at the time of writing (May 2016), with updates where possible.

In this report, the "City" refers to the City of Cape Town administration, including elected councillors, responsible for the development and local administration of the city.

The "city" refers to the geographical area that is administered by the City of Cape Town, its physical elements, as well as all the people living in and active within the area.

For readers' convenience, complete source references are indicated in footnotes in the chapter summaries. Thereafter, footnote references appear in a shortened form, accompanied by a complete reference list at the end of each chapter.

CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

Introduction

Cities are hubs for ideas, commerce, culture, science, productivity, social development and more. There are however challenges in developing and maintaining cities in a way that continues to create jobs and prosperity, without straining land and resources. Cities can overcome their challenges and continue to thrive and grow, while improving resource use and reducing pollution and poverty.[1]

This State of Cape Town 2016 report is the sixth in a series produced biennially by the City of Cape Town. It seeks to provide information on, and evidence-based analysis of, the current urban opportunities and challenges facing Cape Town, while also highlighting issues that need to be kept track of and attended to as the city moves forward, into the future. The purpose of the report is to outline the current context of Cape Town, providing a snapshot of its profile and the issues, key challenges and opportunities facing the city and its stakeholders.

The production of this State of Cape Town report was edified by key urban development informants. The year 2016 is the first year in which the United Nations (UN) Sustainable Development Goals (SDGs) will be officially implemented. The SDGs follow on the Millennium Development Goals (MDGs), which lapsed in 2015. The SDGs comprise 17 goals with a total of 169 targets to be achieved by countries all over the world in the next 15 years. Importantly for cities, an urban sustainable development goal has been developed and introduced as Goal 11, "Make cities inclusive, safe, resilient and sustainable" (or "the urban goal"). This is highly significant, as it embeds the importance of urban areas in the flagship UN sustainable development and international agenda, and is the first time that subnational units feature in this way.

In addition, the New Urban Agenda – being the official outcome document of the UN Habitat III conference on housing and sustainable urban development in Quito, Ecuador – will be officially introduced in October 2016. It will guide a wide range of organisations and stakeholders' efforts around urbanisation over the next 20 years and will also provide the foundation for policies and approaches that will still affect urban areas and those active in them far into the future.[2]

This report objectively assesses the state of development in Cape Town and among its people, using National Census and General Household Survey data, economic data from the Economic Performance Indicators for Cape Town (EPIC) document, the City's planning, service and administrative data, supplemented by other relevant data sources. It is aimed at policymakers and decision-makers, senior managers and other stakeholders, as well as researchers and ordinary residents who seek information on Cape Town and its diverse set of development opportunities and challenges.

The content of this 2016 edition can be divided into three categories: analytical chapters covering five themes, two think pieces, and case studies of specialised tools and processes that support transversal management work and activities in the City. The latter two are linked to the respective chapter themes.

This 2016 issue builds on the 2014 edition, again covering the five themes of social, the economy, natural wealth, urban growth and form (which focuses on infrastructure and services), and urban governance. Each thematic chapter contains a review of the national and local development shifts, an overview of the current context and trends, and where possible, some of the emerging trends, opportunities and challenges for the future.

> The purpose of this report is to outline the current context of Cape Town, providing a snapshot of its profile and the issues, key challenges and opportunities facing the city and its stakeholders.

The report does not purport to be a comprehensive overview of all the possible components and aspects that may shape the future Cape Town, but rather touches on the issues most pertinent to increasing economic growth and development, advancing social inclusion and cohesion, building the city's resilience and supporting sustainable development. Cape Town's growth and change is both a challenge and an opportunity for social, institutional and economic innovation. An attempt is made to provide data for 2015 and 2016; however, where 2015 and 2016 data were not available, the most recent available data were used and referenced appropriately.

For an extract of key selected statistics from this report, see the accompanying overview document.

1 http://www.un.org/sustainabledevelopment/cities/.

2 For more information on the purpose and proposed ideas for the New Urban Agenda, please see UN-Habitat, 2016, World Cities Report 2016: Urbanization and Development – Emerging Futures, UN-Habitat: Nairobi.

Chapter 1: Social

1. Introduction 16
2. Demographic trends 17
   2.1 Population 17
   2.2 Households 17
   2.3 Age 18
3. Health trends 19
   3.1 Health trends in Cape Town 19
   3.2 Foetal alcohol spectrum disorder 24
4. Education 24
   4.1 Literacy 25
   4.2 Adult education 25
   4.3 Youth education 25
5. Poverty and food security 26
   5.1 Poverty and inequality 26
   5.2 Food security 28
6. Crime 30
   6.1 Murder 31
   6.2 Total sexual crime 31
   6.3 Driving under the influence of alcohol or drugs 32
   6.4 Substance abuse 32
7. Future Cape Town 34

Chapter 1: Social reference list 36

Case study 38

"Cities of the developing world will absorb roughly 95% of the total population growth expected worldwide in the next two decades."

(United Nations, 2015)

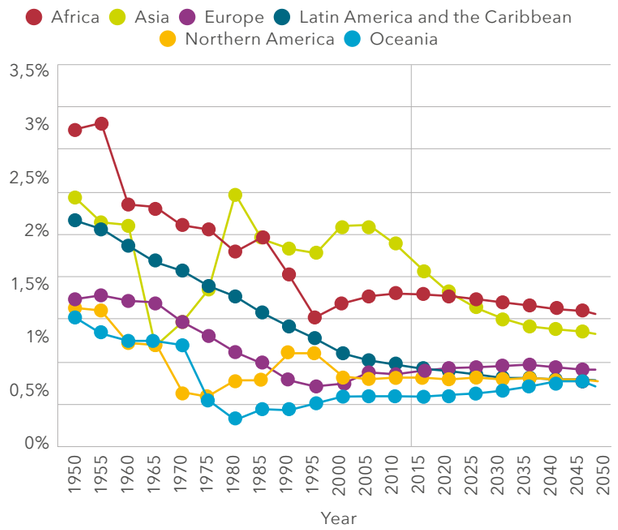
1. Introduction

Historically, cities have always been strategic sites to explore major issues confronting society. In the 21st century, the city is once again emerging as a strategic site for understanding some of the pertinent new trends influencing the global and local social order.[3]

The importance of the social component of cities cannot be overstated. Indeed, cities cannot succeed without the energy and investment of their citizens. Cities' success stems from their unique capacity to bring together a critical mass of social and cultural diversity.[4]

Contrary to popular belief, global urbanisation[5] and urban growth rates have been declining for some time (figure 1.1). However, the number of people added to the world's urban population annually has been increasing steadily and is expected to peak at more than 70 million during this decade.[6] By 2030, about 84,6% of the global population will live in less-developed countries.[7] Cities of the developing world will absorb roughly 95% of the total population growth expected worldwide in the next two decades.[8] Cities are thus vital to bring about social upliftment and sustainable development.

Figure 1.1: Rate of urbanisation by major area, 1950 to 2050



Source: *United Nations, 2015c: 11.*

The pace of urbanisation in Africa has recently accelerated (figure 1.1). Although this is expected to again decrease gradually in the coming decades, Africa is expected to be the fastest-urbanising region from 2020 to 2050. By 2050, the urban population of Africa will have likely tripled to account for 21% of the world's urban population.[9]

In the early 1990s, South Africa reached the urban tipping point where 52% of the country's population were urban. This increased to 64% in 2014, and by 2050, it is projected that 77% of the population will be urban.[10] The advent of South Africa's democracy in 1994 saw the end of the repressive apartheid control policies, which facilitated a recovery in the rate of urbanisation.[11]

3 Saskia, 2010.
4 Republic of South Africa, 2014a: 75.
5 Although there are different definitions for urbanisation, it is generally accepted to involve a shift in population from rural to urban settlements. From a demographic perspective, the urbanisation level is best measured by the urban population share (of total population), while the urbanisation rate represents the rate at which that share is growing. See McGranahan and Satterthwaite, 2014.
6 McGranahan and Satterthwaite, 2014.
7 United Nations, 2015a.
8 United Nations, 2015b.
9 United Nations, 2015c.
10 Ibid.
11 Turok, 2012

Table 1.1: Households in Cape Town, 1996 to 2011

Population group	1996		2001		2011	
	Number	%	Number	%	Number	%
Black African	168 000	25,7	251 125	32,3	444 781	41,6
Coloured	259 982	39,8	310 465	39,9	358 629	33,6
Asian	8 742	1,3	10 065	1,3	14 267	1,3
White	195 011	29,9	205 734	26,5	232 826	21,8
Other	21 350	3,3	0	0,0	18 069	1,7
Total	653 085	100,0	777 389	100,0	1 068 572	100,0

Source: *City of Cape Town DI&GIS Department, using all available Census data.*

In the State of Cape Town 2014 report, a 20-year trend analysis was presented to determine urbanisation developments since the dawn of democracy in South Africa. The social inequalities inherited from the pre-democratic South Africa formed the baseline for this analysis. This chapter will consider the latest developments since the 2014 analysis to continue to reflect on changes in Cape Town's demographic, health, education, poverty, inequality and crime trends.

This chapter is structured as follows:

- Demographic trends
  - Population
  - Households
  - Age
- Health trends
  - Health trends in Cape Town
  - Foetal alcohol spectrum disorders
- Education
  - Literacy
  - Adult education
  - Youth education
- Poverty and food security
  - Poverty and inequality
  - Food security
- Crime
  - Murder
  - Total sexual crime
  - Driving under the influence of alcohol
  - Substance abuse
- Future Cape Town

2. Demographic trends

2.1 Population

The South African nation comes from diverse cultural and ethnic backgrounds and has 11 official languages. This diverse population is characterised by eight distinct factors, namely race (population group), culture, ethnicity, language, religion, class, education and politics.[12] This section will reflect on the demographics of Cape Town, highlighting where trends may differ across population groups. Later in the chapter, discussions will centre on education and class within the context of poverty.

The South African population in 2015 was estimated at 54 956 900 people, of whom approximately 51% (some 28,07 million) were female.[13] The Western Cape population in 2015 was estimated at 6 200 100, which constituted 11,3% of the country's total population,[14] having declined slightly since 2014 when it constituted 11,4% of the total South African population.[15] The female population in the province is slightly higher, comprising 50,73% of the total population.[16] The Western Cape's population is predominantly urban, mainly as Cape Town's population makes up a significant portion of the provincial population.

Cape Town is ranked as the tenth most-populous city in Africa.[17] In 2016, the city's population was estimated at 4 004 793[18].

2.2 Households

The family and the household are the most basic socio-economic institutions in society. Traditionally in most cultures, the primary role of the family is to raise and care for children, and to support the ill and elderly. The role of the household and residential family is also central in economic analyses, because these units are usually the locus of joint decisions regarding consumption, production, labour force participation, savings and capital formation.[19]

The total number of households in Cape Town grew from 653 085 in 1996 to 1 068 572 in 2011,[20] which represents an increase of 63,6%.[21] There seems to be a trend towards smaller household units across all population groups. In 1996, the average household in Cape Town had 3,92 members, which declined to 3,50 in 2011 (refer figure 1.2).

Fertility, mean age at marriage, and divorce are the three main demographic determinants influencing household size. Households become less extended, more nuclear and smaller as societies industrialise and urbanise.[22] The Human Sciences Research Council (HSRC) reviewed the factors

12 Benjamin, 2014.
13 Stats SA, 2015b.
14 Ibid.
15 City of Cape Town, 2014.
16 City of Cape Town, 2015. DI & GIS Department, using StatsSA data
17 UN-Habitat, 2014.
18 City of Cape Town, DI&GIS Department, using StatsSA 2016 Community Survey data.
19 Bongaarts, 2001.
20 Stats SA defines a household as "a group of persons who live together and provide themselves jointly with food or other essentials for living, or a single person who lives alone".
21 The Stats SA Community Survey 2016 was being conducted at the time of writing. When available, the results will allow the number of households and average household size in Cape Town to be updated.
22 Bongaarts, 2001.

responsible for the reduction in household sizes throughout South Africa. Their review revealed that a combination of interrelated legal, economic and social processes have contributed towards this trend since 1994. These involve greater legal protection and social acceptance of youth and women claiming rights to housing, the emergence of a powerful youth culture driving modern aspirations, the cumulative effects of high unemployment, and women's earning power eroding patriarchal values and changing the nature of the institution of marriage.[23]

Cape Town's average household size (figure 1.2) is below that of developing countries (five members) and is moving closer to that of many developed countries (two to three members). This is already the case in certain population groups, notably the white and black African groups (with the former averaging at around 2,5 and the latter at 3,25 in 2011).

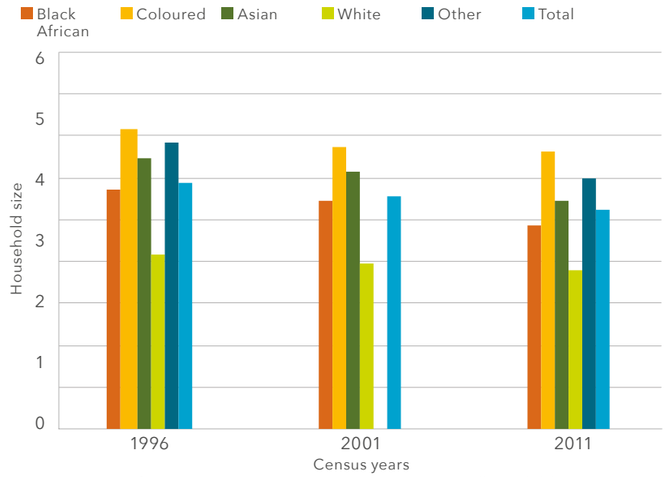
Although the trend of smaller household sizes may be viewed as positive, it does pose certain challenges to Cape Town, as to other South African metros and developing-country cities. These include the increased demand for housing supply to accommodate the trend, with the consequent increase in housing prices; increased competition for scarce urban land for new housing developments, and the breakdown of the extended family, which is often considered a powerful social support network.

2.3 Age

Ageing is not what it used to be. Emerging movements such as "slow living" and "ageing reinvented" are new societal trends that will redefine the way we live, work and play.[24] "Slow living" advocates a cultural shift towards slowing down in a fast-living culture. This movement is associated with a desire to lead healthier lives and explore healthier ways of eating, living and consuming products that relieve modern man from the relentless pace of busy lives and fast-evolving technology. In the reinvention of ageing, in turn, the

23 Cross et al., 2005.
24 O'Brien, 2016.

Figure 1.2: Average household size in Cape Town, 1996 to 2011



Source: *City of Cape Town DI&GIS Department, using all available Census data.*

baby boomer generation[25] redefines what it means to grow older. Coupled with the younger generation's obsession with body image,[26] this renewed interest in living better (and perhaps longer – see discussion on life expectancy under section 3 below) may change the age profile in the decades to come.

The demographic trend for South Africa and the Western Cape indicates an ageing population[27] across all population groups.[28] This pattern is also evident in Cape Town.

The proportion of children (0 to 14 years) in Cape Town decreased from 29,10% in 2002 to 26,18% in 2015 (see figure 1.3). In the same period, the percentage of the population who are economically active (15 to 64 years) increased from 66,58% to 67,73%, while the aged population (65 years and above) grew from 4,31% to 6,09%. However, the total age dependency ratio[29] for Cape Town decreased during this period from 0,50 to 0,48.

> Cape Town's average household size is below that of developing countries (five members) and is moving closer to that of many developed countries (two to three members).

According to the UN classification, Cape Town's population has moved towards the upper end of a mature or intermediate-aged population. A population is considered mature or of intermediate age if 4 to 7% of the population are aged 65 and above.

Of the economically active (15 to 64 years), 53,30% were absorbed into the economy in 2015. Although this increased from 2009, when the labour absorption rate[30] was 52,50%, it has still not recovered to the 2008 level of 54,20% (refer table 1.2). This reflects that Cape Town's economy is not growing fast enough to support the increasing economically

25 The baby boomers are those born during the post-World War II baby boom, between approximately 1946 and 1964. In 2016, this would include those between 52 and 70 years of age. See Wikipedia, 2016.
26 Ngubane et al., 2016.
27 Population ageing refers to declining proportions and numbers of children, increasing proportions and numbers of older persons, and rising median ages.
28 City of Cape Town, 2014.
29 The World Bank defines the age dependency ratio as the ratio of dependants (people younger than 15 or older than 64) to the working-age population (those aged 15 to 64). http://data.worldbank.org/indicator/SP.POP.DPND.
30 This is the percentage of the working-age population in employment.

Table 1.2: Labour absorption rate of Cape Town's economically active population, 2008 to 2015

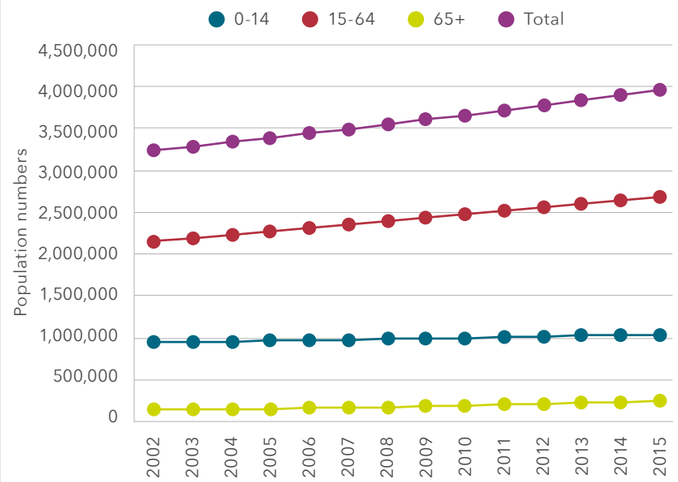
	2008	2009	2010	2011	2012	2013	2014	2015
Labour absorption rate	54,20%	52,50%	50,80%	51,80%	51,30%	50,80%	51,70%	53,30%

Source: *Stats SA Quarterly Labour Force Survey, 2008 to 2015.*

active population. However, it also displays the impact of the economic recession from late 2008 to the end of 2009 on the economy, and a degree of recovery since then.

The high ratio of potential workers to dependants holds possible benefits for Cape Town's economy – a so-called "window of opportunity" for accelerated economic development.[31] If the population continues to age, however, there will be a negative impact not only on the economy, government and pension expenditure, but also on health care, social services, housing and the family[32] – especially for low-income and indigent families who depend on the state for support.

Figure 1.3: Cape Town population by age, 2002 to 2015



Source: *Stats SA mid-year estimates, 2002 to 2015.*

3. Health trends

South Africa's health profile reflects the historical challenges associated with its economic and geographical disparities. South Africans experience an increasing number of non-communicable diseases associated with age and lifestyle, while communicable diseases (mainly the Human Immunodeficiency Virus (HIV) and Tuberculosis (TB)) also remain paramount concerns.[33]

Life expectancy at birth in South Africa increased from 61,2 years in 2012, to 62,2 years in 2013, to 62,9 years in 2015,[34] which represents an annual rate of increase of 0,57 years. At this rate, the National Development Plan (NDP) vision of 70 years for life expectancy by 2030 is very likely to be achieved. The Western Cape has the highest life expectancy at birth (68 years),[35] which is very close to achieving the NDP 2030 vision.

31 Haldenwang, 2011.
32 Roux, 2013.
33 Republic of South Africa, 2016.
34 Republic of South Africa, 2015, 2016.
35 Republic of South Africa, 2016.

3.1 Health trends in Cape Town

a) Infant mortality rate in Cape Town[36]

The infant mortality rate (IMR)[37] is a key indicator of health and development in a society. It is associated with a broad range of social, economic and environmental factors, which are also indicative of the health status of the broader population.

The IMR in South Africa significantly reduced from 2009 (39,0) up to 2012 (27,0), but had increased slightly by 2014 (28,0), although it was still significantly lower than in 2009 (figure 1.4). This downward trend is also seen in Cape Town, where there was a clear trend towards a decrease in the IMR in the Cape metro between 2003 and 2012, dropping from 25,2 to 16,4 (per 1 000 live births) (refer table 1.3).

Areas with low socio-economic status display a higher IMR than those with high socio-economic status,[38] which confirms that socio-economic and environmental factors contribute to the root causes of infant deaths. Gastroenteritis and pneumonia are common causes of infant deaths, particularly among the black African and coloured population groups. Many infant deaths are directly attributable to the effects of bad sanitation, poor nutrition, inadequate water supply, poor housing, overcrowding and poverty.[39] A key factor in the significant reduction in the IMR, especially in areas of low socio-economic status, is the improvements in basic service delivery to these areas.

Exclusive breastfeeding in the first six months of an infant's life provides all the nutrients that they need to grow, and further strengthens their immune systems. However, modern lifestyles, with many mothers pursuing careers,

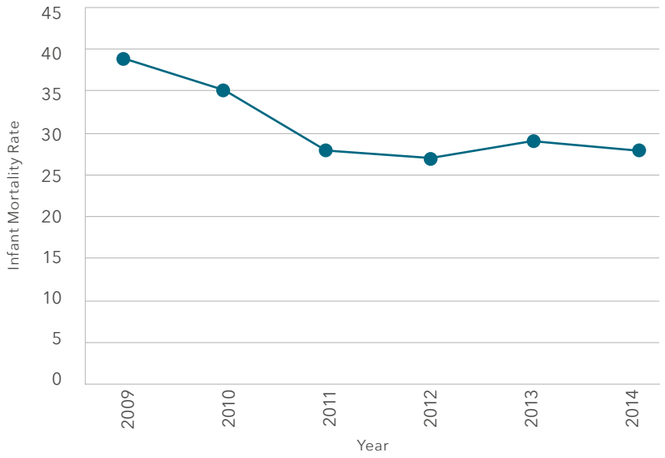
36 IMR and causes-of-death data cannot be updated due to the Medical Research Council's inability to access death certificates, as explained under paragraph (b), "Child deaths".
37 The IMR is defined as the probability of dying within the first year of life. It refers to the number of babies below 12 months of age who die within a year, per 1 000 live births during the same year. See Nannan and Hall, 2014.
38 See City of Cape Town, 2014.
39 Chetty, 2003.

Table 1.3: Cape Town infant mortality rate (IMR) trends (per 1 000 live births), 2003 to 2012

Year	Cape Town IMR
2003	25,2
2004	23,7
2005	22,3
2006	21,4
2007	20,0
2008	19,8
2009	20,8
2010	20,1
2011	15,6
2012	16,4

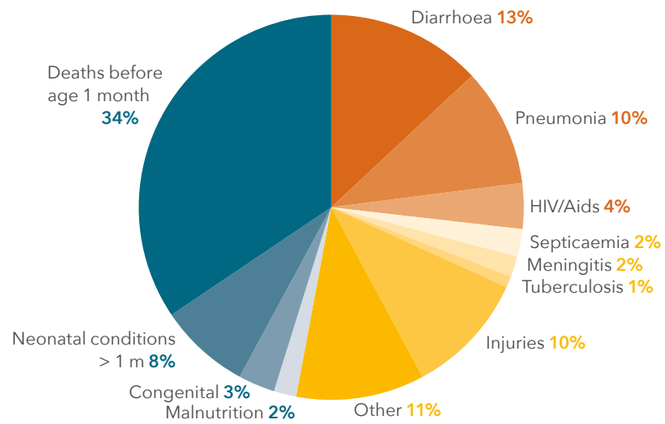
Source: Medical Research Council (MRC), 2013.

Figure 1.4: Infant mortality rate in South Africa, 2009 to 2014



Source: Dorrington et al., 2015.

Figure 1.5: Causes of child death in Cape Town, 2010



Source: MRC, 2013.

do not always allow for breastfeeding. Infant formula as a substitute does however not contain all the essential nutrients or antibodies to protect children from diarrhoea, pneumonia or malnutrition. Many maternity facilities across Cape Town provide antenatal workshops where breastfeeding is encouraged as a first choice. In addition, health practitioners also encourage breastfeeding among their antenatal patients.

b) Child deaths

Most child deaths are caused by diseases that are readily preventable or treatable. Globally, infectious diseases and neonatal complications are responsible for the vast majority of deaths below the age of 5.[40]

Internationally, there has been steady progress in reducing the under-5 mortality rate, with the annual rate of reduction having increased from 1,8% in the period 1990-2000 to 3,9% in the period 2000-2015. Sub-Saharan Africa, the region with the highest under-5 mortality rate in the world, also saw a significant improvement in the rate of reduction from 1,6% in the 1990s to 4,1% in the period 2000-2015.[41]

Although South Africa did not meet its MDG target of reducing deaths per 1 000 live births to 20 by 2015 (based on projections),[42] it has however significantly improved its child health and under-5 mortality rate. The latter declined by an annual average of 10,3% between 2006 and 2011 (the fourth fastest rate of decline globally).

This decline is largely attributed to the programme for the prevention of mother-to-child transmission (PMTCT) of HIV, improved immunisation rates to protect children against vaccine-preventable diseases such as diarrhoea and pneumonia, and vitamin A supplementation, which has decreased vitamin A deficiencies. South Africa is one of only a few countries that have introduced rotavirus and pneumococcus vaccines to reduce the incidence of, and death due to, diarrhoea and pneumonia in children.[43]

The main causes of child deaths during 2010 in Cape Town (figure 1.5) include diarrhoea (13%), other illnesses (11%), pneumonia (10%) and injuries (10%).[44] The data for causes of child deaths in Cape Town were previously generated by the Medical Research Council (MRC). However, the National Department of Home Affairs has introduced certain law

40 UN IGME, 2015.
41 Ibid.
42 Haldenwang, 2015. The author used 2013 data for her 2015 projection.
43 Republic of South Africa, 2014b.
44 Death before the age of one month as a category, although the highest proportion in the graph, is not a cause of death in itself.

amendments,[45] which now prohibit access to medical certificates, except for Stats SA. Therefore, the MRC was unable to generate more recent data. Stats SA's report on mortality and causes of death only presents a national overview of the causes of death for the under-5 group.

c) Tuberculosis

There was a general increase in TB cases and incidence from 1997 to 2014 in Cape Town (figure 1.6). From 2010 to 2014, however, a downward trend started to emerge. This downward trend is consistent with global and national TB trends. In Cape Town, data reveal that the number of HIV-positive TB cases, which previously increased, is now falling. Substantial improvements in TB outcomes have been achieved in the past number of years.

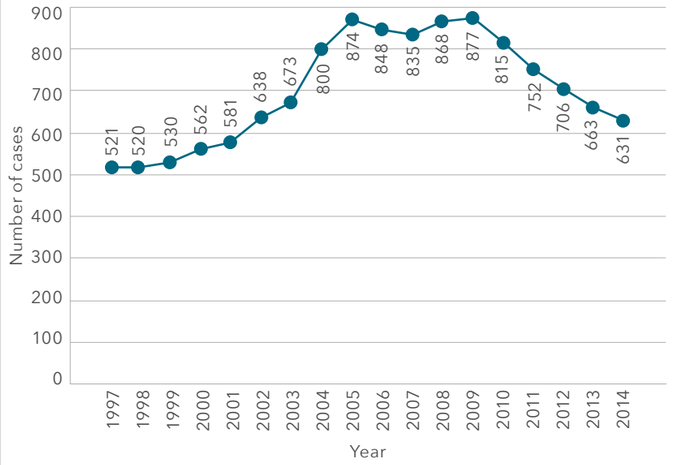
In spite of these improvements, however, the following factors continue to fuel the TB epidemic in Cape Town:

- Poverty
- Urbanisation, with resultant overcrowding
- Damp, poorly ventilated houses/ shacks
- High HIV prevalence
- Clients presenting or being identified late in the course of the disease (having potentially infected many others before treatment starts)
- Some clients never starting treatment, or interrupting treatment (defaulters)
- Substance abuse
- Smoking

Particular challenges are experienced in areas with high case loads and high dual infection rates, such as Khayelitsha and parts of the Klipfontein, Eastern and Mitchells Plain health sub-districts. In Khayelitsha, the TB incidence is a high 1 165 per 100 000. The challenge is not only to maintain efforts to combat the TB epidemic throughout the city, but also to develop enhanced responses in the high-burden areas. New challenges have also arisen with the emergence of drug-resistant strains (multidrug-resistant (MDR) and extensively drug-resistant (XDR) – refer figure 1.7), which poses difficulties in service delivery as well as clinical and ethical issues. The treatment and management of patients with drug-resistant TB has been decentralised to primary health-care level since 2010.

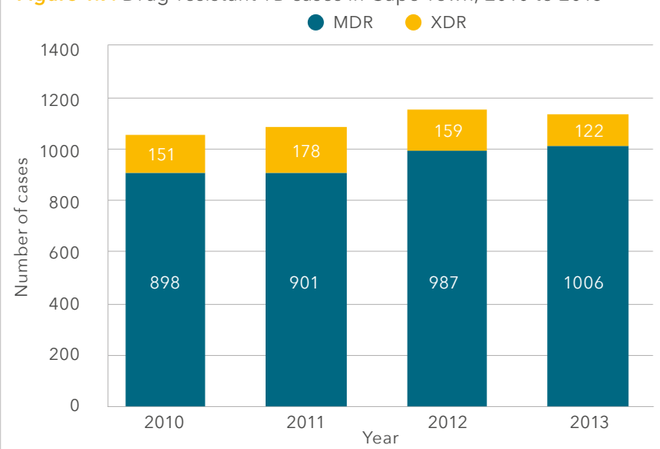
The treatment of both MDR- and XDR-TB takes substantially longer than ordinary (drug-susceptible) TB and requires the use of second-line anti-TB drugs, which are more expensive and have more side effects.[46] The diagnosis of drug-sensitive and drug-resistant TB has been enhanced by the roll-out of a new diagnostic test called GeneXpert.[47] GeneXpert is a molecular test for TB that diagnoses the disease by detecting the presence of TB bacteria as well as testing for resistance to the commonly used drug Rifampicin.[48]

Figure 1.6: All Cape Town TB cases per 100 000 population, 1997 to 2014



Source: *City of Cape Town, Health Directorate, 2016.*

Figure 1.7: Drug-resistant TB cases in Cape Town, 2010 to 2013



Source: *City of Cape Town, Health Directorate, 2016.*

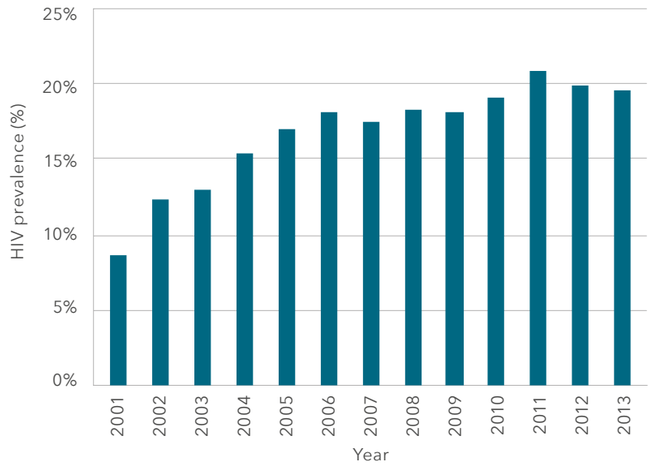
45 The registration of deaths in South Africa falls under the mandate of the Department of Home Affairs and is governed by the Births and Deaths Registration Act 51 of 1992. Although the act itself was last amended in 2010, its accompanying regulations were revised in 2014. The death notification form used to register deaths in South Africa provides legal evidence of death and is used to compile national statistics on mortality and causes of death. See Stats SA, 2014.

46 WHO, 2012.

47 City of Cape Town, 2015b.

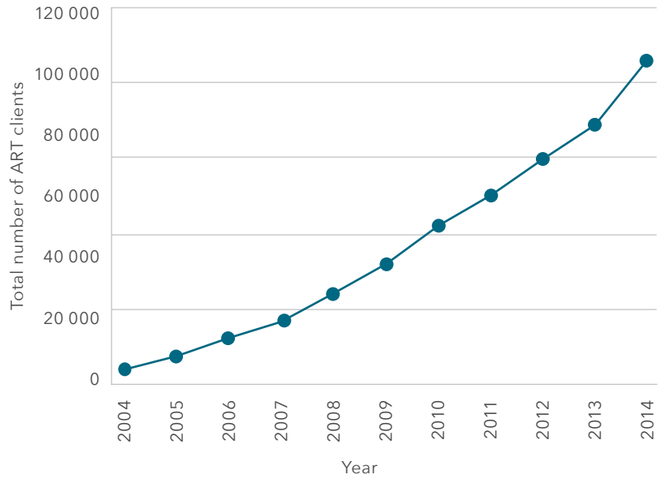
48 Kanabus, 2016.

Figure 1.8: Cape Town HIV prevalence trend, 2001 to 2013



Source: *South African National Department of Health, 2015.*

Figure 1.9: Number of ART clients registered for treatment in Cape Town



Source: *City of Cape Town Health Directorate, 2016.*

d) HIV/Aids

Although South Africa has more people living with HIV than any other country, the number of new infections almost halved from 0,6 million in 2000 to 0,34 million in 2014, thereby meeting the MDG target. However, South Africa still has the fourth highest HIV prevalence rate[49] in the world, having increased from 15,6% in 2002 to 18,8% in 2013, which failed to meet the MDG target.[50]

Historically, the Western Cape has always been the province with the lowest prevalence rates in the country.[51] In 2005, the Western Cape passed the early phase of the HIV epidemic, which was characterised by an exponential growth in prevalence. Thereafter, prevalence rates began to stabilise, with a slight decrease in 2012 compared to 2011 figures. The 2013 HIV prevalence rate for the province was 17,1%,[52] which was lower than the 2010 rate of 17,3% and suggests a downward trend.

HIV/Aids is the leading cause of premature mortality in Cape Town.[53] According to the annual antenatal survey, overall HIV prevalence in Cape Town is plateauing, although in some areas, this still occurs at a very high level. The 2013 antenatal survey showed an HIV prevalence of 19,7% in the city (figure 1.8).

The significant increase in HIV prevalence up to 2011 was in part due to the large number of people receiving antiretroviral therapy (ART) (figure 1.9), enabling them to live longer with the virus, thereby increasing the total number of people living with HIV. Access to ART has continued to expand. The eligibility criteria for ART commencement have become increasingly inclusive, and the latest guidelines released in 2015 have expanded access to HIV-positive persons with a CD4[54] count of below 500, women with HIV within one year post-partum, regardless of infant feeding choice, as well as HIV-infected partners in serodiscordant[55] couples. However, maintaining an increasingly large number of people on lifelong ART does pose certain challenges, with available staff and infrastructure struggling to cope.

Strategies that address the HIV epidemic need to consider the broader issues of poverty, discrimination, alienation, the separation from the family, and the breakdown of established community and social networks, along with the broader goal of building social capital.

City Health, along with the national and provincial departments of health and the United States President's Emergency Plan For AIDS Relief (PEPFAR), is currently in the planning stages of implementing the UNAIDS strategy of "90-90-90". UNAIDS postulates that if by 2020, 90% of those with HIV are diagnosed, 90% of these are retained in care on ART, and 90% of these are on effective

49 The HIV prevalence rate in selected populations refers to the percentage of people tested in each group who were found to be HIV-positive.

50 Haldenwang, 2015.

51 See City of Cape Town, 2014.

52 South African National Department of Health, 2015.

53 Medical Research Council's Western Cape Mortality Profile 2011, referenced in City of Cape Town, 2015b.

54 CD4 cells (sometimes called T-cells, T-lymphocytes, or helper cells) are white blood cells that play an important role in the immune system. See Carter and Hughson, 2014.

55 Also known as magnetic or mixed-status, "serodiscordant" refers to a couple of which one partner is HIV-positive and the other is not.

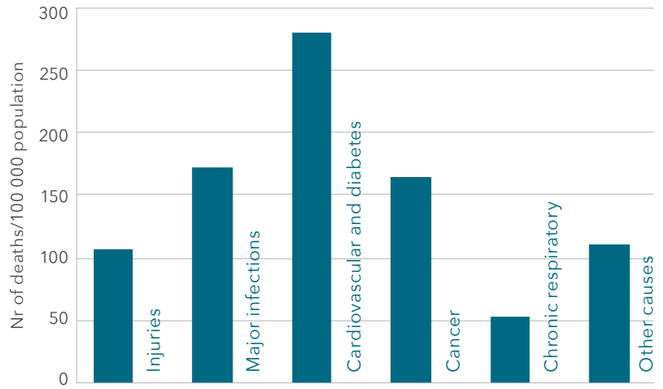
ART (i.e. suppressing their viral load), HIV/Aids will have ceased to be an epidemic by 2030. Achieving this ambitious target will require drastic increases in coverage of both HCT (HIV counselling and testing) and ART.

e) Causes of death[56]

The major causes of death in Cape Town in 2010 (refer figure 1.10) included cardiovascular and metabolic diseases (279 deaths per 100 000), major infectious diseases (172 deaths per 100 000), cancer (165 deaths per 100 000), other illnesses (111 deaths per 100 000), injuries (107 deaths per 100 000) and chronic respiratory diseases (51 deaths per 100 000).

The majority of deaths in Cape Town are caused by lifestyle diseases. These are associated with a combination of factors, including unhealthy and stressful living conditions typical of urban life, which particularly affect the most vulnerable in society.

Figure 1.10: Causes of death (per 100 000 population), Cape Town, 2010



Source: MRC, 2013.

3.2 Foetal alcohol spectrum disorder

Alcohol has a severe negative impact on society. For this reason, the Western Cape Provincial Government (hereinafter Province) in partnership with the City has implemented the game-changer programme titled Alcohol Harm Reduction.[57] The goal of this programme is to reduce alcohol-related harm in targeted areas in the province. One of the major negative societal effects of alcohol is its impact on unborn children.

Alcohol is dangerous for pregnant women and their unborn children. Current research indicates that alcohol exposure during pregnancy leads to foetal alcohol spectrum disorders (FASD). FASD is a group of birth defects caused by alcohol intake during pregnancy. The disease is 100% permanent (i.e. damage cannot be undone), though also 100% preventable if the mother refrains from drinking alcohol while pregnant. When a pregnant woman consumes alcohol, it enters her bloodstream, which then transports the alcohol to the foetus. Alcohol damages the unborn baby's growing body and brain in many ways at various stages of the pregnancy, resulting in many types of birth defects.

FASD is a significant public health problem, but is not often recognised as such.[58] Defects seen in children with FASD include brain damage; facial anomalies; growth deficiencies; defects of the heart, kidneys and liver; sight and hearing problems; skeletal defects, as well as dental abnormalities.[59] This has both economic and social implications. In terms of the economic impact, FASD treatment consumes a significant amount of money, which further burdens already poor households and overstretched government resources. Children with FASD perform poorer in education, and in most instances, would not progress to tertiary education, which reduces their chances of securing well-paid employment. Social problems relating to FASD include that the mothers of these children are often at risk of dying an alcohol-related death (such as accidents, homicide and violence, TB, liver disorders). In addition, the disorder often leads to behavioural problems in adulthood, including interpersonal injuries, violence, unsafe sex and other negative behaviours.[60]

56 Data could not be updated for the reason explained in footnotes 36 and 45.
57 Western Cape Government, 2015a.
58 Olivier et al., 2013.
59 SAMHSA, 2007.
60 Olivier et al., 2013.

4. Education

Throughout human history, knowledge has proven essential for success. The process of learning comprises four important elements, namely the teacher, the learner, the learning material, and the learning environment or context. A successful society is therefore one that understands how to effectively integrate these four key learning elements with a dynamic, effective and efficient educational system in order to meet the demands of its time.

In South Africa, the education mandate resides with two departments of National Government, namely the Department of Basic Education and the Department of Higher Education and Training. The former is responsible for all school education from Grade R to Grade 12. Its functions are delegated to the respective provincial government departments of education throughout the country. Therefore, education is not a local government responsibility. However, it does constitute a fundamental component of a city's population profile and helps ensure social and economic development and growth within a city.

The World Economic Forum (WEF) has identified 16 core skills required to succeed in the 21st-century innovation-driven economy, which is predominantly based in the urban context, with the labour market having shifted from a routine manual and cognitive skills base to a non-routine analytical and interpersonal

Table 1.4: Skills needed in the 21st century

Foundational literacies	Competencies	Character qualities
Literacy	Critical thinking/problem-solving	Curiosity
Numeracy	Creativity	Initiative
Scientific literacy	Communication	Persistence/grit
Information and communication technology literacy	Collaboration	Adaptability
Financial literacy		Leadership
Cultural and civic literacy		Social and cultural awareness

Source: WEF, 2015.

Table 1.5: Adult literacy levels in Cape Town, 2011 to 2014

	2001	2011	2014
Illiterate	15,10%	12,10%	6,73%
Literate	84,90%	87,90%	91,48%

Source: City of Cape Town, 2015. DI & GIS Department using StatsSA data.

skills base.[61] These 16 skills can be divided into the three broad categories of foundational literacies, competencies, and character qualities (see table 1.4). Foundational literacies refer to the way in which students apply core skills to everyday tasks; competencies refer to the way in which students approach complex challenges, while character qualities refer to the way in which students approach their changing environment.

The implications for South Africa in this regard is that strategic national, provincial and local government plans would need to ensure that the skills identified by the WEF are taught in the school curriculum and tertiary training programmes provided by the country's institutions of learning.

4.1 Literacy

South Africa has witnessed a surge in publicly funded adult literacy education programmes in recent years. The positive impact of this is reflected in the vast improvement in literacy levels from 1995 to 2013.[62]

From 2001 to 2011, adult literacy in Cape Town improved from an illiteracy rate of 15,1% to 7,55%, with a further improvement to 6,73% in 2014 (refer to table 1.5).

4.2 Adult education

The percentage of literate adults in South Africa increased from approximately 71% in 2002 to 82% in 2013. Over the same period, the percentage of South African adults with no schooling decreased from almost 12% to approximately 6%.[63]

In Cape Town, the percentage of the adult population with no schooling is much lower than the national figure. General Household Survey (GHS) data for 2011 revealed that an estimated 1,16% of Cape Town's adult population had no schooling at the time. This decreased further to 0,74% in 2013. However, in 2014, the percentage increased slightly to 1,40%.

The percentage of Cape Town's adult population who had completed schooling (Grade 12) increased slightly from 30,07% in 2011 to 30,38% in 2014.

4.3 Youth education

South Africa managed to achieve universal enrolment of all children of primary-school age as early as 2009, thereby meeting the MDG 2015 target.[64] However, enrolment rates paint a deceivingly positive picture of South Africa's education outcomes, overshadowing various internal systemic inefficiencies caused by suboptimal school entry patterns, grade repetition practices and dropout patterns[65].

The Department of Basic Education estimates that only 40% of South African learners pass matric.[66] Of every 100 learners who started school in 2001 in South Africa, only 51 made it to Grade 12 (matric) in 2013,[67] which suggests a dropout

61 WEF, 2015.
62 Department of Basic Education, 2014.
63 Department of Basic Education, 2014.
64 Haldenwang, 2015.
65 Department of Basic Education, 2013a.
66 Ibid. This corresponds with the finding by Spaull, 2014. Also see City of Cape Town, 2014.
67 Spaull, 2014.

rate of 49%. This may be attributed to, inter alia, pregnancy, financial challenges, and youth being forced to care for ill household members.[68]

Grade repetition remains relatively high in South Africa, especially in Grade 10 and 11, where a "queuing phenomenon" is observed, with many learners spending a few years in these grades and then dropping out of school without completing Grade 12.[69]

The practice of grade repetition presupposes that learners who repeat a grade will receive remedial support to ensure that they master certain foundational skills that are required before progressing to more advanced skills. However, given the large classes and systemic problems of underperformance in the school system, it is unlikely that grade repetitions are sufficiently remedial in South African schools. Grade repetition has been inefficient, as studies reveal that it does not lead to improved performance in subsequent grades or a matric pass. It also contributes to, and is symptomatic of, other problems in the school system, creating a perturbing incentive for children not to work hard and for weak learners to remain in the school system in the false hope that they may eventually pass matric. Random grade repetition also points to problems in the setting and grading of assessments by teachers, which in turn raises questions as to teacher content knowledge and the quality of school management.[70]

In 2015, Cape Town had a total of 757 ordinary public schools and 159 ordinary independent schools. By 2016, these figures had increased to 758 ordinary public schools and 161 ordinary independent schools. The general trend in Cape Town (table 1.6) suggests an increase in enrolment numbers at ordinary public schools from 1995 to 2004.[71] The number of learners in ordinary public schools fluctuated between 2005 and 2015.

68 Schultz, 2013.
69 Department of Basic Education, 2013a.
70 Department of Basic Education, 2013b.
71 In 2000, the Department of Education introduced an admissions policy that required learners to be 7 years old to be enrolled in Grade 1. This policy was constitutionally challenged and was relaxed in 2004 to allow 6-year-olds to be admitted to Grade 1. As a result, learner numbers increased significantly in 2004.

5. Poverty and food security

Unprecedented efforts to meet MDG 1, namely eradicating extreme poverty and hunger, resulted in profound achievements. Globally, extreme poverty declined significantly over the past two decades. In 1990, 47% of the population in the developing world lived on less than $1,25 (R18,59)[72] a day. That percentage had dropped to 14% by 2015.[73]

Globally, the number of people living in extreme poverty declined by more than half, falling from 1,9 billion in 1990 to 836 million in 2015. Most of the progress has occurred since 2000. The proportion of undernourished people in the developing regions has fallen by almost half since 1990, from 23,3% in the period 1990-1992 to 12,9% in 2014-2016.[74]

South Africa achieved MDG target 1A,[75] having reduced its poverty rate by 56% between 2000 and 2011. The country also achieved the MDG hunger target (target 1C).[76]

5.1 Poverty and inequality

Poverty lines are important tools that enable statistical reporting of poverty levels and patterns, and further assist with poverty reduction planning.[77] The State of Cape Town 2014 report contained a detailed discussion of the complexity of poverty definitions. The importance of understanding poverty in a social, cultural and historical context was noted. Although the report acknowledged the shortcomings associated with measuring poverty in terms of income, it also emphasised its value, especially with regard to determining poverty lines. A poverty line "establishes a minimum socially acceptable standard for a predetermined welfare indicator to separate the poor from the non-poor".[78]

72 Currency conversion rate as at 9 June 2016.
73 United Nations, 2015d.
74 Ibid.
75 Target 1A: Halve between 1990 and 2015 the proportion of people whose income is less than $1,25 a day.
76 Target 1C: Halve between 1990 and 2015 the proportion of people who suffer from hunger. See Haldenwang, 2015.
77 Statistics South Africa, 2015a.
78 Ibid: 3.

Table 1.6: Learner enrolment numbers (Grade 7, 10 and 12) in ordinary public schools in Cape Town, 1995 to 2015

Year	GR7	GR10	GR12
1995	42 363	33 797	23 429
1996	43 246	36 542	25 328
1997	43 656	38 406	27 041
1998	46 424	40 754	27 849
1999	46 916	42 160	26 838
2000	47 678	42 124	27 460
2001	49 317	44 673	26 548
2002	50 939	46 394	26 751
2003	52 818	54 590	26 533
2004	56 604	54 184	26 549
2005	51 684	54 344	26 457
2006	41 186	55 580	26 828
2007	45 417	57 180	28 400
2008	48 005	52 806	28 771
2009	47 598	46 385	30 021
2010	51 866	47 070	29 408
2011	48 616	49 096	25 562
2012	47 753	48 460	28 198
2013	47 532	51 926	30 051
2014	46 945	49 539	30 384
2015	46 275	43 620	35 062

Source: Western Cape Department of Education, 2015.

Stats SA employs an internationally recognised approach to produce three poverty lines, namely the food poverty line (FPL), the lower-bound poverty line (LBPL) and the upper-bound poverty line (UBPL), each capturing different degrees of poverty.[79] Stats SA updates these poverty lines annually using consumer price index (CPI) data. The latest update in 2015 estimated the FPL at R335 per capita per month, the LBPL at R501, and the UBPL at R779.[80]

Table 1.7 (see next page) presents a summary of the impact of updates to (rebasing of) the national poverty lines. The adjustment does not change the food poverty line significantly, but does bring about a substantial increase in overall poverty estimates (from 45,5% to 53,8%). A similar impact is noted when considering the depth of poverty in the country (i.e. how far poor people are from the poverty line). The change in the poverty gap among the extremely poor is negligible (6,2% to 6,9%), while

79 Ibid: 1.
80 Ibid.

Table 1.7: Impact of rebased food, lower-bound and upper-bound poverty lines on poverty estimates in South Africa, 2011

Indicator	Current poverty lines (R321, R443 & R620)		Rebased poverty lines (R335, R501 & R779)	
	(%)	Number	(%)	Number
FPL				
Poverty head count	20,2%	10 185 450	21,7%	10 944 089
Poverty gap	6,2%		6,9%	
LBPL				
Poverty head count	32,3%	16 286 636	37,0%	18 632 646
Poverty gap	11,8%		14,5%	
UBPL				
Poverty head count	45,5%	22 942 475	53,8%	27 117 973
Poverty gap	19,6%		25,8%	

Source: Stats SA, 2015a.

Table 1.8: Households living in poverty in Cape Town, 2012 to 2014

Year	Black African	Coloured	Asian	White	Total
2012	54,8%	30,9%	10,7%	9,3%	35,4%
2013	47,9%	25,1%	0,0%	7,1%	29,8%
2014	42,4%	23,5%	0,0%	2,9%	25,9%

Note: Refers to households with a monthly income of R3 500 or less. It excludes households with an unspecified income.

Source: Stats SA General Household Survey 2012-2014.

Table 1.9: Indigent households in Cape Town, 2003 to 2015

Year	Number of households
2003	250 000
2004	135 891
2005	225 000
2006	184 032
2007	261 671
2008	201 876
2009	197 478
2010	232 027
2011	213 765
2012	251 381
2013	288 703
2014	288 724
2015	231 793

Source: City Cape Town, 2015. Finance Directorate, 2015.

the change in overall poverty is substantial (19,6% to 25,8%). This analysis does not imply an increase in poverty levels in the country over time, but rather reflects that the rebasing of poverty lines yields higher poverty thresholds.[81]

The poverty line used to determine poverty levels in Cape Town (table 1.8) differs from the national poverty lines (FBL, LBPL and UBPL) discussed above. A household that qualifies for a Breaking New Ground (BNG)[82] house is used as the proxy baseline in terms of poverty, and any household earning R3 500 or less per month would qualify for a BNG house.

Poverty in Cape Town is still widespread, and the number of poor households increased from 24,7% in 1996 to 47,0% in 2011.[83] However, table 1.8 shows signs that from 2012 to 2014, the proportion of Cape Town's households living in poverty started a downward trend.

The number of indigent households[84] in Cape Town declined from 250 000 in 2003 to 231 793 in 2015 (table 1.9). During this 12-year period, however, there were significant annual increases and decreases from the 2003 baseline figure.

81 Ibid.

82 BNG refers to low-cost housing under the more recent (2011) Breaking New Ground policy.
83 City of Cape Town, 2014, drawing on Census data.
84 To qualify as indigent a Cape Town resident must be the owner of one residential property, of which they are the full-time occupant, and their total monthly household income must be less than R3 500. Registered owners of residential properties which have a municipal valuation of R200 000 or less are also registered as indigent.

South Africa is one of the most inequitable countries in the world[85], with a 2014 Gini coefficient[86] of 0,64[87]. Overall, income inequality increased between 1993 and 2000. Since 2000, inequality has not changed substantially due to two opposing trends – greater inequality within population groups (especially as a result of the rising black African middle class) and lower inequality between population groups.[88]

The Gini coefficient for Cape Town consistently improved in the ten years from 2001 to 2010, having strengthened from a baseline of 0,60, to 0,59 in 2007, to 0,57 in 2010 (figure 1.11). However, by 2014, the Cape Town Gini coefficient had weakened to 0,62, which was lower than the South African figure.

South Africa's human development index[89] (HDI) worsened over the first decade of democracy, having decreased from 0,65 in 1995 to 0,604 in 2005 (figure 1.12). This is attributed to the dramatic decline in life expectancy due to HIV/Aids.[90] However, the HDI has improved since 2010 (0,621), having increased to 0,658 in 2013 and to 0,666 in 2014. This trend is due to increases in life expectancy as

85 Republic of South Africa, 2013; Keeton, 2014.
86 The Gini coefficient measures inequality in levels of income. The higher the value, the greater the level of income inequality.
87 City of Cape Town, 2015a.
88 Department of Economics, 2013.
89 A composite index measuring average achievement in three basic dimensions of human development – a long and healthy life, access to knowledge, and a decent standard of living. See UNDP, 2013: 151. A value closer to 1 represents a good human development index.
90 defenceWeb. 2011.

In 2008, global and local food prices significantly increased as a result of the economic recession.

well as in gross national income (GNI). South Africa's HDI in 2013 ranked 118th in the world and climbed even further in 2014 to 116th position globally.[91]

The HDI in the Western Cape averages at 0,71, outperforming the national HDI of 0,66. HDIs in the province improved from 0,66 in 2001 to 0,71 in 2013 due to improving literacy rates and income per capita.[92]

Cape Town's HDI is the highest in the province, measured at 0,68 in 2001, 0,72 in both 2011 and 2012, and 0,73 in 2013. This indicates that Cape Town managed to translate economic successes between 2001 and 2013 into social development for its inhabitants.[93] From 2003 onwards, Cape Town's HDI has been the highest compared to all other cities in South Africa.[94]

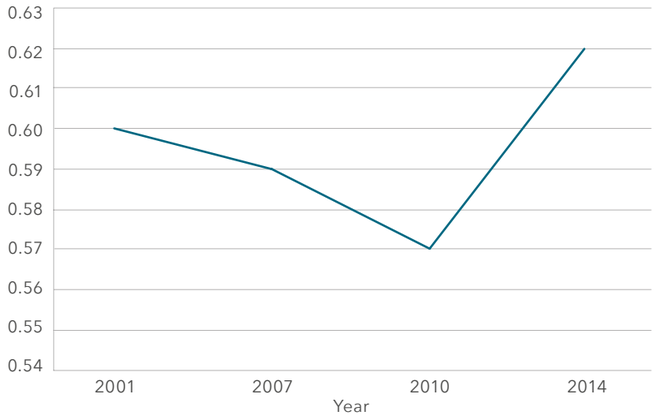
5.2 Food security

Food insecurity is becoming an increasingly urban challenge in South Africa. Food insecurity is more about the inability to access nutritious and culturally acceptable food than about the absolute amount of food available.[95] Addressing food insecurity in Cape Town is essential, because improved access to adequate, nutritious, hygienic and culturally important food can help achieve the City's developmental aims.[96]

In the nine years between 2005 and 2013, more than three quarters of Cape Town's households had food-secure adults (figure 1.13, see next page). In 2014, however, this figure dropped slightly to less than three quarters. Since 2005, a downward trend has been observed for food security among the city's adult population. In terms of food security among the city's children, figure 1.14 (see next page) depicts a fluctuating

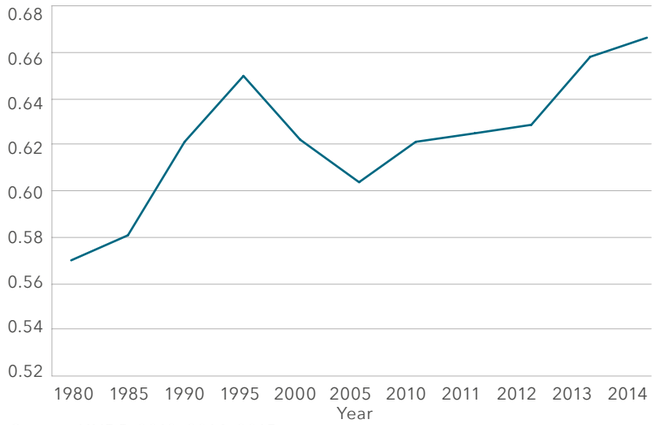
91 UNDP, 2014; 2015.
92 Western Cape Government, 2015b.
93 Ibid.
94 Human Science Research Council, 2014: 31.
95 Frayne et al., 2010.
96 Battersby, 2011.

Figure 1.11: Cape Town's Gini coefficient, 2001 to 2014



Source: *Western Cape Government, 2011; City of Cape Town, 2015a.*
Note: *Refer to footnote 86.*

Figure 1.12: South Africa's HDI trends, 1980 to 2014



Source: *UNDP, 2013, 2014, 2015.*
Note: *Refer to footnote 89.*

trend for the ten years between 2005 and 2014. Food security among children has generally improved since 2005. Between 2006 and 2012, more than three quarters of Cape Town's households had food-secure children. However, from 2010 onwards, a general downward trend has been observed, and the figure for 2014 (73,17%) came close to the 2005 baseline (72,50%).

In 2008, global and local food prices significantly increased as a result of the economic recession. In South Africa, food inflation between October 2007 and 2008 was 16,7%, which was 4,6% higher than general inflation.[97] Between October 2013 and 2014, food inflation was 8,8%. Severe droughts experienced in the major maize-producing areas of the North West and Free State from 2015 onwards have also pushed up maize prizes and have consequently made basic staple food less affordable.[98]

Food insecurity is caused by household scale characteristics, such as income poverty, but also by wider structural issues, such as the local food retail environment and the price and availability of healthy relative to less healthy foods.[99] In addition, spatial planning and location plays a significant role in urban food insecurity, as settlement layout and household location influence the ability and cost to access food in a city context.[100]

97 National Agricultural Marketing Council, 2008.
98 National Agricultural Marketing Council, 2015.
99 Battersby et al, 2014
100 See City of Cape Town, 2014.

Improved access to adequate, nutritious, hygienic and culturally important food can help achieve the City's developmental aims.

The City currently supports 196 food gardens across the metropole.

Poor households in Cape Town primarily access food in three ways, namely through food purchases, formal social safety nets and social networks.[101] The City currently supports 196 food gardens across the metropole.[102] Community members managing these food gardens are capacitated by the City through food gardening management and leadership training to ensure the sustainability of their food gardens. The City also provides the gardens with resources ranging from tools to compost and seedlings.

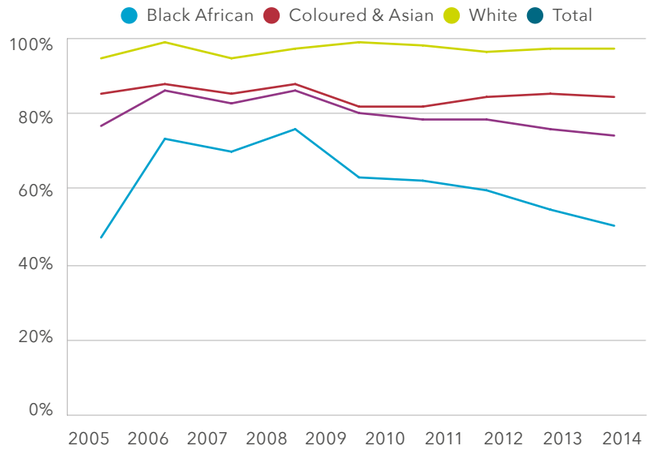
6. Crime[103]

Crime has become a key social and health concern to public policymakers and citizens in urban areas globally.[104] South Africa is perceived as a country with a high incidence of crime, domestic violence, murder and rape.[105] Cape Town's crime statistics highlight a major challenge for the City and its residents. Crime has a detrimental effect on Cape Town's ability to attract foreign business investments, tourists and highly skilled people. It further reduces trust among locals, which harms social cohesion. Crime contributes to stressful living conditions and increased expenditure on security measures. In addition, it has given rise to a range of responses that further divide the city socially, including the urban form of gated communities.

The South African Police Service (SAPS) data reveal that Cape Town had the highest overall crime rate in 2014/15 compared to other selected South African metros, measured at 8 519 per 100 000 population. This may be attributed to Cape Town's significantly high drug-related crime rate, coupled with relatively high property crime rates compared to other metros. In terms of violent crime, Cape Town continues to experience the highest incidence of murder, attempted murder, sexual crime and common assault crime, and also experiences the highest rate of robbery with aggravated circumstances.[106]

Over the decade 2005/6 to 2014/15, South Africa's crime situation showed a steady improvement of 13%. The overall crime rate per 100 000 population in Cape Town for the same period, however, is more than double the national crime rate, having increased by 5,5%. Nevertheless, in the reporting period 2013/14 to 2014/15, the overall crime rate in Cape Town decreased from 8 526 (2013/14) to 8 519 (2014/15) per 100 000 population, which represented a decrease of 0,08% (figure 1.15, see next page).[107]

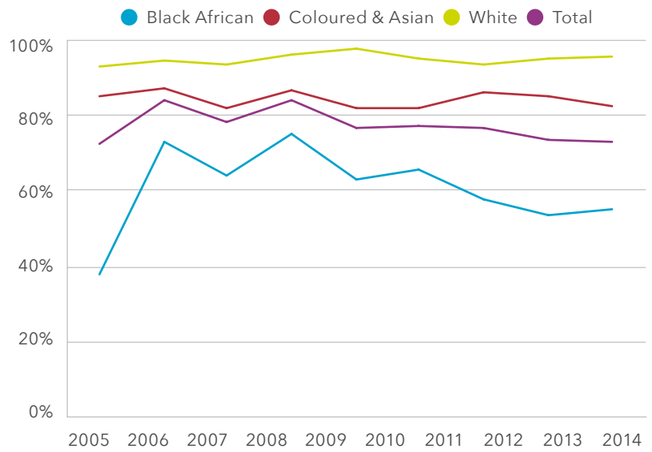
Figure 1.13: Food security among adults in Cape Town, 2005 to 2014



Source: City of Cape Town, 2015. DI&GIS Department, using Stats SA GHS data.

Note: The question was not included in the 2009 GHS, hence the missing data for that year.

Figure 1.14: Food security among children in Cape Town, 2005 to 2014

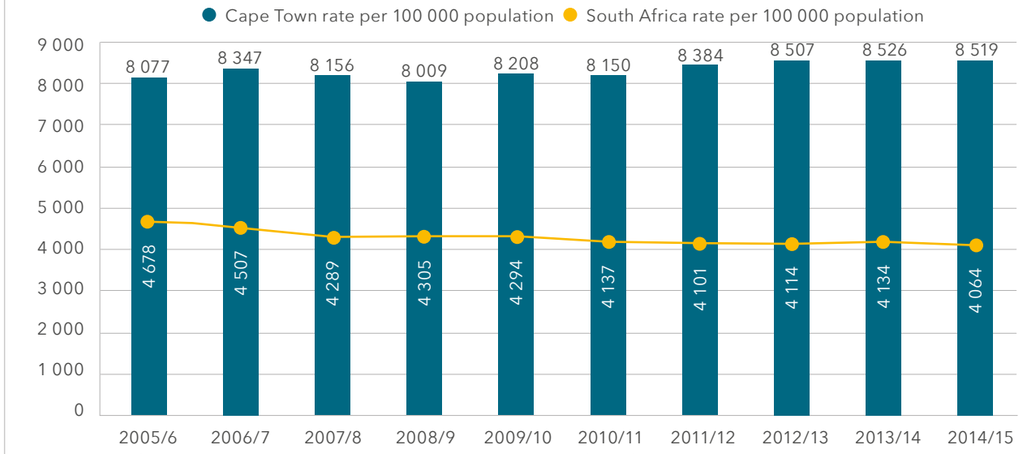


Source: City of Cape Town, 2015. DI&GIS Department, using Stats SA GHS data.

Note: The question was not included in the 2009 GHS, hence the missing data for that year.

101 Battersby, 2011.
102 City of Cape Town, 2016a.
103 Note that the SAPS crime data released in 2015 contained revised data for the previous nine years, excluding cases that had been closed as unfounded. In addition, the 2015 mid-year estimates used contain different population estimates from those previously published. Crime rates from SAPS crime data presented here will therefore not necessarily be the same as those in earlier publications.
104 City of Cape Town, 2008.
105 City of Cape Town, 2012.
106 City of Cape Town, 2016b.
107 City of Cape Town, 2016c.

Figure 1.15: Crime rate – all reported crimes in Cape Town, and trend for South Africa, 2005/6 to 2014/15



Source: City of Cape Town, 2016c. SAPS, 2015; DI&GIS Department, based on Stats SA mid-year estimates 2015.

6.1 Murder

Since 1994, the murder rate for South Africa had consistently and gradually decreased[108] up until 2012/13 (refer figure 1.16). Historically, Cape Town's murder rate has always been slightly above the national murder rate.[109] In 2014/15, however, it was nearly double the national rate. Although Cape Town observed a downward trend in its murder rate between 2006/7 and 2009/10, it has started to increase again in the past five years (2010/11 to 2014/15).

In 2009/10, Cape Town was the metro with the second-highest murder rate, topped only by eThekwini.[110] From 2010/11, however, Cape Town has become the metro with the highest murder rate.[111] Although the reasons for Cape Town's increasing murder rate are not clear, a possible explanation includes the relationship with other crimes, particularly drug-related crime (see section 6.4 on substance abuse below). Another possible reason may be the changing context in which murder is committed. Analyses of national murder dockets suggest that a declining proportion of murders have "social" causes,[112] which normally occur in areas plagued by social problems, greater poverty and unemployment. Instead, murders committed in other circumstances, specifically linked to other types of crime (mostly aggravated robberies, vigilantism, self-defence, gang-related factors[113] and taxi violence), seem to be on the increase.[114]

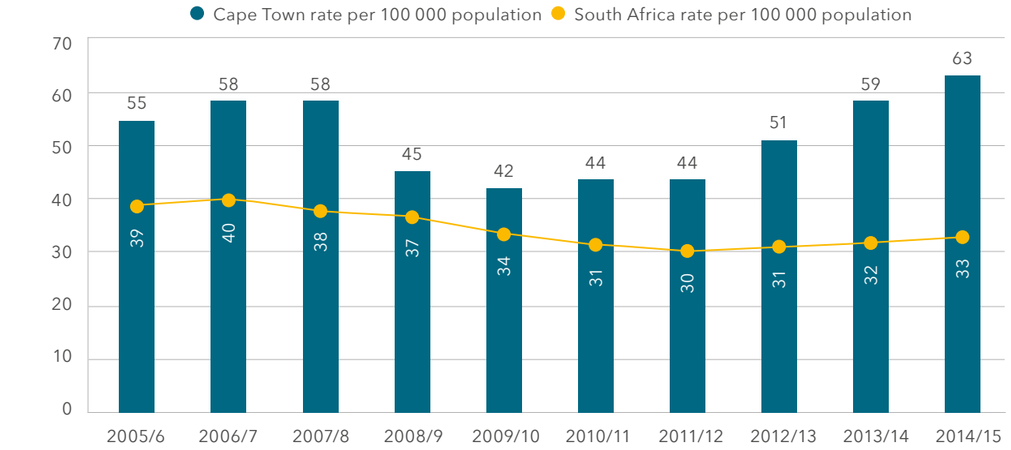
6.2 Total sexual crime

The crime category of "total sexual crime" contains 59 separate offences, ranging from sex-work-related offences to rape and indecent assault. Many cases of sexual crimes go unreported; in some communities more so than others. Statistics depend on the reporting of such crimes, and not on police action taken.

There was a consistent gradual decrease in total sexual crime for South Africa and Cape Town from 2005/6 to 2014/15 (refer figure 1.17). This could be attributed to an increase in awareness campaigns, social programmes empowering women, and improved policing. A recent example includes the City's Safe City pilot programme in Atlantis, which forms part of the UN Women's Safe Cities Free of Violence Against Women and Girls global programme.

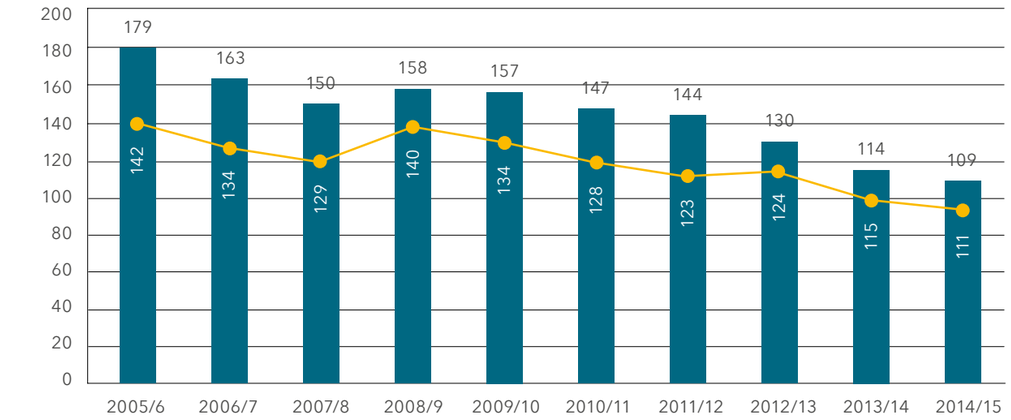
108 See City of Cape Town, 2014.
109 Ibid.
110 Kriegler and Shaw, 2015.
111 City of Cape Town, 2016b.
112 Incidents of murder that start with an argument between people who know one another and of which at least one is intoxicated, and then develop into physical violence, ending up in murder.
113 Usually linked to drug-related crime in terms of the "drug turf war" between rival gangs.
114 Kriegler and Shaw, 2015.

Figure 1.16: Murder rate (per 100 000) for Cape Town and South Africa, 2005/6 to 2014/15



Source: City of Cape Town, SAPS, 2015; DI&GIS Department, based on Stats SA mid-year estimates 2015.

Figure 1.17: Total sexual crime rate (per 100 000) for Cape Town, Western Cape and South Africa, 2005/6 to 2014/15



Source: City of Cape Town, SAPS, 2015; DI&GIS Department, based on Stats SA mid-year estimates 2015.

The City's programme objective is to ensure women and girls' safety in accessing public modes of transport,[115] particularly in terms of violent and sexual crimes.

6.3 Driving under the influence of alcohol or drugs

Intoxicated drivers are the biggest threat to road safety in South Africa.[116] From 2005/6 to 2012/13, there was a significant increase in the rate of people driving under the influence of alcohol or drugs in South Africa, with a slight decrease noted in the past two years (refer figure 1.18). The rate for Cape Town is significantly higher than the national rate, having increased up to 2011/12, followed by a decrease over the past three years. The significant increase in this offence is partly a result of improved reporting and law enforcement, as well as the increase in the amount of substance abusers in the city. The decrease observed since 2012/13 could be due to the success of ongoing law enforcement campaigns. The game-changing programme for the reduction of the harmful effects of alcohol is aimed at further reducing the number of intoxicated road users through improved random breathalyser tests.[117]

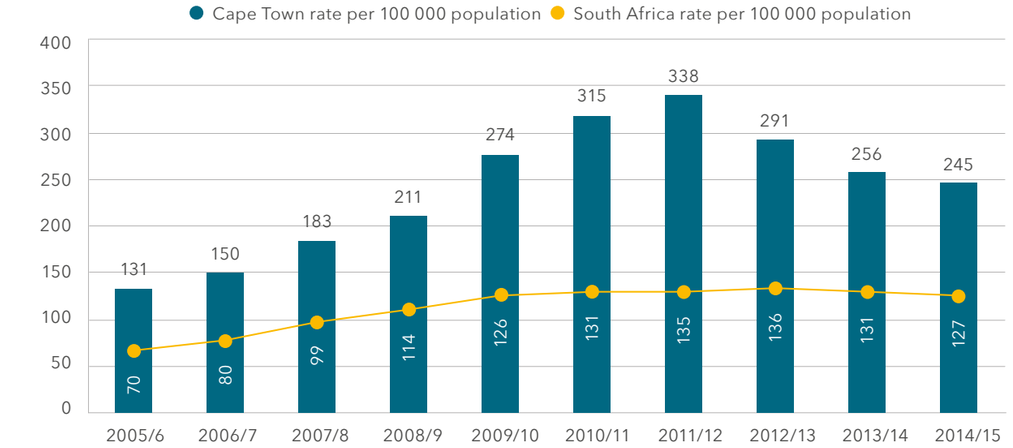
115 City of Cape Town, 2015c; 2015d.
116 Arrive Alive Campaign, 2012.

6.4 Substance abuse

Figure 1.19 shows drug-related crime rates from 2005/6 to 2014/15 for Cape Town and South Africa. Drug-related crime includes the use and possession of, as well as dealing in drugs. Over the ten years 2005/6 to 2014/15, the rate of drug-related crime in Cape Town increased. In 2005/6, the drug-related crime rate in Cape Town was 2,9 times higher than the national rate, and in 2014/15, three times higher.

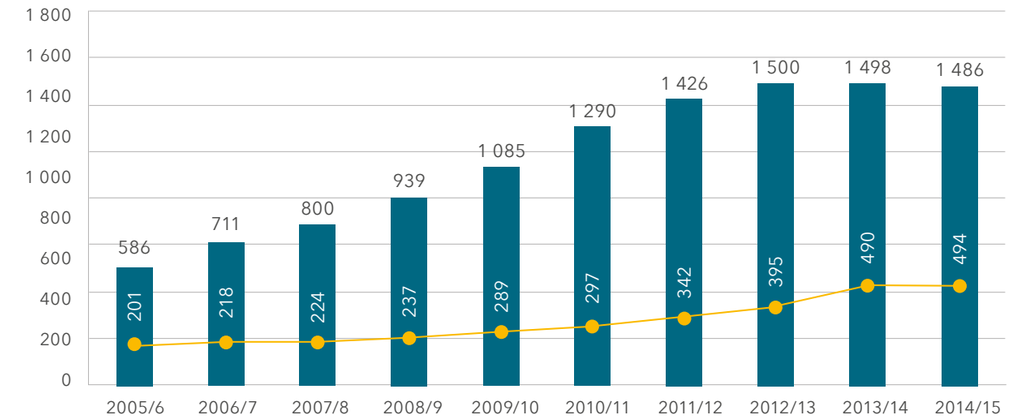
117 Western Cape Government, 2015a.

Figure 1.18: Rate of driving under the influence of alcohol or drugs (per 100 000) for Cape Town and South Africa, 2005/6 to 2014/15



Source: City of Cape Town, SAPS, 2015; DI&GIS Department, based on Stats SA mid-year estimates 2015.

Figure 1.19: Drug-related crime rates in Cape Town, and trend line for South Africa, 2005/6 to 2014/15



Source: City of Cape Town, SAPS, 2015; DI&GIS Department, based on Stats SA mid-year estimates 2015.

The key reason for this increase is police action in terms of arrests made. These statistics are not "reported" crimes, but cases opened by the police as a result of law enforcement action taken. However, this does not change the fact that Cape Town's drug challenge has exacerbated over the past decade judging by secondary sources, such as types-of-crime research and citizen accounts, public forums and social interactions.[118]

In the Western Cape, methamphetamine (commonly known as tik) is currently the number one drug of choice, although tik clients presenting for treatment across the Western Cape decreased from 39% in 2011 to 35% in 2015. Marijuana is second on the list and increased from 21% to 33% over the same period, followed by heroin which decreased from 17% to 14%.[119]

Since 2008, City Health has opened six Matrix® sites across the metropole – in Tafelsig, Albow Gardens (Table View), Delft South, Khayelitsha, Parkwood and Manenberg. At these sites, which provide free alcohol and drug community-based treatment, 8 619 new clients were screened for substance abuse in the period June 2008 to June 2015.

A 65% target was set for clean drug tests of clients attending the programme. Results recorded between July 2012 and June 2015 exceeded this target at 77%.

The Tafelsig and Delft South treatment sites recently received Matrix® three-year certifications of excellence and are the only sites in Africa to have achieved this.

118 Also see Kriegler and Shaw, 2015.
119 Dada et al, 2015 and CCT, 2014

7. Future Cape Town

Cape Town will see a continued increase in population over the next 20 years. The city's population is expected to grow to 4,20 million by 2022, and to 4,46 million people by 2032.[120]

Along with a growing population, the future Cape Town will be characterised by a continuous inflow of people from neighbouring provinces and countries. There will therefore be more, though smaller households. Between 2011 and 2035, Cape Town can expect 0,6 million more households, bringing the total number of households in the city to 1,7 million by 2035, with an average household size of three members.[121]

The future Cape Town will also witness decreasing fertility rates among all population groups, an ageing population, and higher life expectancy at birth. Projections point to a changing age structure with a higher proportion of older persons, declining proportions of children, and rising median ages, which indicate an ageing population. By 2035, Cape Town will have 335 300 more people aged 65 (and above), which is the official retirement age in South Africa.[122]

There will however also be large numbers – and a higher proportion – of people aged 15 to 64, indicating a demographic dividend or window of opportunity for economic development. According to projections, the city will gain 0,8 million more people aged 15 to 64 from 2011 to 2035; thus, in 2035, there will be 3,4 million people (67,7% of the population) in this age bracket.[123]

120 Western Cape Government and City of Cape Town, 2014.
121 Haldenwang, 2013.
122 Ibid.
123 Ibid.

Health statistics and projections point to an overall improvement in the health status of Cape Town residents: The IMR will continue to decline as vaccinations become more readily available and the City's health services improve, coupled with increased awareness among mothers, which will contribute to a higher life expectancy at birth among all population groups. Furthermore, the number of children dying from HIV/Aids will drop further (with a target of zero) as PMTCT programmes gain further momentum.

In contrast, however, drug-resistant TB will continue to pose a challenge for reducing TB rates, and growing informal settlements, where residents live in very close proximity to one another, will contribute to the drug-resistant strain of this disease.

Future scenarios highlight that local food production and distribution systems will become increasingly critical as climate change affects weather patterns, bringing increased probabilities of food losses due to drought and/or floods, while the rising cost of fuel will drive up food prices even further.[124] Low-income and poor households will be most affected by these hikes in food prices.

Future crime trends in Cape Town will be determined by a number of factors. These include labour market trends, as the ability of the economy to absorb Cape Town's labour force will determine whether there will be high numbers of unemployed people, which is a potential major crime determinant. Social institutions[125] at community and household level also determine whether or not a population is more inclined to criminal activity. Healthy and functioning social institutions better protect a society from becoming vulnerable to crime. While the predominant approach to crime prevention has been to prioritise law enforcement – which will continue to play a critical role in keeping the city and its citizens safe – there are emerging calls for approaches that build resilience among children from a young age through greater investment in access to early childhood development (ECD). This would enable children to develop greater resistance to peer and other pressures to participate in criminal activities. The possibilities provided by access to ECD, and its potential impact on children's resilience to pressure to engage in anti-social and/or criminal behaviour, require further investigation. Since ECD is a local government responsibility in South Africa, this may provide the City with a way to potentially address one of the more intractable social problems facing Cape Town's low-income and poorer communities.[126]

By 2035, Cape Town will have 335 300 more people aged 65 (and above), which is the official retirement age in South Africa.

124 See for example Watson et al., 2016.
125 These include faith-based institutions, community cohesion, clubs and societies, and the family.

126 Pinnock, 2016.

There are emerging calls for approaches that build resilience among children from a young age through greater investment in access to early childhood development.

Chapter 1: Social reference list

Arrive Alive Campaign, 2012.

Battersby, J. 2011. *The State of Urban Food Insecurity in Cape Town*. Urban Food Security Series No. 11. Queen's University and AFSUN: Kingston and Cape Town.

Battersby, J., Haysom, G., Tawodzera, G., McLachlan, M., Crush, J., Lombard, T., Labuschagne, I., Bitzer, V., Simpson, N., Rattle, J., Duncan, S., Marshak, M., James, J., and Kroll, F. 2014. *Food System and Food Security Study for the City of Cape Town*. July, 2014. University of Cape Town.

Benjamin, A. 2014. *Pathway to Measuring Social Cohesion in Cape Town*. Development Information and GIS Department, City of Cape Town.

Bongaarts, J. 2001. *Household Size and Composition in the Developing World*. Population Council: New York. Available at: http://www.popcouncil.us/pdfs/wp/144.pdf.

Carter, M. and Hughson, G. 2014. CD4 Cell Counts. Available at: http://www.aidsmap.com/CD4-cell-counts/page/1044596/.

Chetty, K.S. 2003. 'Urbanization and health: evidence from Cape Town', in *The Apartheid City and Beyond: Urbanization and Social Change in South Africa*. D.M Smith (ed). Routledge.

City of Cape Town. 2008. *State of Cape Town 2008*. Development Information and GIS Department.

City of Cape Town. 2012. *State of Cape Town Report 2012*. Development Information and GIS Department.

City of Cape Town. 2014. *State of Cape Town 2014: Celebrating 20 Years of Democracy*. Development Information and GIS Department, City of Cape Town.

City of Cape Town. 2015. Development Information (DI) & GIS Department using Statistics South Africa data (including Census and General Household Survey).

City of Cape Town. 2015. Finance Directorate using internal data.

City of Cape Town. 2015a. *EPIC: Economic Performance Indicators in Cape Town*. Quarter 4 (October – December) 2015. Economic Research Unit, City of Cape Town.

City of Cape Town. 2015b. *HIV and TB Plan 2015/2016*. City Health Directorate.

City of Cape Town. 2015c. 'Atlantis Scoping Study Report', *City of Cape Town Safe Cities Programme*. Part of the UN Women Safe Cities Free of Violence Against Women and Girls –Global Programme.

City of Cape Town. 2015d. 'Atlantis Monitoring and Evaluation Baseline Study'. *City of Cape Town Safe City Programme*. Part of the UN Women Safe Cities Free of Violence Against Women and Girls –Global Programme.

City of Cape Town. 2016. Health Directorate using internal data

City of Cape Town. 2016a. 'City lobbies for food garden support'. http://www.capetown.gov.za/en/Pages/Citylobbiesfoodgardensupport.aspx.

City of Cape Town. 2016b. *Crime in Cape Town: Selected Crime Types – Comparison with selected Metros from 2011/12 to 2014/15*. Compiled by Kyle Ford. Development Information & GIS Department, March 2016.

City of Cape Town. 2016c. *Overall Crime Trends in Cape Town 2005/6 – 2014/15 and Crime Rates by Police Precincts in Cape Town 2011/12 and 2014/15*. Compiled by Janet Gie. Development Information & GIS Department, March 2016.

Cross, C., Kok, P., van Zyl, J., O'Donovan, M., Mafukidze, J. and Wentzel, M. 2005. *Understanding the City's Demographic Future: Towards Modelling the Evidence on Population and Household Growth*. Report to the City of Johannesburg on Phase One of a Proposed Three-Stage Research Undertaking. Human Sciences Research Council: Integrated Rural and Regional Development Programme, Pretoria.

defenceWeb. 2011. 'South Africa's Human Development Index on the rise: SAIRR'. Available at: http://www.defenceweb.co.za/index.php?option=com_content&view =article&id=13241:south-africas-human-development-index-on-the-rise-sairr&catid=52:Human%20Security&Itemid=114.

Dada, S., Harker Burnhams, N., Erasmus, J., Parry, C., Bhana, A., Timol, F., Fourie, D. 2015. *South African Community Epidemiology Network on Drug Use (SACENDU)*, November 2015. Medical Research Council

Department of Basic Education. 2013a. *Macro Indicator Report*. Republic of South Africa, Department of Basic Education: Pretoria.

Department of Basic Education. 2013b. *The Internal Efficiency of the School System: A Report on Selected Aspects of Access to Education, Grade Repetition and Learner Performance*. Republic of South Africa, Department of Basic Education: Pretoria.

Department of Basic Education. 2014. *Education for All (EFA) -2014 Country Progress Report: South Africa*. Republic of South Africa, Department of Basic Education: Pretoria.

Department of Economics. 2013. *The Emergent South African Middle Class*. Stellenbosch University.

Dorrington, R., Bradshaw, D., Laubscher, R., and Nannan, N. 2015. *Rapid Mortality Surveillance Report 2014*. Medical Research Council: Burden of Disease Research Unit.

Frayne, B. et al. 2010. 'The State of Urban Food Insecurity in Southern Africa'. Urban Food Security Series No. 2. Queen's University and AFSUN: Kingston and Cape Town.

Haldenwang, BB. 2011. *Projections of the South African population, 1985-2040 (With-AIDS and No-AIDS projections)*. Bellville: IFR, University of Stellenbosch.

Haldenwang, B. 2013. *South African demographic trends to 2035*. Presentation to City of Cape Town on 31st October 2013. Institute for Futures Research, University of Stellenbosch.

Haldenwang, B. 2015. 'Scorecard of the Millennium Development Goals', *Strategy Insights: Social*, Vol. 20, No. 3, Institute for Futures Research: Stellenbosch University

Human Science Research Council. 2014. *The City of Johannesburg (COJ) Economic Overview 2013: A Review of the State of the Economy and other Key Indicators*. Human Science Research Council: Economic Performance and Development Programme.

Kanabus, A. 2016. *Information about Tuberculosis*. GHE (Global Health Education). 2016. Available at: http://www.tbfacts.org/xpert-tb-test/.

Keeton, G. 2014. *Inequality in South Africa*. Available at: http://www.ngopulse.org/article/inequality-south-africa.

Kriegler, A. and Shaw, M. 2015. *Where is the Murder Rising? Concentration to Cape Town and Diffusion within*. Centre of Criminology, University of Cape Town. 23 November 2015. Available at: http://www.criminology.uct.ac.za/news/where-murder-rising-concentration-cape-town-and-diffusion-within.

McGranahan, G. and Satterthwaite, D. 2014. *Urbanisation Concepts and Trends*. Working Paper, June 2014. International Institute for Environment and Development (IIED): London.

Medical Research Council. 2013. *Western Cape Mortality Profile 2011*.

Nannan and Hall, 2014. Available online at: http://www.childrencount.ci.org.za/indicator.php?id=5&indicator=23.

National Agricultural Marketing Council. 2008. *Food Price Monitor*. November 2008.

National Agricultural Marketing Council. 2015. *Food Price Monitor*. February 2015.

National Planning Commission. 2011. *National Development Plan: Vision for 2030*. Republic of South Africa: Department of the Presidency.

Ngubane, S., Klaffke, T., McNair, I., O'Brien, M., King, C., Derooij, A., Slabber, S. 2016. *Lacuna Radar Quarterly*, 4th Edition, February 2016.

O'Brien, M. 2016. *2016 Trend Map Synopsis: 2016 Outlook and Trends Underway for 2017*. Lacuna Radar.

Olivier, I., Urban, M., Chersich, M., Temmerman, M. & Viljoen, D. 2013. 'Burden of fetal alcohol syndrome in a rural West Coast area of South Africa', South African Medical Journal, Vol. 103, No. 6, June.

Pinnock, D. 2016. *Gang Town*. Tafelberg: Cape Town.

Republic of South Africa. 2013. *Millenium Development Goals: Country Report 2013*.

Republic of South Africa. 2014a. *Integrated Urban Development Framework: Draft for Discussion*. September, 2014. Department of Cooperative Governance and Traditional Affairs.

Republic of South Africa. 2014b. *Twenty Year Review: South Africa 1994 – 2014*. The Presidency: Pretoria.

Republic of South Africa. 2015. *National Department of Health Annual Report 2014/2015*. Department of Health: Republic of South Africa, Pretoria.

Republic of South Africa. 2016. *Annual Performance Plan 2016/2017 – 2018/2019*. Department of Health: Republic of South Africa, Pretoria.

Roux, A. (ed). 2013. *Business Futures 2013*. Institute for Futures Research: Bellville.

SAMHSA. 2007. *The Physical Effects of Fetal Alcohol Spectrum Disorders*. US Department of Health and Human Services. http://fasdcenter.samhsa.gov/documents/WYNK_Physical_Effects.pdf.

Saskia, S. 2010. 'The city: Its return as a lens for social theory', *City, Culture and Society*, 1 (2010): 3-11.

Schultz, D. 2013. 'Trends in education', *Mail & Guardian*, 22 March 2013. Available at: http://mg.co.za/article/2013-03-22-trends-in-education.

South African National Department of Health. 2015. *The 2013 National Antenatal Sentinel HIV Prevalence Survey South Africa*. National Department of Health: Pretoria.

Spaull, N. 2014. 'Education in SA –Still separate and unequal'. Available at: http://nicspaull.com/2014/01/12/education-in-sa-still-separate-and-unequal-extended-version-of-citypress-article/.

Statistics South Africa (Stats SA). 2014. *Mortality and Causes of Death in South Africa, 2013: Findings from Death Notifications*. Statistics South Africa: Pretoria.

Statistics South Africa (Stats SA). 2015a. *Methodological Report on Rebasing of National Poverty Lines and Development of Pilot Provincial Poverty Lines*. Technical Report. Statistics South Africa: Pretoria.

Statistics South Africa (Stats SA). 2015b. *Mid-year Population Estimates 2015*. StatsSA: Pretoria.

Turok, I. 2012. *Urbanisation and Development in South Africa: Economic Imperatives, Spatial Distortions and Strategic Responses*. Urbanization and Emerging Population Issues Working Paper 8. IIED and United Nations Population Fund.

UN-Habitat. 2014. *The State of African Cities 2014: Re-imagining sustainable urban transitions*. UN-Habitat: Nairobi.

United Nations. 2015a. *Population, Consumption and the Environment 2015*. UN Department of Economic and Social Affairs: Population Division. New York.

United Nations. 2015b. *Sustainable Development Goals: Goal 11: Make cities inclusive, safe, resilient and sustainable*. http://www.un.org/sustainabledevelopment/cities/.

United Nations. 2015c. *World Urbanization Prospects: The 2014 Revision*. Department of Economic and Social Affairs: Population Division. New York.

United Nations. 2015d. *The Millennium Development Goals Report 2015*. United Nations: New York.

United Nations Development Programme (UNDP). 2013. 'Explanatory note on 2013 HDR composite indices: South Africa'. *Human Development Report 2013. The Rise of the South: Human Progress in a Diverse World*. http://hdr.undp.org/sites/default/files/Country-Profiles/ZAF.pdf.

United Nations Development Programme (UNDP). 2014. *Human Development Report 2014. Sustaining Human Progress: Reducing Vulnerabilities and Building Resilience*. United Nations Development Programme: New York.

United Nations Development Programme (UNDP). 2015. *Human Development Report 2015: Work for Human Development*. United Nations Development Programme: New York.

UN IGME. 2015. *Levels and Trends in Child Mortality*. Report 2015: Estimates Developed by the UN Inter-agency Group for Child Mortality Estimation. UNICEF: New York.

Watson, A., Gaspard, A. and Lebreton, A. 2016. *Climate, Food and the City*. FHN-IUFN-UNEP Climate Change Urban Food Initiative Policy Perspectives Paper.

Western Cape Government. 2011. Regional Development Profile: City of Cape Town. Provincial Treasury: Cape Town.

Western Cape Government and City of Cape Town. 2014. *Western Cape Population Projections 2011 – 2040*.

Western Cape Government. 2015a. *Western Cape Government Game Changer: Alcohol Harms Reduction*. Design Lab Two, Final Report. 1 – 2 June, 2015, The River Club, Observatory. Prepared by The Health Foundation for the Western Cape Provincial Government.

Western Cape Government. 2015b. *Municipal Economic Review and Outlook 2015*. Western Cape Government: Provincial Treasury: Cape Town.

WHO. 2012. 'Frequently Asked Questions: XDR-TB'. World Health Organization. http://www.who.int/tb/challenges/xdr/FrequentlyaskedquestionsXDRTB_2012.pdf?ua=1.

Wikipedia. 2016. *Baby Boomers*. https://en.wikipedia.org/wiki/Baby_boomers.

World Bank. Undated. Available at: http://data.worldbank.org/indicator/SP.POP.DPND.

World Economic Forum (WEF). 2015. *New Vision for Education: Unlocking the Potential of Technology*. World Economic Forum: Geneva.

CASE STUDY

City of Cape Town programme monitoring and evaluation support

Overview

The DI&GIS Department provides monitoring and evaluation (M&E) services to support the City's departments in their processes. M&E is an important part of programme and project implementation to track the extent to which the aims of a development programme or project and the related initiatives are achieved. M&E is results-based. It also supports good governance, as the programme results are reported and reflected on to inform decision-making. The City has a good track record with M&E of organisational performance, while focus on M&E of programmes and/or projects is strengthening. The latter provides a way to ensure that programmes or projects do indeed reach their intended beneficiaries or achieve the required results.

The City's Safe City programme M&E framework and baseline study

There are many parts to conducting M&E. An important first phase involves preparing an M&E framework, which includes the approach to be used as well as agreeing on the outcomes, targets and indicators to be measured. Undertaking a baseline study or gathering baseline data on the indicators is a key step in the process. Baseline information can be used to monitor the programme or project, and to enable post-intervention comparison.

An example of M&E support provided by the DI&GIS Department is the City's Safe City programme (2015). This programme, which forms part of the UN Women's Safe Cities global initiative and is coordinated by the Strategy and Operations Unit in the Mayor's Office, is aimed at improving the safety of women and girls in accessing and using the MyCiTi bus service in Atlantis.

It is a City transversal management project (i.e. involving various City stakeholders) and is linked in particular to the IDP strategic focus area of making Cape Town a safe city. At the same time, it addresses other pillars such as ensuring that Cape Town is a well-governed city and an inclusive city. The results of the project are intended for application in other local areas.

The City's UN Safe City programme M&E project involved preparation of an M&E framework to complement and support the overall programme, and to provide a method to assess and monitor the programme's progress and effectiveness both during and after execution. Research was undertaken on possible approaches as well as important requirements to comply with, including work already done by the UN. Detailed indicators were prepared and refined in alignment with the objectives of the overall project, namely to reduce incidents of violence and crimes against women and girls accessing and using the MyCiTi service; to increase women and girls' experience of safety in accessing and using MyCiTi, and to increase their mobility using MyCiTi.

Methodology

To conduct the City's Safe City programme M&E, a baseline survey methodology was developed and linked to the M&E framework, and a field survey was conducted to obtain required baseline information. The instrument used included a questionnaire specifically developed for research on women and girls as well as local non-governmental organisations/support organisations. (Refer to figure 1 for some of the main steps in the M&E survey design process.) The survey included fieldwork, data capture and detailed analysis. The fieldwork and data capture and checking stages involved collaboration with the City's Social and Early Childhood Development Directorate to train Expanded Public Works Programme (EPWP) workers from Atlantis as well as DI&GIS interns.

Findings

Both the City's Safe City programme M&E framework and baseline study were successfully completed towards mid-2015. A baseline research report in both full and abridged format was drafted in line with other project deliverables and was completed and presented to the overall project team. Later in 2015, the survey findings were integrated with a presentation made by the Executive Mayor to Atlantis community members.

Value-adding impact

The results of the baseline survey have been used by various City departments in their work in Atlantis and among women and children. The results of the City's Safe City programme M&E framework and baseline study were used directly to inform the preparation of interventions by a range of City Departments in Atlantis, for implementation in 2016. The transversal nature of the M&E work in turn supported transversal decision-making, service delivery and interventions in the City.

The City's Safe City programme M&E framework was ground-breaking and helped deepen the use and value of M&E practice in the City. It was recognised as international best practice by an M&E expert of the UN Women's global programme.

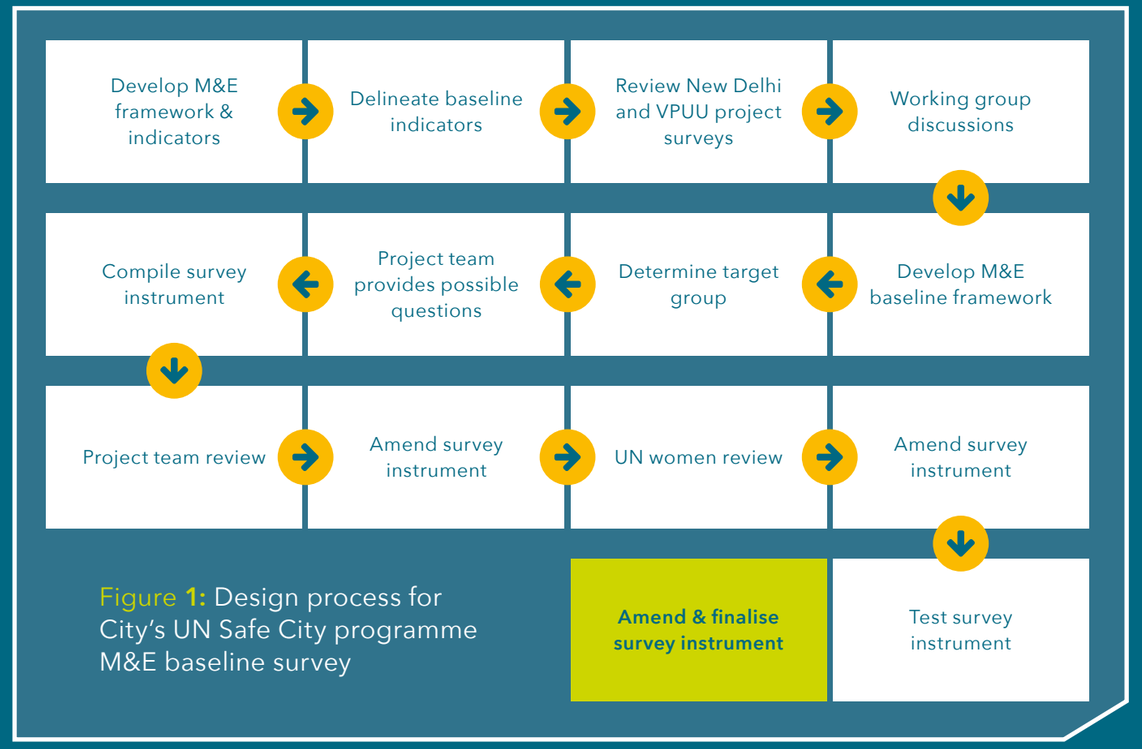


Figure 1: Design process for City's UN Safe City programme M&E baseline survey

Chapter 2: Economy

1. Introduction 42
2. Global trends: Headwinds for emerging economies 42
3. The power and responsibility of cities 43
4. Cape Town's economic growth performance 44
5. The sectoral drivers of Cape Town's economy 46
   5.1 Sectors attracting the most foreign direct investment 46
6. Cape Town's labour market 48
   6.1 A disproportionately low number of discouraged work seekers in Cape Town 49
   6.2 Youth unemployment in Cape Town 50
   6.3 Employment-creating sectors 52
7. Size and impact of the informal sector in Cape Town 52
8. Leveraging strategic infrastructural assets 53
   8.1 The Port of Cape Town 54
   8.2 Cape Town International Airport 56
9. Spatial characteristics of Cape Town's economy 57
   9.1 Inward growth 60
   9.2 Land value gradients and congestion 60
   9.3 What to expect up until 2020 63
10. Economic outlook for Cape Town: Key emerging trends 63
   10.1 Short-term outlook 63
   10.2 Beyond the short term – key trends that will affect industries in Cape Town 65
Chapter 2 Economy reference list 67
Case study 68

The economy is the point of departure for assessing the state of development in a city.

1. Introduction

An effective, well-performing local economy is central to improving the lives of the city's residents. The success of cities, especially those in developing countries such as South Africa, hinges on the economy's ability to distribute the benefits of economic growth to all its citizens. A city can only become a place of opportunity and inclusivity if the economy creates jobs and raises wage income, and if the returns from value-added production are reinvested in physical and social infrastructure. The performance of the economy also indirectly affects the relative safety and health of a city's people, as well as their ability to achieve full cultural expression. In many ways, therefore, the economy is the point of departure for assessing the state of development in a city.

This chapter examines the performance of Cape Town's economy as reflected in macroeconomic indicators such as gross domestic product (GDP) growth and labour market indicators, as well as indicators derived from administrative data. It also places Cape Town's economy in a broader context, acknowledging that it is inextricably linked to a regional and global economic system and is subject to many of the same headwinds and opportunities. As a fast-growing, emerging city, Cape Town is faced with both sublime opportunities and major challenges, which are unpacked in this chapter.

2. Global trends: Headwinds for emerging economies

In April 2016, the International Monetary Fund's (IMF) World Economic Outlook report predicted global growth of 3,2% for 2016, a downward revision from its forecast in January 2016. The expectation is that from 2017 onwards, global growth will strengthen (to 3,5%), led by emerging-market and developing economies. However, there is the risk of weaker growth scenarios, which may put economies under greater stress.[127] This risk could be a function of the notable decline in net capital flows to emerging-market economies since 2010. Using a sub-sample of emerging-market economies, the IMF report finds that weaker net capital inflows and larger outflows have resulted in an economic slowdown in these economies, as the gap of growth narrows relative to advanced economies. These growth trends are detailed in figure 2.1 and 2.2 (see next page). Should capital outflows continue to outstrip inflows in emerging-market economies, it could bring about a series of contagion effects, making economies that rely on external financing particularly vulnerable.[128]

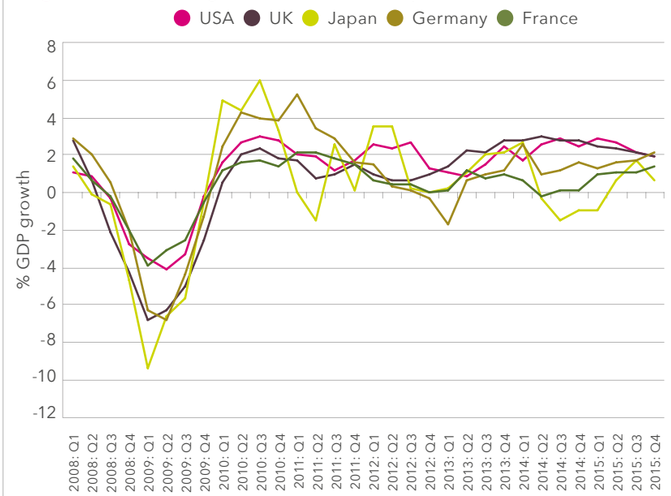
This observation is also mirrored in foreign direct investment (FDI) trends. In particular, South Africa observed a 31% decline in FDI from 2013 to 2014. FDI inflows were dominated by capital inflows towards the services sector (51%), the primary sector (31%) and manufacturing (18%). Much of the growth in FDI inflows in South Africa is a function of growth in the rest of Africa. Specifically, many companies are using South Africa as the "base from which to expand regionally", according to the World Investment Report 2015.[129]

Developed economies were badly affected by the economic recession from late 2008 to the end of 2009, posting negative year-on-year growth rates during that period. In contrast, both China and India maintained growth rates in excess of 5%. Following the recession, most economies experienced a pronounced upswing in 2010, coming off the lower base in the previous years.

While developing countries have experienced a mild cooling of growth since 2011, growth in developed countries was dramatically stunted by the Euro-area sovereign lending crisis. The combination of the impact of these two economic shocks (the recession and the Eurozone crisis) on developed countries profoundly shifted the economic centre of gravity towards the emerging-market economies of China and India in particular. From 2014 onwards, however, a general cooling in Chinese growth and the end of the United States' policy of quantitative easing[130] have placed considerable

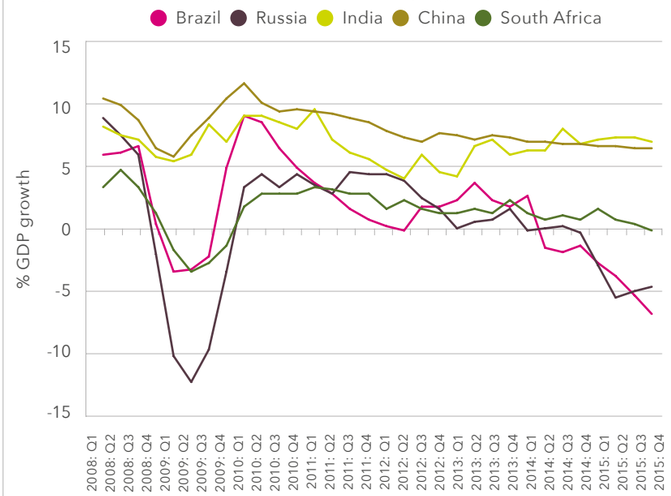
127 IMF, 2016: xv.
128 Ibid: 25.
129 UNCTAD, 2016: 36.
130 The monetary policy practice whereby the central bank unusually increases its monetary base, including asset purchases and lending programmes (Fawley & Neely, 2013: 52). In practice, in the wake of the global financial crisis and in response to interest rates nearly reaching zero (implying that short-term nominal interest rates could not be reduced any further to promote economic activity (Forbes, 2015), the Federal Reserve Bank of the United States expanded its balance sheet by purchasing government bonds and mortgage-backed securities to lower interest rates. The intention was to change the willingness of banks to lend, of firms to invest, or of individuals to consume or invest in housing (Fawley & Neely, 2013: 52).

Figure 2.1: Economic growth trends in developed economies, 2008 to 2015



Source: Trading Economics, 2016.

Figure 2.2: Economic growth trends in developing economies, 2008 to 2015



Source: Trading Economics, 2016.

economic strain on some emerging economies. Economic growth in Brazil and Russia has plummeted since 2014, respectively as a result of a lack of "macroeconomic rigour"[131] in Brazil and international sanctions and lower global oil prices in Russia.[132] Euromonitor has described the Brazil, Russia, India and China (BRIC) consortium (with South Africa excluded for purposes of this analysis) as "losing their shine for investors".[133]

As a result, Euromonitor predicted that the combined average FDI intensity (FDI as a proportion of GDP) in the BRIC countries would decline from 3,0% in 2008 to 1,5% in 2015.[134]

Despite the headwinds facing the global economy, the IMF forecasts global economic growth to continue improving beyond 2017, reaching approximately 4% by 2021, notably led by growth in emerging-market and developing economies. This does however hinge on a number of economic stabilisation factors, including:[135]

- a gradual normalisation of conditions in several economies currently under stress;
- a successful rebalancing of China's economy, with trend growth rates that – while lower than those of the past two decades – remain high;
- a pickup in activity in commodity exporters, albeit with growth rates more modest than in the past; and
- resilient growth in other emerging-market and developing economies.

Zooming in on South Africa, the IMF's report shows lowered economic growth forecasts for 2016 and 2017. The growth forecast has declined from 0,7% to 0,6% for 2016, and from 1,8% to 1,2% for 2017. Domestically, National Treasury has forecast growth of 0,9% relative to the Reserve Bank's forecast of 0,8% for 2016. A number of potential domestic risk factors, including the prospects of labour instability associated with wage negotiations in the mining and manufacturing sectors, could be driving this expected decline in growth. A rise in economic growth forecasts for China could help buffer some of the lower growth in the South African economy, as China is a major export market for the country. However, this would again rely on the rebalancing of the Chinese economy.

3. The power and responsibility of cities

Cities are increasingly seen as the engines of economic growth and job creation, utilising their economies of scale, greater ability to specialise, and enhanced attractiveness to investors to outperform their home countries. Of the largest 750 cities in the world, three quarters grew faster than their home countries over the period 2005-2012.[136] Altogether 70% of these cities also outperformed their home countries in terms of productivity. As an example of the potential disparity between a country's economic performance

131 Economist, 2016.
132 World Bank, 2016.
133 Euromonitor International, 2016.
134 Euromonitor International, 2016.
135 IMF, 2016: 18.
136 World Bank, 2015a: 12

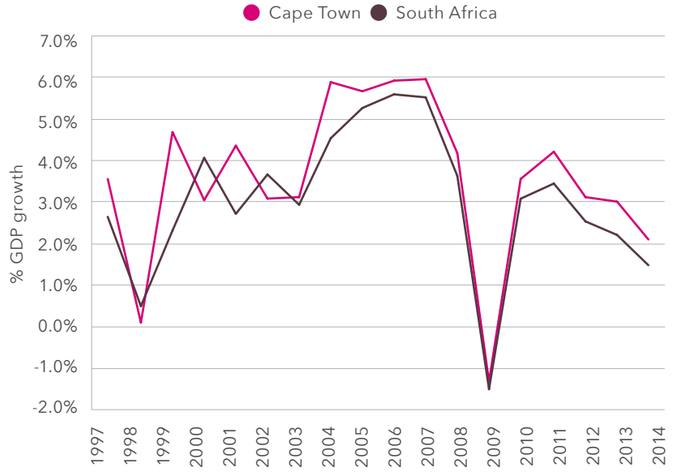
and that of one of its large cities, Euromonitor reports that consumer spending is expected to increase by 5% in Nigeria in 2016, but by 10% in Abuja, its capital city.[137] So, while Brazil's economy may be in a deep recession, Sao Paulo's growth could for example, remain resilient.

Since 2000, lower to middle-income countries have accounted for a disproportionately high number of the fastest-growing cities of the world. These cities in part gain their growth impetus from rapidly expanding populations as a result of relatively high birth rates and increasing rates of rural-urban migration. Particularly rural-urban migration can result in widening disparities between the home country and its major cities. As this chapter will show, Cape Town, like many emerging cities, is outperforming the national economy. However, the World Bank[138] warns that fast-growing emerging cities need to create jobs quickly in order to provide opportunities for their citizens, and to raise revenue for increasing service delivery demands. Prolonged periods of youth unemployment also undermine the economic and related gains from population growth.

4. Cape Town's economic growth performance

The degree to which economic growth in Cape Town is tied to South Africa's economic growth rate is clearly reflected in figure 2.3, which plots Cape Town and South Africa's annual GDP growth rates for the period 1997-2014. For the most part, Cape Town's growth performance tracks that of the country, especially in the last five years. However, while matching the direction of national growth trends, Cape Town has on average grown faster (2,3% compared to 1,8%). Cape Town's fastest economic growth came in the period 2004-2007, just prior to the global financial crisis. In that time, the average annual growth rate of Cape Town's economy was 5,9% compared to a national average annual growth rate of 5,2%. The greatest divergence from the national growth rate, however, came in the period 2011-2014, when Cape Town recorded an average annual growth rate of 3,1%, and South Africa recorded only 2,4%. This points to the greater resilience of the city's economy in the post-recession period and confirms the World Bank's finding that cities tend to grow significantly quicker than their home countries.

Figure 2.3: GDP annual growth rates for Cape Town and South Africa, 1997 to 2014



Source: City of Cape Town, 2016. Trade and Investment Department calculations, based on Global Insight ReX Regional data, 2016.

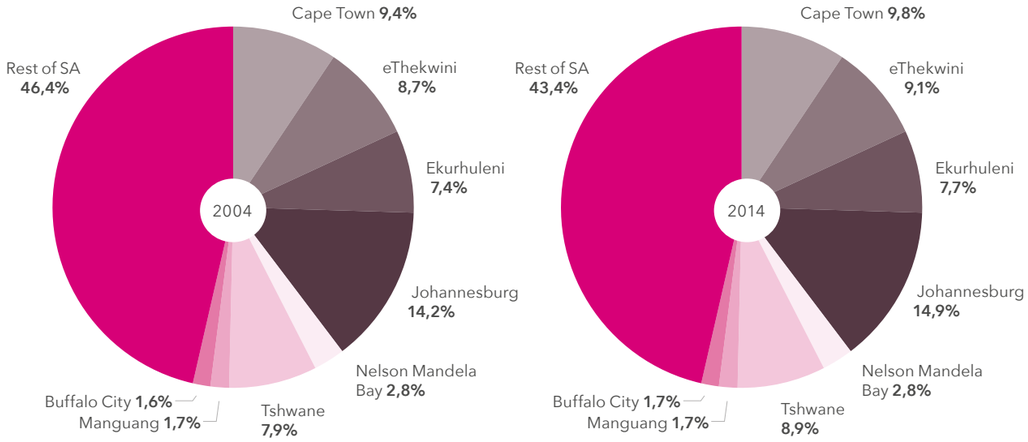
The total growth of Cape Town's economy between 2004 and 2014 was 40,5%, while South Africa's was 33,6%. Naturally, this has resulted in Cape Town contributing an increasing share to South Africa's GDP. Figure 2.4, which compares the GDP contributions of eight metros in South Africa, provides evidence that Cape Town's contribution to national GDP increased, albeit marginally, from 9,4% to 9,8% between 2004 and 2014, making it the second-highest contributor to national GDP after the City of Johannesburg. The City of Tshwane showed the largest growth in this period, having increased its share by a percentage point. This is in line with a broader trend in this period that saw metropolitan municipalities increase their share of national GDP from 53,6% to 56,6%. Metropolitan municipalities contributed even more strongly to growth, cumulatively accounting for 66% of South Africa's GDP growth, with Cape Town contributing 11%.

It is not surprising that economic growth in cities has been faster than in the rest of South Africa since 2004, as an ongoing process of urbanisation has increased the number of people living in large cities. According to the 2011 Census, Cape Town in particular was one of the largest receivers of South African and international migrants: Close to 40% of the population growth in Cape Town between 2001 and 2011 comprised new arrivals from outside the Western Cape.[139] For this reason, it is necessary to ascertain whether economic growth in Cape Town simply reflects population growth in the city or represents increased productivity and value addition. The easiest way to do this is to control for the impact of population growth by analysing GDP per capita.

Cape Town's real GDP[140] per capita in 2014 was R76 420, compared to a national figure of R55 953 and an average of R75 188 among South

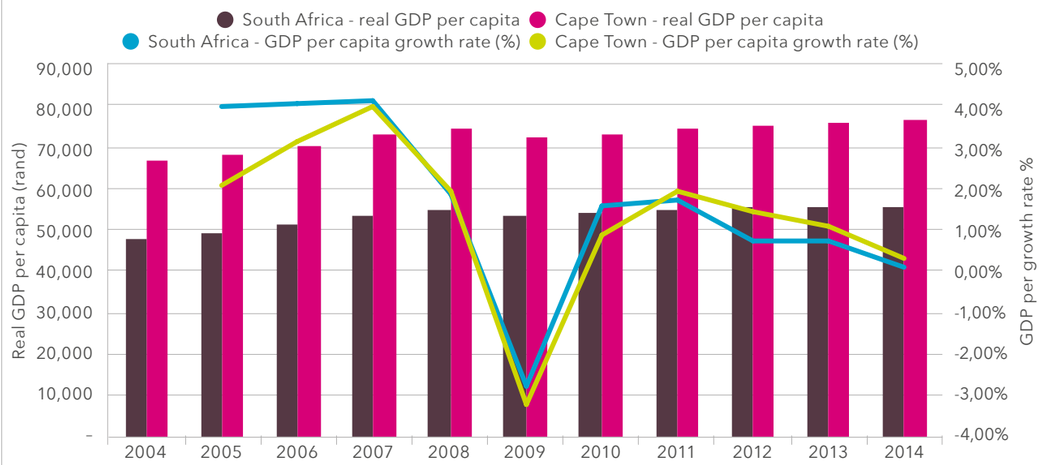
137 Euromonitor, 2016:28
138 World Bank, 2015a: 16
139 City of Cape Town, 2014.
140 Real gross domestic product is an inflation-adjusted measure that reflects the value of all goods and services produced by an economy in a given year, expressed in base-year prices, and is often referred to as "constant-price". (Investopedia, undated)

Figure 2.4: Comparison of GDP contributions of Cape Town and other South African metros, 2004 and 2014



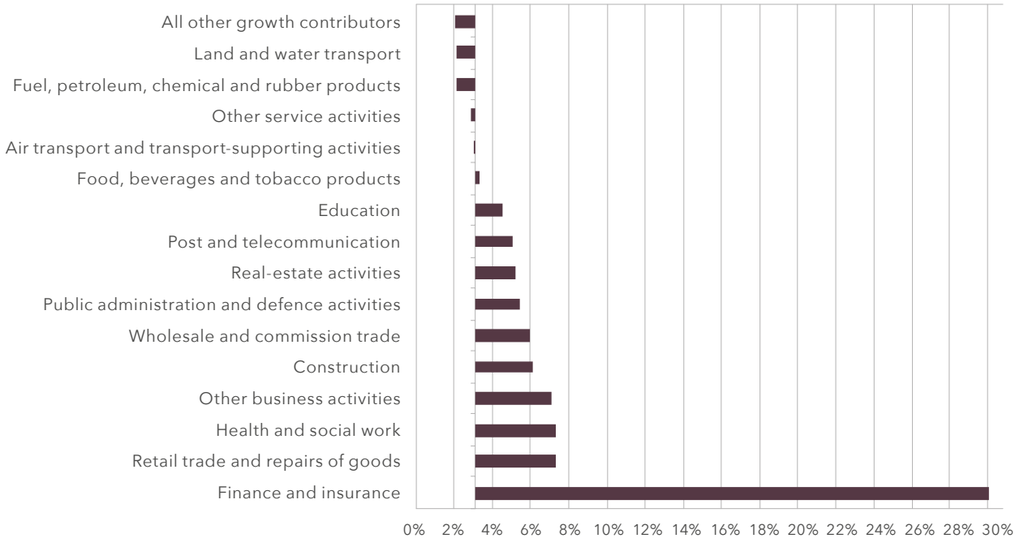
Source: City of Cape Town, 2016. Trade and Investment Department calculations, based on Global Insight ReX Regional data, 2016.

Figure 2.5: GDP per capita and GDP per-capita growth rates for Cape Town and South Africa, 2004 to 2014



Source: City of Cape Town, 2016. Trade and Investment Department calculations, based on Global Insight ReX Regional data, 2016.

Figure 2.6: Sectoral contributions to GVA growth in Cape Town, 2005 to 2014



Note: *The axis is pegged at the average GVA growth rate of the whole economy over the period in question (not at nought). Therefore, everything to the left of the axis is growing slower than average.*

Source: *City of Cape Town, 2016. Trade and Investment calculations, based on IHS Global Insight ReX Regional data, 2014.*

Africa's metropolitan municipalities (refer figure 2.5). This finding points to the greater productivity of Cape Town's economy and lends credibility to the assertion that cities are the growth engines of countries' economies and are essential to the "miracle of productivity", which has seen a rapid increase in the value of human production.[141] This can be attributed to the increased "scale and specialisation" that can be achieved in cities as a result of the densification and clustering of human settlements.[142]

Cape Town's positive growth in GDP per capita would indicate that economic growth over the period 2004 to 2014 was not only an outcome of population growth, but also of increased productivity due to scale and specialisation. However, Cape Town's GDP per-capita average annual growth rate of 1,3% between 2004 and 2014 was lower than the average for South Africa's metropolitan municipalities, which was 1,7%.

141 Centre for Development and Enterprise, 2014:18.
142 Ibid.

5. The sectoral drivers of Cape Town's economy

Cape Town is primarily a service-driven economy, with tertiary-sector industries contributing almost 80% to the city's total gross value added (GVA). Like most cities, the primary sector in Cape Town is very small, contributing less than 1% to the city's economic output. Tertiary-sector industries also contributed most to the economic growth of the city between 2005 and 2014. In particular, the finance and insurance industry contributed over 30% to the City's economic growth, with strong contributions also coming from retail, business services and wholesale trade (refer figure 2.6).

The fastest-growing sectors in Cape Town's economy are more capital-intensive than labour-intensive, and mostly demand workers who are highly skilled. Robust economic growth in sectors such as the finance and real-estate sectors will generally have lower employment multiplier impacts than those associated with the manufacturing or agricultural sectors. While this constitutes a challenge for the city's economy, there are nevertheless opportunities for specialisation in specific industries within the tertiary sector that offer relatively high employment multiplier effects. If employment growth is crucial for the sustainable economic growth of the city, the manufacturing sector should, for example, not be overlooked. The trend of "fast fashion", for instance, is revitalising the Cape Town clothing and textiles industry, while large-value investments in consumer electronic and renewable-energy manufacturing have also provided these sectors with fresh impetus.

5.1 Sectors attracting the most foreign direct investment

Figure 2.7 (see next page) indicates the total level of FDI received per sector between 2003 and 2014. In total, Cape Town received R59 billion worth of investments. The distribution of these investments confirms that Cape Town is indeed a services-driven economy, with the largest recipients of FDI being information and communications technology (ICT), real estate, tourism, transport and business services. From 2003 to 2014, ICT – the largest FDI-receiving sector – attracted R16 billion worth of FDI.

Cape Town's positive growth from 2004 to 2014 was an outcome of increased productivity due to scale and specialisation.

6. Cape Town's labour market[143]

GDP or GVA growth is one measure of economic performance, but is insufficient for understanding the broader impact of economic performance. GDP represents the volume of value-added production that takes place in an economy, but provides no indication of how the benefits of this production are distributed. The primary mechanism by which the benefits of economic production are distributed is through the creation of jobs.

Between the fourth quarter of 2008 and the fourth quarter of 2015, employment in Cape Town grew by 105 288 jobs to a total of 1 511 117 (refer figure 2.8, see next page). The average annual growth rate of employment during this period was 1,05%, while the corresponding GDP growth rate was 2,6%. This indicates a certain capital intensity of growth, as well as growth in labour productivity, necessitating fewer labour inputs to produce output units.

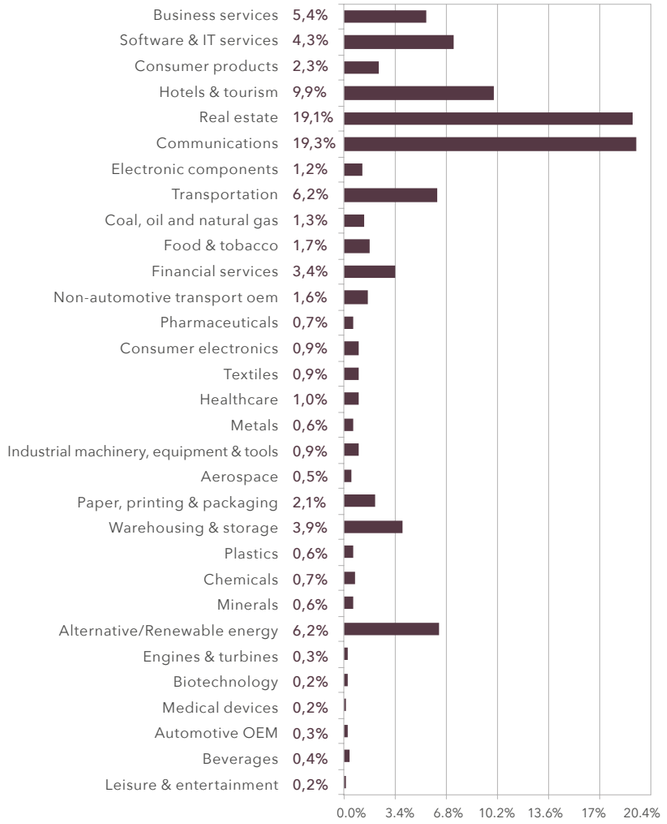
The strict unemployment rate in Cape Town increased from 19,2% to 22,1%[144] between 2008 and 2015. This increase in the unemployment rate must be seen in light of adverse global economic conditions, particularly in 2009, in which millions of jobs were lost across the globe, and total job losses in South Africa amounted to almost a million. The impact of the global recession on jobs in Cape Town was lagged, reaching its most severe extent in the third quarter of 2010. Since then, and despite typical business cycle swings, employment levels have largely displayed an upward trend. This led to a gradual decline in the unemployment rate from 24,9% in 2012 to 22,1% in 2015, which can largely be attributed to recent improvements in Cape Town's labour market.

South Africa's official or strict unemployment rate also increased moderately over the period 2008 to 2015 (from 22,5% to 25,4%). Typically,

143 While labour market indicators, as provided by Stats SA's Quarterly Labour Force Survey at a metro level, are among the most up-to-date economic indicators available, they do not date back very far. This is because the Labour Force Survey (as it was known at the time) did not report on metro-level statistics prior to 2005.

144 Annual average of the unemployment rate for the four quarters.

Figure 2.7: FDI distribution by industry in Cape Town, 2003 to 2015



Source: City of Cape Town, 2016. Trade and Investment Department calculations, based on Financial Times data, 2015.

Cape Town and South Africa's strict unemployment rates have been closely matched, but a significant gap has opened up between them since the end of 2014, which saw Cape Town's strict unemployment rate being over three percentage points lower on average in 2015 (refer figure 2.9, see next page).

The decline in the city's strict unemployment rate is all the more impressive as it comes against a backdrop of increased labour force participation[145] (having grown from 67,7% in the fourth quarter of 2014 to 68,9% in the fourth quarter of 2015). The labour force participation rate for South Africa increased to 58,5% in the fourth quarter of 2015 over 56,8% in the same quarter of 2014. Even though

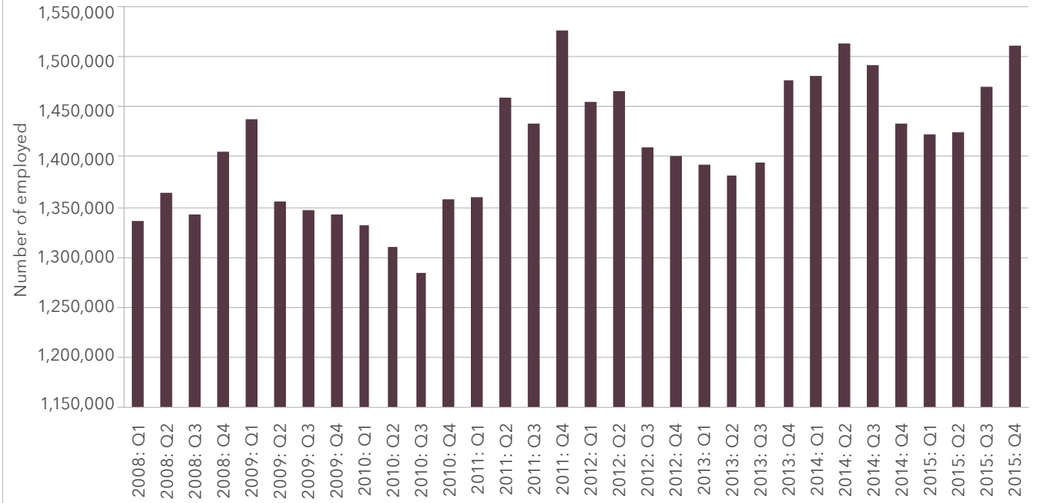
The unemployment rate in Cape Town decreased from 24,9% in 2012 to 22,1% in 2015.

labour force participation rates for both South Africa and Cape Town have increased, Cape Town's labour force participation rate is 10 percentage points higher than the national rate. The other large disparity between national and Cape Town labour market indicators is the difference in the broad[146] rates of unemployment. Cape Town's average broad unemployment rate for 2015 (23,4%) was more than 10 percentage points lower than South

145 The labour force participation rate is a measure of the proportion of a country's or city's working-age population that engages actively in the labour market, either by working or looking for work.

146 While the strict definition of unemployment includes only people who are actively seeking work, the broad definition also includes the non-searching unemployed (including discouraged work seekers).

Figure 2.8: Employment levels in Cape Town, 2008 to 2015



Source: City of Cape Town, 2016. Trade and Investment Department, based on Stats SA Quarterly Labour Force Survey data.

Figure 2.9: A comparison of the strict and broad rate of unemployment for Cape Town and South Africa, 2008 to 2015

Source: City of Cape Town, 2016. Trade and Investment Department, based on Stats SA Quarterly Labour Force Survey data.

Africa's (34,8%). This can be explained by the relatively small number of non-searching unemployed people (including discouraged work seekers) in Cape Town.

While comparing Cape Town's key labour market indicators to the national baseline is useful, it fails to account for the employment-creating dynamism of large cities. Cape Town's relatively strong labour market indicators compared to those of the country could simply reflect it being a large urban area, while national labour indicators would also take into account isolated rural areas where employment opportunities are relatively scarce.

For a more nuanced assessment of how Cape Town's labour market is performing, it is better to compare it to the country's other large metro areas. On this basis, Cape Town had the second-lowest strict unemployment rate following eThekwini (15,91%), and the lowest expanded (broad) unemployment rate for the fourth quarter of 2015 (refer table 2.1 on the next page).

6.1 A disproportionately low number of discouraged work seekers in Cape Town

For one of South Africa's major metropolitan regions, Cape Town accounts for a comparatively small percentage (0,41%) of the country's total number of discouraged work seekers. When expressed as a percentage of the total broadly unemployed, Cape Town has the second-lowest[147] proportion of discouraged work seekers (2,23%) of all the metros. In contrast, 33% of broadly unemployed people in eThekwini are classified as discouraged work seekers (see figure 2.10 on the following page).

To understand why Cape Town has so few discouraged work seekers, it is necessary to understand exactly what the term "discouraged work seeker" means. A discouraged work seeker "is a person who was not employed during the reference period, wanted to work, was available to work/start a business but did not take active steps to find work during the last four weeks, provided that the main reason given for not seeking work was any of the following: no jobs available in the area; unable to find work requiring his/her skills; lost hope of finding any kind of work".[148]

147 The figures for Port Elizabeth (PE, or Nelson Mandela Bay metro) must be interpreted with caution due to the small Quarterly Labour Force Survey sample size in that metro.

148 Stats SA, 2016.

Table 2.1: Metro comparison of strict (official) and expanded (broad) unemployment rates

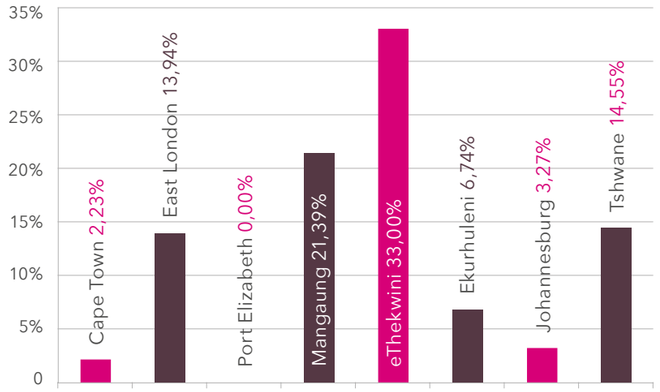
Metro	Official			Expanded		
	2015:Q4	2015:Q3	2014:Q4	2015:Q4	2015:Q3	2014:Q4
Cape Town	20,52	21,85	25,25	21,81	23,21	25,97
eThekwini	15,91	15,74	16,66	24,34	24,87	25,95
Ekurhuleni	30,80	30,33	31,56	33,02	32,71	35,38
Johannesburg	27,90	29,74	22,06	29,16	30,69	25,03
Nelson Mandela Bay	30,65	34,31	33,67	30,65	34,38	33,92
Tshwane	23,42	24,71	20,47	27,45	28,84	27,78

Source: *City of Cape Town, 2016. Trade and Investment Department, based on Stats SA Quarterly Labour Force Survey data.*

Based on this definition, there are a number of likely reasons for the lower rate of discouragement in Cape Town. These include the following:

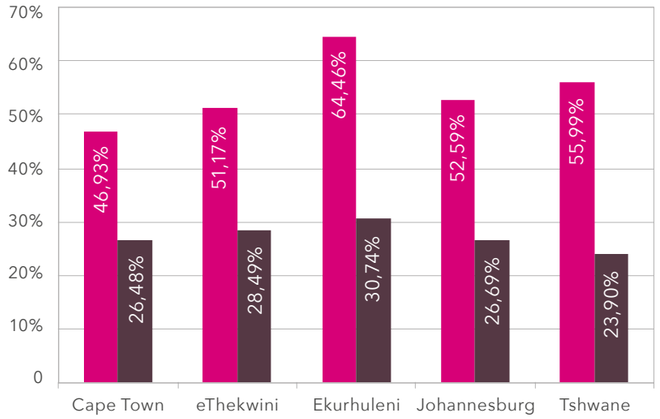
- *Metro areas such as Cape Town provide more job opportunities.* The greater probability of finding a job in a metro area compared to non-metro areas is likely to sustain a prolonged period of active job searching.
- *Job search costs are lower in Cape Town, particularly compared to non-metro areas.* The density of settlement in a metro area is conducive to more efficient and cost-effective job searching. In particular, Cape Town's public transport system may be more effective than in other areas of the country, thereby enabling more sustained active job searching.
- *Many unemployed job seekers in Cape Town are migrants from outside the Western Cape.*[149] Individuals who have relocated in search of jobs are likely to search more intensively and for longer than non-migrant job seekers.
- *Cape Town offers no viable substitutes for work.* Cape Town has fewer opportunities to engage in non-return, subsistence activities, such as collecting firewood, water, etc., which may typically serve as substitutes for work in rural areas.

Figure 2.10: Discouraged work seekers as a proportion of the broadly unemployed in South African metros, 2015: Q4



Source: *City of Cape Town, 2016. Trade and Investment Department, based on Stats SA Quarterly Labour Force Survey using 2015: Q4 data.*

Figure 2.11: Broad rate of unemployment and proportion of NEET (not in education, employment or training) among those aged 15 to 24 in 2015: Q4



Source: *City of Cape Town, 2016. Trade and Investment Department, based on Stats SA Quarterly Labour Force Survey data.*

6.2 Youth unemployment in Cape Town

South Africa has a relatively young population by global standards and has the opportunity to take advantage of what is known as a demographic dividend. A demographic dividend occurs when "a falling birth rate changes the age distribution, so that fewer investments are needed to meet the needs of the youngest age groups, and resources are released for investments in economic development and family welfare".[150] This reduces the level of dependency on the working-age population, allows for the reallocation of spending away from social spending targeted at children and toward higher education, and increases the country's labour supply. Theoretically, this should facilitate an increased level of output in the economy and a concomitant rise in living standards.

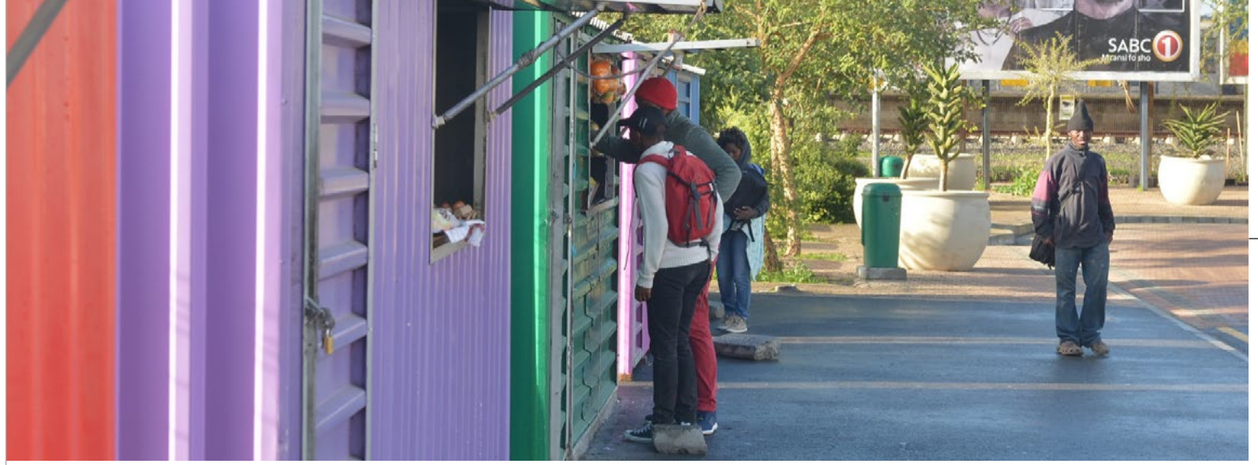
South Africa's demographic dividend window is still wide open as it is estimated that by 2069, two thirds (or 44 million) of the country's forecast population of 66 million will still be of working age.[151] Benefits do not flow automatically, however, and the World Bank identifies high unemployment rates and skills mismatches as key factors hindering South Africa from realising its demographic potential.

The key to realising the demographic dividend is ensuring that new entrants to the labour market are able to find work. In this respect, youth unemployment in cities, which attract the highest proportion of young labour market entrants, is particularly damaging. Figure 2.11 depicts the broad unemployment rates for individuals between the ages of 15 and 24 in South Africa's largest metros. The figures do not make good reading, and far exceed comparable figures for the rest of sub-Saharan Africa and Latin America. Cape Town has the lowest broad unemployment rate for its population between the ages of 15 and 24, but at 47%, it is still exceptionally high.

City research on youth unemployment in Cape Town reveals a substantially lower (strict) unemployment rate for those between the ages of 24 and 35 than for those between the ages of 15 and 24. Using South Africa's official definition of youth (those aged 15 to 34), youth unemployment was found to be more predominant among females (51,5% of unemployed youth), black Africans (56,4%) and those with incomplete secondary education (25,0%). However, persons with incomplete secondary education do seem to have a lower unemployment rate than those with a lower level of education attainment. The highest youth unemployment rate by level of education attainment in Cape Town is recorded for those individuals who have completed only primary education (34,5%). Interestingly, the lowest unemployment rates are those recorded at the two extremes, namely no schooling (16,5%) and a tertiary qualification (12,1%).[152]

Youth unemployment figures in isolation can however be misleading. In South Africa, where a large proportion of the labour force lives close to the poverty line, responses to Labour Force Survey questions may be different from those given in developed countries. For example, a school-going 17-year-old individual from a household at a very low income level may state that (s)he is willing and available to work should an opportunity arise, despite having to attend school. This individual will then be classified as unemployed, although (s)he is clearly meaningfully occupied in education. From a policy perspective, young individuals who are "unemployed" but in education should be seen differently from those who are neither employed, nor in education or training. The latter category comprises some of the most excluded and vulnerable members of society, and also most starkly reflects the inability of the economy to fully realise the opportunities offered by a demographic dividend.

To distinguish between unemployed individuals meaningfully engaged in acquiring further skills, and those who are not, the NEET (not in education, employment or training) is the most appropriate indicator to use. In Cape Town, the youth NEET rate is much lower than the broad youth unemployment rate (26,48% compared to 46,93%). The implication is that almost half of Cape Town's young unemployed population is engaged in education or training. The 26,48% of individuals who are not contributing to either the current or future output of the economy (by either working or acquiring skills to work) require a two-pronged intervention that addresses both demand (job availability) and supply-side issues (access to quality education, training and skills development). In this regard, the World Bank urges South



> Cape Town's public transport system may be more effective than in other areas of the country, thereby enabling more sustained active job searching.

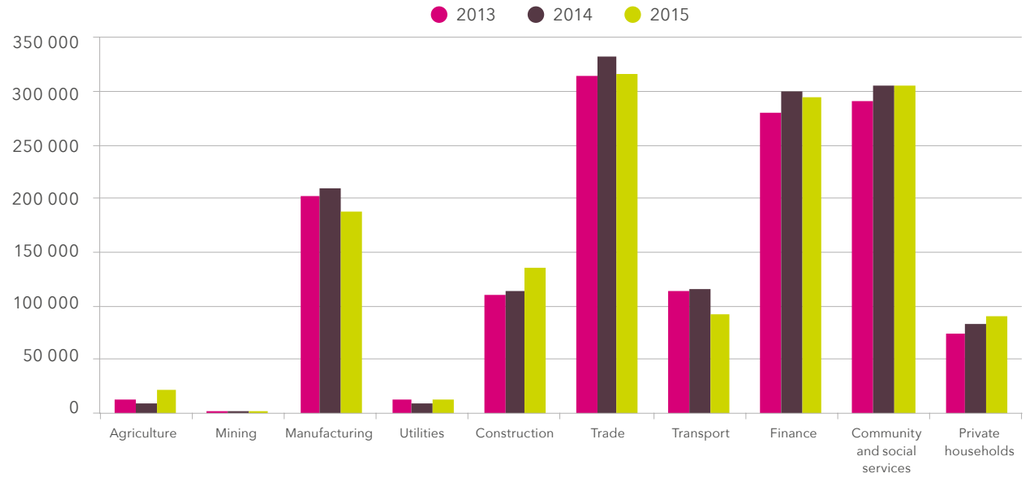
149 As indicated in preliminary research by the City, up to 40% of the population growth in Cape Town between 2001 and 2011 comprised new arrivals from outside the Western Cape. Most of these migrants can be expected to have been seeking work.

150 HSRC, 2007.

151 World Bank, 2015b

152 City of Cape Town, 2015b.

Figure 2.12: Sectoral employment levels in Cape Town, 2013 to 2015



Source: City of Cape Town, 2016. Trade and Investment Department calculations, based on Stats SA Quarterly Labour Force Survey data.

African cities such as Cape Town to "combine a more labour-intensive economic growth trajectory with improved educational outcomes and faster labour productivity growth".[153] The following section looks at the sectors that have created the most job opportunities in Cape Town since 2008.

6.3 Employment-creating sectors

Tertiary sectors have remained consistent in their contribution to creating employment opportunities. It is clear from figure 2.12 that Cape Town derives relatively little aggregate employment from the primary sector. The strongest contributing sectors in respect of employment growth in 2015 were construction, agriculture and private households, which grew employment by 22 859, 11 912 and 7 019 jobs respectively between 2014 and 2015. The aggregate employment gains in the agricultural sector in 2015, however, mask the recent job losses experienced in the sector toward the end of 2015, as low rainfall affected yields, which in turn led to retrenchments. Low confidence levels in the building sector and among consumers are also likely to undermine the ability of the construction and private household sectors to replicate their strong employment growth of 2015. While employment in the manufacturing sector has declined over the past three years, its growth remains essential to employment creation in the city's economy.

153 World Bank, 2015b.

7. Size and impact of the informal sector in Cape Town

Labour economists commonly refer to the informal economy as the "employer of last resort", as it absorbs the excess supply of labour that cannot always be absorbed by formal-sector employment. Thus, in a city such as Cape Town, or any major city in South Africa in which severe unemployment remains a persistent problem, the informal economy can be viewed as vital to efforts to reduce unemployment. Indeed, studies on the informal economy in South Africa have found strong correlations between unemployment and informal-economy participation.[154] This finding indicates that many South Africans utilise informal work as an alternative to unemployment.

Census 2011 estimated that 122 013 people (or 9,44% of the total city workforce) were employed in the informal sector in Cape Town at the time. This was substantially up from the 2001 Census figure of 47 020 (5,01%), although this may include an element of measurement error in the 2001 figure. While Census figures provide an 80%+ sample of the population, they are not specifically geared toward measuring the labour market and are outdated. Rather, Stats SA recommends that the Quarterly Labour Force Survey (QLFS), which is representative at the metro level, be used to estimate employment figures. According to the QLFS, the average number of people employed in the informal sector between the first quarter of 2011 and the second quarter of 2014 was 145 315, equivalent to 10,09% of the city's workforce. A more recent yet volatile estimate (on account of the higher frequency of the data) is the QLFS estimate for the second quarter of 2015, which found 161 000 (11,3% of the workforce) employed in the sector. If the informal sector were to be viewed as a conventional economic sector, based on the more conservative estimate of 10,09% of the workforce, it would be the fifth-largest employing sector in the city, just below manufacturing (11,96%) and just above construction (9,52%). This confirms the sector's importance as an employer in the Cape Town economy.

154 South African LED Network, 2013.

Table 2.2: Employment and wage estimates for the informal sector in Cape Town

Data source	Total employment in informal sector	% of total employment in the informal sector	Mean monthly wage in the informal sector (rand)	Reduction in the poverty rate
Census 2001	47 020	5,01	-	-
Census 2011	122 013	9,44	1 601-3 200	-
QLFS 2011:1-2014:2	145 315	10,09	-	-
GHS 2013	185 984	11,84	3 432	4,5 percentage points
QLFS 2015: 2	161 000	11,30	-	-
SESE 2013	-	-	3 300	-

Source: City of Cape Town, 2015a.

The informal sector's socio-economic impact in Cape Town is even larger than its contribution to employment would imply, as the income received from informal work accrues disproportionately to households that live close to the poverty line. Mean wages in the 2013 General Household Survey (GHS) are estimated at R3 432 per month, while the 2013 Survey of Employers and the Self-Employed (SESE) estimated a combined mean value of informal-sector wages and profits of about R3 300 per month.

Using the GHS 2013 wage and household income figures, the impact of informal-sector income on otherwise impoverished households is measured. The relatively low wages of informal-sector workers, who tend to reside in poor households with a larger-than-average household size, result in a substantial decrease in the city's poverty rate. Without informal-sector income, the poverty rate (the proportion of individuals earning less than R682[155] per person per month) in the city would be 25,1%; once informal-sector income is factored in, however, the poverty rate is reduced to 20,6%. This 4,5 percentage point reduction in Cape Town's poverty rate is equivalent to pulling 186 000 people out of poverty (refer to table 2.2). This would suggest that although the aggregate economic contribution from this sector to GDP may be relatively small, the aggregate improvement in welfare and impact on the lives of the poor is large.

155 This poverty line was obtained by using the poverty line of R524 per person per month in 2005 prices, which was obtained from the National Planning Commission's website, and adjusting it for inflation using the Western Cape CPI, which was obtained from Stats SA's website.

8. Leveraging strategic infrastructural assets

Attracting renewed investment to the manufacturing industry, and indeed to the economy as a whole, requires a holistic, facilitative approach. One crucial component of this approach is the development and maintenance of world-class infrastructure. Manufacturing businesses base their location decisions in part on the ease with which they can get their products to the market. This includes an efficient rail system, well-maintained and high-capacity highways, fast broadband connectivity, an effective seaport and a well-connected airport. The state of these assets and South Africa's infrastructure more broadly has been a key focus of the NDP and has also resulted in the identification of 18 strategic infrastructure projects aimed at harnessing economic growth through infrastructure development.[156] The City's Economic Growth Strategy also notes the relationship between infrastructure and economic growth, recognising that "the City's approach to future infrastructure development will be a critical component of its objective of achieving an Opportunity City".[157]

Over the past 20 years, the City has been actively involved in securing and developing its economic assets. Since 1994, key economic assets such as the Cape Town International Convention Centre (CTICC), Cape Town Film Studio and an extensive broadband network have been developed in collaboration with strategic partners. These economic assets have underpinned growth in some of the city's key sectors and have enhanced the city's ability to attract investment. The CTICC,[158] as one example, has made a cumulative contribution of R28,8 billion to South Africa's GDP and R25,6 billion to the Western Cape's gross geographic product (GGP) since it opened in 2003. In the 2014/15 financial year, the operations of the CTICC contributed R3,4 billion to national GDP and R3,1 billion to Western Cape GGP. In addition, the number of direct jobs increased to 3 568 in 2014/15 from 3 376 in the previous year. To increase its capacity to host conferences and events, the CTICC has undertaken an expansion project that will see its capacity nearly doubling with the completion of the east section in 2017. This expansion is set to create several job opportunities and will add approximately R20 billion to the CTICC's existing national GDP contribution.

Further strengthening Cape Town's appeal as a destination for business events is the recent development of a new conference centre at Century City. The Century City Conference Centre (CCCC) has the capacity to comfortably host up to 1 900 delegates across 20 different venues. Adjacent to the CCCC, a newly developed hotel[159] offers 125 rooms, which increases the number of rooms in the area to 600 and improves the CCCC's value proposition to business tourists.

Cape Town is also established as a price-competitive film-making

156 National Planning Commission, 2012.
157 City of Cape Town, 2013.

158 CTICC, 2015.
159 Century City Conference Centre and Hotel, 2016. Also see press release at http://ccconferencecentre.co.za/press-release/new-conference-centre-set-to-add-to-citys-business-travel-appeal/.

destination. Cape Town ranks fourth out of 16 global cities for both filming quality and cost. This is primarily due to the low cost of production, as South Africa's exchange rate makes it cheaper to film here than in Europe or the United States.[160] Moreover, Cape Town Film Studios is the first film-industry public-private partnership in South Africa that is supported by the local, provincial and national tiers of government. At a total capital cost of R306 million, it is the biggest investment in long-term film infrastructure in South Africa.[161]

While these strategic assets are important for the development of the tourism and film industries respectively, transport infrastructure remains critical to the functioning of the economy in general, and the economy in Cape Town and its region in particular. The following two sections examine the performance of the Port of Cape Town and Cape Town International Airport over the past few years.

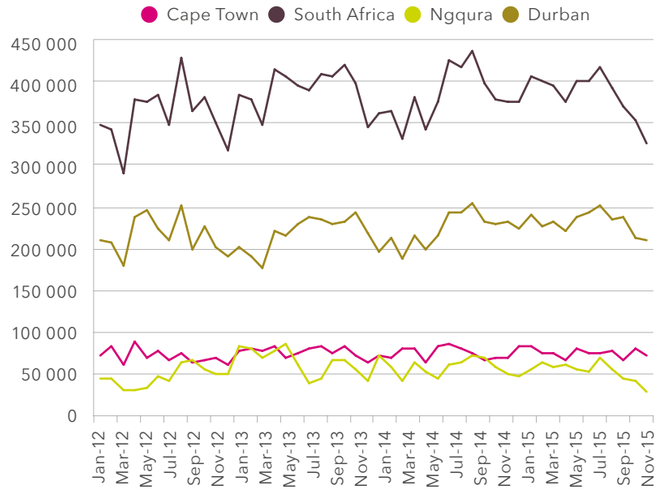
8.1 The Port of Cape Town

The capacity of seaports to handle increasing container traffic is a crucial factor in creating a competitive location for manufacturing-sector investments. While raw commodities are typically exported as bulk or break-bulk cargo, value-added manufactured products are exported in containers. As such, manufacturing-sector investors will be drawn to locations that are situated close to efficient, cost-effective container-handling ports. This is particularly relevant in the context of the rising consumer demand for products. It is estimated that the capacity of ports will have to increase by more than 2½ times from the current level to handle projected future container-handling volumes.[162] This will necessitate $200 billion worth of investment in capacity expansion at ports by 2025, 85% of which will be in emerging markets.

The Port of Durban is South Africa's main container-handling port, and contributed more than half (62,8%) of the total containers handled in South African ports in the fourth quarter of 2015. Although the Port of Cape Town is the second-busiest container-handling port in the country, it handles far fewer containers than Durban, and accounted for only 21% of all containers handled in South African ports in the fourth quarter of 2015. The Port of Ngqura (located between Port Elizabeth and East London) has shown to be a strong competitor, as it managed to catch up with Cape Town, especially in the period November 2012 to May 2013. Since then, however, the Port of Ngqura has lost momentum and showed a declining trend at the end of September 2015 (refer figure 2.13). The number of containers handled by the Port of Ngqura over the past year decreased by 9,75%, while the Port of Cape Town showed a moderate increase of 1,87%. As a large, relatively new and purpose-built port, Ngqura may overtake the Port of Cape Town with regard to container handling in the near future due to capacity constraints in the former. This may in turn lead to a shifting of manufacturing industries to the Port Elizabeth area.

The nearby Port of Saldanha has recently been designated as an industrial development zone (IDZ), which has been converted into a special economic zone with a specific focus on the oil and gas industry. While most of the heavy engineering associated with the maintenance and repair of rigs will take place in Saldanha, a number of oil and gas companies have located their administrative offices in Cape Town itself. A second IDZ focused on the development of green technology is also being established in Atlantis. Although the manufacturing activity expected to take place as a result of this will initially be targeted at the domestic market, it is well located for future export activities through the Port of Saldanha. Transnet National Ports Authority has also allotted R7 billion[163] to the upgrade of most of South Africa's ports. For Cape Town, in conjunction with the Port of Durban, R353 million has been invested for boat-building infrastructure.

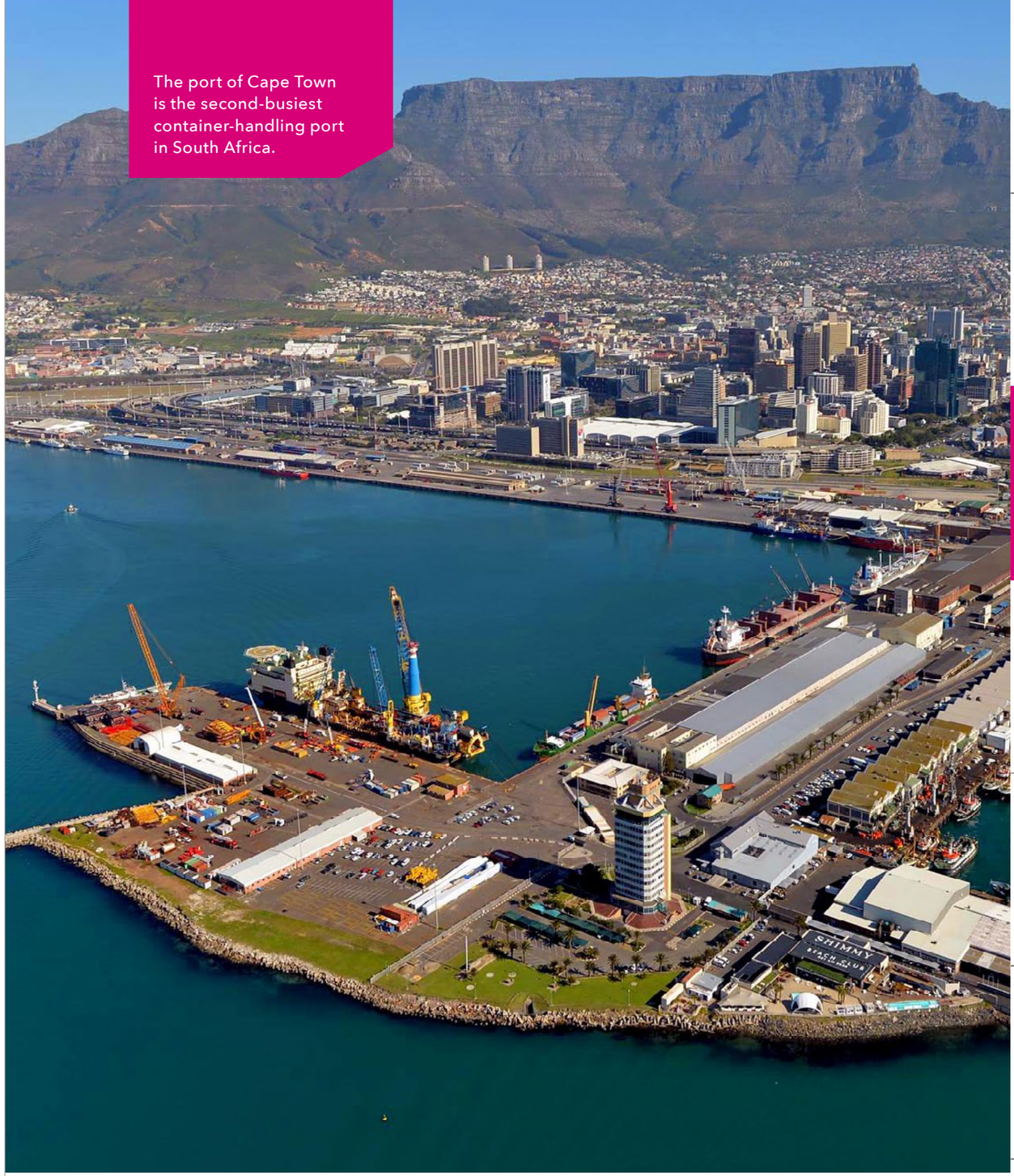
Figure 2.13: Total containers handled (20 ft.-equivalent units) in South Africa and the ports of Ngqura, Durban and Cape Town, 2012 to 2015



Source: *Transnet National Ports Authority, 2016.*

> Cape Town ranks fourth out of 16 global cities for both filming quality and cost.

160 City of Cape Town, 2015a.
161 City of Cape Town, 2015a.
162 McKinsey Global Institute, 2012: 8.
163 http://www.southafrica.info/business/trade/ports-investment-090316.htm#.Vxck6_l96Uk.



The port of Cape Town is the second-busiest container-handling port in South Africa.

Table 2.3: Ranking of international flight routes by total passenger movements

Rank	Type	Operator	Route
1.	International	Emirates	Dubai
2.	International	British Airways PLC	London (Heathrow)
3.	International	KLM	Amsterdam
4.	International	Qatar Airways	Doha
5.	Regional	Air Namibia (Pty) Ltd	Windhoek
6.	International	Lufthansa German Airlines	Munich
7.	International	Turkish Airlines	Istanbul

Source: ACSA, 2016.

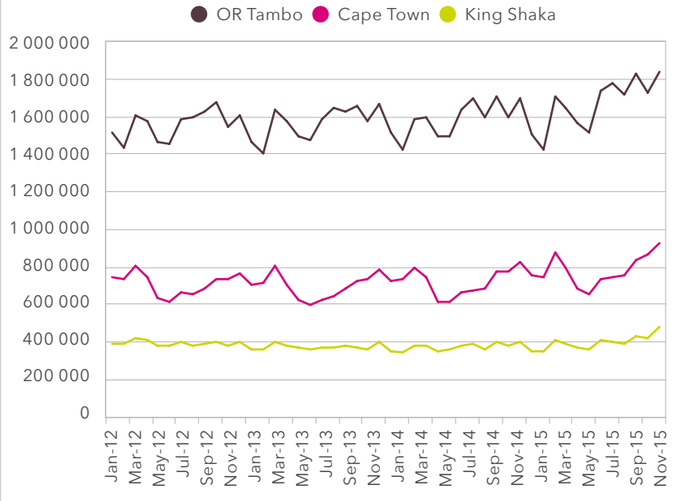
8.2 Cape Town International Airport

In a globalised economy, connectivity with the rest of the world is paramount for investors in all types of industries. In this regard, international airports are increasingly important strategic assets for cities. The number of international connections from a region's airport is a critical competitiveness factor for a region and is seen as one of the traits of a globally fluent city.[164]

Cape Town International Airport, voted the best airport in Africa in 2015,[165] is South Africa's second-busiest airport and recorded 2,63 million total passenger movements in the fourth quarter of 2015, compared to 5,38 million passenger movements at OR Tambo (Johannesburg) and 1,33 million at King Shaka International (Durban) during the same period (see figure 2.14).

The disparity between OR Tambo and Cape Town international airports is a result of the Airports Company South Africa (ACSA) strategy of using OR Tambo as the international hub airport for South Africa. Consequently, international arrivals to Cape Town International constituted only 18,1% of the airport's total passenger arrivals in 2015. In contrast, in the same period, OR Tambo's international arrivals constituted 45,1% of its total passenger arrivals. Over the past two years, the number of direct international flights from and to Cape Town has increased with Airlink, Lufthansa, Ethiopian Airlines, Fly Blue Crane and Kenya Airways now also adding value to Cape Town's tourism sector and, equally important, the city's other key sectors as well. Table 2.3 ranks the international flights landing at Cape Town International according to the number of passengers transported.

Figure 2.14: Total passengers at South Africa's major international airports, 2012 to 2015



Source: *Airports Company South Africa (ACSA) passenger movement statistics, 2016.*

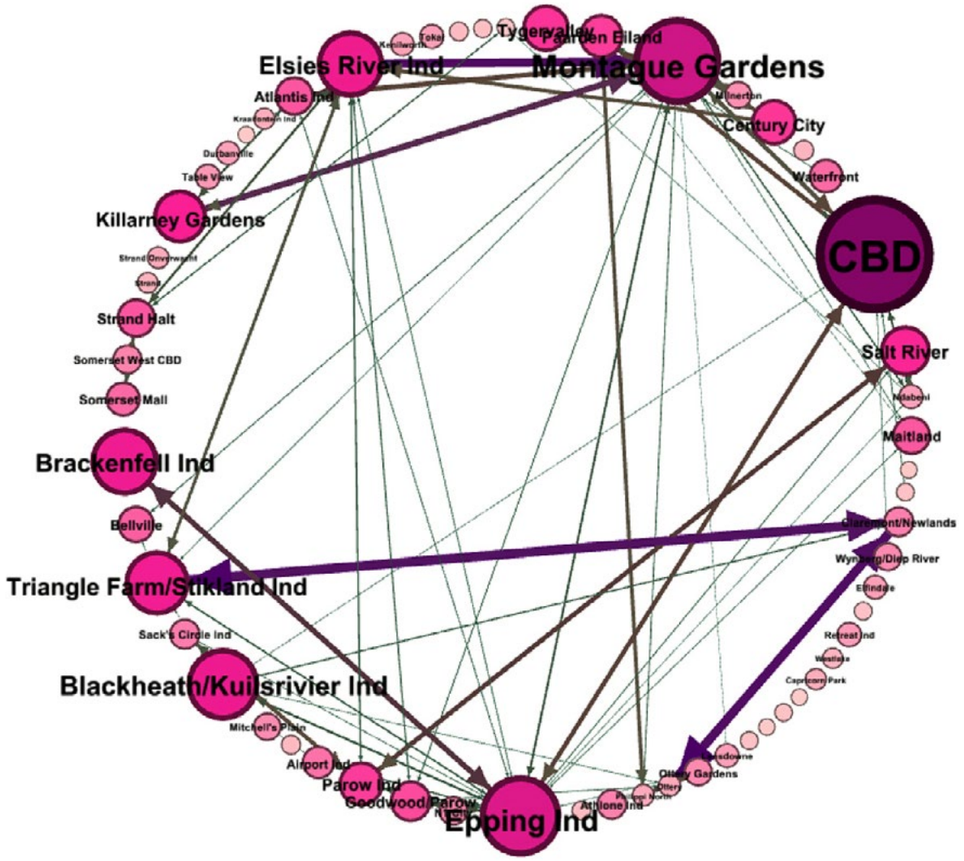
On average, the Emirates flight from Dubai lands and departs Cape Town International 122 times per month. Combined with the size of the aircraft, this means that the Dubai route accounts for most international passenger movements in and out of Cape Town International. While Air Namibia records only one fewer aircraft movement per month (121), its much smaller aircraft size means that it contributes significantly fewer passenger movements than routes serviced by bigger aircraft (such as the British Airways A380 on the London route). Despite Dubai and Doha accounting for the highest and fourth-highest number of passenger movements at Cape Town International respectively, the Middle East is a relatively small source tourist market for Cape Town. This has to do with the shortage of direct flights from destinations, as well as the use of Middle Eastern airports as indirect flight hubs to Africa, especially by European tourists.

Although many initiatives are being implemented to enhance Cape Town's ability to increase traveller numbers, the need for more direct international connection points to Cape Town International remains crucial if the city is to become one of the leading emerging-economy urban destinations. In particular Cape Town's two labour-intensive comparative advantages, namely tourism and business process outsourcing (BPO), require excellent international connectivity. Other sectors important in the economy of Cape Town's rural hinterland, such as agriculture, also require well-functioning air links, particularly with regard to time-sensitive export products.

164 Clark & Moonen, 2014:33.

165 http://www.timeslive.co.za/local/2016/03/17/Cape-Town-International-rated-as-Africa%E2%80%99s-top-airport.

Figure 2.15: Freight movement between business nodes in Cape Town



Source: *City of Cape Town, 2015e.*

In addition to vigorous efforts to attract more direct flights, ACSA has also proposed to realign the runway at Cape Town International to make room for larger aircraft that will accommodate greater passenger numbers. This proposal, which includes extending the runway length by 300 metres, would allow between 10 and 14 additional aircraft to land and take off each hour, as well as enable larger aircraft to land at the airport.[166]

9. Spatial characteristics of Cape Town's economy

As with any large urban region, Cape Town's space economy may be understood as a network of inter-connected and inter-dependent productive centres or 'business nodes', where the vast majority of the city's firms are clustered (see figure 2.15 showing freight movements between nodes). Each of these nodes represents an 'ecosystem' in which businesses are established and, over time, flourish or fail. The performance of these ecosystems has a direct impact on the livelihoods of each member of the 1,87 million-strong workforce and their dependants. Indirectly, the attractiveness of these nodes to businesses is capitalised into revenue for the City in the form of rates and tariffs, which in turn provide the necessary resources for the City to roll out infrastructure and provide services, in particular to poor households.

It is therefore critical for the City to closely monitor and understand the unique assets, constraints and resultant performance of these business nodes over time. This enables the City to initiate more informed interventions with a greater prospect of success, whether the objective is to retain existing businesses or attract new investment.

In this brief overview of the city's space economy, the focus is mostly on the performance and location potential of the 50 largest business nodes between 2005 and 2020, as these are home to the vast majority of the city's firms and workers, as is evident from the map in figure 2.16. This map confirms that whereas commercial nodes are geographically smaller than industrial areas, they are significantly more labour-intensive, making more efficient use of valuable urban space. For example, while industrial job density reaches up to 135 industrial workers per hectare in places such as Retreat Industrial, commercial nodes can reach densities of over 1 000 workers per hectare

166 SRK Consulting, 2014

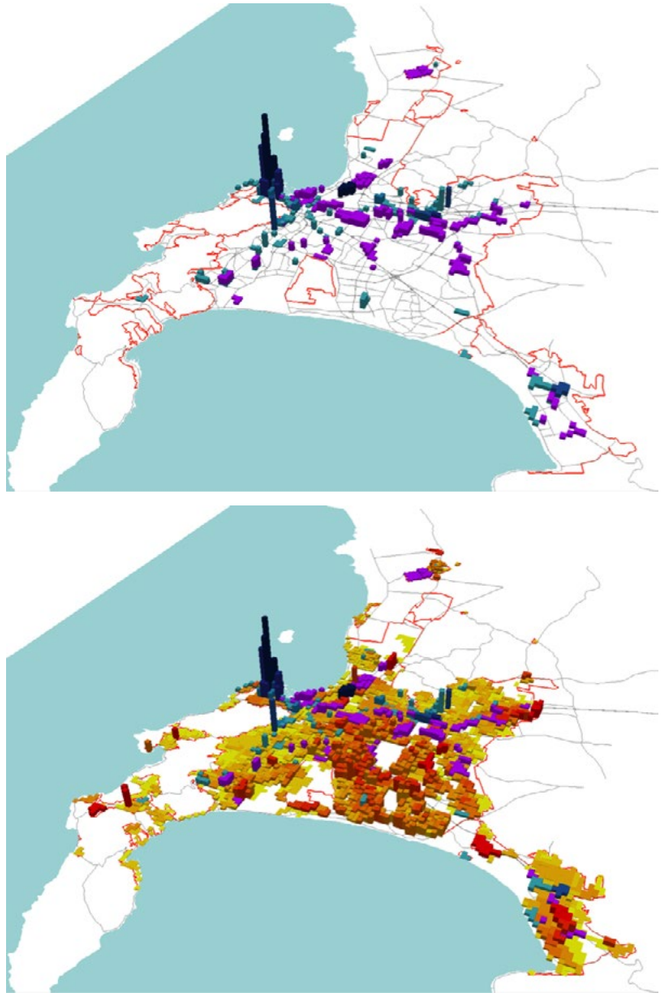
in the Cape Town central business district (CBD). However, higher-order services are very sensitive to locational characteristics and prioritise amenity, accessibility and safety over cheap land. Industrial activity, on the other hand, traditionally takes up a lot of space, and therefore seeks cheap land and good infrastructure instead of amenity. These locational requirements of the different business sectors constrain the City's efforts to drive job creation in unsafe and poorly located parts of the region.

The overall space economy not only depends on its constituent elements, but is also sensitive to macro-economic dynamics, as figure 2.17 shows. The data below confirm that commercial and industrial building activity in Cape Town has contracted by half since the economic downturn of 2007/8. What is interesting, however, is that Cape Town is increasingly punching above its weight in terms of attracting new commercial development despite sluggish local and national economic conditions. This may reflect a national trend towards the spatial consolidation of higher-order services in a limited number of nodes, such as Cape Town CBD, Sandton City in Johannesburg and Umhlanga in eThekweni.

When looking at a broad spectrum of market performance data from 2005 to 2015, it is evident that, notwithstanding its interconnected nature, not all nodes in Cape Town performed at a commensurate pace. Indeed, the city's overall economic growth was largely due to a small number of star performers, with the CBD, Century City, Tygervalley, Blackheath, Claremont and Brackenfell being the leading nodes. Philippi East and Athlone Industrial are notable underperformers (see figures 2.18 and 2.19, next page).

However, as highlighted earlier, different economic sectors have different locational requirements. When looking specifically at the underlying locational drivers of industrial performance, a different pattern emerges (see figure 2.20). There remains significant potential for industrial development along the eastern periphery of the city, in closer proximity to concentrations of the urban poor in Delft and Khayelitsha.

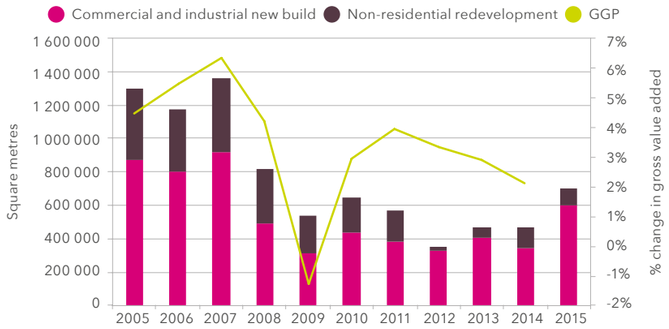
Figure 2.16: Employment densities in Cape Town, 2015



Source: *City of Cape Town, 2015d.*

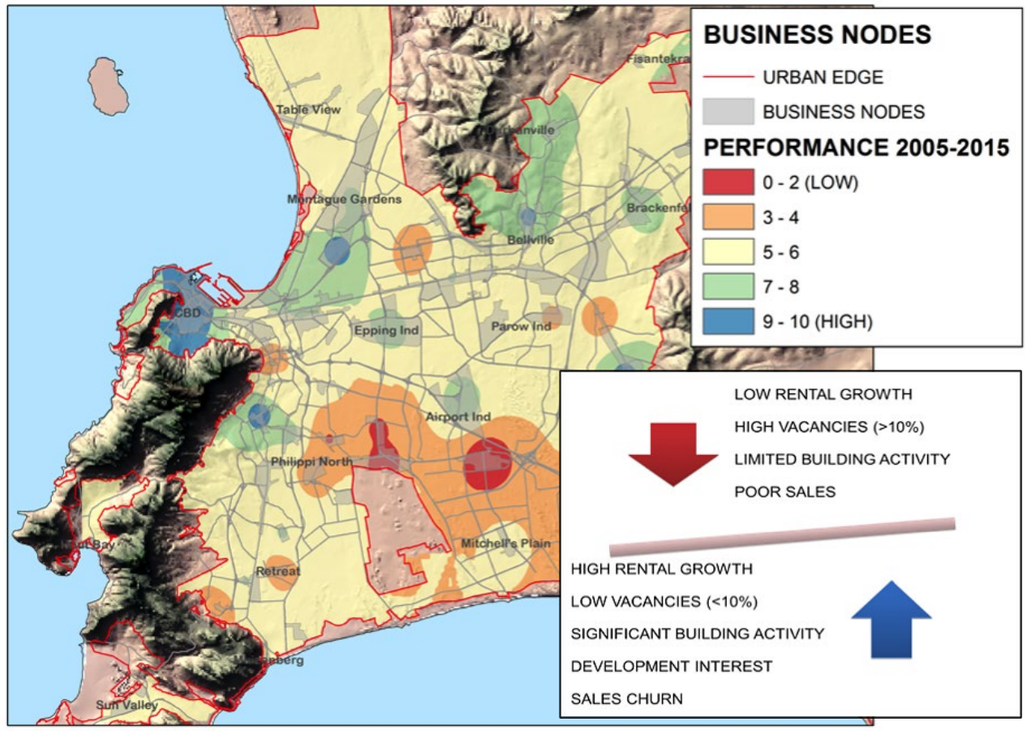
Note: *The map above indicates the density of commercial (including office and retail) nodes per transport zone across the city in blue, and industrial employment density in purple.*

Figure 2.17: Building activity and gross value added in Cape Town, 2005 to 2015



Source: *City of Cape Town, 2015c.*

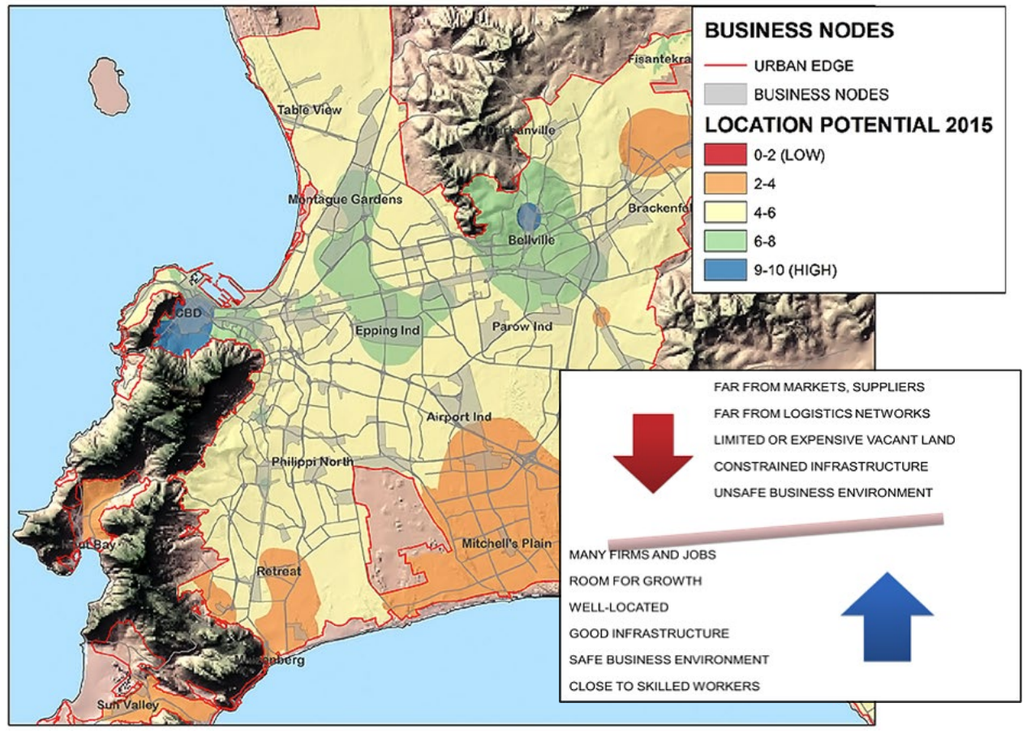
Figure 2.18: Business nodal performance in Cape Town, 2005 to 2015



Source: *City of Cape Town, 2016. ECAMP data platform.*

Note: *For more information on data-capture methodology, please see Rabe, McGaffin & Crankshaw, 2015.*

Figure 2.19: Location potential of businesses in Cape Town, 2015



Source: *City of Cape Town, 2016. ECAMP data platform.*

Figure 2.21 shows the relative size and proportional growth in the non-residential building stock for the city's top 20 nodes between 2005 and 2015. Although the Cape Town CBD maintains its pre-eminent position as the regional economy's market place, commercial building stock increased by only 4% in ten years compared to a phenomenal 245% increase in Century City and 80% in Tygervalley. Alongside Salt River, these four nodes have received the bulk of commercial investment over the past decade. As previously stated, industrial investment is highly cost-sensitive, seeking cheap land and good infrastructure before amenity. For this reason, the highest growth rate has been in peripheral areas such as Blackheath Industrial, Brackenfell and Killarney Gardens. Similar to the higher-order services, however, there are troubling signs that instead of bringing about an overall growth in industrial activity, these rapidly growing industrial estates may firstly lead to the sectoral displacement of job-rich manufacturing activities with job-poor logistical activities, and secondly, a spatial reconfiguration and even consolidation of industrial activity in general. This suggests that firms may be vacating large premises in unsafe, traditional industrial areas such as Elsies Rivier and Philippi in favour of secure, smaller premises in security estates such as Rivergate and Atlas Park in Killarney Gardens, Brackengate in Brackenfell, and Saxenburg in Blackheath.

In light of these dynamics, there are two emerging policy directions with direct implications for the space economy. These are, firstly, a shift in emphasis from outward, dispersive growth towards inward, agglomeration growth. Secondly, there is a shift from private to public transport to counteract the adverse effect of concentration and congestion on transport costs, which in turn threatens to aggravate income segregation.

9.1 Inward growth

There is a growing realisation in South Africa and the rest of the world that inner cities contain the genetic material for long-term resilience, growth potential and competitive advantage due to concentrated investment in infrastructure, coupled with rich and diverse agglomerations of firms and workers. On the other hand, should Cape Town maintain its historical propensity towards outward growth, the resultant inefficiencies, inequities and impact on its vulnerable food and natural systems would almost certainly and irreversibly compromise the economic, social and fiscal integrity of the overall urban system.

Indeed, it is not an overstatement to say that the fate and fortune of the regional economy will in coming years be bound to its ability to grow inward, i.e. within the inner city. This realisation is increasingly reflected in the City's strategic policies, from densification to growth management. Two powerful drivers of inner-city revitalisation and regeneration, namely brownfield redevelopment and residential apartment blocks (flats), are mapped and reflected in figure 2.22.

Unsurprisingly, the CBD provides the necessary conditions for regeneration, with 15% of its non-residential building stock being redeveloped or developed into apartments over the ten-year period 2005 to 2015. Similar trends are evident in mature, space-constrained nodes such as Claremont, Wynberg, Tygervalley and Century City. The challenge for the development community and metropolitan governments is to extend these positive trends to new neighbourhoods, such as along the length of Voortrekker Road and Athlone CBD.

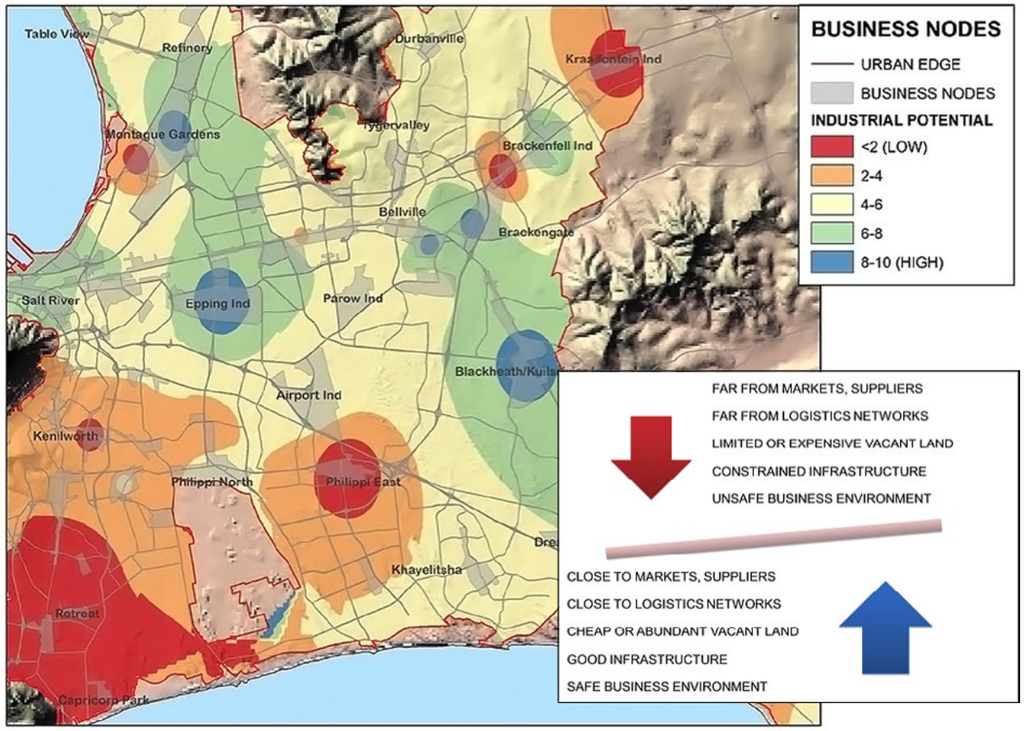
> Cape Town is the most congested city in South Africa, with local motorists spending an extra 40 minutes a day behind the wheel because of traffic congestion.

9.2 Land value gradients and congestion

Cape Town is the most congested city in South Africa,[167] with local motorists spending an extra 40 minutes a day behind the wheel because of traffic congestion. Not only does congestion cost motorists around R20 billion in direct fuel costs, but the cost of transport also creates a 'price cliff' where households and firms compete to be located close to employment. Therefore, developers build housing and office complexes at densities and for markets that reflect those land values.

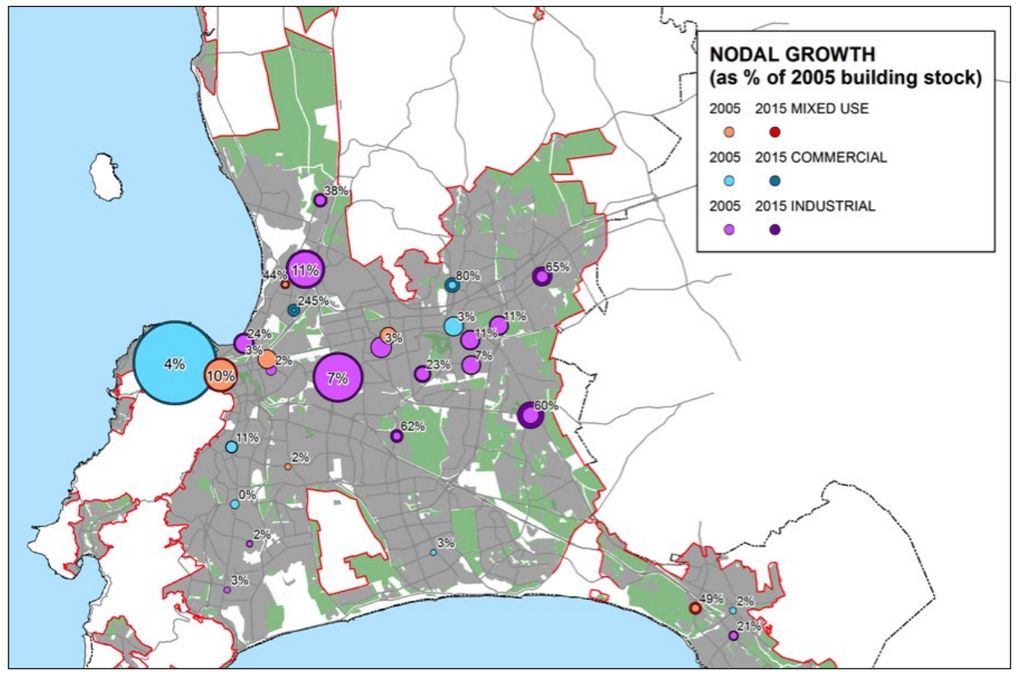
167 TomTom Traffic Index, 2016.

Figure 2.20: Industrial location potential in Cape Town, 2015



Source: *City of Cape Town, 2016. ECAMP data platform.*

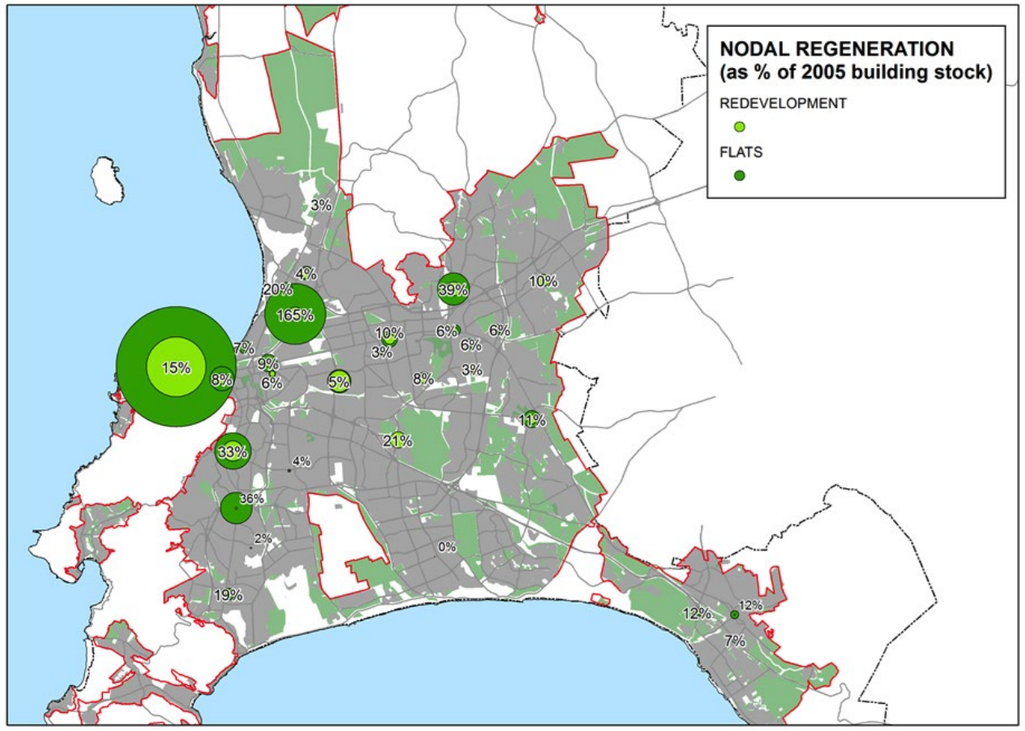
Figure 2.21: Nodal growth in Cape Town: Mixed-use, commercial and industrial, 2005 to 2015



Source: *City of Cape Town, 2016. ECAMP data platform.*

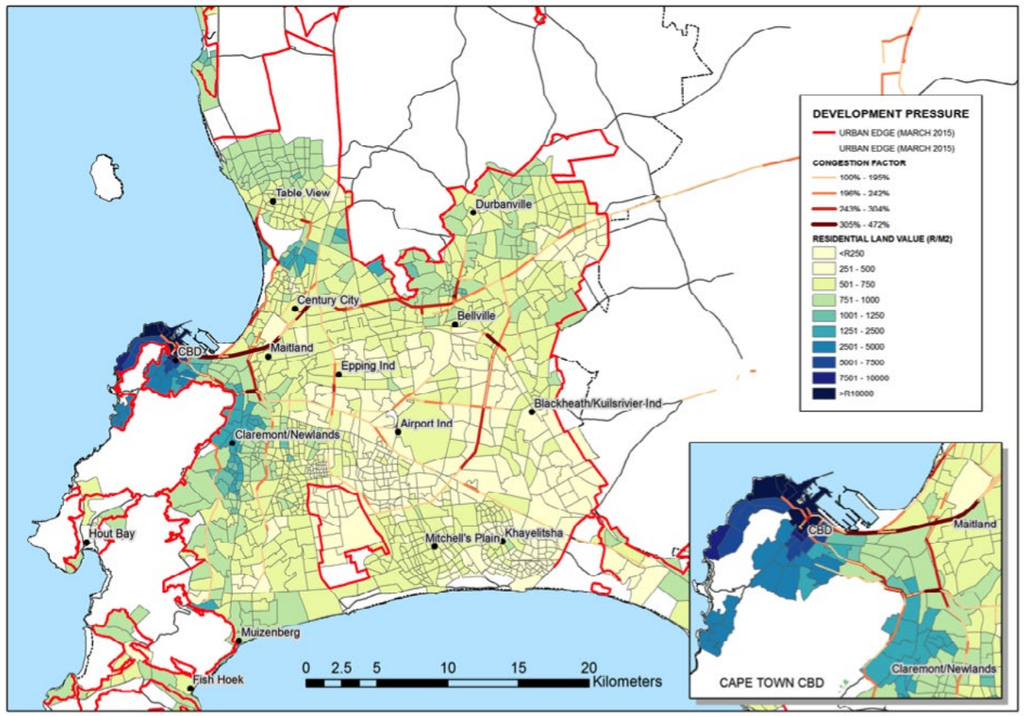
Note: *Circles indicate both size of building stock (size of circle) and proportional growth over ten years of buildings stock (% figure in circle)*

Figure 2.22: Nodal regeneration – redevelopment and flats in Cape Town, 2005 to 2015



Source: Combination of various City administrative sources, including valuation roll and building plan data.

Figure 2.23: Urban land values and congestion in Cape Town



Source: City of Cape Town 2012; 2015e.

Spatial consolidation of higher-order firms, coupled with rising traffic congestion, is resulting in steepening land value gradients from the city centre to the urban periphery, as is shown in figure 2.23.

While by no means unique to Cape Town, steep land value gradients have a powerful effect on neighbourhood sorting and are known to aggravate income segregation in affluent areas and intensify hyper-segregation in poor areas due to selective out-migration. By reducing the cost of transport through the improvement of public transport into the CBD and other congested nodes in the city, the extreme land value gradient will moderate and result in a positive spill-over into adjacent neighbourhoods. Therefore, the City's bold efforts to reduce the cost of transport for Cape Town's working population by prioritising public over private transport have never been more urgent.

There is some promising evidence that the property market is responding positively to the city's strategic shift towards transit-oriented development (TOD), with a significant market-driven push towards medium-density to high-density residential intensification along corridors accessible by public transport, stretching from the CBD towards Claremont and Wynberg. Similarly, the City is facilitating the development of social housing from Salt River along Voortrekker Road as part of its Voortrekker Road corridor project.

9.3 What to expect up until 2020

Figure 2.24 shows where the City expects residential and employment growth to occur up until 2020, based on building plan submissions and land use applications. Despite tentative positive signs, the city-building process (as signified by the building development pipeline) is a slow-moving dynamic with significant inertia. There is continued development pressure on the city's outskirts, most specifically along the so-called West Coast growth corridor. However, this is fortunately being counterbalanced by large residential infill developments.

Clearly, developments in the years up until 2020 will be based on investment and planning decisions taken in the previous approximately five years. Similarly, the strategic decisions made today will only manifest in the built environment in five years or more from now.

10. Economic outlook for Cape Town: Key emerging trends

10.1 Short-term outlook

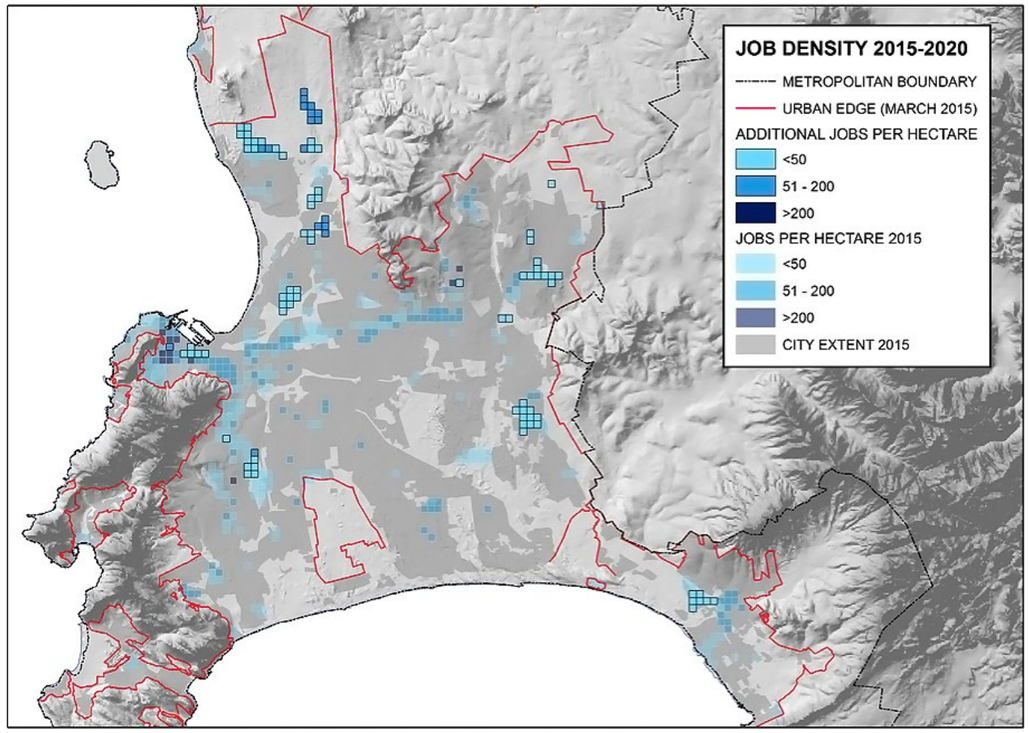
In the short term, a number of factors make it unlikely that the South African economy will soon emerge from its current slump. At a global level, planned tightening of fiscal policy in the United States is likely to have a negative impact on investment levels in emerging economies, while the projected slowdown of the Chinese economy will continue to reduce the level of demand for commodity exports, disproportionately affecting commodity-rich countries such as South Africa. On the domestic front, a severe and prolonged drought, rising inflation and low levels of business and consumer confidence are likely to continue to weigh heavily on economic growth. Considering the aforementioned downside risks to growth, the Bureau of Economic Research (BER) believes that the original growth rate forecast of 0,8% for South Africa for 2016 may be an overestimation of economic performance.[168] Negative quarter-on-quarter growth rates at some stage during the year are certainly possible.

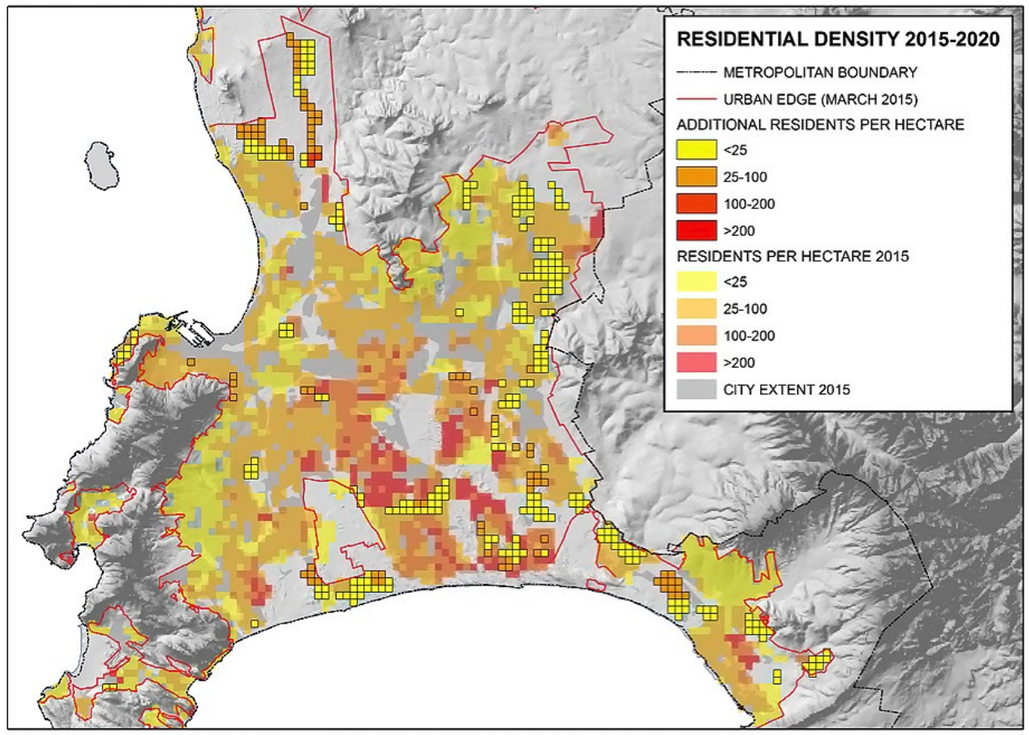
As noted earlier in this chapter, Cape Town – as a fast-growing emerging-economy city – has the opportunity to harness its ever-increasing working-age population, superior productivity derived from economies of scale, and enhanced attractiveness to investors, to rise above the general malaise of the South African economy. This is not guaranteed, however, and a critical factor in placing Cape Town on a higher-growth path will be attracting private-sector investment (both greenfield FDI and existing business expansion) in job-creating sectors.

Over the past year, Cape Town has managed to grow employment strongly enough to accommodate new labour market entrants, and to reduce the unemployment rate among the existing pool of unemployed. However, the city's ability to sustain improvements in the labour market will come under strain as it battles to prevent the spread of national issues to its best-

168 BER, 2016

Figure 2.24: Expected changes to density, 2015 to 2020





Source: City of Cape Town, 2015d.

performing sectors. The finance and construction sectors, which were the big job creators in the fourth quarter of 2015, will particularly struggle to overcome weak levels of consumer confidence, high inflation and a rising interest rate in 2016 and may even shed some jobs.

Cape Town's best approach to facing these headwinds is to remain flexible and see the opportunities inherent in some of the challenges. In this regard, Cape Town's manufacturing exporters should be encouraged to take advantage of the current weakness of the rand to expand their export share. In addition, exported services such as offshore BPO and tourism present a significant opportunity, as they do not depend on domestic consumers, but can leverage Cape Town's locational competitiveness factors to attract international consumers. Tourism in particular, having recently shed unnecessary regulatory burdens, has the potential to really drive growth in 2016/17. The best opportunities for employment growth in the short term certainly appear to lie in tourism and BPO.

While, naturally, some of the growth in the economy will come from the expansion of existing business, the attraction of FDI will be critical. To this end, the City continues to target investment promotion and attraction as a key priority. The revision of the City's investment incentive policy will see incentives for job-creating investment offered in more areas in the city. These incentives may act as a 'sweetener', tipping undecided companies toward investing in Cape Town. Yet, they should in no way be seen as a substitute for creating and maintaining, through effective service delivery, an environment that is inherently attractive to businesses. Cape Town's ability to stand out as a world-class destination in which to do business on the African continent will determine how it weathers the current economic storm.

10.2 Beyond the short term – key trends that will affect industries in Cape Town

While Cape Town's short-term outlook, tied as it is to the national economy, is relatively bleak, its long-term outlook is an open canvass and hinges on the city's ability to adapt to the global megatrends, which are changing the way in which economies produce and distribute wealth.

Rising levels of urbanisation and economies of scale mean that emerging cities will increasingly become the foci of economic growth and job creation. In Cape Town, this is further compounded by intra-city migration in the city's favour. At the upper end of the income spectrum, recent property market data from First National Bank (FNB) reveal that the Western Cape had "by far the strongest net inward migration rate of repeat home buyers from other provinces" (with migration accounting for 12,2% of all repeat home buyers in the Western Cape).[169] This would suggest that Cape Town, being the largest property market in the province by far, is experiencing an increasingly strong influx of skills – a trend that will lend impetus to the city's economy in the medium to long term.

Although Cape Town is, in the words of FNB's chief property economist, "winning the war for skills", the largest proportion of new entrants to the city are young semi-skilled to unskilled individuals. As indicated earlier in this chapter, Cape Town, along with the rest of the country, has entered its demographic dividend window – a period in which an increasing working-age population can be expected to drive increased output. Taking advantage of this window of opportunity over the next 50 years requires enhanced levels of job creation. This can in part be achieved through labour supply interventions aimed at enhancing the skills level of the labour force. However, equally important is to ensure growth in the demand for labour by bolstering the competitiveness of some of the city's key industries.

Some of the industries in which Cape Town currently enjoys comparative advantages will remain growth drivers in the next 20 to 30 years, but some will need to be replaced by industries that exploit growing technological or socio-demographic trends. These industries are affected by a number of cross-cutting global trends, some of which are identified below:

- *The rise of India as a global powerhouse*. A combination of substantial population growth, economies of scale, a strong entrepreneurial drive and world-class information technology (IT) expertise have caused India's economic growth rate to overtake China's, which trend is expected to continue in the long term.
- *Growth of the African middle class*. Africa is forecast to have the world's largest workforce in 2040 and will add 500 million consumers to the global economy in the next 25 years.[170]
- *Increased digital disruption*. The rise of internet connectivity and the internet of things, as well as growth in three-dimensional printing and robotics, will lead to what many describe as the fourth industrial revolution and will necessitate fundamental changes in business practices.
- *Increasing influence of cities*. Cities around the world will become increasingly involved in attracting business, generating trade and facilitating international relations.
- *Raised consumer awareness*. The ability to access information at any time will make consumers increasingly price-sensitive as well as selective in their shopping preferences.[171]

Cape Town industries' response to these broad trends will determine whether the city can indeed take advantage of its demographic window of opportunity in the next 30 to 50 years. The impact of these and other trends on some of Cape Town's key industries is unpacked below:

Business services:

While a significant component of the business services industry in the city depends on existing businesses in other sectors, whether financial, construction or manufacturing, the BPO component largely serves an external market. BPO has been the leading creator of jobs in the city over the past few years. This has predominantly been driven by voice-related services, i.e. call centres. This segment of the industry has a clear, if still somewhat distant, ceiling. Unless the BPO industry in Cape Town can

169 FNB, 2016:2

170 Future Agenda, 2016.

171 Economic Intelligence Unit, 2016: 16.

diversify its offering, it will not be as prominent in ten years' time. However, there is a major opportunity for South Africa to diversify from voice to web, in line with global technological developments, which is being aggressively pursued by some of the large international players operating in Cape Town.[172]

Renewable energy:

Recent government initiatives, such as the Renewable Energy Independent Power Producer Procurement Programme (REI4P), have stimulated the South African renewable-energy industry through incentivising private power producers. Increasingly, however, renewable energy will not need incentives, as costs, driven by improved technology, continue to decline. The cost of solar energy in particular is expected to decrease to a fraction of the cost of fossil fuels in the next decade.[173] This will be further aided by the increasing affordability of energy storage options. Cape Town is already undertaking a number of initiatives to capitalise on this opportunity, prominent among which is the green-technology special economic zone (SEZ) in Atlantis.

Electronics:[174]

The electronics industry is highly dynamic, constantly evolving as new technologies such as three-dimensional printing, virtual reality and the internet of things disrupt the way we do things. The catalyst for a number of these trends is the smartphone, which analysts predict is set to reach 100% penetration in developed countries, with developing countries not far behind.[175] South African spending on consumer electronics is expected to grow at 7,3% a year to $10,6 billion in 2018, mainly driven by smartphone sales, followed by personal computers and mobile handsets. Currently, the domestic market is overwhelmingly supplied by imported products, and there is a large opportunity for locally produced products to penetrate the market. This opportunity also extends beyond South Africa to the rest of sub-Saharan Africa. African markets currently account for 51% of Cape Town's electronic exports, and there is certainly opportunity to further grow exports in the region.

Clothing and textiles:

Having suffered for the past two decades under the spectre of cheap Chinese imports, the clothing and textiles sector in Cape Town is beginning to shrug off its lethargy. The gentrification of China renders it less price-competitive, although other low-cost producers, including Bangladesh and Vietnam, will certainly take its place. What is driving the mini-revival in the clothing and textile industry in the city is not the weakening of competitors, but instead the shifting demand structure of the industry. Fast fashion [176] is the key trend here, with speed to market becoming a critical factor. Cape Town's mix of retail head offices and large-scale manufacturers means that the city's clothing producers can offer a value proposition unmatched by producers in distant countries.

> The sustained growth of the global population will naturally lead to a growing demand for food.

Enhanced production techniques being implemented in Cape Town factories are also leading to increased efficiencies, which target turnaround time as much as cost. Sustained growth in the industry over the long term will however require that South African producers utilise their locational advantage to tap into neighbouring markets.

Agro-processing:

The sustained growth of the global population will naturally lead to a growing demand for food. As with the electronics sector, the rise of the African middle class will increasingly lead to enhanced demand for a wider range of agricultural products to support a more diverse palate. The exceptional growth of wine exports to Angola already points to some of the opportunities that Cape Town's agribusinesses should explore. In addition to a population effect, agribusinesses also need to be aware of the fact that consumers are increasingly well informed. Greater access to information is driving demand for healthier food and back-to-basics production.[177] This will have profound implications for the way in which the agro-processing sector in the city operates and positions itself.

172 City of Cape Town, 2015a.
173 Lacuna Radar, 2016: 6.
174 City of Cape Town, 2015a, except where stated otherwise.
175 Lacuna Radar, 2016: 33.
176 A contemporary term used by fashion retailers for designs rapidly moving from the catwalk in order to capture current fashion trends. See http://www.investopedia.com/terms/f/fast-fashion.asp
177 Lacuna Radar, 2016: 28.

Chapter 2: Economy reference list

Airports Company International. 2013. Available at http://www.aci.aero/Airport-Service-Quality/ASQ-Awards/2013-Winners/Best-Airport-By-Region/Africa.

Airports Company South Africa (ACSA). 2016. Passenger Movements.

Bureau of Economic Research (BER). 2016. *SA escapes technical recession as Q4 posts marginal GDP growth.*

Cape Town International Convention Centre (CTICC). 2015. *Integrated Annual Report.*

Centre for Development and Enterprise. 2014.

Century City Conference Centre and Hotel. 2016. Factsheet.

City of Cape Town ECAMP portal. Available at: http://web1.capetown.gov.za/web1/ECAMP/.

City of Cape Town. 2012. Valuation Roll Administrative Data.

City of Cape Town. 2013. Economic Growth Strategy. Cape Town. Available at http://www.capetown.gov.za/en/IDP/Documents/EconomicGrowthStrategy.pdf.

City of Cape Town. 2014. New Arrivals in Cape Town from outside Western Cape, 2001 – 2011. Cape Town. Available at http://cityapps.capetown.gov.za/sites/ikrc/Document/Cape%20Town%20Migration_New%20Arrivals_122014Final.pdf.

City of Cape Town. 2015a. EPIC – Economic Performance Indicators for Cape Town, 3rd Quarter 2014; 1st Quarter 2015; 4th Quarter 2015. Cape Town.

City of Cape Town. 2015b. *Youth Labour Market Analysis for Cape Town.* Trade and Investment Department: City of Cape Town

City of Cape Town. 2015c. Planning and Building Development Data.

City of Cape Town. 2015d. Land Use Model. Spatial Planning and Urban Design Department.

City of Cape Town. 2015e. emme Transport Model.

City of Cape Town. 2016. ECAMP Platform.

City of Cape Town. 2016. Trade and Investment Department calculations, based on Global Insight ReX Regional data 2014, 2016.

City of Cape Town. 2016. Trade and Investment Department using Financial Times 2015 data.

City of Cape Town. 2016. Trade and Investment Department using Statistics South Africa (StatsSA) Quarterly Labour Force Survey 2016 data.

Clark, C. & Moonen, T. 2014. The 10 Traits of Globally Fluent Metro Areas in Global Cities Initiative. Brookings Metropolitan Policy Program. Available at http://www.brookings.edu/~/media/research/files/reports/2013/06/26-global-metro-traits/the_10_traits_of_globally_fluent_metro_areas.pdf.

Economist. 2016. Economic backgrounder: Brazilian waxing and waning. Available at http://www.economist.com/blogs/graphicdetail/2016/04/economic-backgrounder?zid=305&ah=417bd5664dc76da5d98af4f7a640fd8a.

Economic Intelligence Unit. 2016. Industries in 2016.

Euromonitor International. 2016. White Paper: Economies in 2016. Available at - http://blog.euromonitor.com/2016/02/white-paper-economies-in-2016.html.

Fawley, B.W and Neely, C.J. 2013. Four stories of Quantitative Easing. Available at https://research.stlouisfed.org/publications/review/13/01/Fawley.pdf.

Financial Times Ltd. 2016. Foreign Direct Investment [FDI] Intelligence. London. Available at www.fdimarkets.com.

First National Bank (FNB). 2016. Property Barometer - Western Cape House Price Growth Bucks The Rand Area Trend.

Forbes. 2015. Quantitative Easing In Focus: The U.S. Experience. Available at http://www.forbes.com/sites/greatspeculations/2015/11/16/quantitative-easing-in-focus-the-u-s-experience/#47500b7f3013.

Future Agenda. 2016. Future Insights. Available at http://www.futureagenda.org/insight/africa-growth.

Grant Thornton. 2014. Research on the Monitoring of Trends on the Economic Value of Tourism in Cape Town. Commissioned by the City of Cape Town. Cape Town.

Human Sciences Research Council. 2007. Youth and the Demographic Dividend.

IHS Global Insight. 2016. ReX regional data. ReX Regional Explorer.

International Monetary Fund (IMF). 2016. 'World Economic Outlook: Too slow for too long', April 2016. Available online at - http://www.imf.org/external/ns/cs.aspx?id=29

Kaplan, D. 2013. Policy Gridlock, in CDE Focus. The Centre for Development and Enterprise: Johannesburg.

Lacuna Radar. 2016. Industries under disruption.

McKinsey Global Institute. 2012. Urban world: Cities and the rise of the consuming class.

National Planning Commission (NPC). 2012. National Development Plan 2030: Our future – make it work. Department of the Presidency: Pretoria.

Rabe, C., McGaffin R. and Crankshaw, O. 2015. Towards a Diagnostic Approach to Intra-Metropolitan Spatial Targeting.

South African LED Network. 2013. Informal Economy. Available at http://led.co.za/topic/informal-economy.

SRK Consulting. 2014. Cape Town International Airport Runway Realignment and Associated Infrastructure Environmental Impact Assessment: Final Scoping Report. Available at www.srk.co.za.

Statistics South Africa. 2016. Quarterly Labour Force Survey – 4th Quarter 2015. Pretoria.

TomTom Traffic Index. 2016.

Trading Economics. 2016. Available at http://www.tradingeconomics.com/.

Transnet National Ports Authority of South Africa. 2016. Transnet Port Terminals: Port Statistics.

United Nations Conference on Trade and Development (UNCTAD). 2016. 'World investment Report 2015: Reforming International Investment Governance'. Available at http://unctad.org/en/pages/DIAE/World%20Investment%20Report/WIR-Series.aspx.

World Bank. 2015a. Competitive Cities for Growth and Jobs. Available at http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2016/04/21/ 090224b0842b4f79/3_0/Rendered/PDF/Competitive0ci000what00who00 and0how.pdf.

World Bank. 2015b. South Africa Update. Available at http://www-wds.worldbank.org/external/default/WDSContentServer/ WDSP/IB/2015/08/14/090224b08307421f/1_0/ Rendered/PDF/South0Africa0e0hanging0 demographics.pdf.

World Bank. 2016. 'Russia Economic Report 35: The Long Journey to Recovery'. Available at http://www.worldbank.org/en/ news/press-release/2016/04/06/russia-economic-report-35.

http://www.investopedia.com/terms/f/fast-fashion.asp

http://www.investopedia.com/terms/r/realgdp.asp

http://www.southafrica.info/business/trade/ports-investment-090316.htm#.Vxck6_l96Uk

http://www.timeslive.co.za/local/2016/03/17/Cape-Town-International-rated-as-Africa%E2%80%99s-top-airport.

CASE STUDY

City of Cape Town Urban Development Indicator Framework

Overview

The purpose of the City's Urban Development Indicator Framework (currently an internal City administrative resource) is to support and facilitate the collection, maintenance, monitoring, analysis and reporting of indicators pertaining to Cape Town's development profile by various City directorates and departments.

Typically, a core set of indicators is used to monitor and communicate data on the status and progress of an entity – in this case, Cape Town. As the focus is on the city and its residents, urban development indicators are aimed at the medium-term to longer-term outcomes and effects of various development actors' actions on Cape Town and its residents.

Through monitoring and tracking this core indicator set for Cape Town, the City's urban analysts and decision-makers in a range of institutional contexts can shape their development strategies for the city or parts thereof.

How does the framework contribute to an improved understanding of urban development in Cape Town?

Such a core set of urban development indicators draw on intersecting bodies of knowledge (such as human development, urban development, sustainable development, social development and economic development). The key indicators allow measurement of status (for a time period, usually annually) and change (using trends analysis) against stipulated baselines for a specific set of development challenges in Cape Town.

What value can it add – or has it added – to the City's operations?

The focus on urban development indicators allows for awareness of and coordination around different indicator work currently under way in the City, in which most directorates and departments are actively engaged – and builds a better understanding of how the different indicators and related processes fit together and align.

Urban development indicators linked to a results/outcomes-based approach are distinguished from the City's organisational performance indicators, which are required by legislation, form part of the organisational performance management system and are reflected in corporate and directorate service delivery and budget implementation plans. Performance indicators are usually focused on short-term input and output, with minimum outcome indicators.

Methodology

This project was initiated by the DI&GIS Department to guide the conceptualisation, development and implementation of urban development outcome and impact indicators for Cape Town.

Within the City, the project is based on engagement and collaboration with indicator custodians in various directorates and departments in order to agree on the relevant outcome or impact indicators to track for Cape Town, given its development profile; feasible objectives, given the available data, as well as possible future indicators to include, along with the systems and data needed to track them.

Through such engagement with indicator custodians, who constitute a working group, a core set of indicators was agreed for tracking and reporting within and by the City. The indicators were primarily selected because they were considered to be 'core' indicators and would not duplicate current indicator reporting.

The next phase of implementation is to review and prioritise new indicators to add, based on agreed selection criteria, such as whether the addition would address an indicator reporting gap, indicator data availability, etc. The next set of urban development indicator engagements may also include proposals for new data collection systems in order to collect urban development indicator data not currently available.

Value-adding impact

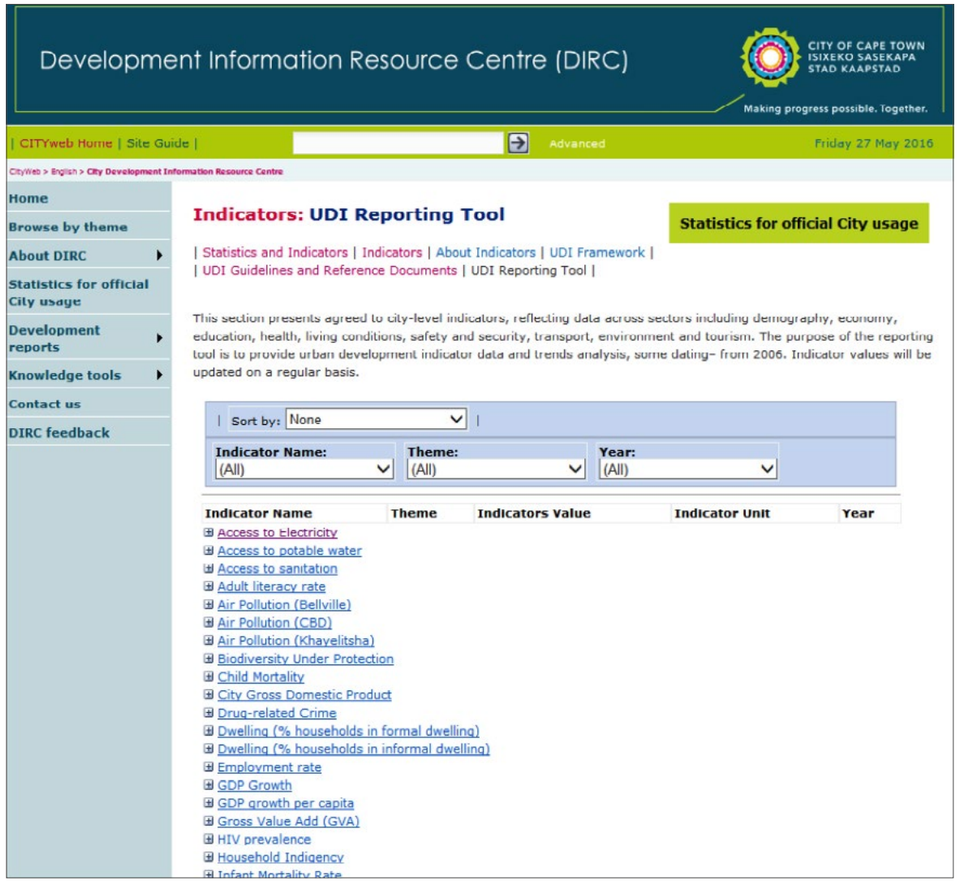
The improved understanding of the difference between organisational performance indicators and urban development indicators helped shape the Integrated Development Plan Office's approach to undertaking a high-level impact analysis of the current IDP term-of-office (ToO) plan.

Lessons drawn from the preparation of the Urban Development Indicator Framework and the engagement on medium-term to longer-term indicators in the City have manifested in the City's Built Environment indicator process (as part of the Built Environment Performance Plan), the 2015/16 implementation of the IDP ToO (2012-2015) impact analysis, and the City's participation in an international pilot of the draft SDG 11 indicators. The engagements have also helped generate deeper awareness of urban development indicators, the range of technical aspects relating to indicators and, importantly, the need for a longer-term focus on outcome and impact indicators for the City. Through these engagements, DI&GIS is developing specialised knowledge and excellence in the field of urban development indicators.

DI&GIS team members also shared lessons and insights from the City's urban development indicator experience on international platforms and through scholarly articles. The former included a workshop in Gothenburg in June 2015 where international scholars reviewed the findings of the draft SDG 11 indicators pilot implemented in Cape Town and four other cities in Kenya, India, Sweden and the United Kingdom. Articles appeared in the journal *Environment and Urbanization*.

Way forward

With the support of the Information Services and Technology Directorate, DI&GIS is currently reconceptualising the existing urban development indicator reporting tool in order to develop a dynamic reporting tool with analytical capabilities, which will be available internally for City colleagues, and eventually to external users.



Chapter 3: Natural wealth

1. Introduction 72
2. Cape Town's environmental challenges 72
3. Air quality 73
   3.1 Key issues 73
   3.2 Data, trends and analysis 73
4. Energy 74
   4.1 Key issues 74
   4.2 Data, trends and analysis 75
   4.3 Cape Town's energy breakdown by sector, 2012 77
5. Biodiversity 78
   5.1 Key issues 78
   5.2 Data, trends and analysis 78
6. Water quality 82
   6.1 Coastal water quality 82
   6.2 Inland water quality 84
   6.3 Drinking water quality 85
7. Water resources and use 86
   7.1 Key issues 86
   7.2 Data, trends and analysis 87
8. Solid waste management 87
   8.1 Key issues 87
   8.2 Data, trends and analysis 88
9. Future Cape Town 90
   9.1 The future outlook for air quality 90
   9.2 The future outlook for energy 91
   9.3 The future outlook for biodiversity 91
   9.4 The future outlook for water quality (including coastal water quality, inland water quality and drinking water) 91
   9.5 The future outlook for water resources and use 92
   9.6 The future outlook for solid waste management 92
   9.7 Summary 93
Chapter 3: Natural wealth reference list 93
Specialist analysis 94
Case study 96

Climate change effects pose further challenges through the risk of rising sea levels and the associated impact on the low-lying urban and coastal environments.

1. Introduction

Successful cities provide stimulating environments for their inhabitants, without making unsustainable demands on natural resources and ecosystems. Such cities meet multiple goals, including providing living and working environments that promote health and well-being, and support a prosperous economic base. These cities also work to ensure a sustainable relationship between the demands of residents and businesses, and the resources and ecosystems on which they depend. This achievement requires an understanding of the link between the city's built environment, the physical environment in which it is located (including soils and landforms, water resources and climate) and the biological environment (including indigenous biodiversity), as well as how all of these are changing. Such an understanding is essential if environmental hazards are to be minimised and environmental capital effectively conserved.[178]

The importance of the environmental agenda in the urban context is widely recognised, both internationally (for example through the SDGs and the New Urban Agenda) and locally. South Africa's natural resources and environment, for example, make the country unique and attract international business, science and tourist interest. Many South African cities are also known for either their natural resources or unique environment, if not both.

In December 2015, South Africa joined a number of other countries in committing to a new international climate agreement at the Conference of the Parties (COP 21) in Paris (through South Africa's intended nationally determined contributions) to ensure that temperature increases are kept below 2°C. The agreement is expected to potentially have implications for the urban context, but would likely be in line with the objectives of both the SDGs and the New Urban Agenda.

This chapter presents Cape Town's environmental challenges that affect both the natural environment and the people of the city. The chapter focuses on air quality, energy consumption, biodiversity, water quality, water use and waste management. Several significant environmental challenges currently face the City, including climate change, waste and pollution, resource depletion, and biodiversity and ecosystem loss. Drought and global climate change impacts are increasingly significant for the City, as they have negative long-term effects on ecosystems, health and service delivery.

2. Cape Town's environmental challenges

Cape Town's natural assets and biological diversity are part of what makes the city a unique and desirable place in which to live and work.[179] However, wetlands, watercourses, beaches, high-potential agricultural areas, cultural landscapes and scenic views are all being degraded by rapid and uncontrolled urbanisation.[180]

Climate change effects pose further challenges through the risk of rising sea levels and the associated impact on the low-lying urban and coastal environments. It further contributes to changing rainfall patterns and temperature extremes, negatively affecting water resources and biodiversity, as well as food security.[181] The frequency and intensity of extreme weather events are also driven by climate change and cause significant storm damage in the city, which results in significant infrastructural costs and economic losses.[182] Between 2004 and 2013, the 1-in-100-year flood occurred three times in various parts of Cape Town.[183] Such extreme weather events are expected to become more frequent and intense in future.

The following sections will cover the challenges facing Cape Town's environment in the following fields:

- **Air quality**
- **Energy**
- **Biodiversity**
- **Water quality**
- **Water use**
- **Solid waste management**

178 Hardoy et al., 1992.

179 City of Cape Town, 2012a.

180 City of Cape Town, 2011a.
181 Oxfam, 2014.
182 Midgely et al., 2005.
183 City of Cape Town, 2014a.

3. Air quality

3.1 Key issues

Clean air is a basic requirement for human and environmental well-being; yet, air pollution[184] poses a significant threat worldwide. Air pollution comprises a number of different pollutants, and measuring these becomes a technical and expensive activity. In this context, key pollutants termed "criteria pollutants" are often chosen as indicators of general air pollution. Criteria pollutants are related to certain activities (e.g. fuel emissions and wood burning) that produce other pollutants, and therefore, the presence of one is an excellent indicator of the presence of the other. The National Environmental Management Air Quality Act 39 of 2004 stipulates that three main criteria pollutants need to be measured and reported. These include particulate matter smaller than ten microns in size (PM_{10}), sulphur dioxide (SO_2) and nitrogen dioxide (NO_2). This report will focus on PM_{10} due to its significant impact on human health.

Particulate matter (PM_{10}) is a mixture of suspended microscopic solid particles and liquid droplets, which could consist of a number of inorganic or organic materials.[185] PM_{10} can be the product of various activities. In Cape Town, the most common sources of PM_{10} pollution are diesel vehicle emissions, wood and fuel burning, and dust from construction activities as well as unpaved roads and verges.

PM_{10} particles are microscopic in size (one tenth of the diameter of a human hair), which makes them easy to inhale. PM_{10} can cause lung irritation and aggravate existing lung disorders and diseases, such as asthma and TB. It has also been linked to cardiovascular problems.

Air pollutant concentrations are measured against an acceptable average annual level as well as an acceptable daily or hourly level of the pollutant. Each pollutant is also assigned a "frequency of exceedance value", which denotes the maximum number of times that the level may be exceeded at each measuring site, both daily and annually. This report focuses on daily exceedances and annual average measurements of PM_{10} in Cape Town.

Most sites in Cape Town meet the South African national standard for PM_{10} levels, with only Khayelitsha exceeding it in some years.

Before 2009, the City measured air quality according to the United Kingdom air quality standards, as set by that country's Department of Environment, Food and Rural Affairs. In 2009, however, the South African Department of Environmental Affairs released the National Ambient Air Quality Standards, which contain guidelines on acceptable levels of pollutants. The new South African standards are very similar to the United Kingdom standards, with only the PM_{10} standard differing significantly. The City continues to monitor and report against both the United Kingdom and South African standards for PM_{10}, as this provides a useful basis for comparison with both other countries and previous years.

The World Health Organization (WHO) guideline for PM_{10} is also presented in this report for comparison purposes. The WHO guideline is based on the level of pollution at which it has been determined that the health effects of PM_{10} become negligible or immeasurable. This WHO PM_{10} guideline should not be seen as a mandatory standard, but as a goal to be pursued. It is difficult to set a definitive guideline for PM_{10}, as different places have different conditions, and individuals react differently to particulate substances in the air. Therefore, the process of standard-setting needs to be contextual and must take into account situational factors, public health priorities as well as capabilities and constraints.

The guidelines and standards for PM_{10} are as follows:

a) South African ambient air quality standards

- Annual average: No more than 50 µg/m^3
- Daily average: No more than 120 µg/m^3
- Annual limit of exceedances of daily average: 4 per site

b) United Kingdom standards and WHO guideline

- Annual average PM_{10} level (WHO guideline): No more than 20 µg/m^3
- Daily average (United Kingdom standard): No more than 75 µg/m^3
- Annual limit of exceedances of daily value (United Kingdom standard): 35 per site

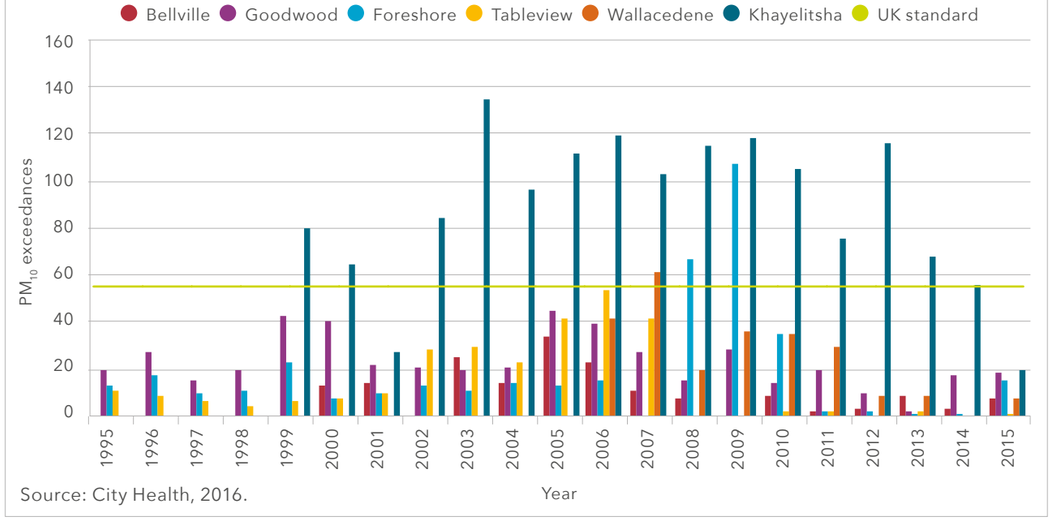
3.2 Data, trends and analysis

It is difficult to determine general trends for Cape Town, as air pollution is often seasonal and localised, and can fluctuate significantly at each site. Generally, most sites in Cape Town meet the South African national standard for PM_{10} levels, with only Khayelitsha exceeding it in some years. However, almost all sites have exceeded the WHO guideline in almost all years since 1995, which shows that there is significant room for improvement. Importantly, as mentioned above, the WHO guideline should be seen as a goal to strive for, with most large cities around the world having been unable to meet it thus far.

When measured against the 75 µg/m^3 United Kingdom daily standard (figure 3.1), only Khayelitsha and the Foreshore have experienced significantly more than the limit of 35 exceedances since 2008. In contrast, there has been a general downward trend since 2010 in areas such as Bellville, Goodwood, Table View

184 Air pollution can be defined as the introduction of chemicals and other substances into the air that have a harmful effect on the environment and living creatures, including humans (City of Cape Town, 2014c).
185 Materials such as ammonia, sodium chloride, water, sulphates, mineral dust, soil, dust or pollen (City of Cape Town, 2014c).

Figure 3.1: PM_{10} exceedances in Cape Town following the United Kingdom guideline, 1995 to 2015



Source: City Health, 2016.

and Wallacedene, which are all well below the limit of 35 exceedances. In terms of the number of exceedances of the daily PM_{10} South African standard (figure 3.2), the city has generally performed well. Since 2009, only Khayelitsha – with nine exceedances – and Wallacedene – with 29 exceedances – have failed to comply with the maximum limit of four exceedances of the 120 µg/m³ daily standard.

Spikes in air pollution concentrations in a particular year can generally be attributed to specific events, such as a large fire or significant construction activity near the monitoring station, or the influence of local weather conditions.

Meeting the PM_{10} standards continues to be a challenge, particularly in Khayelitsha. While it is important that all forms of air pollution remain under control, the City is especially concerned about the levels of particulate matter pollution, especially in the poorer suburbs of Cape Town. The relatively high level of TB infection in poorer areas is a significant public health concern. Although PM_{10} does not cause TB, it can aggravate the condition in infected individuals. In the summer months, PM_{10} pollution in Khayelitsha primarily consists of dust, which is exacerbated by unpaved roads and verges as well as open spaces with little vegetation. In the winter months, vehicle emissions and smoke from cooking and heating fires are the primary source of PM_{10}. Similar sources also affect the city's other informal settlements. However, it is evident from figure 3.2 that since the establishment of the Khayelitsha Air Pollution Strategy in 2007, there has been a remarkable reduction in exceedances, particularly from 2012 onwards.

4. Energy

4.1 Key issues

In response to the global challenge of climate change, cities around the world are increasingly realising the importance of reducing their carbon (CO_2) emissions. As almost all aspects of daily life in cities are linked to the burning of fossil fuels, the transition towards creating a low-carbon city requires enormous commitment. Local governments have an important role to play in supporting this commitment through local policies and action plans. In order to gauge the effects of any mitigation actions, it is important to understand the carbon emissions profile and carbon footprint of the city – how big it is, and which sectors contribute to it. This informs strategic planning and appropriate responses.

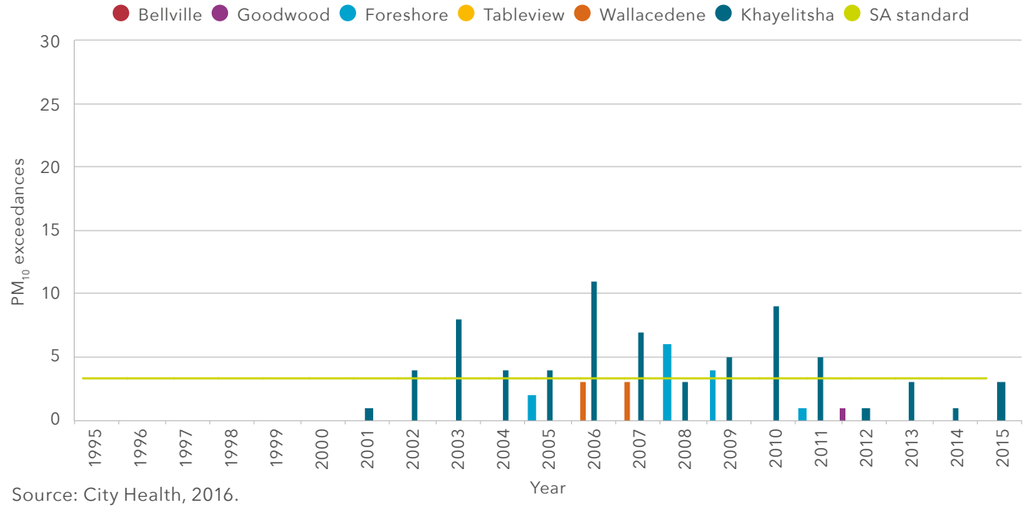
This section draws on the City's 2015 State of Energy report. The purpose of the Cape Town State of Energy report is that it provides the background information to guide the City's strategy development in relation to energy and development in Cape Town. The data-gathering exercise is also a means to monitor progress towards existing targets, and to support the redefinition of goals and targets going forward. Increasingly, global cities such as Cape Town are expected to report on international platforms with regard to their greenhouse gas emissions status.[186]

Cape Town's total annual energy use, calculated in 2012, was around 141 million GJ (gigajoule), proportionally slightly lower than its relative contribution to the provincial and national population as well as economic production. The major fuels supplying the Cape Town energy market are electricity and fossil-based liquid fuels, predominantly petrol and diesel. Electricity is almost entirely supplied by the state-owned enterprise Eskom, whose fuel supply is predominantly (approximately 95%) coal-derived, with the nuclear power station at Koeberg comprising the remaining 5%.

In 2012, Cape Town's emissions per capita were 5,2 tonnes CO_2. This indicator is not updated annually, as data are onerous to obtain. The reduction in per-capita emissions

186 City of Cape Town, 2015.

Figure 3.2: PM_{10} exceedances in Cape Town following the South African standard, 1995 to 2015



Source: City Health, 2016.

levels from the 2007 baseline to 2012 is attributable to emission factor changes, the drop in electricity consumption in Cape Town, alongside population growth among lower-income (and less energy-intensive) groups. Cape Town's CO_2 footprint, although lower than the national average, is substantial compared to those of developing cities with similar economies and is even higher compared to many developed cities, primarily due to the fact that almost all electricity used in the city is from national coal-generated power.

In South Africa, more than 70% of primary energy, more than 90% of electricity and a third of liquid fuels are derived from coal. South Africa produces in excess of 255 million tonnes of coal per year. Transport continues to dominate energy consumption in Cape Town. This is made up of passenger, commercial, industrial (petrol and diesel) as well as aviation and marine transport. The city has a large harbour and an international airport, which accounted for approximately 11% of total energy and 17% of total transport energy in 2012.

Cape Town is confronted by multiple and interconnected energy challenges, including a comparatively large carbon footprint, national electricity supply insecurity, rising and volatile energy costs, widespread energy poverty, and poor dormitory residential areas with challenges regarding access to energy services. As with the rest of South Africa, all sectors of Cape Town's society have been very energy-inefficient in their practices due to a history of cheap and abundant electricity. The above challenges have created an urgent need to improve energy efficiency, diversify energy supply, and work with National Government and Province on projects to improve Cape Town's energy security.

In 2011, the City published its Action Plan for Energy and Climate Change,[187] which demonstrated the administration's commitment to meeting these challenges. In 2014, Cape Town won the Global Earth Hour capital award for its energy and climate efforts, competing against 163 other cities.

The City has laid a strong institutional foundation for sustainable energy development. By 2015, the administration had installed over 220 smart meters in its buildings and facilities in order to monitor its own energy consumption. A range of energy-efficiency projects and initiatives have also been undertaken, including traffic and streetlight retrofits, energy-efficient building retrofits, the training of building managers, the establishment of a commercial energy-efficiency forum, and campaigns on energy-efficiency behaviour and efficient water heating. Renewable independent power production is a national growth area. The City has begun to introduce rooftop photovoltaic (PV) installations on some of its own buildings in order to offset electricity consumption. In this way, the City is leading by example and is also gaining hands-on experience of the practicalities relating to small-scale embedded generation systems. New policy commitments within the City are aimed at developing larger-scale embedded generation and alternative energy sources, such as gas.[188]

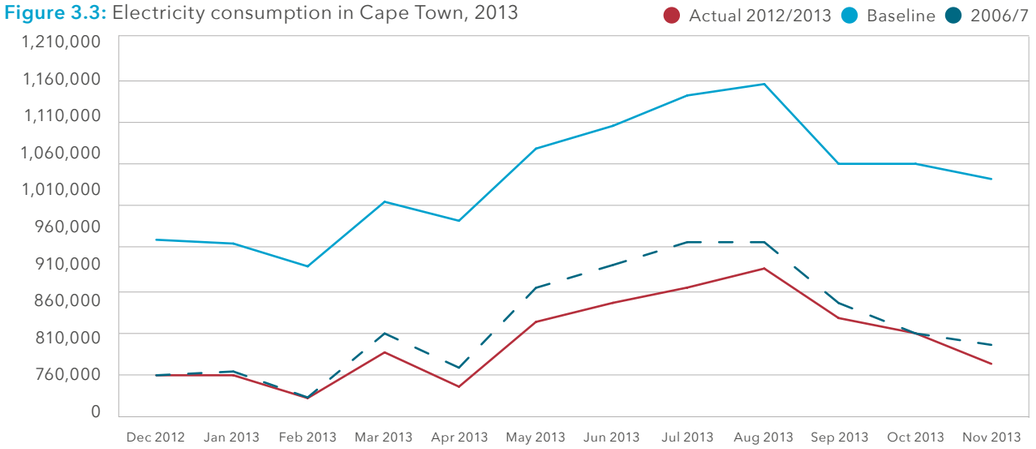
4.2 Data, trends and analysis

Economic growth and energy show similar overall growth trends, but changes in the economic growth rate do not appear to have an immediate or absolute/direct impact on energy demand. The economic impact of changes in the energy sector, notably price changes, and the consequent change in energy demand is a new area of analysis. The Cape Town data indicate that the residential sector has responded quickly to changing electricity prices, although other sectors

187 City of Cape Town, 2011b.

188 Ibid.

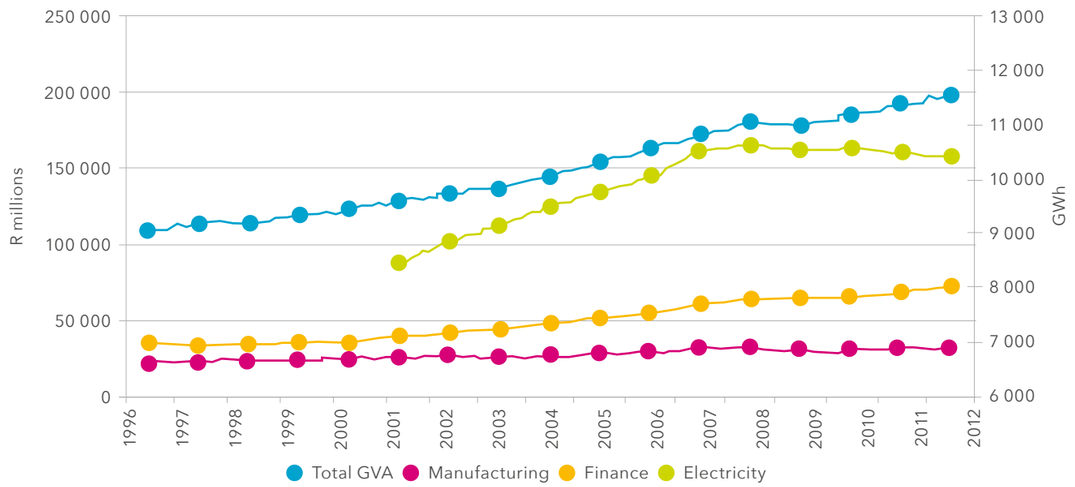
Figure 3.3: Electricity consumption in Cape Town, 2013



	Dec 2012	Jan 2013	Feb 2013	Mar 2013	Apr 2013	May 2013	Jun 2013	Jul 2013	Aug 2013	Sep 2013	Oct 2013	Nov 2013
Actual 2012/2013	811,648	811,251	781,625	837,944	798,187	870,376	892,975	913,124	936,726	875,772	858,391	821,535
Baseline	971,747	967,995	937,499	1,015,254	994,681	1,075,843	1,105,814	1,140,586	1,153,852	1,058,647	1,060,491	1,043,029
2006/7	809,106	815,724	783,623	860,967	817,387	910,370	937,688	966,230	966,673	896,343	856,572	843,598
% Saving achieved	16,5%	16,2%	16,6%	17,5%	19,8%	19,1%	19,2%	19,9%	18,8%	17,3%	19,1%	21,2%

Source: City Electricity Services, 2013.

Figure 3.4: Cape Town's economy vs electricity sales growth, 1996 to 2012



Source: Sustainable Energy Africa, 2013.

have not shown a dramatic drop in demand. Coal suppliers do indicate that they have been witnessing a fuel switch, with industrial customers replacing electricity with coal, where feasible.[189]

Cape Town has experienced an absolute and unprecedented decline in electricity consumption in the period 2007 to 2013. In 2010, total annual electricity consumption was 10 556 gigawatt per hour (GWh). By 2011, electricity use had reduced to 10 488 GWh, to 10 431 GWh in 2012, and to 10 200 GWh in 2013. Over the period April 2013 to April 2014, consumption was consistently 20% (2 446 GWh) below the business-as-usual baseline (projected at a 3,3% annual increase on the 2006/7 baseline) and is now even below 2006/7 consumption (see figure 3.3).

According to independent research, the City's programmes and projects relating to energy efficiency and behaviour change have played a significant role in reducing electricity use. It is however difficult to disaggregate the City's role in electricity consumption reduction from the effects of electricity price increases as well as other electricity-efficiency drives, such as those by Eskom.

Since 2007, a number of changes have occurred that have contributed to the notable decrease in electricity use in the city. These changes are

189 Ibid.

> The transport sector is the largest consumer of energy and any attempt to reduce energy consumption would require increased investment.

resulting in a longer-term reduction in CO_2 emissions. Evidence shows that Cape Town has managed to decouple electricity consumption from economic growth. Cape Town's 2012 annual electricity consumption (also using electricity sales as the indicator) is below its 2007 levels, in the context of steady growth in Cape Town's gross domestic product (see figure 3.4).

4.3 Cape Town's energy breakdown by sector, 2012

Cape Town's energy breakdown by sector indicates that energy use is dominated by transport (which consumes approximately 64% of total energy), followed by the residential (12%), commercial (13%), industrial (8%), local government (1%) and agriculture (<1%) sectors (see figure 3.5).

However, although the transport sector consumes the largest share of energy (64%), it is only responsible for 35% of CO_2 emissions, while the residential and commercial sectors produce comparatively higher CO_2 emissions. This is due to the carbon intensity of coal-based electricity generation (see figure 3.6).

Residential sector: Cape Town's residential sector accounts for 12% of total energy use and 37% of total electricity use, with an annual use of 23 486 363 GJ. The residential sector predominantly uses electricity as a fuel source. Paraffin, liquid petroleum gas (LPG) and wood are also used, although mostly in lower-income households. The amount and types of energy consumed by households vary according to income level. Low-income households, which make up 47% of all households, contribute only 24% of total residential energy use. On the other hand, high-income or very high-income households, which make up only 26% of total households, use 46% of all residential energy. This indicates Cape Town's energy inequality, where many households and communities live in energy poverty, with limited access to and ability to afford basic energy services, while high-end residential users consume a significant proportion of Cape Town's total energy.

Industrial sector: The industrial sector's share of energy use in Cape Town (8%) is considerably smaller than the rest of South Africa's industrial use (up to 41% in some areas). This is because the city's economy is less dependent on the primary sector. Instead, it is predominantly made up of the tertiary sector. Cape Town's economy is largely service-oriented, with a large contribution from tertiary-sector services, including financial and insurance services, real estate, government and social services. While Cape Town has some nodes of light industrial activity, there is very little heavy industry in the city.

Transport sector: Over half of Cape Town's total energy is consumed by the transport sector. Transport accounts for a far greater proportion of Cape Town's energy use than in the rest of South Africa (approximately 28%). However, the transport sector accounts for significantly less carbon emissions than other sectors. Despite high private vehicle usage among Capetonians, the transport sector is responsible for only 35% of Cape Town's total carbon emissions, as petroleum fuels have lower carbon intensity than coal-based electricity. Currently, private vehicles dominate passenger transport, comprising 48% of the total passenger kilometres travelled in the city. Extending and promoting affordable and sustainable public transport is therefore a key priority to encourage modal shifts and reduce Cape Town's transport-related carbon footprint.

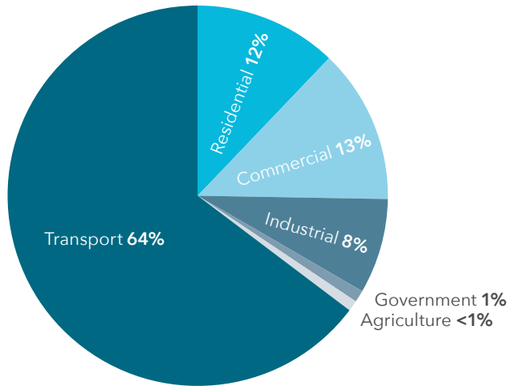
Commercial sector: The commercial sector accounts for 13% of energy use, of which 94% is electricity. As with the residential sector, the commercial sector's dependency on coal-based electricity as its primary energy source accounts for its high carbon intensity, being responsible for 28% of total carbon emissions. The commercial sector includes retail and office buildings, tourism activities, education facilities, hospitals and other non-industrial activities.

Local government: The local government sector (the City itself) accounts for only 1% of total energy consumed in Cape Town, and 2% of carbon emissions. However, local government – as a single organisation – is the single largest

user of energy. Accordingly, it has a significant role to play through leading by example and reducing its own use. This will save the City money and reduce pressure on the public funds required to meet the energy needs of Council operations.

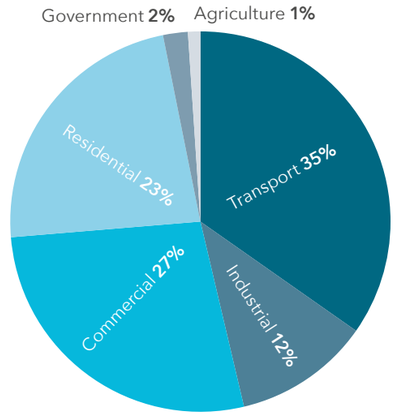
Cape Town's population is consuming electricity more efficiently, which reflects the positive impact of the City's energy-saving campaign. However, since the transport sector is the largest consumer of energy, any serious attempt to significantly reduce energy consumption would require increased investment in innovative, sustainable transport modes – particularly public transport infrastructure. This is attended to through the establishment of Transport for Cape Town (TCT), the City's transport authority, which has as its mandate the requirement to regulate efficient, safe, integrated, intermodal and interoperable transport systems.[190] However, new technologies and prototypes elsewhere in the world may also provide fresh opportunities for transport planning in this respect, such as the driverless car[191] or China's proposed "straddling bus".[192]

Figure 3.5: Energy use by sector, 2012



Source: City of Cape Town, 2015

Figure 3.6: $C0_2$ emissions by sector, 2012



Source: City of Cape Town, 2015

5. Biodiversity

5.1 Key issues

Cape Town has a rich biological diversity and is known for its natural beauty. The city is located in one of the world's six plant kingdoms – the Cape Floristic Region (CFR). The CFR, a recognised United Nations Educational, Scientific and Cultural Organization (UNESCO) world heritage site, is the smallest yet most biologically diverse of all the plant kingdoms. The CFR has one of the highest proportions of endemic species in the world, with over 70% of its approximately 9 600 plant species found nowhere else, and has been officially identified as a global biodiversity hotspot. This designation recognises it as one of the planet's 25 most threatened ecosystems, and places an international responsibility on all spheres of government to ensure its adequate conservation.

Managing such threatened biodiversity in an urban context is complex. Over two thirds of the natural vegetation types are classified as either endangered or critically endangered, while over 300 of Cape Town's plant species are threatened with global extinction.[193]

Cape Town has six endemic vegetation types, which means that they can only be conserved within the boundaries of Cape Town. Some of these vegetation types are critically endangered, and remnants will need to be conserved both within and outside the urban edge. Cape Town is a unique example of a city where biodiversity must be conserved as part of the urban fabric and must be fully integrated into present and future spatial and related planning.

5.2 Data, trends and analysis

As table 3.1 shows, levels of biodiversity loss as well as levels of conservation vary widely from one vegetation type to the next. Over 60% of the original extent of Cape Town's natural vegetation has been lost, mostly in the lowlands. Of those vegetation types that were historically most extensive, significant amounts have been lost, namely 85,7% of Cape Flats sand fynbos, 91,9% of Swartland shale renosterveld, and 46,4% of Cape Flats dune strandveld (including 72,6% of the False Bay subtype). Lowland vegetation types are also least likely to be well protected, and face significant pressure from urban development. Mountainous vegetation types are most likely to be well protected, and comprise

190 http://www.tct.gov.za/en/home/.
191 See for example Romem, 2013: 11-14.
192 See for example Poon, 2016.
193 City of Cape Town, 2014c.

Cape Town has experienced an absolute and unprecedented decline in electricity consumption in the period 2007 to 2013.

Table 3.1: Remaining natural vegetation in Cape Town, by type, 2015

National vegetation type	Historical extent (ha)	Remnant extent (ha)	% remaining	Extent proclaimed	Target: (% of original)	% original proclaimed	% remnant proclaimed	National ecosystem status 2014
Atlantis sand fynbos	25 177	15 200	60,4%	634	30%	2,5%	4,2%	CR
Cape Flats sand fynbos	54 335	7 765	14,3%	959	30%	1,8%	12,3%	CR
Elgin shale fynbos	841	327	38,9%	325	30%	38,7%	99,4%	CR
Kogelberg sandstone fynbos	9 435	9 207	97,6%	8 216	30%	87,1%	89,2%	CR
Lourensford alluvium fynbos	3 585	290	8,1%	9	30%	0,2%	3,0%	CR
Peninsula granite fynbos - north	2 070	1 478	71,4%	992	30%	47,9%	67,1%	CR
Peninsula granite fynbos - south	7 158	2 435	34%	1 783	30%	24,9%	73,2%	CR
Peninsula shale fynbos	1 263	660	52,3%	654	30%	51,8%	99,1%	CR
Peninsula shale renosterveld	2 384	276	11,6%	245	26%	10,3%	88,8%	CR
Swartland alluvium fynbos	1 734	68	3,9%	0	30%	0%	0%	CR
Swartland granite renosterveld	7 292	1 875	25,7%	136	26%	1,9%	7,3%	CR
Swartland shale renosterveld	47 316	3 841	8,1%	581	26%	1,2%	15,1%	CR
Swartland silcrete renosterveld	1 091	175	16,1%	4	26%	0,4%	2,3%	CR
Cape Flats dune strandveld - False Bay	27 823	7 631	27,4%	2 651	24%	9,5%	34,7%	EN
Cape Flats dune strandveld - West Coast	13 006	10 383	79,8%	2 597	24%	20%	25%	EN
Hangklip sand fynbos	3 295	1 851	56,2%	1 381	30%	41,9%	74,6%	EN
Peninsula sandstone fynbos	21 936	21 061	96%	17 726	30%	80,8%	84,2%	EN
Boland granite fynbos	9 379	5 645	60,2%	299	30%	3,2%	5,3%	VU
Cape Winelands shale fynbos	4 006	2 279	56,9%	1 373	30%	34,3%	60,2%	VU
Southern Afrotemperate forest	348	345	99,2%	286	34%	82,3%	82,9%	LT
Western coastal shale-band	317	316	99,8%	298	30%	94%	94,2%	LT

Note: *CR = critically endangered; EN = endangered; VU = vulnerable; LT = least threatened.*
Source: *City Environmental Resource Management Department, 2016a.*

significant portions of Table Mountain National Park.

Of the 21 vegetation types or subtypes present in the city, 13 are classified as critically endangered. For nine of these types, it is impossible to meet the national conservation targets, as less than the target extent of each remains. Another four vegetation types are classified as endangered, two as vulnerable, and two as least threatened. Of the 21 critically endangered South African vegetation types, 52% are found in Cape Town. Cape Town also has a high incidence of threatened species, with 18% of the country's threatened species found in the city, despite it comprising only 0,1% of the country's surface area, while 13 plant species are already extinct.[194]

194 Rebelo et al., 2011.

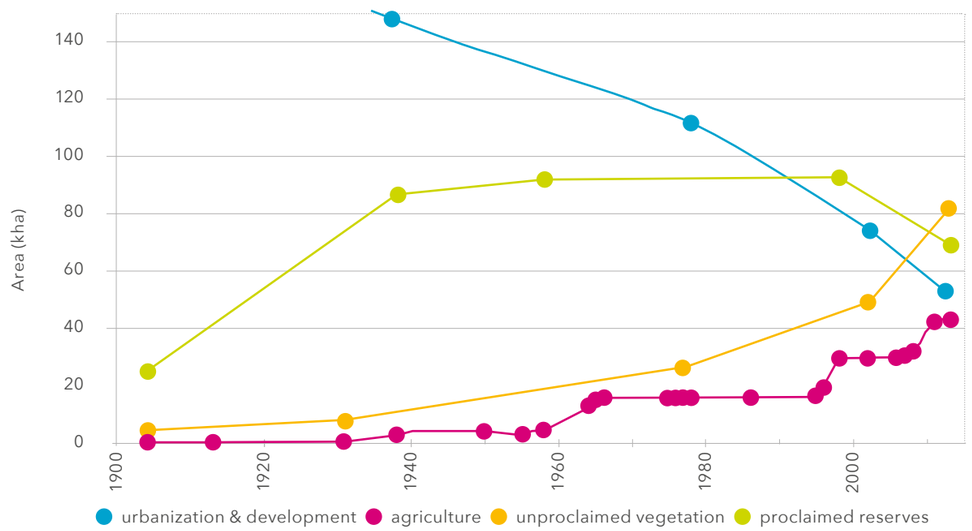
Urban and agricultural expansion have been responsible for much of the biodiversity loss over the past century, with urban growth being the main contributing factor since 1994 (refer figure 3.7). Although the total area of biodiversity lost has increased, the total area under formal protection has also expanded over the past century, with significant increases since the mid-1990s.

Table 3.2: Breakdown of conserved land in Cape Town

Category	Area (ha)	% of BioNet
City nature reserves (in process)	11 500	13,53%
Conserved: City land	3 504	4,12%
Conserved: South African National Parks	24 850	29,24%
CapeNature provincial nature reserves	2 862	3,37%
Perpetuity stewardship	497	0,58%
SANParks - Solole and contract nature reserves	198	0,23%
Baronetcy	80	0,09%
Moravian Church and Klein Dassenberg	350	0,41%
City parks	381	0,45%
Koeberg	2 826	3,32%
Dassenberg Coastal Catchment Partnership state	4 643	5,46%
Total	51 691	60,81%

Source: City of Cape Town, 2016a.

Figure 3.7: Biodiversity and city development for Cape Town



Source: *Rebelo et al., 2011.*

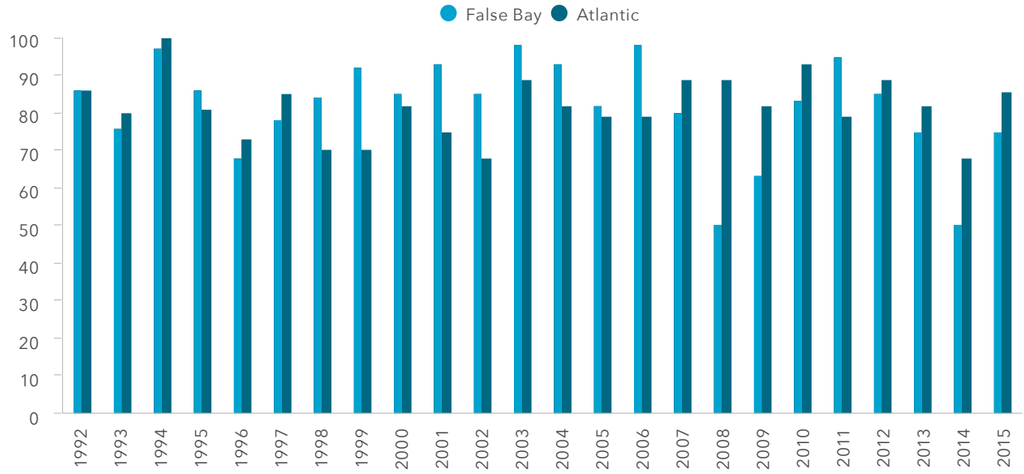
Table 3.2 provides a breakdown of currently conserved land in Cape Town. In 2009, as part of the Environmental Agenda 2009-2014, the City set itself a target to conserve 60% of the Biodiversity Network (BioNet)[195] by 2014. By December 2014, altogether 60,81% of the BioNet had been placed under conservation.

The achievement of the target is remarkable and indicates a commitment to long-term biodiversity conservation in the city. It is important to note that much of this land falls within Table Mountain National Park, and lowland vegetation types are therefore underrepresented.

By continuing to secure the BioNet, the City aims to ensure that functioning ecosystems are conserved and, where needed, restored. This is essential to maintain Cape Town's unique, vast biodiversity, which has always attracted national and international visitors, and continues to inspire local residents.

195 The fine-scale systematic biodiversity plan for the Cape Town metropolitan area (City of Cape Town, 2016a).

Figure 3.8: Results meeting the Department of Water and Sanitation's 80th-percentile coastal recreational guideline for Cape Town's False Bay and Atlantic coastline beaches, 1992 to 2015



Source: *City of Cape Town,2016a*

6. Water quality

This section is divided into three subsections respectively covering the challenges of and achievements in maintaining the quality of coastal water, inland water bodies and drinking water in Cape Town.

6.1 Coastal water quality

a) Key issues

Urban development has environmental consequences, including increased stormwater runoff and the need to provide water, wastewater and refuse services to new areas. Despite the very best efforts to approach development in a sustainable manner, environmental water pollution is unfortunately a common impact with which cities must deal. Cape Town's landscapes, rivers, wetlands and beaches are natural assets that, if managed correctly, can provide economic benefits. Therefore, it is critical to prevent development from resulting in degradation of these green assets.

Many activities that take place on land ultimately have an impact on coastal water quality, which is why initiatives to mitigate land-based pollution are also relevant to managing water quality in the near-shore coastal environment. Point-source discharges to the coast can potentially be addressed by implementing best practice at the source; however, stormwater runoff that may discharge into the sea cannot be easily managed from a water quality perspective. It is important to understand that stormwater is not in and of itself a pollutant. It is merely the medium in which pollution and contaminants picked up throughout the contributing catchment are conveyed through the stormwater network, out into the environment.

Table 3.3: Breakdown of results of Cape Town beaches meeting the 80th-percentile guideline, 2012 to 2015

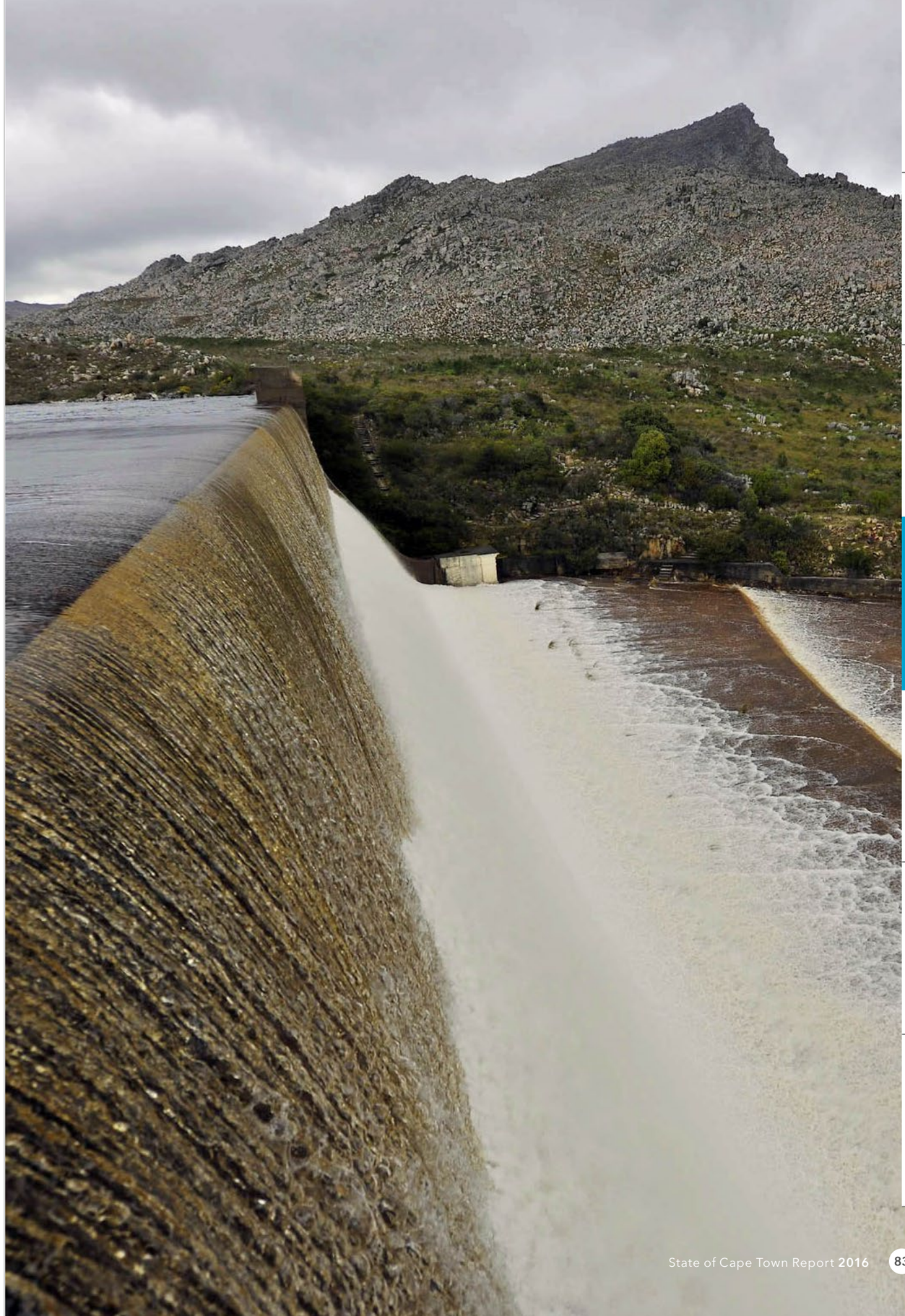
False Bay (40 beaches): Percentage meeting the 80th-percentile guideline			
Jan '12-Dec '12	Jan '13-Dec '13	Jan '14-Dec '14	Jan '15-Dec '15
85	75	50	75
Atlantic (28 beaches): Percentage meeting the 80th-percentile guideline			
Jan '12-Dec '12	Jan '13-Dec '13	Jan '14-Dec '14	Jan '15-Dec '15
89	82	68	86

Source: *Transport for Cape Town Stormwater and Sustainability Branch, 2016.*

b) Data, trends and analysis

Figure 3.8 illustrates the percentage compliance of Cape Town beach samples with the stringent 80th-percentile coastal recreational guideline of the National Department of Water and Sanitation (DWS) for 1992-2015.[196] The long-term trend for the sites along the False Bay and Atlantic coastlines fluctuates, and no single reason for these variations is evident. The percentage of sites along the False Bay coastline that met the guideline declined significantly in 2008, but since then, has gradually improved, probably due to integrated City teams' concerted efforts to address persistently problematic sites in terms of the Inland and Coastal Water Quality Improvement Strategy and Implementation Plan. The percentage of sites along the Atlantic coastline that meets the DWS guideline has been relatively stable over the past several years.

196 This guideline requires that 80% of sample results over the sample period (12 months) must be less than or equal to 100 faecal coliforms per 100 mℓ.



As part of the Environmental Agenda 2009-2014, the City set a target for 95% of all the monitoring points to meet the 80th-percentile guideline by 2014. Progress towards meeting this target is illustrated in table 3.3 above. There are still significant challenges to overcome in ensuring excellent coastal water quality.

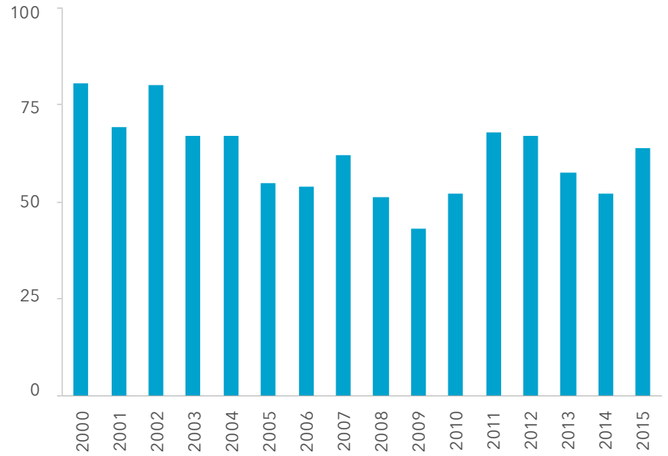
6.2 Inland water quality

a) Key issues

The primary sources of pollution of the city's freshwater systems are unsatisfactorily treated wastewater effluent (although not consistent throughout the city), overflows from blocked or leaking sewer systems and malfunctioning pump stations, and contaminated stormwater. The inappropriate disposal of human waste (in the form of toilet buckets from informal settlements and 'backyard' dwellers) directly into rivers and drains as well as generally polluted runoff from informal settlements also adds to the organic loading of the city's aquatic ecosystems. Illegal dumping and careless disposal of household waste and builder's rubble into open-space areas, rivers, wetlands and the stormwater system is an additional problem.[197]

197 City of Cape Town, 2012b.

Figure 3.9: Percentage results meeting the Department of Water and Sanitation's intermediate-contact recreational guideline for all inland aquatic systems: Annual medians 2000 to 2015



Source: *Transport for Cape Town Stormwater and Sustainability Branch, 2016.*

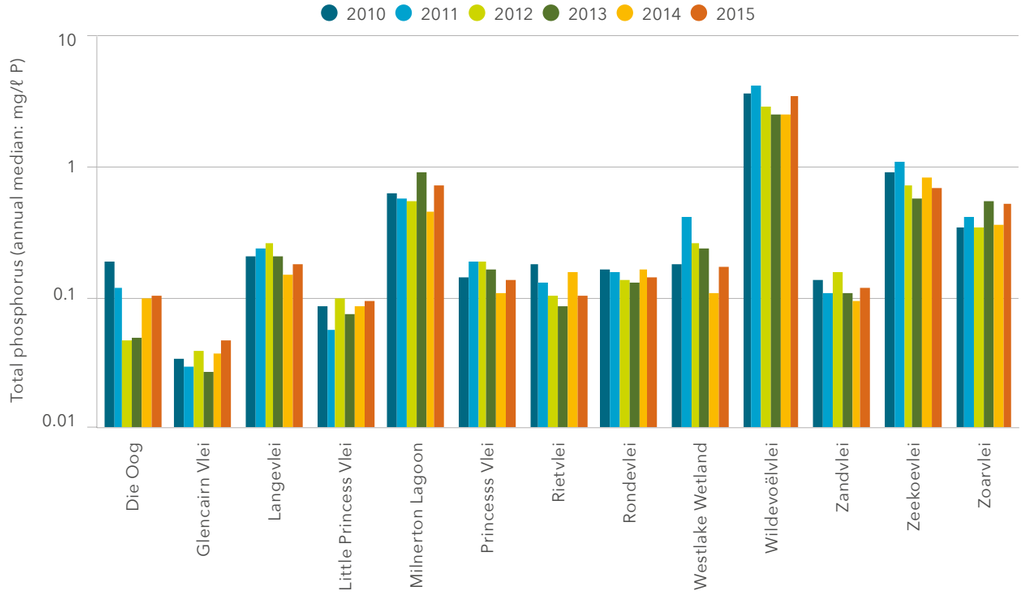
Pollution may pose significant risks to aquatic life and freshwater ecosystems, and may also result in public health risks.

b) Data, trends and analysis

The quality of Cape Town's freshwater ecosystems can be assessed by evaluating water quality data in terms of public health and ecosystem health perspectives, each requiring different indicators derived from DWS recommendations and guidelines. Microbiological data are used to evaluate the suitability of inland waters for recreational use.[198] Monthly samples are taken at

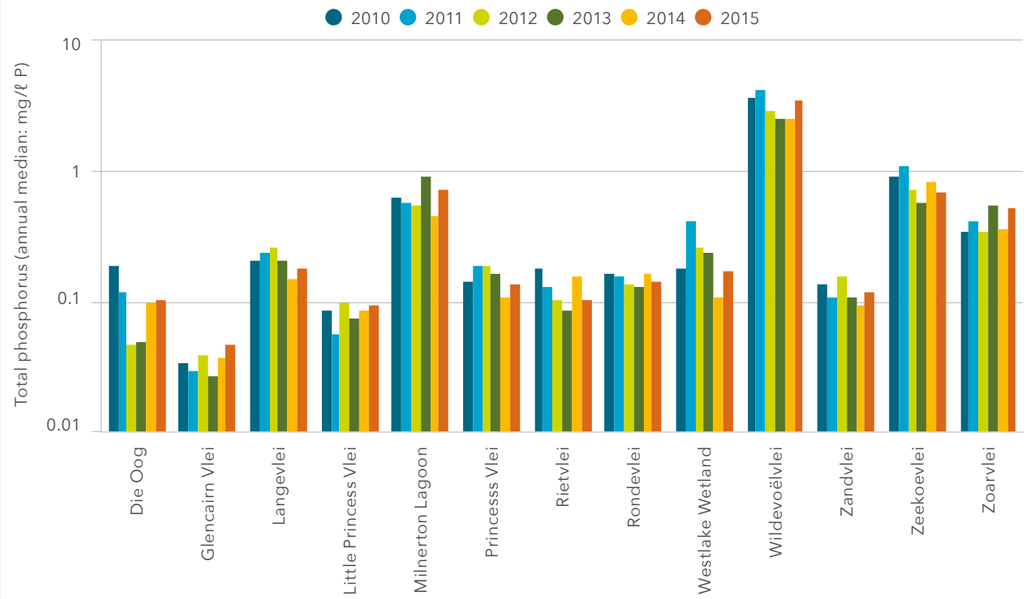
198 DWS guidelines for intermediate/partial contact with water during activities such as sailing, canoeing and fishing recommend that samples should not exceed 1 000 indicator organisms per 100 mℓ of water.

Figure 3.10(a): Total phosphorus (annual median) measured in various Cape Town wetlands, 2010 to 2015



Source: *Transport for Cape Town Stormwater and Sustainability Branch, 2016.*

Figure 3.10(b): Total phosphorus (annual median) measured in various Cape Town rivers, 2010 to 2015



Source: *Transport for Cape Town Stormwater and Sustainability Branch, 2016.*

monitoring points throughout the city's freshwater ecosystems.

Phosphorus concentration data are used as a proxy measurement of the eutrophic state (extent of nutrient enrichment) of the freshwater ecosystems. Phosphorus is a common nutrient pollutant in urban and peri-urban areas. Too much phosphorus in a freshwater system leads to eutrophication, where excessive plant and algae growth leads to degradation of the natural ecosystem.[199]

The city's freshwater ecosystems fluctuated between improvements and deterioration in the period 2000 to 2015. Although overall phosphorus enrichment levels now show a slight improvement, nutrient enrichment remains a concern – particularly in catchments that are intensively developed, receive wastewater effluent discharges, and have many informal settlements.

The percentage of bacterial results meeting the DWS intermediate contact guideline declined between 2000 and 2008, after which it steadily recovered (figure 3.9). The drop in percentage compliance in 2014 is thought to be due to a number of storm events that resulted in wash-off of contamination, and many instances of overflowing sewers due to rainwater ingress. The improvement in 2015 is possibly due to the City and other role players' continued pollution abatement efforts, although below-average rainfall experienced in 2015 could also be a factor.

199 Phosphate levels are divided into four trophic state categories (City of Cape Town,2012 b): (i) oligotrophic (very low nutrient level), which is excellent; (ii) mesotrophic (moderate nutrient level), which is good; (iii) eutrophic (high nutrient level), which is fair to poor; and (iv) hypertrophic (excessive nutrient level), which is bad.

6.3 Drinking water quality

a) Key issues

Safe drinking water is essential for public health. To ensure that Cape Town's residents have the safest possible tap water to drink, the City fully supports and complies with strict water quality checks as prescribed by the Department of Water and Sanitation (DWS). This means that water quality must be closely monitored, with many water samples constantly being analysed on a monthly basis according to the stringent South African National Standard (SANS 241) requirements.

b) Data, trends and analysis

The water quality table on the next page (table 3.4) indicates the percentage achieved against SANS 241 requirements for Cape Town's drinking water in the period 2009 to 2015. Water compliance constantly exceeded the City's own internal annual target, which was 96% in 2009 and increased to the very high 99% in the period 2012 to 2013. Compliance is measured in terms of prescribed chemical and microbiological components.

The water quality results above form part of the City's participation in the DWS Blue Drop certification programme. The Blue Drop process[200] is undertaken annually through a DWS physical audit. To qualify for a Blue Drop certificate, a water service authority must score at least 95% in meeting the criteria set by the DWS. These include additional aspects such as the maintenance and monitoring of the catchment, storage areas, facilities, the pipeline and distribution systems, and the water treatment facilities and processes. The water quality has to meet the standard from where it is stored until it is used by the consumer. Adequate and suitably skilled staff, coupled with a training regime, also form part of the certification process.

200 The Blue Drop system was initiated by the then Department of Water Affairs as part of the drinking water quality regulation programme to instil public confidence in drinking water.

Table 3.4: Drinking water quality in Cape Town, 2009 to 2015 (SANS 241 requirements per population size; one sample: 20 000 population)

Drinking water quality percentage summary						
	2009 to 2010	2010 to 2011	2011 to 2012	2012 to 2013	2013 to 2014	2014 to 2015
Quarter 1	98,70	97,00	97,00	99,10	99,10	100,00
Quarter 2	98,70	98,00	98,30	99,10	99,10	99,80
Quarter 3	98,90	98,00	98,00	99,50	99,00	99,77
Quarter 4	98,00	99,00	98,60	99,30	99,80	99,76

Source: *City Water and Sanitation Department, 2016.*

The City has been awarded Blue Drop certification every year since the launch of this programme in 2009. At the awards ceremony in 2012, the City obtained the highest score in the Western Cape (98,14%) and was one of only ten municipalities in the Western Cape that achieved Blue Drop status. This was the sixth-best score in the country. The City also received a Platinum Blue Drop award for its consistent excellent performance for four years (2009-2012) and remains among the top-performing water service authorities in South Africa.

A 2015 study on urban South Africans' perceptions of their municipal water services found that most urban South Africans are still confident that their tap water is safe to drink. The survey further found that consumers in the metropolitan municipalities perceive their tap water to be significantly safer to drink than consumers in the other urban municipalities. The City achieved the highest confidence level, with 98% of consumers expressing confidence in their tap water. These perceptions correlate with the findings of the Blue Drop status report.[201]

201 The Water Wheel, 2016.

7. Water resources and use

7.1 Key issues

South Africa is a water-scarce and water-stressed country, which has consequences for both the economy and urban living. Similarly, the Western Cape is a water-scarce and water-stressed province, and Cape Town is no exception. Currently, the only water management area (WMA)[202] in the province with a surplus in terms of water availability is the Berg WMA due to the implementation of the Berg water project in 2007.[203]

The Western Cape Water Supply System (WCWSS), comprising raw-water storage and conveyance infrastructure, supplies water to Cape Town, surrounding towns and urban areas as well as agriculture. The major raw-water supply schemes of the WCWSS are the Riviersonderend, Voëlvlei and Berg River schemes, owned and operated by DWS, and the Wemmershoek and Steenbras schemes, owned and operated by the City.

According to April 2016 measurements, the total storage capacity of the six major dams of the WCWSS is 898,2 million kilolitres (kℓ).[204] This is an increase of 130 million kℓ from the 2009 total storage capacity of 768,3 million kℓ. However, despite this increase in total storage capacity, there has been a significant decrease in the total stored between 2014 and 2016, with the most significant decrease experienced in 2016. This decrease is attributed to a combination of lower rainfall during the period, evaporation loss, and a growing urban population leading to increased total consumption.

The City's allocation of water from the WCWSS, with the additional yield of the Berg River scheme, is 398 million kℓ per annum. Including the Berg River scheme, the City obtains 73% of its allocated water from DWS-owned sources, with the balance of 27% coming from its own sources.[205]

202 Water resources are managed on a catchment scale (by WMA), whereas actual water use is aligned with municipal boundaries (which traverse WMAs). This leads to overlaps and gaps between managing institutions and priorities.
203 Department of Water Affairs, 2011.
204 City of Cape Town, 2016b.
205 City of Cape Town, 2014b.

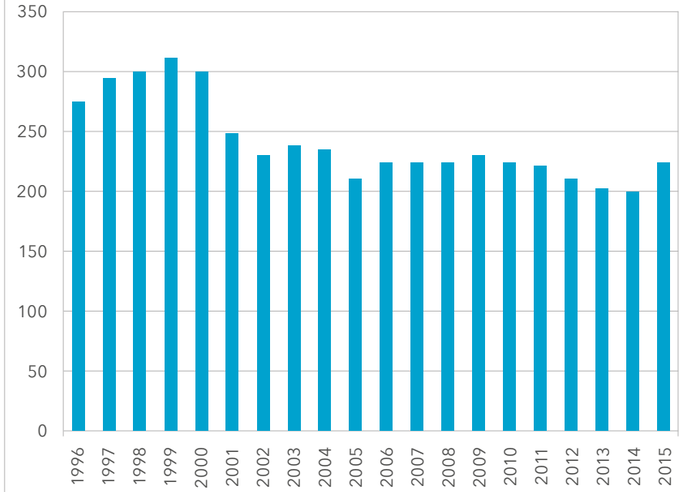
Table 3.5: City of Cape Town major dam levels (in million kℓ), 2012 to 2016

Major dams	Bulk storage 2012-2016					
	Capacity million kℓ	% 2012	% 2013	% 2014	% 2015	% 2016*
Wemmershoek	58,644	53,9	68,1	69,3	59,8	50,1
Steenbras lower	33,517	45,9	49	55,2	51,9	43,4
Steenbras upper	31,767	67	71,4	88,8	70,7	58,6
Voelvlei	164,095	48,4	55,4	64,8	54,8	19,9
Theewaterskloof	480,188	52,1	68,7	76,7	61,1	34,7
Berg river	130,010	61	65,6	87,4	62,2	25,5
Total stored	898,221	477,330	585,224	675,801	539,167	294,859
% Storage		53,1	65,2	75,2	60	32,8

**As at April 2016.*

Source: *City Water and Sanitation Department, 2016.*

Figure 3.11: Daily water use per capita (in litres) in Cape Town, 1996 to 2015



Source: *City Water and Sanitation Department, 2016.*

Most of the City's raw water for treatment to potable standards is obtained from mountainous catchments outside its municipal area, which means that most of the City's treated wastewater effluent is not returned to the raw-water resource. A percentage of the effluent produced at the Westfleur treatment works at Atlantis is used to artificially recharge the aquifer from which water is abstracted for potable supply as part of the Atlantis water supply scheme.[206]

7.2 Data, trends and analysis

Overall annual water usage between 1996 and 2014 increased from approximately 250 000 megalitres (Mℓ) to approximately 284 000 Mℓ in 2014, with highs of around 305 000 Mℓ in 1999 and 2009. However, over the same time period, water use per capita steadily declined from a high of approximately 312 ℓ per day in 1999 to just over 200 ℓ per day in 2014 (refer figure 3.11). These achievements are in line with the City's Environmental Agenda 2009-2014 target to reduce overall water use to 290 000 Mℓ per year, and use per capita to 180ℓ per day.[207]

Efforts are also under way to investigate opportunities for the sustainable harvesting of new water sources – such as underground reservoirs (a non-renewable resource) and desalination plants – alongside upgrading water reticulation systems to minimise leaks and water losses. The City has also recently embarked on a programme of reusing treated wastewater effluent for various applications, including watering of sports fields and golf courses, and for certain industrial uses. In 2015, just under 19 500 Mℓ of water (about 6%) was reused.

206 Ibid.
207 The WHO recommends as a basic level of service, a minimum of 50 ℓ of water per capita per day for basic cooking, drinking and hygiene requirements. The City provides 6 000 ℓ free to all households. At an average household size of four people, this amounts to 50 ℓ per person per day.

8. Solid waste management

8.1 Key issues

Over the past two decades, solid waste management has become an increasingly urgent priority on the global environmental agenda. Recent estimates suggest that globally, as much as 11 million tonnes of industrial and municipal waste will be generated per day by 2100. More sustainable and integrated waste management practices are vital in order to mitigate further environmental degradation and harm to human health. Waste materials are also increasingly being regarded as potentially valuable resources that should not be thrown away. Currently, the system works largely in linear fashion, meaning that raw materials are used to create a product, parts of which are used and the remains disposed of as waste. Innovative solutions are those that create methods to reuse waste materials in the process of product creation.[208]

208 City of Cape Town, 2016a.

8.2 Data, trends and analysis

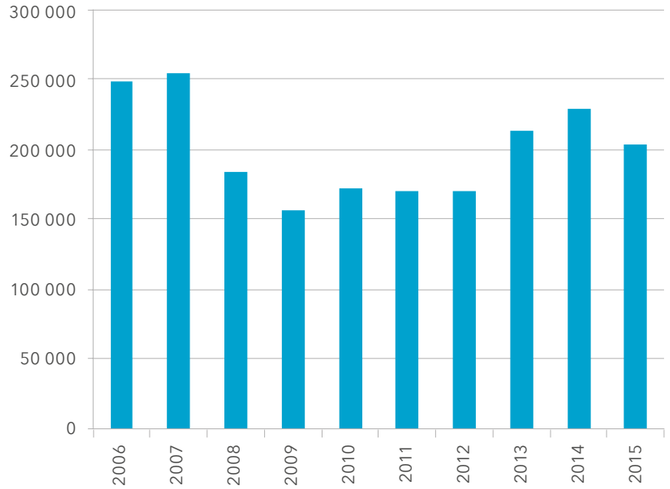
Waste data in the City are available from 2006 only, which is when consolidated reporting began (refer figure 3.12).[209]

Waste disposal occurs at the City's three municipal landfill sites in operation, namely Coastal Park, Vissershok and Bellville South. Coastal Park and Bellville South are used for general waste only, while Vissershok is a low-risk hazardous waste facility operated by the City. However, another, privately owned site at Vissershok is licensed to manage high-risk hazardous waste. In 2007, waste disposed at the City's landfill sites reached a high of approximately 2,5 million tonnes, or some 730 kg per person (including Cape Town's domestic as well as the majority of its commercial and industrial waste) (figure 3.12). A sharp drop is then observed from 2007 to 2015. While the overall trend appears to be decreasing, Cape Town still has a relatively high level of waste disposal. During this same period, the percentage of waste minimised (i.e. diverted from landfill) by the City's own waste minimisation programmes only (i.e. excluding the tonnages minimised directly by the private sector) increased from 4% to between 12% and 14% of the total waste entering the municipal system.

Pinpointing the reasons for these significant changes is difficult, but a number of possibilities can be considered. The 2008 economic recession experienced globally had a significant impact on South Africa too. As a result, it is likely that consumption of goods and, therefore, production of waste decreased over this time. Construction waste accounts for a significant portion of waste sent to landfill in Cape Town. Therefore, the general downturn in the construction industry can also account for some of the decrease in waste disposal. However, potential double-counting should also be considered in this analysis.

209 It should be noted that waste disposal data from 2006 and 2007 may include some double-counting, which may partially account for the dramatic nature of the decrease in 2008; procedures were subsequently put in place to eliminate double-counting.

Figure 3.12: Total waste disposed (tonnes) in Cape Town, 2006 to 2015



Source: City Solid Waste Department, 2016.

Many of the City's waste minimisation programmes were initiated during 2006 or soon thereafter, some of which have expanded considerably since then. Among these are recycling programmes, including the two-bag pilot household recycling programme, the provision of recycling drop-off centres across the city, and the introduction of material recovery facilities at waste transfer stations, which form a very visible component of the City's waste minimisation approach and facilitate the recycling of packaging waste.

In recent years, garden waste and builder's rubble have been identified as important waste types to be diverted from the landfill stream, due to both their bulkiness and their resource potential. The City has developed a number of drop-off sites that cater for these forms of waste among other waste streams. Private service providers contracted by the City use the garden waste for the production of compost off-site, while other contractors recover portions of the builder's rubble waste stream for reuse.

Food waste is an area that requires more focus, as a large amount of wet organic waste is being disposed of in the city. A good example of innovation in this regard is the waste-to-food project in Philippi, which converts wet organic waste into compost, which is then used to fertilise vegetable gardens, creating food and a sustainable income for farmers. This project highlights the effectiveness of public-private partnerships in helping to improve waste minimisation, with concomitant benefits to the environment, society and economy.

> While the overall trend appears to be decreasing, Cape Town still has a relatively high level of waste disposal.

The City has also committed to working with the private sector to reduce waste sent to landfill through initiatives such as the Integrated Waste Exchange (IWEX). Operating on the principle that one person's garbage is another person's gold, IWEX is a free online system that enables waste generators and users to exchange waste materials. In 2013, the City also collaborated with Province's pilot programme, the Western Cape Industrial Symbiosis Programme (WISP), which is delivered by the sector development agency GreenCape. WISP aims to build business networks by identifying mutually profitable links

or synergies, so that underutilised and undervalued resources from one business (materials, energy, water, logistics, assets and expert knowledge) can be used by another. The programme is provided as a free facilitation service, using an industrial symbiosis approach to enhance business profitability and sustainability.[210]

Apart from the 12% of the municipal waste stream diverted from landfill through the City's own waste minimisation programmes, the City's study conducted in terms of section 78.3 of the Municipal Systems Act to assess alternative service delivery options (completed in February 2011) found that approximately 18% of the total waste stream, expressed in tonnes, is diverted annually through private-sector waste minimisation programmes. Continuous improvements in these private-sector waste minimisation and recycling programmes may also account for a reduction in waste disposed at landfills.[211]

The City's Solid Waste Management Department has also developed WasteWise, an integrated waste minimisation and awareness programme designed to raise awareness and encourage action among Cape Town's general public and businesses to minimise waste, reduce littering, stop illegal dumping and increase recycling. The programme seeks to foster behaviour change and encourage a culture of environmental responsibility and cooperation to minimise waste and littering through campaigns engaging with communities, schools, commerce, industry as well as the general public.

The City recently completed a supplementary Environmental Impact Assessment to obtain environmental authority and a waste licence to construct and operate a proposed new regional landfill site to service Cape Town. This site, if approved, will help the City carry out its constitutional mandate to provide essential services to its residents with regard to the adequate and legal disposal of solid waste. Essentially, it will form part of an integrated approach in order to achieve minimisation targets as well as reduce the amount of waste requiring final landfill disposal.

Responsible waste management is fundamental in order to ensure the sustainability of cities worldwide. Over the past two decades, the focus has shifted to recognising solid waste management as an increasingly urgent priority on the global environmental agenda. However, the amount of waste disposed of continues to rise fast, and without drastic changes in how we use and reuse materials, this trend is unlikely to be stemmed during the 21st century. Therefore, more sustainable and integrated waste management practices are vital in order to mitigate these pressures on environmental and human health. Waste materials can be extremely useful resources, if used effectively and innovatively.[212]

210 GreenCape, 2013.
211 City of Cape Town, 2014c

212 City of Cape Town, 2016a.

Responsible waste management is fundamental in order to ensure the sustainability of cities worldwide.

9. Future Cape Town

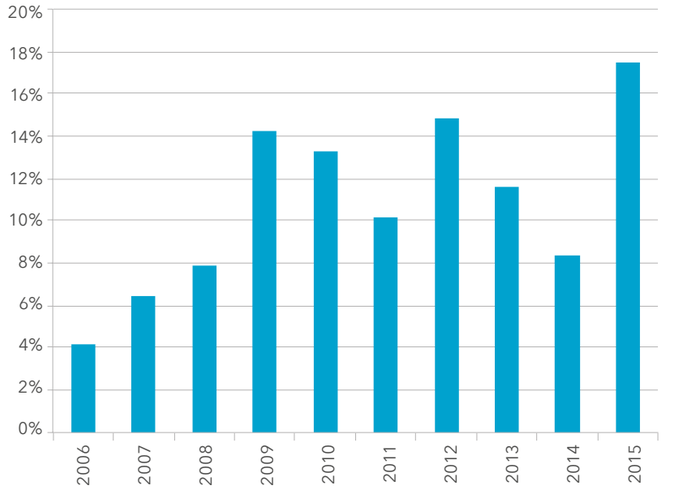
9.1 The future outlook for air quality

The human activity associated with an ever-increasing rate of urbanisation and population growth in Cape Town will inevitably generate an increased air pollution burden. The growth of private motor vehicle ownership and usage to well over a million vehicles on the roads in the metro will continue to pose significant challenges to ambient air quality. As it stands, the transport sector has the greatest impact on ambient air quality.

The impact of climate change on ambient air quality still needs to be fully quantified. Drier, windier and hotter conditions all have the potential to contribute additional particulate matter load to the receiving environment. These factors could however be mitigated by various initiatives, such as the introduction of the Cleaner Fuels 2 (fuel quality requirements) Clean Fuels Bill, which will see a further improvement in the quality of fuel available to the transport sector. Improved fuel quality will translate into the availability of cleaner, more efficient Euro 6 engine technology, which has until now not been available in South Africa.

The potential large-scale uptake of electric vehicle technology is another unknown factor that could have a positive impact on transport-related emissions. The most significant positive contribution, however, will come from a modal shift to public transport through the provision of effective public transport services.

Figure 3.13: Waste minimisation (%) in Cape Town, 2006 to 2015



Source: City Solid Waste Department, 2016.

9.2 The future outlook for energy

Cape Town's energy supply continues to largely mirror that of the rest of the country. However, some important new areas of development and exploration include the private purchase of wind-generated power from an independent power producer (Darling Wind Farm) since 2009, and the acceptance of small-scale embedded generation since 2014. As power supply is a national function, the future of any net-generated, distributed alternative-supply developments depends on national policy directions. Given South Africa's heavy dependence on coal for power generation and electricity supply, an anticipated peak production in 2020 will be a challenge for future economic growth.

9.3 The future outlook for biodiversity

It is vital to conserve as much of Cape Town's biodiversity as possible (represented by the BioNet) in order to promote a sustainable city that is resilient to the impact of climate change. The immediate goal is to increase conservation to 65% of the BioNet by 2020. Well-managed conservation areas provide coastal protection and flood reduction, thus reducing natural disaster risks to the City. In addition to securing biodiversity, conservation areas yield water resources, appropriate carbon, and provide essential recreational space for urban dwellers, thus improving the health and well-being of the population. Jobs and new skills continue to be developed to restore and manage the BioNet ecosystems and in the ecotourism sector. Biodiversity conservation activities strongly align with the SDGs, and directly contribute to South Africa's intended National Determined Contribution of 2015, as communicated to the UN Framework Convention on Climate Change. Achieving the above will ensure a more sustainable city development path, in line with the forthcoming New Urban Agenda.

The challenges to implementing the BioNet include urban sprawl, land invasions, mining, and new agricultural crops on marginal land, which all destroy natural ecosystems. This results in habitat fragmentation and degradation, loss of ecological infrastructure, and deterioration of ecosystem services to humanity.

Other concerns include global impacts such as climate change, which requires biota to adapt to new conditions, as well as invasive alien species, which are increasing owing to global trade. Further matters relate to illegal activities, such as unsustainable harvesting and poaching, which has a long-term impact on the natural resource base, along with theft of reserve infrastructure, and the safety and security of protected area staff and visitors.

Biodiversity conservation goals are monitored at the landscape scale using Geographic Information Systems (GIS) technology, with drones potentially augmenting aerial photography in future. Field monitoring remains important to map habitat condition and the effects of restoration interventions in reserves on vegetation communities and species populations. Useful technology for faunal monitoring includes traditional trap equipment, camera traps and radio collars.

9.4 The future outlook for water quality (including coastal water quality, inland water quality and drinking water)

The ecological condition and water quality of the City's river and wetland systems as well as that of the near-shore coastal environment will continue to face the challenges of a burgeoning population, urban development and a range of associated activities that can result in environmental degradation and pollution. In the face of these significant challenges and concerns, the City is committed to manage the environment in a sustainable and transversal manner, involving partnerships with multiple government agencies, business, industry, non-governmental organisations (NGOs) and private individuals.

A key future focus area will be to broaden understanding of the

integrated nature of the urban water cycle, which includes stormwater, potable water and wastewater networks integral to the built and natural landscapes of Cape Town. In addition to this, there is a need to foster a renewed sense of responsibility in all parties to help protect the environment and ensure that the baseline condition of the aquatic and coastal environments is maintained or improved. In support of the management of these systems and the needs of an environmentally conscious and informed public, the City will continue to introduce appropriate monitoring and analytical technologies along with best-practice pollution abatement and environmental management approaches.

9.5 The future outlook for water resources and use

Future water availability will come under further pressure, as the consequences of climate change are still not fully understood. This may have a significant negative impact on already scarce water resources in the Cape Town region. Changes in seasonality or intensity of rainfall have the potential to disrupt agricultural activities in the region and increase the risk of severe weather events. The principal challenge for the City's Water and Sanitation Department is to maintain a high level of water and sanitation services for Cape Town, whilst providing these services to an ever-increasing number of households in a sustainable, inclusive and operationally resilient manner. This includes balancing the growth in urban demand with maintaining sufficient water supply for agriculture and food security. Various additional water resource investigations are on track, incorporating detailed feasibility studies to enable the City to select the optimal next resource option(s). In addition, the City continues to focus on actively managing its current and future water demand through a multifaceted Water Conservation and Water Demand Management Strategy, which is updated annually.

9.6 The future outlook for solid waste management

Cape Town is fast approaching the capacity of its available landfill volume. While recycling has increased significantly in recent years, landfills are still Cape Town's primary method of waste disposal. Increasing effort and budget is being devoted to recycling and waste minimisation measures, focusing not only on recyclables, but also organic waste in terms of chipping and off-site composting, as well as home composting programmes, thus reducing the carbon footprint of landfilled waste. Builder's rubble is another focus area, creating potentially significant diversions of this waste stream from landfill. Cape Town has two materials recovery facilities, one compost plant and 25 drop-off sites to further facilitate this diversion.

Although waste minimisation lengthens the remaining landfill airspace (lifespan) in Cape Town, it is estimated that between four and seven years of landfill space remains if Vissershok North and the regional site do not soon become operational. Locating new landfill sites too far out of the city would result in increased transport costs for the municipality, while there is insufficient land to locate them closer to waste generation areas. To increase waste transport efficiency, the City has developed four refuse transfer stations, where household waste is first compacted and then hauled via road and train to Vissershok landfill site. The construction of new landfill sites is a complex and expensive process, and sites must be engineered and properly operated so as to prevent any ground or other pollution. It does however remain an essential service that the City is mandated to carry out. Although the Provincial Minister of Local Government, Environmental Affairs and development planning has authorised the development of a regional landfill site, this decision is currently on appeal for consideration by the High Court.

> Cape Town continues to be regarded as a successful world city that provides a stimulating environment for its inhabitants.

To broaden the focus in terms of waste technologies in future, thereby potentially reducing the City's reliance on landfills, transactional advisors and a panel of specialists have been appointed to help the City explore and embark on alternative waste technologies, including through private-public partnerships where possible. Illegal dumping remains a huge problem. In this regard, the City in conjunction with the University of Cape Town is busy developing a strategy. This will be further strengthened by targeted public awareness and education, the impoundment of vehicles involved in waste transgressions, and ensuring that all waste service providers are accredited by the City.

9.7 Summary

If population growth increases as indicated in chapter 1, combined with the associated urban expansion as well as climate change, the current environmental challenges of Cape Town will most likely continue to feature going forward. However, new international frameworks as well as national and local environmental management legislation, strategies, plans and programmes serve as best-practice management tools to ensure that future environmental challenges are kept at a minimum. This would ensure that Cape Town continues to be regarded as a successful world city that provides a stimulating environment for its inhabitants, without making unsustainable demands on its natural resources and ecosystems.

Chapter 3: Natural wealth reference list

City Electricity Services. 2013.

City Health. 2016.

City of Cape Town. 2011a. State of Cape Town Report 2010. Development Information & GIS Department: Cape Town.

City of Cape Town. 2011b. Moving Mountains: Cape Town's Action Plan for Energy and Climate Change. Environmental Resource Management Department: Cape Town.

City of Cape Town. 2012a. Spatial Development Framework. Cape Town.

City of Cape Town. 2012b. State of the Environment Report 2012. Environmental Resource Management Department: Cape Town.

City of Cape Town. 2014a. Significant Storm Register (1899 -). Planning Department – Transport for Cape Town: Stormwater and Sustainability Branch.

City of Cape Town. 2014b. Water Services Departmental Sector Plan for City of Cape Town 2012/13 – 2016/17 IDP Term. Water and Sanitation Department: Cape Town.

City of Cape Town. 2014c. State of Cape Town Report 2014: Celebrating 20 years of democracy. City of Cape Town: Development Information & GIS Department.

City of Cape Town. 2015. State of Energy Report 2015. City of Cape Town: Environmental Resource Management Department.

City of Cape Town. 2016a. State of Environment Report 2015 Draft. Environmental Resource Management Department: Cape Town.

City of Cape Town. 2016b. Water and Sanitation: Weekly dam levels. Available at: http://www.capetown.gov.za/en/Water/Pages/WeeklyDamLevels.aspx.

City Water & Sanitation Department. 2016.

Department of Water Affairs. 2011. Western Cape Integrated Water Resources Management Action Plan. Executive Summary: Status Quo Report. Available at: http://www.westerncape.gov.za/other/2011/8/final_draft_exec_summary_report_2011.pdf.

GreenCape. 2013. Available at: http://green-cape.co.za/what-we-do/projects/wisp/.

Hardoy, J.E., Mitlin, D., and Satterthwaite, D. 1992. Environmental Problems in Third World Cities. Earthscan: London.

Midgely, G.F., Chapman, R.A., Hewitson, B., Johnston, P., De Wit, M., Ziervogel, G., Mukheibir, P., Van Niekerk, L., Tadross, M., Van Wilgen, B.W., Kgope, B., Morant, P.D., Theron, A., Scholes, R.J., Forsyth, G.G. 2005. A Status Quo, Vulnerability and Adaptation Assessment of the Physical and Socio-Economic Effects of Climate Change in the Western Cape, CSIR Report No. ENV-S-C 2005-073. CSIR Environmentek: Stellenbosch.

Oxfam. 2014. Hot and hungry – how to stop climate change derailing the fight against hunger. Oxfam Media Briefing, 25 March.

Poon, L. 2016. 'Can China's Futuristic 'Straddling Bus' Finally become a reality?, in CityLab. Available at: http://www.citylab.com/tech/2016/05/can-chinas-futuristic-straddling-bus-finally-become-a-reality/483953/.

Rebelo, A.G., Holmes, P.M., Dorse, C., and Wood, J. 2011. Impacts of urbanization in a biodiversity hotspot: Conservation challenges in Metropolitan Cape Town.

Romem, I. 2013. 'How Will Driverless Cars Affect Our Cities?', in Meeting of the Minds BLOG, Volume 1.2, pp 11-14. Available at: http://sustainability.cityminded.org/wp-content/uploads/2013/09/MotM2013-Magazine-v1.2.pdf.

Solid Waste Department –City of Cape Town, 2016.

Sustainable Energy Africa (SEA). 2013. Unpublished data. Cape Town.

The Water Wheel. 2016. 'Municipal Services: Urban consumers give water services the thumbs up', in The Water Wheel, May/June 2016. The Water Research Commission: Pretoria.

Transport for Cape Town Stormwater and Sustainability Branch –City of Cape Town, 2016.

Cape Town's urban resource efficiency

Having reached 4 million people, Cape Town's urban metabolism is already under pressure, and its population continues to grow. Sustaining a productive and competitive economy, capable of generating opportunities for upward mobility, requires the city's households and firms to become more efficient in their consumption of scarce resources, particularly water, energy and land.

Energy

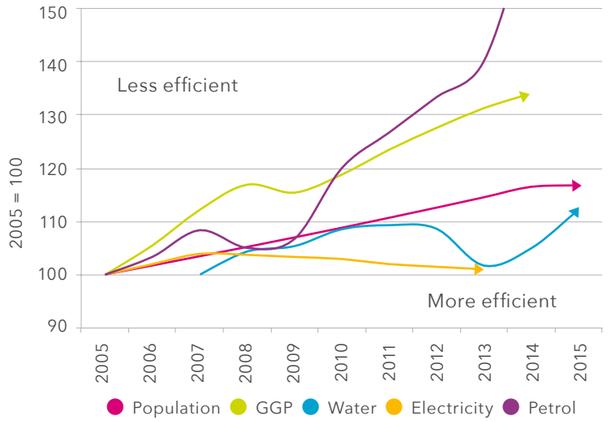
By comparing changes in the size of the economy, the city's population and citywide resource consumption from a common base, it is possible to get an indication as to whether the city is becoming more or less efficient in its use of scarce resources. The figure above shows that the economy (green line) has grown faster than the population (red line), which suggests – all things being equal – that the average Capetonian's productivity has risen over the past ten years. During the same period, both the economy and the city's population have consumed water and electricity more efficiently. However, the steep increase in transport fuel consumption is driven by growth in private passenger transport and road congestion. Although less than half of the city's households own a car, private-car ownership is increasing at a rate of 4% per annum (2009-2013). The amount spent annually on fuel, estimated at between R18 billion and R21 billion, and the immeasurable loss of productivity and well-being as a result of time spent commuting, result in a dead-weight loss to the economy.

Public transport such as Metrorail, MyCiTi and minibuses, on the other hand, transports nearly half of all city passengers daily and consumes only 9% of all liquid fuel relating to passenger transport.

Factors contributing to this increased fuel consumption include growth of household income, increasing sprawl of the city, lack of adequate, safe and reliable public transport options, and a degree of inertia, considering that it is not a quick or easy decision to move house or change your job location and/or education institution in order to reduce trip distance.

Cape Town leads the country with levels of electrification, with 100% of formal housing electrified, and 94% of all households electrified. Cape Town's electricity supply continues to largely mirror the rest of the country, where more than 90% of electricity is derived from coal. However, some important new areas of development and exploration include the private purchase of wind-generated power from an independent power producer since 2009, and the acceptance of small-scale embedded generation since 2014. Furthermore, Cape Town has recently installed photovoltaic panels at a number of municipal buildings, supporting demand reduction. In addition, the City is exploring other renewable-energy generation schemes, such as micro-hydro schemes on the City's water pipe systems, turning sewage methane into electricity to reduce on-site electricity costs at wastewater treatment works, as well as utilising landfill biogas to generate electricity.[213]

Figure 1: Resource efficiency – Cape Town, 2005 to 2015



Source: City of Cape Town (CCT). 2015. Administrative and related data: POPULATION: Stats SA Cape Town mid-year estimates 2015; Province and City population projections 2011-2040, March, 2014; GVA: Quantec South Africa regional output and GVA at basic prices, with the year 2014 estimated at 1,5% GVA growth rate; WATER: City Water Demand Management and Strategy, 2015; ELECTRICITY: City 2015 State of Energy report; PETROL: Sustainable Energy Africa, 2015.

Water and Climate Change

Cape Town shares its water sources with neighbouring towns, the agricultural sector, as well as tourism, manufacturing and the tertiary economic sector. The year 2016 has seen a shortage of surface water availability for much of the Western Cape, with the deficit expected to increase over time: Climate change projections identify a progressive drying of key high-runoff areas. The water shortage is also likely to be exacerbated by the expected increase in temperature and resultant increased evaporation rates.

The Berg River Dam, which was completed in 2009, has increased the volume of water available to the region. However, it is estimated that it will only be able to meet the demand up to between 2016 and 2019. Therefore, water demand management is essential to ensure that existing resources are used efficiently, and to delay the need for new water sources.

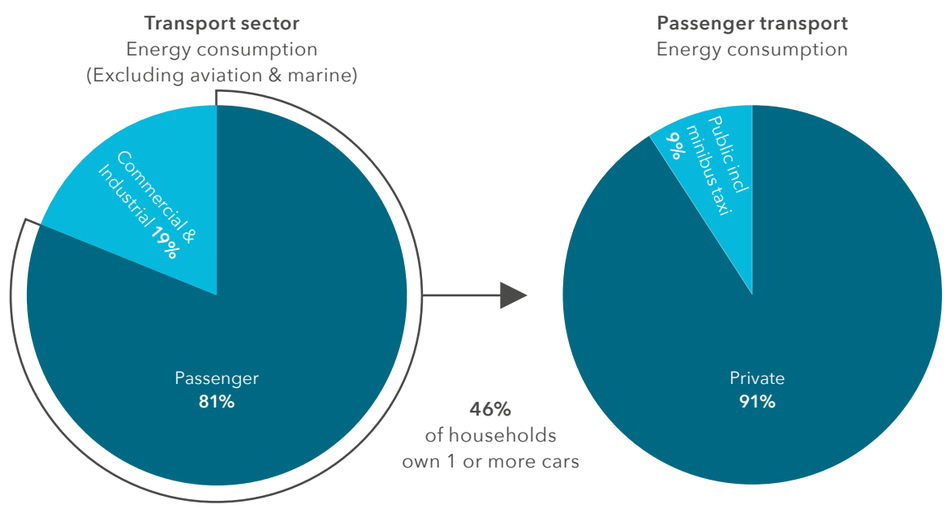
The good news is that Cape Town already benefits from very low water loss rates compared to international standards and continues to reduce its loss rate caused by bulk and reticulation losses (currently below 15%).

However, a significant proportion of water is used inefficiently. Inefficient water use is the amount of water that can be saved by implementing water-efficient technology and practices, and by altering the consumption behaviour in line with industry and residential benchmarks as well as best available practices.

Water from groundwater sources (especially the Table Mountain Group Aquifer located to the east of the Cape Fold Mountains), water recycling, and sea-water desalination are potential ways of accommodating future water demand. Assuming Cape Town's rate of consumption continues along its current low trajectory, the efficacy of its water demand management strategy is sustained and the effects of climate change continue, it is anticipated that the next augmentation scheme will be required to be operational by 2025.

213 City of Cape Town State of Energy report, 2015.

Figure 2: Transport in Cape Town, 2012



Source: City Environmental Resource Management Department, 2016.

Figure 3: Annual land consumption in Cape Town 1652 to 2032

Note: Based on a City desktop analysis of historical aerial photography. The 2000-2014 period was positively verified against Landsat data provided by the Global Land Cover Facility (www.landcover.org).

Source: Spatial Planning and Urban Design, 2016

Land

The loss of productive agricultural land to urban development threatens food security in the city. Between 1977 and 1988, the city was consuming over 1 000 ha per year, driven principally by the rapid expansion of low-density residential development. Rates of land consumption have subsequently contracted from these unsustainable levels to a new low of around 250 ha per year as a result of rising transport costs and a slowdown in market-led residential development. Irrespective of whether the city follows a transit-oriented (236ha/year) or pragmatic (301 ha/year) growth trajectory, there is sufficient developable land available inside the city's current urban edge to accommodate growth until 2040 and beyond.

There is a growing recognition that the fate of large cities is bound to their ability to adapt their systems and practices amidst increasing resource scarcity. As a fast-growing city, entirely dependent on an isolated and fragile natural region, Cape Town's position is particularly vulnerable to exogenous shocks such as climate change. This vulnerability is exacerbated by deep developmental challenges facing the city. It is therefore encouraging that Cape Town is making inroads towards addressing this challenge, not only in words, but also in action. These interventions, supported by structural changes to the economy and cost-conscious behaviour by consumers, are having a measurable positive impact on resource efficiency. Cape Town must adapt and – based on the City's data analysis – is adapting.

CASE STUDY

Spatial information portal leads to informed decisions

Overview

The use of spatial information is fundamental to the urban planning and management of the municipal area, as most, if not all, urban management issues have a spatial dimension: Infrastructure development, for example, takes place at specific locations; our rates base is valued on the basis of properties, and many social trends, including crime, migration, health incidences, etc., display distinct spatial patterns. Using GIS spatial information provides a digital connection between location, people and activities, and could shed light on the 'what, where and why' in respect of urban patterns and trends.

Enterprise GIS (eGIS)

Over the past few years, the City has incorporated spatial data from its various departments into an enterprise GIS database, which is linked to the Systems Applications Products (SAP) enterprise resource planning system. This creates a powerful information tool for planning and decision-making, and supports efficient urban management by offering users a spatial picture of what is happening within the city.

The City employs more than 25 000 staff members, including 300 GIS professionals in various subject areas within the City, all using one Enterprise Geographic Information System (eGIS) to maintain and publish spatial information. Figure 2 below shows the components of the City's eGIS.

The City maintains more than 300 spatial information layers, which are utilised by different business departments to inform decision-making and improve service delivery. The administration has implemented a knowledge management framework that includes knowledge generation, sharing and utilisation. Information (both spatial and non-spatial) is grouped by themes and delivered via the spatial information portal, using spatial tools and is available for access and use by all City employees (refer to figure 1 and 3).

The corporate vision for spatial information (figure 4) is to inform decision-making by assembling, analysing and managing spatial information in a centralised eGIS environment, from where the updated spatial information is packaged and delivered to all in a user-friendly way. At present, the online eGIS spatial tools are used on a daily basis by approximately 10 000 users from various departments.

City stakeholder engagement was important to harness support for a single source of spatial data stored in a centrally managed environment. With the Knowledge Management Policy, the GIS Strategy and the Guiding GIS Framework and Standards as references, Corporate GIS engaged with all stakeholder departments to centralise all departmental spatial data into one source, which are then processed to a reporting environment according to a daily to weekly schedule to ensure that the latest data are available for dissemination. Enterprise GIS information is then disseminated online via the intranet (City-web) as well as mobile and desktop applications. The spatial data and electronic copies of maps are also made available via the City's various dissemination channels, including the Spatial Information Portal, CityMaps and the Open-Data Portal, and can also be accessed by all City staff and GIS professionals. It is further envisaged that spatial datasets will eventually be filtered through to the external web environment, using the same methodology.

Value-adding Impact

As all this information is available at the click of a button via eGIS – including aerial imagery with a resolution of 8 cm – it enables an official in the Building Development Management Department to respond to a phone call regarding a zoning violation on a specific property, or the Utilities Department to attend to a notification regarding a burst water main pipe, or a Councillor to respond to questions regarding informal settlements within the metro – all swiftly and without delay.

The City has come a long way since the days of paper plans and maps, which took weeks or even months to collect, assemble and analyse, often rather inaccurately.

Figure 1: Knowledge generation, sharing and utilisation via the Development Information Resource Centre on the City's Intranet (Cityweb)

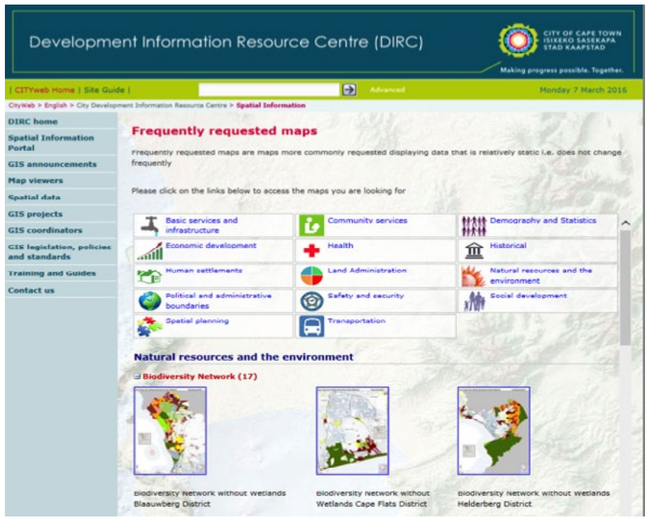


Figure 2: Role players in the City's eGIS, at a glance

Figure 3: Screenshot of the CityMap viewer showing some of the spatial tools available to all staff members

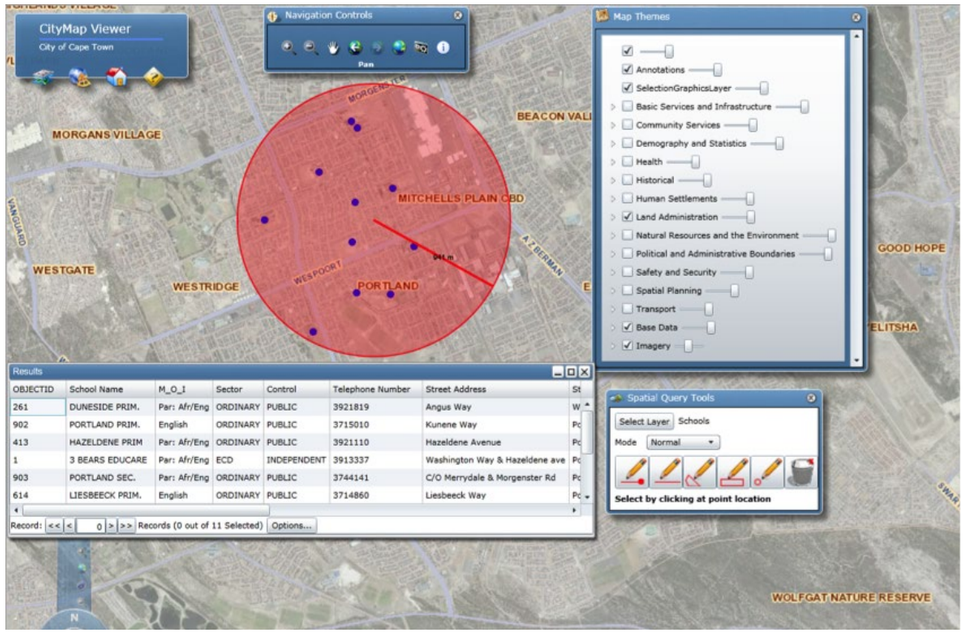
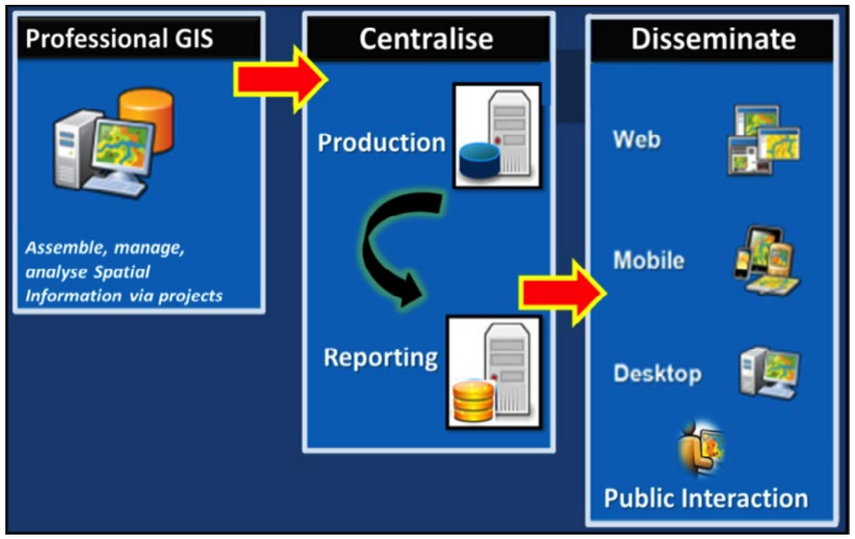


Figure 4: Corporate GIS vision



Chapter 4: Urban growth and form

1. Introduction 100
2. The urbanisation challenge and the role of cities 100
3. Sustainable urban development in South Africa 100
4. The Cape Town context – urban development policy and strategies 101
5. Urban growth in Cape Town – access to services and urban mobility 101
5.1 Access to services 102
5.2 Urban mobility – transport in Cape Town 112
6. Implications for Cape Town's urban form 117
7. Future Cape Town and the New Urban Agenda 117
8. Conclusion 118
Chapter 4 Urban growth and form reference list 122
Case study 124

The New Urban Agenda identifies sustainable urban development as one of the most pressing global challenges of the 21st century.

1. Introduction

This chapter reflects on two key issues. Firstly, it deals with urban growth in Cape Town, with particular emphasis on residents' access to services and amenities (including basic services), access to telecommunications, access to social or community facilities, informality and public housing, as well as urban mobility or transportation. Secondly, the chapter reviews key issues relating to urban form in Cape Town in 2016 – reflecting on current themes such as the Habitat III[214] themes of the New Urban Agenda[215] – and their implications for the city.

The New Urban Agenda identifies sustainable urban development as one of the most pressing global challenges of the 21st century. This includes the conceptualisation of urban sustainable development as a mutually reinforcing relationship between urbanisation and development.[216] Since cities are the drivers of sustainable development, their structure, form and functionality have become a vital part of the solution to addressing sustainable development challenges.

According to the UN, as the world continues to urbanise, sustainable development challenges will be increasingly concentrated in cities, particularly in lower-income to middle-income countries, where the pace of urbanisation is fastest. Currently, the rate of urbanisation is highest in Asia and Africa, where the urban population is increasing by 1,5% and 1,1% per annum respectively. These two regions are projected to reach respectively 56% and 64% urbanisation by mid-century.[217] Some of the key current and new urban challenges that have emerged over the years include an increase in inequality and poverty in cities. The majority of those in extreme poverty are becoming concentrated in urban spaces, and both national and city governments are struggling to accommodate this growing population. One impact of this fast-paced urbanisation is that in different regions of the world, particularly in sub-Saharan Africa and South Asia, urban growth has occurred without appropriate public planning.[218]

2. The urbanisation challenge and the role of cities

The UN has stated that rapid urbanisation, as well as demographic and environmental changes, will pose radical new challenges in urban and national environments. It has warned that a failure to address these urban challenges will have serious repercussions for human well-being, environmental sustainability, and economic growth and development. New commitments to sustainable urban development include the promotion of cities that are environmentally sustainable, socially inclusive and economically productive. Key targets are to improve the lives of urban dwellers through adopting and implementing policies and strategies for sustainable and effective urban planning and design; to reduce cities' ecological footprints; to create jobs based on effective city management, and to develop access to basic services.[219]

Cities now carry increased responsibilities in terms of the delivery of basic services, urban planning, social policies and environmental management. Against this backdrop, there is broad consensus that the structure, form and functionality of towns and cities need to change as societies change. In many emerging-economy countries, the fast pace of urban migration puts pressure on local governments' capacity to respond to urbanisation, which has resulted in urban environments that reflect poor urban development management.

3. Sustainable urban development in South Africa

The South African urban population grew from 54,5% of the country's population (22,5 million out of a total of 41,4 million) in 1995 to 64,8% (34,663 million out of a total of 53,5 million) in 2015 and is projected to increase to 67,2% (37 million people) by 2020.[220] As more South Africans now live in cities than in rural areas, the country's cities are crucial for meeting national development goals.

214 Habitat III refers to a major global summit, formally known as the United Nations Conference on Housing and Sustainable Urban Development, to be held in Quito, Ecuador, on 17-20 October 2016.
215 Refers to the sustainable development of towns, cities and other human settlements.
216 United Nations, 2016.
217 United Nations, 2014.
218 United Nations, 2015a.
219 United Nations, 2015b.
220 United Nations, 2015c.

Cities now carry increased responsibilities in terms of the delivery of basic services, urban planning, social policies and environmental management.

South Africa's cities have a constitutional duty to promote (national) social and economic growth and development. South Africa's 2012 NDP addresses some of the considerations relating to the country's national development and growth, and the policy choices required to achieve it. South Africa's national development is centred on the following goals: the reduction of unemployment, poverty and inequality; the transformation of the economy to better reflect the country's demographics; the creation of a just and inclusive society, and the consolidation of democracy. The NDP sets the vision of a growing national economy, which both invests resources in and is led by the country's major urban areas. South Africa's eight metropolitan areas are home to about 37% of South Africans and account for 59% of economic activity. As South Africa's growth engines, these cities are ideally positioned to promote national economic growth and development.[221] However, despite the economic primacy of our cities, their key role is not evident from South African policy documents and economic analyses.[222]

South Africa's major cities face significant spatial, economic and social challenges associated with urbanisation. The most important of these relate to urban spatial structure. Many post-apartheid policies have unintentionally reinforced and reproduced apartheid spatial patterns through badly designed investment patterns in housing, transport and other infrastructure. South African cities' structure and functioning hamper their capacity to generate and sustain rapid economic growth.

Very few cities faced with a combination of natural population growth and the rapid arrival of mainly poor people are able to provide the services, infrastructure and housing required, at the necessary pace and price. This is the reality that needs to be planned for in terms of urban sustainable development.[223]

Because of concerns that the current patterns of South African urban growth and development trends tend to reinforce the spatial divisions created under apartheid, there has been a shift in urban policy. This shift emphasises the need for a new approach to providing infrastructure, housing and public transport services so as to transform South African cities into engines of economic growth and development, while also overcoming apartheid spatial divisions.

4. The Cape Town context – urban development policy and strategies

To improve the way in which cities function, and create more inclusive, productive and sustainable cities, the South African government initiated the draft Integrated Urban Development Framework (IUDF) for adoption in 2014/15. Designed to foster urbanisation management in South African cities, the IUDF provides a framework and a roadmap for the institutional and policy reforms required to manage urbanisation and city growth for inclusive development.[224]

Another recent manifestation of the shift in attention to cities is National Treasury's Cities Support Programme (CSP). The 2016 CSP seeks to link city governments to the broader intergovernmental system through a coordinated platform, proposing "a systematic approach to create incentives for cities to address the issue of urban spatial form, through coordinating funding programmes and linking these to national regulatory reforms in the built environment and specific capacity support measures to assist cities".[225] As part of the CSP, the World Bank is to carry out an urbanisation review for South Africa to provide additional analyses of the economic and urban policy discourse dimensions in the South African context.[226]

At the sub-national level, several strategies of Province and the City give expression to the urban development goals for Cape Town. The City has in place a number of responses to Cape Town's urban growth and development challenges as well as the specific challenges of the unfolding urban form. Council has approved several strategies and plans in order to guide urban development in the municipal area in the medium and long term.

These strategies and their associated interventions focus on:

- Planning for employment and improving access to economic opportunities
- Managing urban growth and creating a balance between urban development and environmental protection
- Building an inclusive, integrated, vibrant city

5. Urban growth in Cape Town – access to services and urban mobility

Cape Town's population grew by 46% in the 15 years between 1996 and 2011.[227] It reached 4 004 793 by 2016,[228] and by 2020, will have grown to 4 131 720.[229] Rapid urbanisation puts pressure on metropolitan cities such as Cape Town and brings about increased demand for access to infrastructure and services in urban areas, including demand for affordable housing, basic municipal services, public amenities, transportation, water and energy

221 Centre for Development and Enterprise, 2016a.
222 Centre for Development and Enterprise, 2016b.
223 Centre for Development and Enterprise, 2016b.
224 South African Government, 2015.
225 City of Cape Town, 2014a.
226 World Bank, 2016.
227 City of Cape Town, 2012c.
228 See p17.
229 City of Cape Town, 2014b.

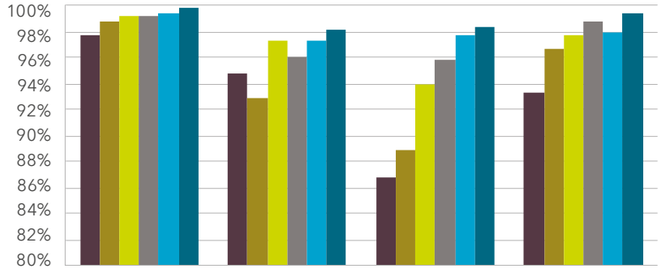
supply, waste disposal as well as better economic, social, educational and health-care facilities for larger numbers of people.

The City has brought about good improvements in service delivery in Cape Town, despite this rapid growth in population. Urban population growth has implications for the municipality's capacity to provide new infrastructure and services, including the maintenance of existing stock, such as roads, water and wastewater facilities, as well as other public infrastructure, facilities and services to cater for the growing population. The City is therefore expected and required to proactively manage its long-term future urban growth, while at the same time facilitating and ensuring well-coordinated, effective and equitable provision of essential services to its growing number of residents.

Households affect the consideration and formulation of public policy and service delivery in general, and can be considered one of the most important units influencing development and service delivery planning, especially in urban environments with growing populations, such as Cape Town. The population and the number of households in Cape Town have increased at different rates, with households generally growing at a faster rate than the population. An analysis of Census 2001 and 2011 household data for Cape Town reveals that in the ten-year period from 2001 to 2011, the number of households increased by 38%, while the population increased by 29%. The highest growth rate was observed among black African households, which increased by 77% (compared to a population increase of 58%). Coloured households increased by 16% (compared to a population increase of 14%).[230]

The average household size in Cape Town in 2011 was 3,5 persons per household. Data reveal a marked increase in small households – i.e. with one or two members – in Cape Town since 2001, particularly among the black African population group. Small black African households grew by 108,4%, from 105 606 in 2001 to 220 118 in 2011. At 47,0% (220 110), small black African households accounted for the highest percentage of small households in Cape Town in 2011. The coloured and Indian and Asian population groups accounted for 19,9%, the white population group 31,1%, and others 2,0% of small households in Cape Town.[231] For 2015, the number of households in Cape Town was estimated at 1 276 023, while estimates for 2016 put this number at 1 319 862.[232]

Figure 4.1: Household access to basic services in Cape Town, 1996, 2001, 2011-2014



	Water supply	Sanitation (toilet facilities)	Electricity supply	Refuse removal
1996	97,8%	94,8%	86,8%	93,3%
2001	98,7%	92,8%	88,8%	96,7%
2011	99,3%	97,3%	94,0%	97,7%
2012	99,3%	96,0%	95,8%	98,8%
2013	99,4%	97,3%	97,8%	98,0%
2014	99,8%	98,2%	98,4%	99,5%

Source: *City of Cape Town, DI&GIS Department, compiled from various Stats SA Census (1996, 2001, 2011) and GHS (2012, 2013, 2014) data.*

5.1 Access to services

This section provides an overview of Cape Town households' access to services in the city. The focus is on levels of access to urban infrastructure and services, including access to basic services such as water, electricity, sanitation and solid waste removal, as well as access to social and community facilities and telecommunications.

a) Access to basic services

City analysis suggests that between 1996 and 2014, households' access to and coverage by basic services in Cape Town consistently increased. Figure 4.1 shows Cape Town households' access to four basic services over this period.

As can be seen from figure 4.1, access to water increased from 97,8% to 99,8%, access to electricity from 86,8% to 98,4%, access to refuse removal from 93,3% to 99,5%, and access to sanitation from 94,8% to 98,2% from 1996 to 2014. However, while the City continues to increase access to these basic services, challenges remain in relation to the provision of basic infrastructure and services to all sections of Cape Town's population. For example, although households in informal settlements may have access to basic services, these are often services shared with other households.

The demand for access to urban infrastructure and services, especially basic services, is also likely to increase as the city population continues to grow, combined with the increase in the number of households.[233]

b) Access to water

Most Cape Town residents have access to piped water inside their dwellings, or at least piped water inside or outside their yards. Households with "no access to piped water" declined from 2,2% in 1996 to 0,2% in 2014, indicating a gradual and progressive improvement in

230 City of Cape Town, 2012c.

231 City of Cape Town, 2015b.
232 City of Cape Town, 2015c.

233 City of Cape Town, 2015d.

The average household size in Cape Town in 2011 was 3,5 persons per household.

the provision of piped water in the city. However, the percentage of Cape Town households with "piped water inside dwelling" declined from 79,0% in 1996 to 78,9% in 2014. This trend reflects the growth in the number of households living in informal settlements and, in particular, in backyards in Cape Town over the period under review – and is mirrored by the small increases in the proportion of households with access to piped water inside and outside their yards.

In formal dwellings, the City's water and sanitation service standards provide for full-house water connection through a single water connection per erf. In this regard, 6 kℓ of water per month are currently provided free of charge to all consumers. In informal settlements, the City provides a minimum of one tap for every 25 households, within 100 m of every household.[234] Between 1996 and 2014, this level of access to water increased from 8,3% to 9,2% (see table 4.1).

The City also provides a monthly indigent grant for additional water supply to qualifying households.

A challenge for the City in respect of access to water is managing both water supply and demand. Cape Town is located in a water-scarce region. Therefore, the City's Water Demand Management (WDM) and Water Conservation Strategy strive to maximise the use of existing infrastructure so as to ensure the sustainability of water supply. In terms of the strategy, it is also critical for the City to ensure the efficient use of scarce water resources to meet the growing needs of the population. Cape Town's water supply resources, comprising six major dams, have a total storage capacity of 898 200 million kilolitres, which constitutes 84,4% of the Western Cape's total storage capacity. To continue to meet water demand in the city, all necessary resources are applied to implement WDM interventions. Steps taken by the City include a water balance and loss reduction strategy, as well as initiatives for water conservation across Cape Town, for which the City has won recognition. [235]

234 City of Cape Town, 2013a.
235 City of Cape Town, 2013a.

Table 4.1: Household access to piped water in Cape Town, 1996, 2001, 2011 to 2014

	Piped water inside dwelling	Piped water inside yard	Piped water outside yard	No access to piped water
1996	79,0%	10,5%	8,3%	2,2%
2001	69,3%	15,1%	14,3%	1,3%
2011	75,0%	12,3%	12,0%	0,7%
2012	77,5%	12,7%	9,1%	0,7%
2013	77,1%	12,4%	10,0%	0,6%
2014	78,9%	11,7%	9,2%	0,2%

Source: City of Cape Town, DI&GIS Department, compiled from various Stats SA Census (1996, 2001, 2011) and GHS (2012, 2013, 2014) data.

Table 4.2: Household access to toilet facilities in Cape Town, 1996, 2001, 2011 to 2014

	Flush or chemical toilet	Pit latrine	Bucket toilet	Unspecified
1996	89,3%	2,4%	3,1%	5,2%
2001	87,5%	0,9%	4,4%	7,2%
2011	91,4%	0,4%	4,5%	3,7%
2012	93,9%	0,2%	1,9%	4,1%
2013	92,8%	1,2%	3,2%	2,8%
2014	93,5%	0,4%	4,1%	2,0%

Source: City of Cape Town, DI&GIS Department, compiled from various Stats SA Census (1996, 2001, 2011) and GHS (2012, 2013, 2014) data.

Table 4.3: Household access to energy in Cape Town, 1996, 2001, 2011 to 2014

	Electricity	Gas	Paraffin	Candles	Other
1996	86,8%	0,2%	10,0%	2,4%	0,5%
2001	88,8%	0,3%	8,6%	2,1%	0,1%
2011	94,0%	0,3%	3,8%	1,5%	0,4%
2012	95,8%	0,0%	1,8%	1,2%	1,3%
2013	97,8%	0,1%	1,5%	0,4%	0,1%
2014	98,4%	0,1%	0,4%	0,9%	0,1%

Source: City of Cape Town, DI&GIS Department, compiled from various Stats SA Census (1996, 2001, 2011) and GHS (2012, 2013, 2014) data.

In 2014/15, the City's Long-Term Water Conservation and Water Demand Management (WCWDM) Strategy was reviewed and updated. This included considerations to redefine the targets and align them with relevant indicators; to project the anticipated savings for the next ten years; to assess the impact of the WCWDM Strategy initiatives on the water demand profile; to promote the need for the implementation of WCWDM initiatives, and further reiterate measures needed to reduce and sustain water demand, and to ensure integration of all initiatives that foster water saving and conservation.[236]

236 City of Cape Town, 2013b.

c) Access to sanitation

Whilst a range of sanitation technologies are currently used in South Africa, the choice of technology is influenced by many factors, including affordability to the household. Table 4.2 indicates Cape Town households' access to sanitation between 1996 and 2014 by type of toilet facility. The majority of households in Cape Town have access to flush or chemical toilets, with access having increased from 89,3% in 1996 to 93,5% in 2014. While the number of households with access to pit latrines declined, those with access to bucket toilets increased from 3,1% in 1996 to 4,1% in 2014, which reflects the growth in the number of households living in informal settlements.

In areas with formal dwellings, the City's water and sanitation standard includes on-site waterborne, conservancy tank, or appropriate waterless sanitation technologies. For all those with access to waterborne sanitation (flush toilets), the first 4,2 kℓ of sewage conveyance and treatment per month are provided free of charge. In informal areas, the minimum service standard for sanitation is the provision of a shared toilet at a ratio of no more than five families per toilet.[237] This service is provided free of charge. Encouragingly, the number of Cape Town households with "no access to toilet facility" declined from 4,9% in 1996 to 1,7% in 2014.[238]

d) Access to energy

Energy in Cape Town is derived from multiple sources. However, coal-based electricity is the main source of energy for many households and is to varying degrees used for domestic consumption in lighting, cooking and heating. Table 4.3 above shows Cape Town households' levels of access to different types of energy sources.

237 City of Cape Town, 2013a.
238 City of Cape Town, 2015f.

Table 4.4: Household access to refuse removal in Cape Town, 1996, 2001, 2011 to 2014

	Removed by local authority/private company at least once a week	Removed by local authority/ private company less often	Communal refuse dump	Own refuse dump	No rubbish disposal	Other
1996	88,6%	3,1%	1,5%	3,3%	2,1%	1,3%
2001	94,2%	1,2%	1,3%	2,0%	1,4%	0,0%
2011	94,3%	0,7%	2,8%	1,4%	0,7%	0,2%
2012	93,2%	0,2%	5,1%	0,3%	0,5%	0,7%
2013	91,3%	0,6%	6,0%	0,1%	0,2%	1,8%
2014	92,3%	0,7%	2,3%	3,9%	0,2%	0,6%

Source: City of Cape Town, DI&GIS Department, compiled from various Stats SA Census (1996, 2001, 2011) and GHS (2012, 2013, 2014) data.

The City also provides a monthly indigent grant for additional water supply to qualifying households.

As table 4.3 shows, electricity is the predominant source of energy for Cape Town households, with access having increased from 86,8% in 1996 to 98,4% in 2014. Over the same period, the use of paraffin decreased from 10,0% to 0,4%.

In 2014, 98,4% of households used electricity for lighting, 89,3% for cooking, 96,5% for water heating, and 28,5% for space heating.[239] The City is the service authority for the supply of electricity in Cape Town and is jointly responsible for its reticulation along with the national electricity supplier, Eskom. Electricity availability and access backlogs are a challenge primarily in informal settlements. Some informal settlements experience service connection backlogs, while there is also a backlog of electricity provision to backyard dwellers in formal areas. These access needs are addressed on an ongoing basis by the City's Electricity Services Department and Eskom through their respective electrification programmes. However, certain informal housing areas are excluded from electrification where the structures are situated in areas considered unsuitable, such as road reserves or private land.

The City has laid a strong institutional foundation for sustainable energy development, which it continues to promote. The administration is committed to promoting energy efficiency in its own operations and facilities: To this end, the City's monitoring of its own energy consumption is now firmly entrenched, and a programme has commenced aimed at developing building facility managers' capacity to effectively manage the energy consumption of City buildings. A range of energy-efficiency projects and initiatives have been undertaken, including traffic and streetlight retrofits, energy-efficient building retrofits, the establishment of a commercial energy-efficiency forum, and campaigns on energy-efficiency behaviour and efficient water heating. Further City efforts include the continued roll-out of the electricity-savings campaign to encourage a reduction in electricity consumption across Cape Town.[240]

239 City of Cape Town, 2015g.

e) Access to refuse removal

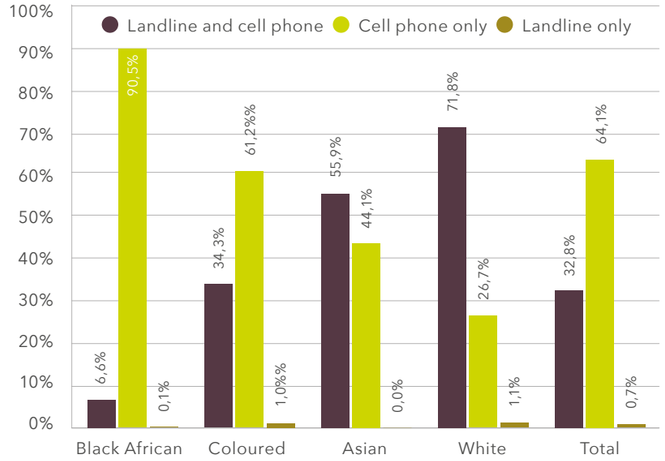
The majority of households in Cape Town have access to regular, weekly refuse removal services. Statistics show a gradual improvement in refuse removal in the city. According to table 4.4, households' access to a weekly refuse removal service increased from 88,6% in 1996 to 92,3% in 2014. Households using a communal refuse dump increased from 1,5% to 2,3% in the same period, indicating some of the pressures on service delivery in a growing urban context.

The City's Integrated Waste Management (IWM) Plan entails the implementation of strategies to manage and minimise waste. Cape Town households in formal areas receive a weekly, basic level of refuse collection as defined in the IWM Policy, while households in informal settlements have access to an integrated refuse collection service. In some instances, informal settlements receive a temporary service until the standard basic service can be implemented. In line with the National Environmental Management

240 City of Cape Town, 2013c.

Waste Act 26 of 2014, amendments were made to the City's policy in 2015 regarding ways to minimise waste generation and disposal within the municipality's boundaries, the use of natural resources, and sound environmental practices for landfilling. The new considerations added include the recovery of any valuable substance, material or object from waste by means of controlled extraction or retrieval; the recycling of reclaimed waste for further use, as well as the reuse of all, a portion or a specific part of any substance, material or object from the waste substance, material or object.[241]

Figure 4.2: Cape Town household access to telephones, 2014



Source: City of Cape Town, DI&GIS Department, compiled from StatsSA GHS data

f) Access to telecommunications

Broadband is recognised as a key driver of economic growth and wealth generation. Information and communications technology for development (ICT4D) has become an established development area, and research continues to investigate the link between ICT and poverty reduction. As communication technologies evolved, the call for the recognition of communication as a human right became linked to the right to access ICT.[242] In line with this, several countries now recognise internet access as a basic human right. The need for access to broadband in South Africa is articulated in many proclamations. On the part of provincial government, there has been a move towards establishing public WiFi hotspots in malls, taxi ranks and the like. Examples include the free public WiFi projects in Tshwane and the Western Cape.[243]

g) Access to telephony

Nationally and in Cape Town, residents' access to telecommunication using landlines or mobile telephones has grown steadily, driven mainly by the rapid uptake of mobile telephony. In Cape Town, access to telephony (landlines and/or cellphones) increased from 61,24% in 1996 to 96,8% in 2014.

GHS 2014 results show that 90,5% of black Africans in Cape Town use cellphones as their sole means of communication (table 4.2).

Access to and the use of landline telephones seems to be on the decline. Nationally, the number of fixed lines in service continues to decline, having fallen by a further 4,8% in 2014 to just over 3,6 million, from 3,8 million in 2013. The fixed-line penetration rate declined from 7,3% in 2013 to 7,0% in 2014.[244]

According to Stats SA Census 2011 and GHS 2014 results, Cape Town households with landlines as their main source of communication declined from 2,0% in 2011 to 0,7% in 2014.

h) Access to the internet

Greater access to mobile telephony is a positive development; however, it cannot be assumed that increased mobile phone access is synonymous with access to mobile internet. Stats SA GHS 2014 results showed that 29,4% of all Cape Town households still do not have internet access. Among black African households in particular, those without internet access are estimated at 37,6% (table 4.5). In addition, while prices are coming down, mobile internet remains more expensive than fixed-line internet access.

The first initiatives by the City to make internet available to low-income residents were through the provision of public internet access points. The Smart Cape initiative, which was launched in June 2002, continues to provide free internet access in the City's public libraries. Smart Cape aims to provide residents with access to basic ICT, free of charge. Since its inception, the initiative has attracted thousands of registered users and is now available in all the City's public libraries.

In addition, the City has launched its broadband infrastructure roll-out throughout the metro. It aims to bridge the digital divide by providing disadvantaged communities with affordable internet connectivity. The municipal connectivity projects are part of the strategy to run the City more efficiently, facilitate cost savings (rather than pay the high commercial telecommunications prices) and reach underserviced areas, for example by connecting all libraries to the internet. The increased availability of bandwidth may potentially benefit Cape Town's growing knowledge-based economy and help attract foreign investment, which could bring major economic and social benefits to the city.

This is aligned with and linked to Province's broadband initiative, which was launched in 2012, and will provide a big boost to efforts to connect Cape Town residents to the internet. At an estimated cost of R100 million, the City approved the construction of a wireless telecommunications network in the metro south-east to leverage the City's optic-fibre network so as to enable Khayelitsha and Mitchells Plain households and businesses to access wireless internet at reduced prices,

241 City of Cape Town, 2015h.
242 McGiver et al., 2003.
243 http://www.techcentral.co.za/let-them-eat-cake-but-not-broadband/64628/.
244 McLeod, 2014.

Table 4.5: Cape Town household access to the internet, 2014

Population group	Use the internet	Do not use the internet	Use internet at home	Use internet at work/ educational institution	Use internet on a mobile device	Use internet elsewhere
Black African	62,38%	37,62%	5,61%	17,26%	58,12%	10,39%
Coloured	67,62%	32,38%	20,52%	28,44%	58,70%	7,24%
White	87,61%	12,39%	71,25%	50,23%	61,87%	3,65%
Total	70,62%	29,38%	27,45%	29,64%	59,57%	7,64%

Source: City of Cape Town, DI&GIS Department, compiled from StatsSA GHS data

for implementation in 2014/15.[245] To date, 69 WiFi access points have been installed in the Khayelitsha and Mitchells Plain areas.[246]

The City is also committed to provide digital access to communities through free WiFi both inside and outside public buildings at a number of hotspots in the city. To this end, the City in October 2014 engaged with three commercial service providers (MWEB, Orange and Internet Solutions) through a supply chain management process. By the end of June 2015, 61 public hotspots had been made available in buildings where members of the public congregate and queue for municipal services, namely the Hillstar administrative building, the Plumstead administrative building, Harare Library in Khayelitsha, and the Cape Town Civic Centre. In addition to the 69 access points mentioned above, the City had also provided 178 WiFi access points across the metro by June 2015.[247]

This development is in line with new research that suggests that by 2018, internet access via fixed lines and WiFi will have overtaken mobile internet access. Nationally, fixed-line and WiFi traffic made up 51% of total internet protocol traffic in South Africa in 2013. According to the latest Cisco Virtual Networking Index™ Global Forecast and Service Adoption Report for 2013 to 2018, this figure will grow to 65% of total traffic by 2018.[248]

As of 2015, the broadband infrastructure investment programme in Cape Town has seen the construction of a 613 km fibre route, comprising 789 km of fibre, and 18 switching centres; 190 City buildings have been connected via broadband fibre or wireless services; fibre speed is a minimum of 1 Gbps; telecommunication costs have been cut by R60 million per year; 54 facilities of Province have been connected, and closed-circuit television cameras have been installed. Seven fibre rings have also been constructed in Atlantis to serve the industrial area; and 39 connections have been provided for third-party services.

i) Access to social amenities

Research shows that the ability to experience meaning in a public space can be restricted by issues of access, mobility and the quality of social resources. Easily accessible amenities and services for communities have been linked to higher community satisfaction and quality of life.[249] In 2010, the City's Sports, Recreation and Amenities Department commissioned a Recreation Research Study to assess Cape Town residents' participation levels in sport and recreation, and to identify participation barriers and motivators. The study found that many Cape Town residents, including children, live sedentary lives and rarely participate in sport and recreation activities. According to the study findings, most Cape Town residents were more interested in recreational programmes such as health and fitness, arts, crafts and games than in participation in formal sporting codes such as soccer and cricket. The results showed that only 24,6% of adult residents participate in physical activities in their spare time.[250] Key results of this study were used to inform and shape the Department's recreation strategy, in terms of which the transition from City-centred sports development to

245 City of Cape Town, 2013d.
246 City of Cape Town, 2015i.
247 Ibid.
248 See http://www.techcentral.co.za/fixed-internet-to-trump-mobile-in-sa/48976/.
249 Lloyd & Auld, 2003.
250 City of Cape Town, 2014c.

community-centred development is to be realised through the establishment of functional recreation hubs across Cape Town.

A City-commissioned sport and recreation study by the Council for Scientific and Industrial Research (CSIR) evaluated[251] community social facilities and recreational space in Cape Town and found limited use of the facilities by formal sporting codes, and supported use of the facilities for recreation, i.e. not for formal sports, by community members.[252]

Previous City-commissioned CSIR research on standards has been updated and reviewed to provide a foundation for the development of specific standards and guidelines tailored to the City's current and future planning needs. This includes a review of the facility standards developed for the City during an accessibility modelling project. In 2009 and 2010, the CSIR undertook an evaluation of the current and future provision and optimal location of new community social facilities and recreational space in Cape Town.[253] In 2011, the Summary Guidelines and Standards for the Planning of City of Cape Town Social Facilities and Recreational Spaces were updated to understand the utilisation of community facilities across Cape Town with a view to improving access and usage. The guidelines and standards promote the use of benchmarks for average travel time and distance to community facilities in order to facilitate their better provision and utilisation. The City also uses the integrated community facility provision map generated by the CSIR, as well as targeted facility usage and needs studies, which are updated regularly. Finally, in 2014, the City signed an agreement with the CSIR to conduct a status quo update of the supply and demand of social facilities, for use in forward planning up to 2032 in Cape Town.[254]

Table 4.6: City sports and recreational facilities by type, 2016

Sports and recreational amenities	Number
Community centres	187
Recreation hubs	55
Multi-code sports grounds	151
Public swimming pools (primary purpose of facility is swimming)	34
Multipurpose centre	6
Total	433

Source: *City of Cape Town, 2016a, Sport and Recreation Department.*

The City encourages residents to embrace an active lifestyle[255] and is making a concerted effort to create spaces where residents can pursue active sporting and recreational activities. One of the objectives of the City is to promote active and healthy lifestyles among members of communities through providing and encouraging the utilisation of sporting and recreational facilities. To achieve this, the City continues to prioritise the maintenance and upgrade of its community facilities for the benefit of all Cape Town residents. A number of sport and recreation partnerships have been established to further promote and develop sport and recreation across the city. According to data from the City's Sport, Recreation and Amenities Department, facilities provided include up to 433 sports and recreational amenities across Cape Town. As can be seen from table 4.6, these consist of 187 community centres, 151 multi-code sports grounds, 55 recreational hubs and 34 public swimming pools.

> As of 2015, 190 City buildings have been connected via broadband fibre or wireless services.

Further, in response to the recognised need for greater outdoor recreational access for all Cape Town residents, the City has focused on developing community recreation hubs that provide a wide range of people with access to a mix of activities. Communities now have access to up

251 The study was called "Evaluation of community social facilities and recreational space in City of Cape Town: current and future provision for 2016 and optimal location of new facilities".
252 CSIR, 2010a.
253 City of Cape Town, 2011.
254 City of Cape Town, 2014d.
255 CSIR, 2010b.

Table 4.7: City public open spaces by type, 2014

City Parks	Number	Area (m²)	Ha
District parks	12	2 894 974	289,5
Community parks	3 526	17 814 619	1 781,5
Greenbelts	364	12 148 521	1 214,9
Undeveloped public open spaces	1 346	9 599 140	959,9
Cemeteries	40	5 422 337	542,2
Road reserves	n/a	19 957 606	1 995,8

Source: *City of Cape Town, City Parks Department, 2015/16.*

Table 4.8: City and provincial health-care facilities in Cape Town, 2015/16

Clinics in Cape Town	Number
City	106, consisting of: 83 fixed facilities; 14 satellite clinics; five mobile units; and four specialised clinics (e.g. reproductive or males-only clinics).
Province	49, consisting of: 43 fixed facilities; and six specialised clinics.
Total	155

Source: *Western Cape Government, 2016.*

to 55 such recreation hubs across Cape Town.[256] The recreation hubs are core facilities where various recreational programmes and activities take place on a regular basis. Activities – which range from free play to wellness and life-skills programmes, as well as structured sporting programmes for seniors and youth – include board games, giant games, angling programmes, roller sports, cycling, BMX tracks, mind sports, wheelchair basketball, fitness programmes, volleyball, learn-to-swim programmes, ball games, tennis, netball, soccer, dragon boat racing, indigenous games, gymnastics and dancing.[257]

In addition, the City maintains about 5 288 public open spaces, including 1 346 undeveloped public open spaces, 3 526 community parks, 12 district parks and 364 greenbelts (see table 4.7).

A 2007 CSIR study also indicated that access to district parks varied across planning districts, and that district parks were mostly located in areas away from the highest population demand.[258] The CSIR's evaluation study in 2010 noted that only 29,7% of the total population in the Mitchells Plain/Khayelitsha district were being served – the lowest proportion in Cape Town. Altogether 67,61% of the population in the Mitchells Plain/Khayelitsha district and 19% of Cape Town's population were being underserved by the City in terms of access to public open space.[259]

The Khayelitsha/Mitchells Plain Greater Blue Downs District Plan of 2012 recognises the major gap in respect of the scale and distribution of public amenities, including open space, in the district as a concern. Often, especially in areas with major population concentrations and significant informal settlements, land identified for facility uses such as open space has been invaded. The plan proposes the development of a metropolitan park and conservation area on the Denel/Swartklip site in order to improve access to open space in the area. Another proposal is for the development of Driftsands Nature Reserve as a multifunctional area incorporating conservation and urban land uses. In addition, it identifies Wolfgat Nature Reserve and Khayelitsha Wetlands Park and their associated sensitive natural environments for promotion and management as nature-based destination places.[260]

j) Access to health-care facilities

According to current City corporate data, Cape Town has 155 clinics, comprising 126 community health centres (CHCs), 14 satellite clinics, five mobile clinics and six specialised clinics. These facilities ensure the provision of comprehensive primary health care (PHC) as well as maternal and child health services, including preventive and promotional programmes (see table 4.8).

The City, in partnership with Province's Health Department, currently operates these facilities according to a service-level agreement (table 4.9).

Other health facilities in Cape Town include 19 public hospitals and 35 private hospitals.[261] The hospitals are fairly evenly spread throughout the city (also indicated in table 4.9).

k) Access to police stations

There are currently 61 police stations across Cape Town, with a police precinct serving each station's area of jurisdiction[262] as part of SAPS's demarcation of policing areas.

The crime statistics released by SAPS in September 2015 underline the concern that crime reached alarmingly high levels in Cape Town in 2014/15. The actual number of reported crimes in Cape Town increased from 327 092 in 2014 to 331 949 in 2015 (reporting years), which represents an increase of 1,5%. This translates into 909 incidents of crime reported on a daily basis during the 2014/15 reporting year. However, in 2014/15, Cape Town showed a decline of 0,08% in its overall crime rate, falling from 8 526 reported cases of crime per 100 000 population in 2014 to 8 519 in 2015.

In terms of types of crimes, Cape Town remains among the cities with the highest incidents of violent crime in the country. Two categories of reported crime, namely violent crime and property-related crime, account for over 65% of the total number of incidents reported in the city in 2014/15. An analysis of the 2014/15 violent crime data by police precinct in Cape Town indicates that violent crime tends to be concentrated in

256 City of Cape Town, 2016a.
257 City of Cape Town, 2016b.
258 CSIR, 2007.
259 CSIR, 2010a.
260 City of Cape Town, 2012d.
261 Western Cape Government, 2016.
262 South Africa Police Service, 2016.

Table 4.9: City and provincial health-care facilities in Cape Town, 2015/16

Object Id	Address	Hospital Name	Classification	Type	Suburb
1	Groote Schuur Drive	Groote Schuur Hospital	Tertiary Hospital	State	Observatory
2	Klipfontein Road	Red Cross Children's Hospital	Tertiary Hospital	State	Rondebosch
3	Duinefontein Road	G.F. Jooste Hospital	District Hospital	State	Manenberg
4	Beach Road	New Somerset Hospital	Regional Hospital	State	Green Point
5	Alphen Hill Road	Victoria Hospital	District Hospital	State	Wynberg
6	Francie Van Zijl Boulevard	Tygerberg Hospital	Tertiary Hospital	State	Tygerberg Hospital
7	Hornsey Road	Mowbray Maternity Hospital	Regional Hospital	State	Mowbray
8	Seventeenth Avenue	False Bay Hospital	District Hospital	State	Fish Hoek
9	Wesfleur Circle	Wesfleur Hospital	District Hospital	State	Avondale
10	Humbolt Avenue	Eerste River Hospital	District Hospital	State	Rosedale
11	Hospital Road	Helderberg Hospital	District Hospital	State	Golden Acre
12	A.Z. Berman Drive	Mitchells Plain Hospital	District Hospital	State	Lentegeur
13	Clinic Road	Melomed Gatesville		Private	Gatesville
14	Park Lane	Intercare Day Hospital Century City		Private	Century City
15	Steve Biko Road	Khayelitsha Hospital	District Hospital	State	Mandela Park
16	Racecourse Road	Mediclinic Milnerton		Private	Milnerton
17	Symphony Walk, Town Centre	Melomed Mitchells Plain		Private	Mitchells Plain Cbd
18	Highlands Drive	Lentegeur Psychiatric Hospital	Psychiatric Hospital	State	Lentegeur
19	Syfred Douglas Street	Netcare N1 City Hospital		Private	N1-Stad
20	Mike Pienaar Boulevard	Karl Bremer Hospital	District Hospital	State	Oosterzee-Bellville
21	Forest Drive Extension	Conradie Care Centre		State	Thornton
22	Alexandra Road	Life Vincent Pallotti Hospital		Private	Observatory
23	Burnham Road	Mediclinic Constantiaberg		Private	Plumstead
24	Stanberry Road	Brooklyn Chest Hospital	District Hospital	State	Rugby
25	Longmarket Street	Netcare Christiaan Barnard Hospital		Private	Cape Town City Centre
26	Hof Street	Mediclinic Cape Town		Private	Gardens
27	Prince Street	Booth Memorial Hospital		Private	Oranjezicht
28	Broadway Street	Mediclinic Louis Leipoldt		Private	Vredelust-Bellville
29	Oosterzee Street	Cape Eye Hospital		Private	Oosterzee-Bellville
30	Voortrekker Road	Melomed Bellville		Private	Hardekraaltjie
31	Tanner Road	Mediclinic Cape Gate		Private	Cape Gate
32	Wellington Road	Mediclinic Durbanville		Private	Durbanville
33	Altena Road	Mediclinic Strand		Private	Strand
34	Rothschild Boulevard	Mediclinic Panorama		Private	Panorama
35	Main Road	Mediclinic Vergelegen		Private	Cherrywood Gardens
36	Main Road	Life Claremont Hospital		Private	Claremont
37	Wilderness Avenue	Life Kingsbury Hospital		Private	Claremont
38	Imam Haron Road	Melomed Claremont		Private	Claremont
39	Watervalle Crescent	Netcare Blaauwberg Hospital		Private	Sunningdale
40	Van Riebeeck Street	Netcare Kuils River Hospital		Private	Sonnekuil
41	Anzio Road	UCT Private Academic Hospital		Private	Observatory
42	Annex Road	Alexandra Psychiatric Hospital	Psychiatric Hospital	State	Maitland Garden Village
43	White Road	D.P. Marais Santa TB Hospital	District Hospital	State	Retreat
44	Kildare Road	Maitland Cottage Children's Hospital	District Hospital	State	Newlands
45	Klipfontein Road	Rondebosch Medical Centre		Private	Mowbray
46	Old Paarl Road	Stikland Psychiatric Hospital	Psychiatric Hospital	State	Stikland Hospitaal
47	Observatory Road	Valkenberg Psychiatric Hospital	Psychiatric Hospital	State	Observatory

Source: Western Cape Government, 2016

the poorer parts of the city, with a small number of police precincts accounting for a large proportion of reported crime. Out of the 61 police precincts, the top five in terms of the number of reported cases of violent crime in 2014/15 were Mitchells Plain, including Lentegeur (5 905); Nyanga (3 665), Khayelitsha (3 477), Harare (2 886) and Kraaifontein (2 530). Two of these police precincts are situated in the greater Khayelitsha area, which makes it the location with the highest number of reported violent crimes (6 363) in that period.[263]

Property-related crime accounts for the highest percentage of crime cases as well as the largest category of crime[264] in South Africa's biggest metros, including Cape Town. However, the property-related crime rate in Cape Town declined by 3% in 2015, falling from 4 078 cases per 100 000 population in 2014 to 3 951, having shown a decrease of 9,5% over the nine-year period from 2005/6 to 2014/15. Cape Town is the only metro where the drug-related and driving-while-intoxicated (DWI) crime proportion (20,31%) exceeds the violent-crimes proportion (19,33%). Commercial crime accounts for the lowest percentage.[265]

The City has three policing departments: Metro Police, Traffic Services, and Law Enforcement and Specialised Services. The objectives and priorities of these departments are set out in the City's overarching Law Enforcement Plan, which includes the Metro Police's legally required Annual Police Plan. The plan aims to ensure the integrated delivery of efficient policing services.

In terms of the Metro Police's 2015/16 plan, the Department set itself the aims of aligning its strategies in order to deal with crime in Cape Town, and to continue to collaborate with both internal and external partners in order to address crime.

The plan aims to ensure that the Metro Police is accountable and attends to problems relating to crime, corruption, traffic and bylaw violations. The primary operating focus of the plan is crime prevention and both traffic and bylaw enforcement. In terms of combating crime and criminal behaviour that may potentially detract from the quality of life of law-abiding citizens of Cape Town, priority crimes targeted by the plan include violent crime, gang-related criminal activities, offences relating to alcohol and drugs, illegal arms and ammunition, dangerous weapons, crimes against women and children, as well as traffic and bylaw enforcement.[266]

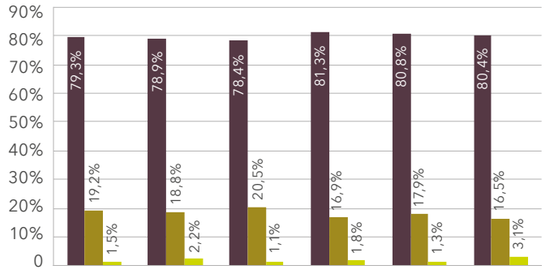
Among the main concerns raised in the policing plan are drugs and gangsterism. The Cape's gang culture and associated violence is a long-standing challenge. In a bid to ensure a more effective response to gang violence in particular, the City established a Gang Unit as well as a Vice Squad, which are targeted at more effectively tackling these problems.[267] This includes using a number of internal and external specialists to intensify the City's anti-gang operations.[268] The Unit conducts targeted patrols based on crime-threat patterns and analyses. Gang Unit duties include identifying gangs and drug hotspots in response to complaints; building profiles of gangs and drug dealers; coordinating the execution of integrated search warrants; increasing the number of roadblocks aimed at crippling gangs and drug networks; dedicated enforcement action against drug dealers, and participating in local drug action committees. The operational focus of the Unit includes tracking known associates of gang members, where relevant; conducting observations of premises known to be associated with gang activities such as illegal narcotics, illegal arms and ammunition, prostitution, alcohol, etc.; conducting stop-and-search operations in respect of suspected drug pushers and users, as well as carrying out targeted operations on suspected drug hotspots and other high-risk areas, both on its own and in collaboration with SAPS.[269]

Furthermore, the City's Safety and Security Directorate has decided to establish an integrated Roadblock Unit, comprising 18 members from various departments, including Traffic Services, Metro Police and Law Enforcement, as well as Province's Traffic Department. The Unit will from time to time

263 City of Cape Town, 2016c.
264 This category includes burglary at non-residential premises, burglary at residential premises, common robbery, theft of motor vehicles and motorcycles, theft out of or from motor vehicles and motorcycles, and all theft not mentioned elsewhere. "All theft not mentioned elsewhere" is the largest individual crime category and could influence the totals for property-related crime. Violent crimes constitute the second-largest category.
265 City of Cape Town, 2016d.
266 City of Cape Town, 2015j.
267 City of Cape Town, 2013e.
268 City of Cape Town, 2014e.
269 City of Cape Town, 2014f.

link up with the Traffic Services Ghost Squad, and the City has also extended an invitation to SAPS to join the initiative. The integrated Roadblock Unit is responsible for executing roadblocks across the city, with a specific focus on drinking and driving, stolen vehicles and illegal street racing. They detect and seize illegal firearms and drugs and work to track down people with outstanding warrants as well as those wanted by SAPS.[270]

Figure 4.3: Household access to types of housing in Cape Town, 1996 to 2014



	1996	2001	2011	2012	2013	2014
Formal housing	79,3%	78,9%	78,4%	81,3%	80,8%	80,4%
Informal housing	19,2%	18,8%	20,5%	16,9%	17,9%	16,5%
No housing	1,5%	2,2%	1,1%	1,8%	1,3%	3,1%

Source: City of Cape Town, DI&GIS Department, compiled from various Stats SA Census (1996, 2001, 2011) and GHS (2012, 2013, 2014) data.

l) Access to public housing, and informality

The emerging human settlements pattern suggests that Cape Town's population of poor households is increasing, and that proportionately more households rely on public housing delivery. The proportion of households living in formal housing increased gradually from 79,3% in 1996 to 80,4% in 2014, against the backdrop of a larger urban population and more households. However, there has also been a marked increase in informal dwellings in Cape Town over the past decade. As such, a substantial proportion of new households live in informal housing for shelter, either in informal settlements or backyard dwellings in formal townships.

The increase in informal housing is in line with the increase in Cape Town's population and is a physical manifestation of the population growth rate and the growth in new household formation outstripping the rate of housing supply. Fuelled by rapid urbanisation, informal housing and settlements have become a regular feature of urban environments in South African cities.

One of Cape Town's biggest growth challenges is managing informal settlements and the escalating number of households living in backyard structures. According to figure 4.3, 19,2% of Cape Town households lived in informal dwellings in 1996; by 2011, this figure had increased to 20,5%, while by 2014, it had declined to 16,5%. Over the same period, the proportion of households living in formal housing declined gradually from 79,3% in 1996 to 78,4% in 2011, rising to 80,4% in 2014. The percentage of those with no housing access decreased slightly from 1,5% in 1996 to 1,1% in 2011, increasing again to 3,1% in 2014. There are currently 204 informal settlement areas in Cape Town, which may consist of more than one informal settlement pocket per area. For service delivery purposes, there are officially 146 236 informal dwelling/service points.[271]

Figure 4.3 shows that the proportion of households in informal housing decreased from 19,2% in 1996 to 16,5% in 2014. Growth in informal dwellings largely occurs in the metro south-east, and the establishment of backyard dwellings is mainly prevalent in areas where subsidised housing has been delivered. To manage the growth of informal settlements, the City has established an Anti-Land Invasion Unit to stop people from illegally erecting shacks on unoccupied land. The Unit demolishes illegal structures, unless the structure is occupied by the owner, in which case a court order is needed.

The continued existence of informal settlements and the growth in informal structures in the backyards of formal township houses suggest an unabated demand for low-cost housing. To respond to this challenge, the City's five-year Integrated Human Settlements Plan 2012-2017 sets out a range of strategies for providing incremental housing, and regularising and upgrading informal settlements. The City prioritises increased allocation of resources to improve living conditions in informal settlements, especially for the provision of basic services such as refuse removal, water, sanitation and electricity. The five-year housing plan outlines initiatives to increase access to housing opportunities, including the provision of serviced sites with shared services. In this regard, the City spent 90% of its Urban Settlements Development Grant (USDG) (for all directorates) during the 2014/15 financial year and delivered a total of 3 822 sites, 3 372 top structures and 1 525 other housing opportunities (upgrade of rental stock, and re-blocking).[272]

> The emerging human settlements pattern suggests proportionately more households rely on public housing delivery.

5.2 Urban mobility – transport in Cape Town

Transport is instrumental in development and constitutes an essential element of urban growth, influencing the form of the city. Much of the recent concern about and promotion of public transport in cities has to do with an observed increase in private-car use and the associated risk to air quality. Further, increased private-car usage is historically associated with urban sprawl, as the availability of private transport allowed for urban development to locate further from the centre and off the main public transport routes.

The push for cities to develop more sustainably has inevitably also meant a renewed emphasis on public transport, and a call for more compact forms of urban development that closely track the key transport corridors within cities. It has been shown that sustainable cities make greater provision for public and non-motorised transport infrastructure, both demanding and yielding a more compact city form. Both of these elements form a core component of the City's Integrated Transport Plan (ITP) 2012-2017. The City's Integrated Public Transport Network (IPTN) Plan 2013-2018 includes provision for rail, bus rapid transit (BRT) services, non-motorised transport (NMT), as well as road-based public transport improvements.

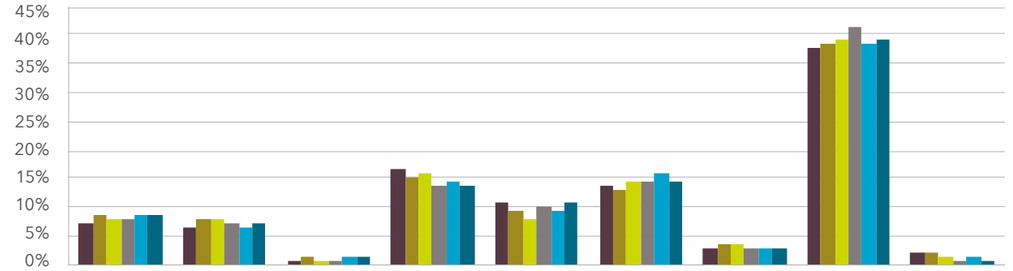
Cape Town has established an empowered Transport Authority – Transport for Cape Town (TCT) – that is committed to delivering integrated transport to address mobility issues and challenges in Cape Town for the benefit of all citizens. An IPTN Plan 2032 has been approved for the next 20 years. This plan focuses on the TOD approach to unlock the value of key transport sites. These might include the development of the land around railway and major bus stations, together with their precincts, in order to enhance land values. There could also be opportunities for development rights above transport facilities so as to create multifunctional urban communities.[273]

a) Modes of transport in Cape Town

Cape Town citizens commute to and from different destinations across the city, for work, education, business and leisure. The travel modes used include bus, train, car, bicycle and walking. Statistics reveal that between 2009 and 2014 (see figure 4.4), private/company cars were the most dominant or preferred mode of transport used by commuters in Cape Town. Between 2001 and 2014, most commuters entering the Cape Town CBD on a daily basis came by private/company car, followed by train, minibus/metered taxi and, finally, the bus.[274]

In the period under review, most commuters in Cape Town used public modes of transport, including trains and buses. Figure 4.4 shows that private/company-car use in Cape Town increased steadily from 37,8% in 2009 to a high of 42% in 2012, and then declined again to 39,8% in 2014. Over the same period, minibus/sedan taxis were the second-most-used mode of transport, followed by trains and buses. However, train use shows a decline from 16,3% in 2013 to 14,6% in 2014; the use of minibus/sedan taxis declined slightly in the corresponding period, while buses remained steady around the 10% mark. The decline in the use of trains and, to a lesser extent, minibus/sedan taxis seems to have been in line with the increase in private/company-car use, which suggests that more people in Cape Town moved from public to private modes of transport to commute to and from work during the period under review. However, in terms of the daily modal split for passenger trips entering the Cape Town CBD between 2001 and 2011, about 60% of passenger trips were by means of non-motorised or public transport modes, compared to approximately 40% of trips undertaken in private cars.[275]

Figure 4.4: Transport modes to travel to and from work in Cape Town, 2009 to 2014



	Office is at home	Walking	Motorcycle/ bicycle	Minibus taxi/ sedan taxi	Bus	Train	Lift club	Private/ company vehicle	Other
2009	7,4%	6,6%	0,7%	17,0%	11,1%	14,0%	3,2%	37,8%	2,2%
2010	8,9%	8,1%	1,1%	15,4%	9,3%	13,1%	3,3%	38,5%	2,4%
2011	8,4%	7,8%	0,7%	16,0%	8,0%	14,8%	3,3%	39,5%	1,4%
2012	8,0%	7,1%	0,8%	13,7%	9,8%	14,7%	3,1%	42,0%	0,7%
2013	9,0%	6,7%	1,1%	14,9%	9,1%	16,3%	2,7%	39,2%	1,0%
2014	8,4%	7,2%	1,1%	14,1%	11,0%	14,6%	2,9%	39,8%	0,9%

Source: City of Cape Town, DI&GIS Department, compiled from various Stats SA Census (1996, 2001, 2011) and GHS (2012, 2013, 2014) data.

270 City of Cape Town, 2014g.

271 City of Cape Town. Various DI&GIS Department data

272 City of Cape Town, 2015a.

273 City of Cape Town, 2015k.

274 City of Cape Town, 2015e.

275 City of Cape Town, 2013f.

b) Travel time to work in Cape Town

Between 2009 and 2014, the majority of commuters travelled an average of 15 to 60 minutes from home to work. Figure 4.5 shows that over this period, there was a fair split between commuters who took between 15 and 30 minutes and 31 and 60 minutes to travel to and from work: Together, more than two-thirds of the commuters travelled either 15 to 30 minutes or 30 minutes to an hour.

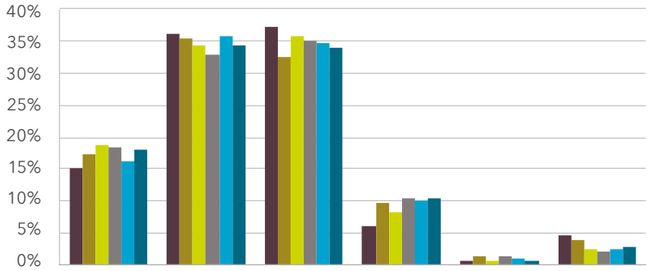
In 2014, commuters in the white (32,4%) and Asian (20,3%) population groups had the shortest commute, taking less than 15 minutes on average to travel to work, compared to 10,7% and 16,6% of commuters in the black African and coloured population groups respectively. In turn, those who took between 61 and 90 minutes were predominantly commuters from the black African (18,0%) and coloured (7,3%) population groups. The majority of low-income black African and coloured households live further away from the city centre and other major economic nodes around the city, and have to commute longer distances and times by means of public transport modes. A small percentage of commuters from these population groups took more than 90 minutes to travel to and from work, and predominantly used public transport.

According to figure 4.6, almost 40,0% (38,7%) of black African commuters used public transport (bus and train) between home and work in 2014. This is in contrast to the 26,9% of coloured commuters and 4,3% of white commuters who used public transport. Altogether 79,0% of Asian and 77,5% of white commuters used private transport to commute, compared to 18,0% of black African and 45,4% of coloured commuters.[276]

The reflected trends suggest that one of the City's major challenges is the predominant use of private cars as the preferred mode of transport. Public transport surveys by the City in 2011 also indicate that private transport use dominated the overall commuter modal split, and as more cars come onto the existing road network, commuters are likely to face more traffic congestion.[277]

Transport has a role to play in creating an enabling environment that is accessible to all. TCT aims to provide safer and higher-quality public transport services across all modes – road, rail, walking and cycling – at a greater quantity. To this end, the City is implementing the Cape Town Integrated Rapid Transit (IRT) system to transform the public transport sector. This initiative seeks to integrate all of Cape Town's current transport modal options into a fully integrated service package. Strategies include the roll-out of integrated road and rail public transport across Cape Town, with the focus on achieving commuter-orientated public transport. As part

Figure 4.5: Travel time to work* in Cape Town, 2009 to 2014

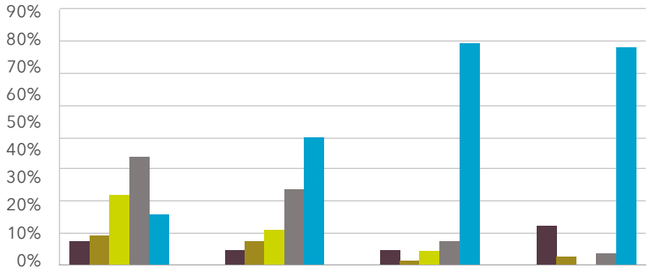


	Less than 15 minutes	15 to 30 minutes	31 to 60 minutes	61 to 90 minutes	More than 90 minutes	Unknown
2009	5,2%	36,2%	37,4%	6,0%	0,7%	4,5%
2010	7,3%	35,5%	32,4%	9,6%	1,3%	3,8%
2011	8,6%	34,4%	35,7%	8,1%	0,7%	2,6%
2012	8,3%	32,7%	35,0%	10,5%	1,4%	2,0%
2013	6,2%	35,7%	34,8%	10,1%	0,9%	2,3%
2014	8,0%	34,3%	33,9%	10,4%	0,5%	2,9%

** Excluding those who have their office at home.*

Source: *City of Cape Town, DI&GIS Department, compiled from various Stats SA Census (1996, 2001, 2011) and GHS (2012, 2013, 2014) data.*

Figure 4.6: Transport mode to travel to work, by population group, 2014

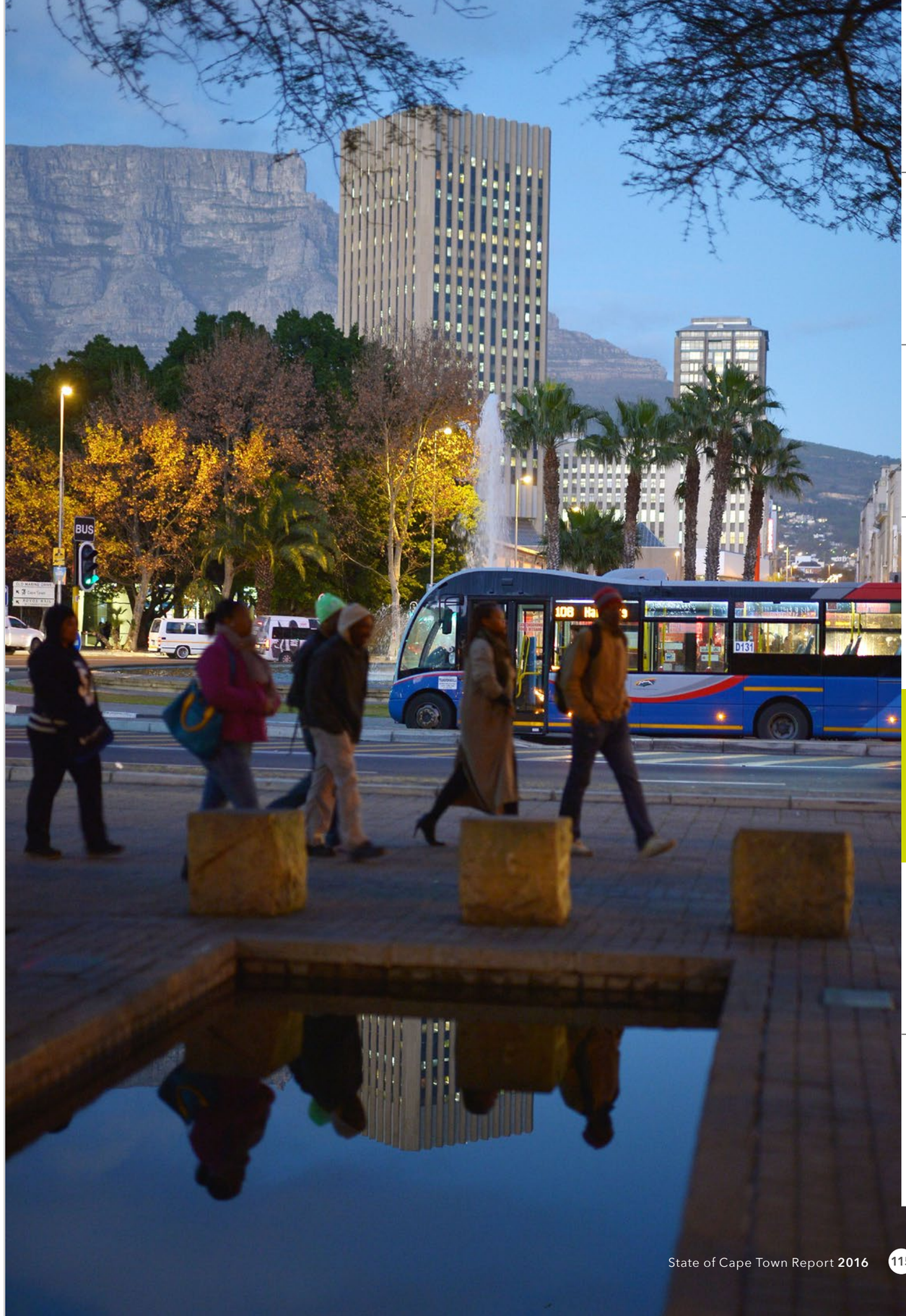


	Black African	Coloured	Asian	White
Office is at home	8,4%	5,6%	5,5%	13,7%
Walking	9,3%	7,9%	1,6%	3,1%
Minibus taxi/sedan taxi	24,5%	13,1%	4,8%	0,5%
Public Transport (bus and train)	38,7%	26,9%	9,0%	4,3%
Private/company vehicle	18,0%	45,4%	79,0%	77,5%
Other	1,0%	1,0%	0,0%	0,8%

Source: *City of Cape Town, DI&GIS Department, compiled from various Stats SA GHS (2014) data.*

276 City of Cape Town. Various. DI&GIS Department.

277 City of Cape Town, 2013g.



of the IRT initiative, the MyCiTi bus service was launched in the 2010/11 financial year. Services commenced in the Cape Town inner city on routes where there is high passenger demand, yet no rail service. Early in the 2013/14 financial year, MyCiTi extended to other areas, including an express service between Khayelitsha, Mitchells Plain and central Cape Town in early July 2014. These new bus services complement the Passenger Rail Agency of South Africa (PRASA) rail service, meet the needs of commuters on high-demand corridors, and contribute to a reduction in traffic congestion and the overall cost of travel.

The City's current and future transport plans are aimed at an integrated, universally accessible public transport system to provide affordable and efficient transport across all modes and facilities, for all in Cape Town, including passengers with special needs,[278] many of whom fall within lower income groups.[279] The Universal Access Policy for Cape Town, which was approved in September 2013, strives to ensure that all new transport infrastructure and transport services adequately incorporate the principles of universal physical accessibility to all. In accordance with the policy, existing transport infrastructure and services are incrementally and realistically retrofitted to become universally accessible. Part of this is a three-year universal-access audit of all roads, which has been under way since 2014, to evaluate the accessibility of transport routes for commuters with special needs. The audit includes an assessment of public transport interchanges, CBDs, main roads used by commuters to travel to work, shopping centres, hospitals, schools and industrial areas, as well as access to MyCiTi bus stations and stops. The data obtained will be used to provide commuters with pre-travel information on the routes and choices best suited to their needs. The City will also use the data to guide future upgrades and identify priority areas where shortcomings have to be urgently addressed.[280]

The City's efforts to enhance the universal accessibility of the MyCiTi service have been acknowledged internationally. In 2014, MyCiTi's universal accessibility policy received an award in Vienna for being one of the most innovative policies in the world in terms of ensuring that all special-needs passengers can make use of the service. Many special-needs groups and passengers already use the MyCiTi service with ease. Universal accessibility features on the MyCiTi buses include spaces for wheelchairs, level boarding, tactile paving and audible signals.[281]

Despite having declined in recent years, rail still is the predominant public transport mode and is considered the backbone of the public transport system for Cape Town. Thus, in addition to maximizing the use of the existing rail infrastructure network, a metro passenger rail link forms a fundamental component of the future metropolitan rail and transport network for Cape Town. Considerations include providing the established communities of Khayelitsha and Mitchells Plain with direct access to the transport network, corridors of activity and CBDs.[282]

> Many special-needs groups and passengers already use the MyCiTi service with ease.

To achieve further improvements in the Cape Town transport experience, the City in 2015 endorsed a Congestion Management Programme to alleviate traffic pressures on Cape Town roads. This programme identifies the most congested areas in relation to freight movement, business traffic and public transport services, and prioritises the affected roads. It envisages road infrastructure projects to improve traffic flows and outlines the interventions planned. Current projects include plans to ease congestion on the N1 in a joint venture with Province. The programme includes commitments not only in terms of infrastructure, but also with regard to operations and behavioural change, including a sustainable solution to reduce private vehicles on the city's roads by providing reliable and attractive travel alternatives, encouraging people to switch to public transport.

278 Passengers/groups with special needs include persons with disabilities as well as the elderly, young children, pregnant women, people with slight sight and hearing problems, people travelling alone at night, and those with many items of luggage, such as prams, shopping bags, surfboards or suitcases.
279 City of Cape Town, 2014h.
280 City of Cape Town, 2014i.
281 City of Cape Town, 2014j.
282 PRASA, 2016.

> To achieve further improvements in the Cape Town transport experience, the City in 2015 endorsed a Congestion Management Programme to alleviate traffic pressures on Cape Town roads.

TCT also proposes certain interventions to reduce the impact of road-based freight on our urban environment. A draft Freight Management Strategy to ensure that freight transport within Cape Town is safe and efficient, and serves the needs of the economy without compromising the access and mobility of other road users.[283]

6. Implications for Cape Town's urban form

Urbanisation challenges and a variety of trends affect and inform the city's growth, form and functions. At the level of metropolitan cities, urban policy, planning and practice require a sound and adequate response to both urbanisation and population growth in cities.

Against the backdrop of continuous urbanisation and population growth, an increased demand for access to services and greater economic opportunities in Cape Town is a reality. Therefore, planning Cape Town's growth and development requires an understanding of urbanisation and the demographic changes taking place within the context of urbanisation in general, and in the city in particular.

The Cape Town Spatial Development Framework (CTSDF)[284] is a long-term (20-plus-year) plan used to manage the spatial urban growth and development of Cape Town. It provides the overarching development planning framework for the City's growth and development. The CTSDF will be reviewed every five years, including a review of the urban edge, and will be informed by the 2012 Spatial Development Framework and recent amendments, the latest BioNet, the coastal edge, the agricultural land and infrastructure survey of 2013, inputs into the IDP process, as well as the criteria and guidelines for the review of the development edges. The first planned five-year review of the CTSDF is currently under way.[285] The purpose of the current review is to reflect on the framework and update it, chapter by chapter, according to changes in legislative principles and requirements for spatial development frameworks, such as the Spatial Planning and Land Use Management Act of 2013, the new Municipal Planning Bylaw 2015, updates in the key variables and/or informants, updates in the development storyline and policy informants based on approved City policy since 2012.[286]

Another significant planning tool in the field of urban growth and form is the City's Built Environment Performance Plan (BEPP), which continues to recognise the imperatives of sustainable provision of utilities and social infrastructure to support and respond to the drivers of public investment in the City. Strategic themes informing its development centre on an emerging policy and investment approach for public transportation and human settlements within the city. Additional challenges and opportunities highlighted in the technical and political BEPP process relate to city development and management.[287]

The BEPP 2016/17[288] was approved by the Council in May 2016. The document outlines the City's suite of plans and strategies to address economic growth and social development; infrastructure maintenance and expansion; environmental protection; and climate adaption. All of these align with the City's five-year City's Integrated Development Plan (IDP) Term of Office Plan for 2011/12 to 2016/17. Integral to the City's IDP is the Cape Town Spatial Development Framework (the current version was approved in 2012) and eight supporting District Spatial Plans that provide a long term spatial vision and policy environment to inform planning and investment decisions. The Spatial Planning and Land Use Management Act, Act 16 of 2013 (SPLUMA) places an increased emphasis on this plan and the processes associated with it.

A major challenge that the City will need to address is transforming Cape Town's growth into a more compact and integrated spatial and social form. The sprawling, inequitable and inefficient city growth form of the former apartheid regime is still largely entrenched. As new developments are located on the outskirts of the city, urban sprawl contributes to the loss of valuable land for Cape Town's future growth and drives up the cost of services provision to outlying areas. The submission of the BEPP 2016/17 for Council approval, was accompanied by a recommendation that the City's Density Policy is reviewed.

7. Future Cape Town and the New Urban Agenda

The administration's City Development Strategy (CDS) informs, supports and directs all other City strategies. All the City's development programmes and projects are aligned with the CDS 2040 long-term goals.[289]

The short-term to medium-term growth management strategies that guide spatial planning in the City – including the development of a

283 City of Cape Town, 2016f.
284 The CTSDF (See City of Cape Town, 2012b) is the spatial planning document with the highest legal status applicable to the municipal area of Cape Town. Applications to amend the CTSDF need to be submitted in terms of both section 3(4)(b) of the Municipal Systems Act and section 4(7) of the Land Use Planning Ordinance.
285 Review framework approved by the Mayoral Committee in March 2016.
286 The review will include updates and alignment with City-approved strategies/policies, such as the Economic Growth Strategy, the Social Development Strategy, the IPTN, the Integrated Human Settlements Framework, integration zone planning and investment strategies as well as collaborative inter-governmental catalytic projects and programmes as reflected in the City's BEPP.
287 City of Cape Town, 2014a, 2016h.
288 City of Cape Town 2016e.
289 City of Cape Town, 2012a.

The City has made significant progress in targeting and identifying integration zones, specifically through the planning and roll-out of its BRT system.

growth management and investment framework and the Integrated Human Settlements Framework (IHSF) – are informed by the following two key drivers of change:

- Transit-oriented urban development planning following the ITP 2012-2017, where urban growth is directed along the main transit corridors and economic growth nodes. Two corridors have been prioritised for the next Medium-Term Revenue and Expenditure Framework (MTREF) cycle, namely the Voortrekker Road corridor and the metro south-east corridor, which extends out from the CBD.
- Redress of the historically, spatially segregated settlement patterns of South African cities, guided by National Treasury's Integrated City Development Grant (ICDG), and reflected in the City's BEPP process.

The City's Urban Network Strategy is informed by the approved CTSDF. The strategy constitutes the rationale for the spatial integration of nodes (e.g. the Bellville and Cape Town CBDs) and emerging township hubs (e.g. underserved townships such as Philippi East) along integration zones such as the Voortrekker Road corridor and the metro south-east corridor. These integration zones become the focus areas for public transport, investment opportunities and densification in the city.

The future Cape Town will be shaped by both the roll-out of public transport networks and services, and the IHSF. It is along these transit corridors and within the new integrated human settlements that the sustainable city and supportive neighbourhoods will find expression first, working towards and achieving optimum delivery of basic services, and creating liveable communities that are socially and spatially connected with other parts of the city and with opportunities.

The City has already approved a number of large-scale capital projects for implementation in order to realise the visions contained in the City's medium-term to long-term strategies.

In December 2013, TCT obtained Council approval for a range of new projects for the 2014/15-2016/17 MTREF cycle at a total estimated value of R747 million,[290] including extending and/or upgrading the public transport facilities to and within low-income areas, inter alia by purchasing additional MyCiTi buses, establishing the NMT network and providing universal access, constructing a Mitchells Plain station, and upgrading concrete roads in low-income areas, specifically Gugulethu, Manenberg, Bonteheuwel and Hanover Park, among others.

In 2013, the City and Province started collaborating on the development of the IHSF, aimed at facilitating expedited housing delivery in Cape Town, with a particular focus on an incremental approach. The City's spatial development frameworks and supporting policy statements to facilitate this goal is under way. The IHSF aligns Province and the City's various initiatives, plans, programmes and budgets in support of housing delivery, with a particular focus on informal settlements upgrade, integrated human settlements, and social and economic amenities.

Also in 2013, the City's Human Settlements Directorate obtained Council approval for seven new projects for the 2014/15-2016/17 MTREF cycle at a total estimated value of R588 million,[291] including the Maccassar housing project, Fisantekraal Garden Cities phase 2, Imizamo Yethu phase 3, the Langa hostels, and three projects involving backyards/informal settlements upgrades.[292]

290 Subject to the Directorate staying within the City's affordability levels, as determined by Council for a specific MTREF period.

291 Subject to the Directorate staying within the City's affordability levels, as determined by Council for a specific MTREF period.

8. Conclusion

Urbanisation is a defining feature of cities in South Africa. Urban population growth presents a challenge for cities in terms of their sustainable growth and development as well as their form, which is reflected in, among others, an increased demand for municipal services and shelter. In order to respond to this challenge, the sustainable growth and development of cities needs to be proactively and strategically planned. In cities such as Cape Town, this includes adapting to accommodate population growth due to in-migration and natural incremental growth, as well as an increased demand for services.

Similar to other South African metros, Cape Town faces the challenge of maintaining budgetary balance between servicing and maintaining old (bulk) infrastructure, and rolling out bulk and basic services to accommodate new entrants to the city and those living in informal and/or backyard dwellings. For local government to be able to deal with urbanisation challenges, and to promote sustainable urban growth and development, partnerships between cities and other spheres of government and the private sector are essential.

In terms of service delivery, the City's growth and development planning also focuses on the administration's internal service delivery capacity. This involves reconsidering the way in which the City and the other spheres of government provide services in the face of increasing population pressures. In terms of growth, this means considerations regarding inward growth and the creation of models for service delivery and public transport to meet the needs of the city's growing population.

The current frameworks, strategies and plans for a future Cape Town

292 City of Cape Town, 2013g.

Planning Cape Town's growth and development requires an understanding of urbanisation and the demographic changes taking place.

are all informed by the imperatives to build sustainable, connected and resilient communities. These goals demand a new approach to human settlements planning: They require the City to develop integrated human settlements that are true living, working, playing and learning spaces; settlements that maximise social interaction between community members both within and in transit between neighbourhoods, with the potential to build trust and social capital, increasing the resilience of individuals, families, households and entire communities. In this regard, the City's strategy of transit-oriented urban development and the implementation of integrated human settlements are crucial in realising the future Cape Town envisioned in the medium-term to long-term strategies for the city.

The City has made significant progress in targeting and identifying integration zones, specifically through the planning and roll-out of its BRT system. Detailed planning of integration zones continues to ensure maximum integration of other public investment with enhanced public transport infrastructure and systems. This will play a key role in the transformation of the city's spatial form to a more compact and sustainable urban environment.

Urbanisation brings about both challenges and opportunities for cities such as Cape Town. In recognition of the current and future impact of urbanisation on cities, SDG 11 is devoted to sustainable cities and communities. The goal acknowledges that sustainable development cannot be achieved without significantly transforming the way in which the growth and development of urban spaces are planned and managed.

The City is on track with its attempts to adress some of the challenges associated with urbanisation. The adoption and implementation of densification, a focus on inward growth and TOD through instruments such as the CTSDF and BEPP is a significant step towards addressing the imbalances in the current growth patterns and resultant form of Cape Town.

Chapter 4: Urban growth and form reference list

Centre for Development and Enterprise. 2016a. The Growth Agenda- Priorities for mass employment and inclusion: Accelerating Inclusive Growth. April. Park Town, Johannesburg. Available at: http://www.cde.org.za/cde-growth-agenda-series/.

Centre for Development and Enterprise. 2016b. The Growth Agenda- Priorities for mass employment and inclusion: CITIES. Parktown, Johannesburg. Available at: http://www.cde.org.za/wp-content/uploads/2016/04/4.cities.pdf.

City of Cape Town. 2011. Summary Guidelines and Standards for the Planning of City of Cape Town Social Facilities and Recreational Spaces. Cape Town. Available at: http://resource.capetown.gov.za/documentcentre/Documents/Procedures,%20guidelines%20and%20regulations/CoCT%20Standards%20Rev%20Dec%202011.pdf.

City of Cape Town. 2012a. Cape Town's City Development Strategy. Cape Town. Available at: http://resource.capetown.gov.za/documentcentre/Documents/City%20strategies%2c%20plans%20and%20frameworks/CDS.pdf.

City of Cape Town. 2012b. Cape Town Spatial Development Framework. Cape Town. Available at: http://resource.capetown.gov.za/documentcentre/Documents/City%20research%20reports%20and%20review/SDF_Technical_Report_2012_Quick_Read_Web.pdf.

City of Cape Town. 2012c. Census Cape Town Profile Change from 2001-2011. Available at: http://resource.capetown.gov.za/documentcentre/Documents/Maps%20and%20statistics/2011_Census_Cape_Town_Profile_Change_from_2001-2011.pdf.

City of Cape Town. 2012d. Khayelitsha/Mitchells Plain Greater Blue Downs District Plan – Technical Report 2012. Cape Town. Available at: http://resource.capetown.gov.za/documentcentre/Documents/City%20research%20reports%20and%20review/Khayelitsha_Mitchells_Plain_Technical_Report.pdf.

City of Cape Town. 2013a. 'City wins accolade for its water saving efforts'. Media Release No. 1847/2013, 23 October 2013. http://www.capetown.gov.za/media-and-news/City's%20wins%20another%20accolade%20for%20its%20water%20saving%20efforts.

City of Cape Town. 2013b. Water Services Development Plan, 2013/14. Cape Town. Available at: http://resource.capetown.gov.za/documentcentre/Documents/City%20strategies,%20plans%20and%20frameworks/AnnexureNi_Water_Services_Draft_Exec_Summary_WSDP_2013_2014.pdf.

City of Cape Town. 2013c. City of Cape Town Annual Report 2012/13. Cape Town. Available at: http://resource.capetown.gov.za/documentcentre/Documents/City%20research%20reports%20and%20review/JOB009126_CoCT_IAR_v4_18Dec.pdf.

City of Cape Town. 2013d. City of Cape Town Large Capital Projects, Council item number C46/12/13. 6 December. Available at: http://resource.capetown.gov.za/documentcentre/Documents/City%20strategies,%20plans%20and%20frameworks/AnnexF_Annual_Police_Plan.pdf.

City of Cape Town. 2013e. Annual Police Plan 2012/2013. Cape Town Metropolitan Police Department. Cape Town. Available at: http://www.tct.gov.za/docs/categories/1258/CTIP%202013-2018%20(20131112)1.pdf.

City of Cape Town. 2013f. Cape Town Integrated Transport Plan. Cape Town. Available at: http://www.capetown.gov.za/en/PublicParticipation/Documents/HYS_Transport_ITP_Final_Draft.pdf.

City of Cape Town. 2013g. Extractfrom Minutes of the Meeting of theCouncil of the City of Cape Town, Wednesday 4 December. Available at: http://resource.capetown.gov.za/documentcentre/Documents/Financial%20documents/Budget%201415%20Annexure%2020%20Individual%20Projects%20with%20a%20TPC%20over%20R50m%20copy.pdf.

City of Cape Town, 2014a. Built Environment Performance Plan (BEPP), 2014/15. Cape Town.

City of Cape Town. 2014b. DI & GIS Department, Western Cape Government and CCT - Population Projections 2011- 2040.

City of Cape Town. 2014c. RecreationStudy Research Report, 2011. CapeTown. Available at: https://www.capetown.gov.za/en/SportRecreation/Documents/Recreation%20Study.pdf.

City of Cape Town. 2014d. Service Level Agreement between the City of Cape Town and CSIR- Phase 3: analysis and planning for social facilities to inform Forward Planning 2032. Available at: https://www.capetown.gov.za/en/cctdocs/City%20documents/MOA%20CSIR.pdf.

City of Cape Town. 2014d. Service Level Agreement between the City of CapeTown and CSIR- Phase 3: analysis andplanning for social facilities to inform Forward Planning 2032. Available at: https://www.capetown.gov.za/en/cctdocs/City%20documents/MOA%20CSIR.pdf.

City of Cape Town. 2014f. Metro Police Gang-unit. Cape Town. Available at: https://www.capetown.gov.za/en/MetroPolice2/Pages/Gang-unit.aspx.

City of Cape Town. 2014g. Media release– City's dedicated Road Block Unithits the streets. Cape Town. Available at: https://www.capetown.gov.za/en/MediaReleases/Pages/CitysdedicatedRoadblockUnithitsthestreets.aspx.

City of Cape Town. 2014h. Media release – City ratifies its commitment to universal access. Cape Town. Available at: http://www.capetown.gov.za/media-and-news/City%20ratifies%20its%20commitment%20to%20universal%20access.

City of Cape Town. 2014i. City's universal access audit has already assessed 1 100 km of sidewalk and five public transport interchanges. Cape Town. Available at: http://www.capetown.gov.za/en/mayor/TransportRoadsStormw/Pages/statement_access.aspx.

City of Cape Town. 2014j. Media release – MyCiTi's universal access rated among the best in the world. Cape Town. Available at: http://www.capetown.gov.za/mediaandnews/MyCiTi's%20universal%20access%20rated%20among%20the%20best%20in%20the%20world.

City of Cape Town. 2015a. Integrated Human Settlements Five-Year Strategic Plan, (IHSF) July 2012 – June 2017 (2015/16 Review). Cape Town. Available at: http://resource.capetown.gov.za/documentcentre/Documents/City%20strategies%2c%20plans%20and%20frameworks/Annex_E_Integrated_Human_Settlement_5yrPlan_2015_16%20%281%29.pdf.

City of Cape Town. 2015b. Census Cape Town Profile Change from 2001-2011. Map of the Month-Small Black African Households in Cape Town. 'Internal document'.

City of Cape Town. 2015c. Estimated Population and Households for Cape Town, 2012. "Internal Document".

City of Cape Town. 2015d. *Annual Review of the Five-year Plan 2012-2017: 2015/16 IDP (29 May 2015).*

City of Cape Town. 2015e. Long-Term Water Conservation and Water Demand Management Strategy (WCWDM) 2014/15. Cape Town. "Internal link".

City of Cape Town. 2015f. Extracted from Statistics South Africa General Household Surveys 2013, 2014 data.

City of Cape Town. 2015g. DI&GIS Department, compiled from Statistics South Africa General Household Survey, 2014 data.

City of Cape Town. 2015h. City of Cape Town Draft Integrated Waste Management (IWM) Policy (2015). "Internal link".

City of Cape Town. 2015i. Free Wi-Fi sees communities riding the digital highway. Cape Town. Available at: https://www.capetown.gov.za/en/Pages/CityfreeWiFisees communitiesridingdigitalhighway.aspx.

City of Cape Town. 2015j. Cape Town Metropolitan Department Annual Police Plan 2015/16. Available at: http://resource.capetown.gov.za/documentcentre/Documents/City%20strategies,%20plans%20and%20frameworks/Annexure%20I%20-%20Annual%20Police%20Plan%2015_16.pdf.

City of Cape Town. 2015l. Transport Cape Town Investment Profile Booklet. Cape Town. Available at: http://www.tct.gov.za/docs/widgets/320/TCT%20Investment%20Profile%20Booklet.pdf.

City of Cape Town. 2015m. DI&GIS Department, General Household Surveys 1996, 2012, 2013, 2014 data.

City of Cape Town. 2015/16. City Parks Department. Data compiled by the department. Cape Town.

City of Cape Town. 2016a. Sport and Recreation and Amentities department. Data compiled. Cape Town.

City of Cape Town. 2016b. Sport and Recreation Programmes. Available at: http://www.capetown.gov.za/en/SportRecreation/Pages/Programmes.aspx.

City of Cape Town. 2016c. Overall crime trends in Cape Town 2005/6 – 2014/15 and Crime Rates by Police Precincts in Cape Town 2011/12 and 2014/15. South Africa.

City of Cape Town. 2016d. Crime in Cape Town: Selected Crime Types – Comparison with selected metros from 2011/12 to 2014/15. 'Internal document'.

City of Cape Town. 2016e. Built Environment Performance Plan (BEPP), 2016/17. Cape Town. Available at: http://www.capetown.gov.za/OpenDocument.aspx?DocLocation=http://cityapps.capetown.gov.za/sites/CouncillorsOnline/MeetingDetails/C/Reports/172/C13260516%20-%202016_17%20BUILT%20ENVIRONMENT%20PERFORMANCE%20PLAN%20(BEPP).pdf

City of Cape Town. 2016f. The Transport Authority for a World-Class City – ensuring performance-oriented service delivery for the benefit of the citizens of and visitors to Cape Town. Available at: http://www.tct.gov.za/en/mandate/tct-long-term-strategy/.

City of Cape Town. 2016h. Built Environment Performance Plan (BEPP), 201/2017. Cape Town.

City of Cape Town. Various. Development Information & GIS Department. Data compiled from Statistics South Africa data (1996, 2001, 2011, 2012, 2013, 2014).

Council for Scientific and Industrial Research (CSIR). 2007. Schedule of Standards and Guidelines for the Spatial Provision and Development of Social Facilities, Public Institutions and Public Open Space in Cape Town. CSIR: Stellenbosch.

Council for Scientific and Industrial Research (CSIR). 2010a. Evaluation of Community Social Facilities and Recreational Space in City of Cape Town: Current and Future Provision for 2016 and Optimal Location of New Facilities. Available at: https://www.capetown.gov.za/en/Planningportal/Documents/SDF/EvaluationOfCommunitySocialFacilitiesRevDec2010.pdf.

Council for Scientific and Industrial Research (CSIR). 2010b. Summary Guidelines and Standards for the Planning of City of Cape Town Social Facilities and Open Spaces. CSIR: Stellenbosch.

Lloyd, K. & Auld, C. 2003. Leisure, public space and quality of life in the urban environment. Urban Policy and Research, 21(4).

McGiver, W.J. et al. 2003. "The internet and the right to communicate". First Monday, Volume 8, Number 12, 1 December. Available at: http://www.firstmonday.org/ojs/index.php/fm/issue/view/153#m12.

McLeod, D. 2014. Fixed lines drag on Telkom. TechCentral. Available at: http://www.techcentral.co.za/fixed-lines-drag-on-telkom/48866/.

Passenger Rail South Africa (PRASA). 2016. Corporate Plan MTEF 2016 – 2019. Available at: https://www.prasa.com/downloads/Corporate%20Plan%202016.pdf.

South African Government. 2015. Towards an Integrated Urban Development Framework – A Discussion Document. Available at: http://www.sacities.net/ 927D86D1-4AB3-463D-9C1E-12AD5F317F0C/FinalDownload/DownloadId-AD38D9930B1E10D405CDDA792BEC4E76/927D86D1-4AB3-463D-9C1E-12AD5F317F0C/wp-content/uploads/2014/08/urban-policy.pdf.

South African Police Service (SAPS). 2016. Crime Statistics 2005/6–2014/15. Available at: http://www.saps.gov.za/.

Statistics South Africa. General Household Survey 2014.

Statistics South Africa. 2015. Mid-Year Estimates 2015.

United Nations. 2014. Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, World Population Prospects: The 2010 Revision and World Urbanization Prospects: The 2011 Revision. Available at: http://esa.un.org/unpd/wup/Publications/Files/WUP2014-Highlights.pdf.

United Nations. 2015a. Urban Initiatives, Post-2015 Agenda. New York. Available at: http://unhabitat.org/urban-initiatives/post-2015-agenda/.

United Nations. 2015b. Un-Habitat Input To Post-2015 Un Development Agenda: Working Group B. New York. Available at: http://unhabitat.org/wp-content/uploads/2015/01/English-HSPGC252Add.5-Activities-of-the-United-Nations-Human-Settlements-Programme.pdf.

United Nations. 2015c. Department of Economic and Social Affairs, Population Division. World Population Prospects: The 2015 Revision, Key Findings and Advance Tables. Working Paper No. ESA/P/WP.241.

United Nations. 2016. United Nations Human Settlements Programme, 2016. World Cities Report, 2016. Nairobi, Kenya. Available at: http://wcr.unhabitat.org/policy-points/.

Western Cape Government. 2016. Data compiled by the Department of Health. Cape Town.

World Bank. 2016. Integrating the Urban Space Economy, South Africa Urbanization Review, Abridged version, South Africa.

http://www.techcentral.co.za/let-them-eat-cake-but-not-broadband/64628/

See http://www.techcentral.co.za/fixed-internet-to-trump-mobile-in-sa/48976/.

CASE STUDY

Building a three-dimensional city information modelling (3DCIM) capability for the City

Overview

Urban population growth makes greater demands on infrastructure and services. The City is increasingly challenged to preserve and maintain existing infrastructure, whilst also planning and providing for new infrastructure. With limited resources, three-dimensional (3D) geospatial information systems can play an important role in enabling evidence-based planning and decision-making.

The DI&GIS Department saw the potential of 3D mapping and has steadily been researching new developments and trends in this field. This includes acquiring technology tools and establishing a database of 3D building models.

3DCIM

Traditionally, mapping is carried out in two dimensions. However, with technological advances, the focus has shifted to 3D mapping. Currently, 3D city information models (3DCIM) are essential aids in supporting urban planning and development. The 3DCIM method is used to visualise and analyse the built environment.

DI&GIS is in the process of establishing a database of 3D building models – a new concept in GIS data capture. 3DCIM allows for the querying and display of information in three dimensions. This enables planning professionals to visualise and analyse proposed new developments in the context of existing surrounding buildings. Analysis of 3D models can be performed to assess view corridors, height or shadow impact as well as solar roof potential. The building models can be captured to various degrees of desired detail and can be further enhanced with imagery attached to their wall and roof surfaces.

Figure 1: Various stages of building developments in Cape Town CBD (green: completed, yellow: under construction, red: in planning, orange: proposed)

The combination with other datasets, such as high-resolution elevation data and aerial photography, allows for the analysis of line-of-sight and flood modelling. A further possibility is to create floor levels for individual buildings, and to link corporate data such as ownership information, split zoning or land use information to building floors. Specialised software tools also provide for the modelling of zoning information and setback lines for individual erven.

Current implementation of 3DCIM

Processes are in place to capture and model buildings, bridges or even underground structures in 3D in order to model the entire built environment of the City. In 2015, the City acquired approximately 70 000 building models, mainly focusing on areas such as the CBD, new development corridors and proposed transport nodes. During 2015, a pilot study was completed to assess 3D modelling capabilities and production processes. Building models were evaluated for quality, potential uses and limitations. Cognisance was taken of accepted international standards and how best to accommodate them. The pilot study is being used as a guide for further development.

Outcomes

Through 3D building modelling, the built environment can be spatially analysed from different view angles, and new development proposals can be visualised in their surrounding context. Corporate data and the accompanying attribute content can be thematically displayed and analysed in 3D. Fly-through provides an additional presentation tool.

The adding of intelligence and the linking of buildings to other corporate geospatial datasets provide the planner with a powerful tool for visualisation and analysis. The combination of zoning models and existing building models enhances planners' ability to assess remaining bulk rights and excess building heights. In this regard, DI&GIS is working closely with the Spatial Planning and Urban Development Department to help model and visualise proposed new developments in the city. A number of modelling projects were completed, and the zoning visualisation of the Blouberg beachfront was successfully presented during public participation.

Figure 2: Visualisation of zoning rights vs. existing buildings – Blouberg beachfront

The visualisation of 3D zoning and building modelling data was positively received during public participation meetings.

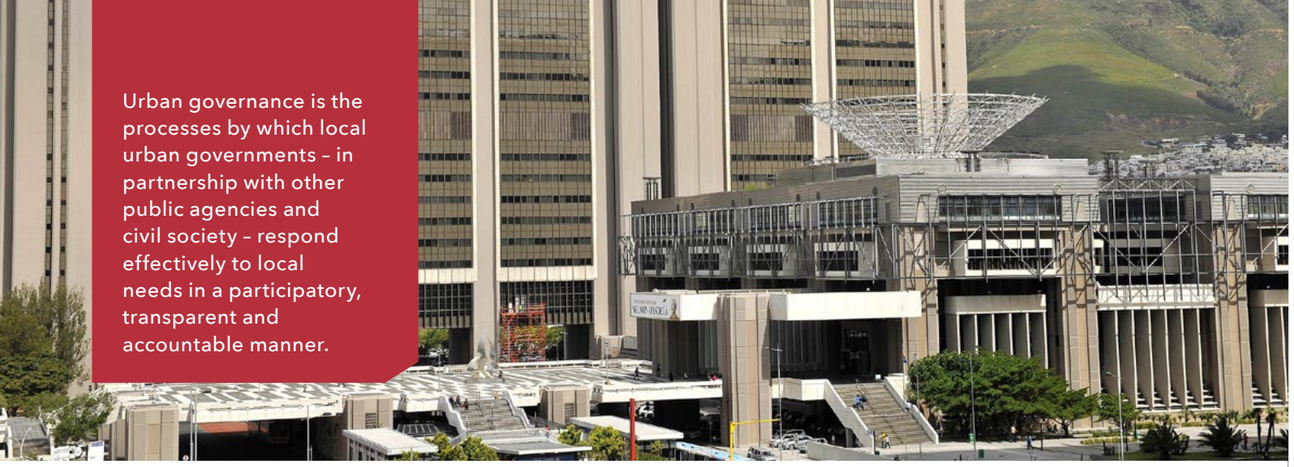
Future objectives include the following:

- Establishing a 3D building modelling service in the City
- Creating and maintaining a 3D city model based on the ESRI 3DCIM scheme
- Creating and maintaining a GIS building footprint layer
- Establishing a 3D building modelling competency hub to promote and support the use of 3D GIS data

Strategies have been developed for the short-, medium- and longterm to achieve these objectives.

Chapter 5:
Urban governance

1. Introduction 128
1.1 What is "urban governance"? 128
1.2 Governance within the New Urban Agenda 128
2. Urban governance in South Africa: A high-level overview 129
2.1 Driving local government transformation, 1996 to 2016 129
2.2 Evolving municipal mandates globally and locally 130
3. Emerging perspectives on urban governance in South Africa 131
4. Configuring local government in Cape Town, 2000 and since 132
4.1 Internal structures, external partnerships and ways of working 132
4.2 Local government planning, policies and implementation tools 136
4.3 Tools for improving the City's effectiveness and responsiveness 137
5. Building urban governance practice for the future 139
6. Conclusion 142
Chapter 5: Urban governance reference list 142



Urban governance is the processes by which local urban governments – in partnership with other public agencies and civil society – respond effectively to local needs in a participatory, transparent and accountable manner.

1. Introduction

"Governance is made up of the political and institutional processes through which decisions are taken and implemented. Governance is most effective when these processes are participatory, accountable, transparent, efficient, inclusive, and respect the rule of law. Good governance is particularly important at local level, where governments interact with citizens and communities on a daily basis. Improving local governance is a vital tool to guarantee peace, boost economic development, maximize administrative efficiency, and ensure social inclusion and environmental sustainability."[293]

This chapter will provide an overview of the concept of urban governance and the developments behind its increasing importance for urban sustainability globally. The chapter further sketches the background to current urban governance practice in the City, including the evolution of urban governance at a national level, as well as emerging perspectives of urban governance in post-apartheid South Africa. It concludes with an overview of the urban governance issues identified for inclusion in the New Urban Agenda, which is to be finalised at Habitat III, and how they may be relevant to the Cape Town context.

Urban governance has gained greater importance as cities around the world are recognised as key drivers of economic growth and sustainability. However, as future urbanisation will predominantly occur in areas where the requisite institutional arrangements are not necessarily in place, sustainable urban development poses a significant challenge. This suggests a strong need for institutional capacity-building in order to effectively manage complex urban dynamics.

Governance has therefore also become an area for urban innovation. For the first Guangzhou Award for Urban Innovation event[294] in 2012, which was co-sponsored by the United Cities and Local Governments (UCLG), the World Association of the Major Metropolises, and China's City of Guangzhou, a total of 250 submissions were received from around the world, of which 45 were shortlisted as deserving. About 60% of the total deserving city initiatives addressed issues of governance as their top priority, while the rest included governance as a major underlying theme. What clearly emerged from the submissions was a discernible trend among cities from diverse contexts to engage their citizens and stakeholders to find innovative ways and means of improving living conditions and sustainability for all. Thus, as city governments review their performance in meeting their developmental goals – under conditions of rapid urbanisation and growing complexity – improved urban governance is increasingly proposed as the foundation for addressing the massive urban challenges these governments face.[295]

293 UCLG, n.d.

294 You, 2013.

295 The second round of submissions for the 2014 competition focused more on resilience and current sustainable urban development challenges faced by the competing cities. The winning cities and initiatives were the Educational Parks for All programme of Antioquia in Colombia; the Smart City programme of Bristol in the United Kingdom; the Transitional City Programme for Our Ever-Evolving City of Christchurch in New Zealand; the municipal finance programme of Dakar in Senegal, and the public bike-sharing system of Hangzhou in China.

Urban governance has gained greater importance as cities around the world are recognised as key drivers of economic growth and sustainability.

1.1 What is "urban governance"?

Urban governance is progressively understood as both government responsibility and civic engagement, and is seen to extend beyond the notion of urban management – i.e. the operation and maintenance of a city's infrastructure and services. Instead, urban governance is seen to be premised on partnerships between stakeholders: "It refers to the processes by which local urban governments in partnership with other public agencies and different segments of civil society respond effectively to local needs in a participatory, transparent and accountable manner."[296]

1.2 Governance within the New Urban Agenda

In October 2016 in Quito, Ecuador, Habitat III is expected to yield the New Urban Agenda as the agreed conference outcome document. To guide the regional preparatory conferences, the UN released Habitat III issue papers in 2015.

296 UNFPA, 2007: 67.

Issue paper 6 focuses on the urban governance theme and refers to urban governance as "the software that enables the urban hardware to function, the enabling environment constituted of adequate legal frameworks, efficient political, managerial and administrative processes as well as strong and capable local institutions able to respond to citizens' needs".[297]

One of the challenges in building sustainable cities, with good governance as a central component, is the lack of guidance and support about the institutional mechanisms and arrangements required to convert a vision into reality. The goals set out in the preparatory documents for the Habitat III conference were all present in the vision documents for, and international agreements reached by governments at, Habitat I[298] in Vancouver (1976) and Habitat II (1996) in Istanbul.[299] Yet, in 2016, almost 40 years after Habitat I, the legal frameworks and regulations along with the intended outcomes motivated as necessary at these earlier global conferences are still not in place.[300]

Furthermore, very few of the Habitat III goals speak directly to the role of local government in helping bring about sustainable urban development. Drawing the link between sustainable urban development – which is understood as advancing the "common good" – and urban governance, urban analysts have noted that "success in integrating development, disaster risk reduction, and climate change adaptation and mitigation is inconceivable without local institutions capable of defining and defending the common good". However, it is doubtful whether national government representatives who will be negotiating the final text of the Habitat III outcome documents will be inclined to provide cities with the requisite mandates and powers for effective management of urban development in their national contexts.[301]

Analyses of urban governance may include diverse perspectives, inter alia focusing on the following:[302]

- Empirical studies that are informed by an urban governance perspective, which try to analyse "the sum of the many ways individuals and institutions, public and private, plan and manage the common affairs of the city. [This] includes formal institutions as well as informal arrangements and the social capital of citizens".
- The economic and societal context in which governance arrangements are embedded, including some comparative analyses.
- New urban governance perspectives as well as neoliberal urbanism contributions, which stress the effects of globalisation and highlight the limits of local actors in mediating the effects of globalisation.
- Perspectives that include justice as a dimension of urban governance and inserts the language of fairness, equity and rights into the debate on urban governance, as reflected by analyses of social movements organising around the "right to the city".

297 UN-Habitat, 2015: 1.

298 Habitat I refers to the first UN Conference on Human Settlements, held in Vancouver, Canada, from 31 May to 11 June 1976, and convened by the UN as governments began to recognise the magnitude and consequences of rapid urbanisation. As one outcome of the conference, a General Assembly resolution 36/162 in 1977 established the UN Centre for Human Settlements, or "Habitat".

299 Habitat II, the second UN Conference on Human Settlements, was held in Istanbul, Turkey, from 3 to 14 June 1996, 20 years after Habitat I. It brought together high-level representatives of national and local governments as well as the private sector, NGOs, research and training institutions, and the media. Universal goals of ensuring adequate shelter for all and safer, healthier and more liveable cities, which had been inspired by the UN Charter, were discussed and endorsed.

300 Satterthwaite, 2016.

2. Urban governance in South Africa: A high-level overview

Like other countries that have undergone political and economic transition, post-apartheid South Africa similarly placed strong emphasis on the development of a viable and effective system of local government. Since the transition to democracy, South Africa has embarked on the long journey towards reconstruction, planning and development in the post-apartheid era. Local government was a significant area for bringing about change, especially as the 1996 South African Constitution highlights the developmental role of local government and advocates the need for strong capacity in areas that for decades had been neglected under the apartheid government.

2.1 Driving local government transformation, 1996 to 2016

In South Africa, the focus of local government transformation since 1994 has included a range of complex processes, inter alia:

- building the legislative and policy framework that would guide local government institutions and practice in a democratic South Africa;
- deracialising local government, doing away with a fragmented system of structures set up to govern communities based on population classification; and
- embracing an ethos of 'developmental local government' as a way of addressing not just access to basic services, but broadly seeking to improve residents' quality of life.

Between 1999 and 2004, local government reform was mainly focused on establishing and consolidating new systems of local government, and completing the policy, legislative and regulatory frameworks for municipal planning, service delivery, finance and administration. The first IDPs were produced in 2001/2 by the newly integrated cities (or unicities) and local municipalities across the country and served (and continue to serve) as both an important strategy document and a tool to guide municipalities to become more developmental through integrated development planning.[303] The large part of the work of building 'developmental

301 Satterthwaite, 2015.

302 Haferburg & Huchzermeyer, 2014: 4.

303 See Government Gazette, 13 March 1998: 39.

local government' started during this period, predominantly through the installation of key pieces of legislation.[304]

Between 2004 and 2009, National Government's focus shifted towards strengthening local government capacity to, among others, (i) link the poor with economic opportunity; (ii) increase capital expenditure on the built environment, such as public transport (BRT), energy, the 2010 FIFA World Cup stadia, which would aid job creation; and (ii) deploy and build technical expertise within the local government sphere.[305] The deployment of technical expertise to local governments became a de facto acknowledgement of a crisis in the local government sphere. A 2009 assessment of the state of local government[306] by the then newly created Department of Cooperative Governance and Traditional Affairs (COGTA) concluded that local government was "in distress". This assessment became the grounds for the nationwide implementation of a local government turnaround strategy by all South African municipalities, including metros, as part of their IDPs. The guidelines from COGTA required municipalities to focus on improving access to basic services, deepening participatory democracy, and improving financial management and administrative capacity.[307]

Finance management legislation introduced international standards for financial management in all municipalities, and progressively placed local government policy[308] within the ambit of National Treasury. As part of the reform of the intergovernmental grant system, National Treasury introduced performance-based grants[309] to incentivise better service delivery and performance by municipalities. The Municipal Infrastructure Grant (MIG) was phased in during 2003 as a conditional grant to upgrade and maintain municipal infrastructure. Since then, a number of conditional grants, some more sector-specific than others, have been introduced to support local government service delivery. In 2013, National Treasury phased in the Cities Support Programme (CSP) to incentivise cities to bring about urban transformation at the socio-spatial level and shift the persistent, racially segregated settlement patterns of the apartheid city. Using a performance grant mechanism called the Integrated City Development Grant (ICDG), National Treasury provides allocations to metropolitan municipalities based on population as well as performance against agreed criteria.[310]

To support the monitoring and evaluation of this socio-spatial urban transformation agenda, metros are required to submit an annual BEPP, including a measurement framework. The City prepared its first BEPP for the 2014/15 reporting year, with the following submissions prepared for 2015/16 and 2016/17. The BEPP includes built environment urban development indicators, which are still being refined in collaboration with National Treasury.[311]

304 This includes the Municipal Systems Act 32 of 2000, which regulates planning, service delivery, performance monitoring and public participation; the Municipal Finance Management Act 56 of 2003, which regulates financial management, accounting, supply chain management, reporting and budgeting; the Traditional Leadership and Governance Framework Act 41 of 2003, as amended by the Traditional Leadership and Governance Framework Amendment Act 23 of 2009, which provides for relations between traditional leadership and municipalities, and the Municipal Property Rates Act 6 of 2004, as amended by the Municipal Property Rates Amendment Act 29 of 2014, which regulates property evaluations and taxing.

305 Project Consolidate (2004-2006) was a two-year national intervention to support 136 municipalities who lacked the expertise to exercise their mandate effectively and deliver basic services, mainly in rural areas and/or former homelands, while the Development Bank of Southern Africa deployed an additional number of people to build financial management and infrastructure planning skills. However, it is unclear what value these capacity-building interventions brought, given that the Auditor-General found that their performance had only improved fractionally. See Powell, 2012: 18.

306 COGTA, 2009a.

307 COGTA, 2009b.

308 Powell, 2012: 19.

309 Finance and Fiscal Commission, 2015.

310 Finance and Fiscal Commission, 2014.

311 Built environment indicators were still being developed at the time of writing this report (May 2016), but will be the basis for assessing municipalities' progress towards the socio-spatial transformation of the city. For an outline of National Treasury's requirements for the preparation of the BEPP and for related grants, see Republic of South Africa, 2015.

The National Treasury introduced performance-based grants to incentivise better service delivery and performance by municipalities.

2.2 Evolving municipal mandates globally and locally

Globally, the formation of large metropolitan governments created the conditions and enabled large cities to engage in global strategy and locate themselves as global cities. This has given rise to the question whether metropolitan governments would in future be able to act autonomously in ways that global cities elsewhere in the world have come to do.

In its 2014 report recommendations, the United Kingdom Cities Growth Commission laid out a process in which metropolitan areas can apply to an independent city-region devolution committee, which would consider and grant powers to applicant cities based on established criteria. Furthermore, based on their performance assessment following a review period every five years, additional powers could be added to such cities' mandates. As cities in the United Kingdom prove themselves more capable of running their own affairs, there is potential for more power to be devolved to the local level.[312] This shift is in line with the increasing recognition that metropolitan areas with flexible decision-making abilities can respond faster than those at higher levels of government. In addition, because all metros operate in distinctive contexts, they need tailored solutions rather than universal, one-size-fits-all policies from the seat of national governments.

In South Africa, the NDP 2030[313] includes as one of its key goals the need for "building a capable and developmental state", of which one of the sub-goals is "a plan to strengthen

312 Katz, 2014.

313 Approved by the South African Cabinet in 2012. See Tim, 2012.

local government". Generally speaking, however, South African metros find themselves in a position where they have capacity far beyond what a local municipality has available.

However, as with local municipalities, metros are also affected by the phenomenon of unfunded mandates,[314] where metros and local municipalities are obligated to perform functions not allocated to them in terms of the Constitution nor by legislation on powers and functions.[315] This is a result of provincial and national policy decisions to delegate or devolve to local government those functions they may find difficult to execute, without also devolving the accompanying staff and finances to implement these new mandates effectively.[316] Services commonly cited in discussions on unfunded mandates include housing, health-care services, road works, libraries and museums.[317]

314 Defined as "cities perform(ing) the functions of other spheres of government - and … bear(ing) significant costs out of their own revenue sources". See SACN, 2007: 78.

315 Through (i) the 2003 amendments to the Municipal Systems Act of 2000, specifically to sections 9 and 10, which aim to prevent unfunded mandates flowing from legislative assignments; and (ii) the 2003 amendments to the Financial and Fiscal Commission Act of 1997, which requires organs of state to assess the financial and fiscal implications (and obtain the Commission's recommendations) before signing into law those functions that are assigned to other organs of state in another sphere of government. See Ntenga, 2013.

316 Cloete, 2008.

317 The Constitution provides for mandates to be devolved from the provincial and national spheres of government to local government, provided that municipalities are best placed to deliver the service and have the capacity. To deal with unfunded mandates and the constraints they place on local government, National Government has sought to install measures to curb the unfunded mandates phenomenon.

However, while the issue of unfunded mandates is not completely resolved, some lessons have been learnt. In 2014, it was announced that the key mandates of providing public housing and public transport would be devolved from the provincial to the local government sphere, specifically to the six metropolitan governments with the requisite capacity, including the City.[318] In 2012, Council approved proposals for an application to National Government for the contracting authority functions to be devolved to the City. TCT was established as a local government entity in October 2012 with a view to transform Cape Town's current, fragmented transport system into an integrated, multi-modal system that provides more efficient, affordable and safer public transport. To date, however, the two processes have not concluded, and detract from the City's capacity to plan the provision of public housing and public transport in an integrated way.

3. Emerging perspectives on urban governance in South Africa

More recent analyses of urban development in South Africa have been less concerned with institutional arrangements and focused more on engagements and interactions between the municipal entities and residents.

The 2014 publication *Urban governance in Post-apartheid Cities: Modes of Engagement in South Africa's Metropoles*[319] deals with cities in post-apartheid South Africa and provides detailed case studies of the alliances and conflicts that play out daily in South African cities. The authors promote an understanding of urban governance as the complex engagements between diverse stakeholders or interest groups that jointly shape or steer urban development. In the context of post-apartheid South African cities, the authors analyse these engagements and their influence on priorities across the three spheres of government, across different sectors (transport, housing, etc.) and at different spatial levels (including citywide and multiple intra-city spatial levels).

Running through the different chapters like a golden thread are arguments about insufficient resourcing by the state and/or the absence of meaningful participation by organised citizens or residents (where such engagements are not outright confrontational). The new key questions posed in connection with urban governance in South African cities include, among others:

- What are the impacts of specific 'spatial' modes of governance that rely on localised interventions to

318 The relatively slow progress by provincial governments in the provision of human settlements prompted the direct transfer of the Human Settlements Development Grant to the six metros, together with the transfer of human resources, projects and assets. This shift will aid attempts to start addressing the human settlements challenges, which continue to trigger violent protests in the local government sphere. Similarly, the public transport function was devolved to the six metros in terms of provisions contained in the National Land Transport Act of 2009.

319 See Haferburg & Huchzermeyer (eds), 2014.

address urban challenges, such as city improvement districts or neighbourhood-upgrading initiatives (as opposed to targeting specific socially or economically defined groups or sectors, regardless of their location in the city)?[320]

- What ways of fostering social cohesion in communities can be harnessed for inclusive urban governance?[321]
- In what way can we harness the relations and interactions of solidarity networks – such as NGOs and community-based organisations – active around a service delivery issue (such as social housing) in support of urban governance?[322]
- In what way can we manage private-sector developer-driven urban transformation projects that target the middle and upper-income classes, without undermining the spatial planning goals of the local planning authorities?[323]
- What are the approaches to strategy and decision-making (such as centralising tendencies), and how has dissent and conflict between the municipality (and different spheres of government) and communities been dealt with and managed?[324]

Laura Wenz's case study done on behalf of the City[325] shows how the lessons gained from a design focus through Cape Town's successful bid to be the 2014 World Design Capital, which was built on a public-private alliance, contributed to a local governance approach focused on creative solutions. The application of these processes through the City's use of co-creation workshops in 2014 illustrated a need for broadening inputs and transforming decision-making with regard to specific service delivery challenges. The author raises questions as to the extent to which possible lessons learnt – such as those on the frequency, tone and quality of citizen engagement – are actually being incorporated into the City's interactions with its residents and the end users of its services, to ultimately minimise the potential for conflict. These questions are all relevant to Cape Town and the City respectively, and touch on strategies and issues that may currently apply or that could be considered in future Cape Town.

320 Diphoorn, 2014.
321 Kirshner, 2014.
322 Ley, 2014.
323 Rubin, 2014.
324 Pernegger, 2014.
325 Wenz, 2014.

Table 5.1: Number of ward councillors by term of office

Years	Number of ward councillors
2000-12-03 to 2006-03-07	100
2006-03-08 to 2011-05-20	105
2011-05-21 to August 2016	111
August 2016 to current	116

Source: City of Cape Town internal resources.

4. Configuring local government in Cape Town, 2000 and since

In 2000, the new Cape Town Unicity had more than 27 000 staff members and a budget of R8,9 billion (consisting of a capital budget of R2,1 billion and an operating budget of R6,8 billion). At the end of June 2015, the City had 25 516 employees. For the 2015/16 financial year, the total budget was R38,741 billion (a capital budget of R6,129 billion and an operating budget of R32,612 billion). For 2014/15, the City managed to spend 85,7% of its total capital budget of R6,907 billion.[326] As part of the endeavour to ensure that large capital projects proceed according to plan and are delivered on time, in 2015 the City established the Capital Projects Management Unit, which is responsible for installing a project performance management system. This system serves as a planning and management tool by detailing the short-term to long-term goals, targets and indicators in order to track whether and to what extent the medium-term to long-term outcomes and results are being achieved.

4.1 Internal structures, external partnerships and ways of working

The City uses a range of structures and tools to facilitate service delivery implementation. These include internal system innovations and external partnerships. While not exhaustive and not necessarily unique to the City, the section below provides an overview of the mechanisms and tools applied.

Internal structures

Council is the legislative and executive body responsible for governing Cape Town[327] and is comprised of both ward councillors and proportional representation (PR, or 'party list') councillors, in roughly equal proportions. The different terms of office for which councillors served are listed in table 5.1. Following the August 2016 local government elections, the size of Council increased from 221 to 231 councillors[328], who are comprised of 116 ward councillors and 115 PR councillors.

Portfolio (or section 79) committees are established by Council to formulate policy and monitor the implementation thereof within their specific functional areas. Before the 2011 local government elections, there were 11 Council-appointed portfolio committees,[329], chaired by councillors appointed by full Council. In May 2016, there were 13 Council-appointed portfolio committees,[330] in addition to the Spatial Planning, Environment & Land Use Management Committee (SPELUM), which meet regularly to discuss issues within their areas of concern. Post the 2016 elections, council is currently in process with forming the section 79 committees.

326 City of Cape Town, 2015b.

327 Council elects the Executive Mayor, the Executive Deputy Mayor, the Speaker and the chairpersons of section 79 committees, and appoints the City Manager, the Chief Whip and the section 57 managers.
328 At the time of writing one seat was vacant.
329 Community Services; Corporate Services and Human Resources; Economic Development and Tourism; Finance; Health; Housing; Planning and Environment; Safety and Security; Social Development; Transport, Roads and Major Projects, and Utility Services.
330 Community Services; Corporate Services and Compliance; Environmental and Spatial Planning; Finance; Health; Human Settlements; Safety and Security; Social and Early Childhood Development; Tourism, Events and Economic Development; Transport for Cape Town; Rules; Utility Services, and the Homeless Agency (Homac). See http://www.capetown.gov.za/Work%20and%20business/Meet-the-city/City-Council/The-City-Council.

Table 5.2: Number of subcouncils in Cape Town

Years	Number of subcouncils
2001	16
May 2003	20
December 2003	21
January 2007	23
August 2011	24*

**As at May 2016.*

Source: City of Cape Town internal resources.

> Ward committees are coordinated by subcouncils, which serve as an administrative link and support to the structures of Council.

In terms of the 1996 South African Constitution, ward committees have an overarching mandate to enhance participatory democracy in local government. While the Municipal Structures Act allows for delegation to ward committees, most ward committees do not have decision-making powers and act in an advisory capacity, while also providing oversight over ward councillors. Ward committees can make recommendations to the ward councillor on matters that affect that ward, after which the ward councillor follow the appropriate political channels to table such recommendations to Council. These committees have to be representative of diverse interest groups, including the women of that ward, and must ensure that their concerns are equitably represented. There are certain concerns regarding the functioning and effectiveness of ward committees: "whether they are useful conduits for community involvement in local governance; whether, as 'created spaces' for public participation, they are inherently capable of playing the critical role expected of them; and whether they create opportunities for real power sharing between municipalities and citizens".[331] While this remains an ongoing challenge for ward committees, they remain a vital link between municipalities and those whom they serve.[332]

Ward committees are coordinated by subcouncils, which serve as an administrative link and support to the structures of Council. Subcouncils are established to assist the municipality in the performance of its duties and the exercise of its powers on a decentralised basis. Table 5.2 shows that, broadly, the increase in the number of wards in the City has been matched by an increase in the number of subcouncils. In August 2011, there are 24 subcouncils in the City.

In 2014/15, the Strategic Policy Unit in the Office of the Executive Mayor proposed new ways of working within the City and developed a transversal management system (TMS) and guideline. The primary purpose of the TMS is to complement the existing hierarchical structure with additional platforms for cross-directorate communication and decision-making, thereby changing the organisational culture from hierarchical and 'silo-oriented' to an integrated and coordinated system. An accompanying guideline sets out the structures within which transversal planning should be implemented in the City, at the time of writing, constituting two overarching clusters, namely economic and social. Under these clusters, a number of transversal working groups operate, which are comprised of parallel work streams that bring together officials from a cross-section of City directorates and departments (for more detail, also see the case study on transversal management at CCT).

External partnerships

Partnerships and collaboration are key to ensuring universal access to services, and preserving public goods – even more so in an increasingly complex urbanised world, where local governments are assuming greater responsibilities for urban management and service delivery, and providing for the needs of ever larger numbers of people. The City has entered into different partnership arrangements with external entities with a view to extending its presence and improving service delivery. Some of these partnerships involve the provision of basic service delivery and are subject to legal compliance and service delivery standards. Partnerships with social development organisations may be less regulated, and instead be

331 Smith, 2008.
332 See Naidu, n.d.

linked to specific programmes that different directorates or departments implement in defined communities.

Municipal entities and sector-body partnerships: The City may utilise municipal entities[333] to help deliver services on its behalf. The City is then responsible for ensuring that its municipal entities comply with all relevant legislation, are managed responsibly and transparently, and meet their statutory and contractual obligations.[334] Presently, the City has a 50,2% shareholding in a single municipal entity,[335] namely the Cape Town Convention Centre Company (Pty) Ltd (Convenco). Convenco operates the multiple award-winning CTICC and is tasked to do so with the aim of improving tourism, creating jobs and increasing economic benefits for Cape Town and the Western Cape. An extension of the CTICC is currently under way and will be a pilot project of the Green Building Council, with set sustainability and green-design targets, including a 45% reduction in water consumption compared to a similar building constructed using standard building processes. Other targets include a 35% reduction in energy consumption compared to buildings constructed according to national building regulations, and a 70% reduction in construction waste.[336]

Public-private partnerships in the local government landscape: Municipalities can outsource basic service delivery to private companies and aim for full cost recovery through user fees, on a 'no fee, no service' basis. Alternatively, a municipal government can make selected zones of the city more marketable and attractive for lucrative consumption and investment, for example by using special rating areas (SRAs). These SRAs, also known as city improvement districts (or CIDs), provide examples of entrepreneurial urban governance.[337] In 1999, the City approved the adoption of CIDs in partnership with business and property owners.[338] Since the establishment of the first CID in the Cape Town CBD in 2000, the number has increased to 30 by 2016 and includes a combination of commercial, industrial and residential areas.[339] Generally, CIDs have become part of City urban management and regeneration policies, and the City's SRA Bylaw[340] and Policy[341] provide the framework for their establishment.

Other public-private partnerships in which the City is involved are those in connection with solid waste management services. Section 77 of the Constitution provides the legal framework for the selection of a suitable, equitable and sustainable mechanism for waste management service delivery. The City uses private-sector entities to provide solid waste removal services, while retaining its duty and prerogative as the service authority and regulator within the municipal boundary, once it has complied with the determination of the criteria in accordance with the statutory mechanisms.[342]

> The City has set out processes and guidelines that need to be followed when soliciting and accepting contributions to the City.

Partnerships with NGOs and civil society entities: Partnerships with civil society organisations are governed by grant-in-aid agreements, which set out the conditions for the support of NGOs or community-based organisations. There are currently no formal policy guidelines that apply across the City with respect to partnerships with NGOs. In the social development arena, there are no formal relationships with NGOs; in total, there are 12 grant-in-aid agreements with organisations operating in the social development sphere, outlining the City's support for the relevant organisations.[343]

Policy on contributions to the City: From time to time in the course of its operations, the City harnesses the goodwill of people and business in Cape Town to amplify its resources for social and economic development work in Cape Town and its communities. To this end, the City has set out processes and guidelines[344] that need to be followed when soliciting and accepting contributions to the City. These were formalised in a policy, approved by Council on 2 June 2015, which allows for any donor to specify projects or programmes to which to apply its donation, or for allocation to a Mayoral special fund and appropriated at the Executive Mayor's discretion. Between February 2015 and the end of May 2016, the City received 27 contributions of varying extent from private citizens, companies and foundations.[345]

333 Municipal entities are independent organisations that perform municipal services on behalf of a municipality. The municipality controls the majority shareholding in these companies and monitors their service delivery. See policy approved by Council in July 2013, available at http://www.capetown.gov.za/en/Policies/All%20Policies/Municipal%20Entities%20-%20%28Policy%20number%2012619%29%20approved%20on%2031%20July%202013.pdf.

334 The City's municipal entities are monitored by its Shareholding Management Department (SMD), a unit within the Finance Directorate that is responsible for regulating, managing and monitoring these organisations for maximum shareholder returns, financial performance, and legislative and policy compliance.

335 The Khayelitsha Community Trust was a municipal entity from 2003 until 30 June 2011, when the City relinquished control of it. It was established in 2003 as part of the City's broader Urban Renewal Programme to develop the community of Khayelitsha through the introduction of commercial, residential and community facilities in the area.

336 See https://www.capetown.gov.za/en/MunicipalEntities/Documents/Newsletter/CTICC-IAR-2014-Full-Report-Online.pdf.

337 CIDS are defined as "zones that receive privately funded, additional services for security, cleaning and marketing". See Miraftab, 2007.

338 Local governments in Johannesburg and Cape Town adopted CIDs in 1997 and 1999 respectively, to generate income for government through real estate development and tourism, with the promise to also create jobs.

339 In Cape Town, SRAs are managed via a Special Rating Area policy and by-law, which provide the guidelines and legal framework for the establishment of the SRAs.

340 City of Cape Town, 2012

341 City of Cape Town, 2013.

342 Provided for by the Municipal Systems Act, S.77 and 78

343 Internal email communication with SDECD official, 25 May 2016.

344 See CCT 2015, Policy: Contributions to the City of Cape Town (Policy Number 41636).

345 Internal email communications, 31 May 2016.

Ways of working: **Implementing the transversal management system in the City**

In November 2014, the City circulated the first draft of a proposed new way of working in the administration, *A Guide to the Transversal Management System (TMS).* This was intended to move the City from a hierarchical, vertical and more silo-oriented service delivery approach to one that is more integrated so as to allow for coordinated planning and service delivery. The system is now in its second year of implementation and is evolving, with good lessons being drawn from some areas of current implementation. The use of and results from the TMS have been positive in some areas, and it is likely that implementation will be deepened in the next IDP cycle from 2017/18-2022/3.

4.2 Local government planning, policies and implementation tools

The City has in place a range of processes, systems and policies to ensure service delivery and support the implementation of its developmental role. Many of these systems and processes have been in place and matured over years since the establishment of the City in 2000; some have been continually refined based on the implementation experience and/or to strengthen service delivery.

The following paragraphs provide a brief overview of the long-term planning tools, as well as the more operational platforms and tools, to support smarter and sustainable service delivery planning, implementation and monitoring.

Long-term strategies

The City has a long-term strategy in place in the form of Province's ONECAPE2040 and its City Development Strategy (CDS) 2040, both of which were approved by Council in October 2012 and are aligned with the 2012 NDP. These documents also informed the development of the Economic Growth Strategy and the Social Development Strategy, which were approved in 2013.

The Integrated Development Plan (IDP)

The IDP[346] is a five-year management plan that links the municipal budget to the City's strategic plan and sector plans, including the CTSDF, transport plans and infrastructure roll-outs. The foundational IDP, which served as the Term of Office (ToO) plan for the very first Unicity Council, was developed for 2000/1. Since then, the City has produced three IDPs; the fourth will be for the 2017-2022/23 ToO. Consultations and planning for the next ToO IDP commenced in 2015/16 to gather inputs for a draft document, which is to be reviewed by the new political leadership following the 2016 local government elections.

346 Theoretically, IDPs are meant to articulate how investment by parastatals, other government spheres and the private sector would affect local needs, the planning framework and the budget. In practice, this has proven to be more difficult to do, and remains work in progress. From the City's perspective, it is challenging to include in the IDP programmes and activities that the administration cannot fully account for in an auditing process.

To date, the City has produced 17 IDP annual reviews. The annual reviews are intended to inform any refinements to the Council-approved IDP and are subject to review by the Mayor and Mayco, and approval by Council. Inputs for these reviews were gathered through a series of annual IDP engagements and, since 2014, by a process through which Mayco members and ward councillors propose changes to IDP implementation plans. These proposals are then subjected to a public participation process, where the public's comments on the proposed IDP implementation plan are invited via various electronic communication platforms and community consultations.

A high-level impact analysis of the IDP 2012-2017 is currently under way, using 2012 and 2015 as reference points to assess the City's progress against the 23 stated strategic objectives. The lessons from this process will be used to inform the next IDP as well as the appropriate measures to assess the outcomes and results of City programmes and projects in the short, medium and long term.

While there have been considerable achievements in the past 15 years since the formation of the Unicity, many of the urban challenges identified by the then Unicity Commission continue to prevail to a greater or lesser extent. Consequently, some of the same or related challenges still inform the IDP today. This indicates the imperviousness to change and the length of time needed to shift some of the complex, interrelated

> The City continues to invest in SAP, and it is central to its success, enabling better monitoring of its self delivery and project implementation.

and deep underlying social and economic challenges that the City, other spheres of government, stakeholders and all who live and work in Cape Town, face.

Spatial development framework

A spatial development framework typically reflects a 20-year to 30-year vision for the future spatial form and development of a municipal area and contains all the supporting policy statements of the built environment sector. For a spatial development framework to have any force, it must first be approved by Council and ultimately by Province.[347] The City's first framework, the Cape Town Spatial Development Framework (CTSDF), was approved in 2012 as part of the IDP 2012-2017. The CTSDF is a long-term plan to manage growth and change in Cape Town, and to ensure that it becomes a more sustainable, integrated and equitable city. It seeks to ensure that Cape Town remains a quality place in which to live work and invest, as well as to visit.

The CTSDF was a landmark document and replaced a number of outdated guide plans that had previously applied to the Cape Town metropolitan area. It was recognised as a best-practice example of balancing sustainability with the need for economic expansion, without compromising the principle of densification and urban compaction.[348]

At the time of writing this report, preparations were under way for a mid-term review of the Cape Town Metropolitan Spatial Development Framework (CTSDF), which will reflect on implications for the framework following certain legislative changes, including amendments to the Spatial Planning and Land use Management Act of 2013 and the promulgation of the City's Municipal Planning Bylaw of 2015. Among other things, the mid-term review will also take account of the five-year review of the Cape Town urban edge as well as changes and updates to other internal policies, such as the Economic Growth Strategy, the Social Development Strategy, the IHSF, the TOD strategic framework, as well as project and programmes included in the City's BEPP.

347 As per the Municipal Systems Act of 2000.
348 http://www.capetown.gov.za/en/Planningportal/Pages/SDFAward.aspx.

The City was also in the consultative stages of developing an Organisational Development and Transformation Plan (ODTP) at the time of writing this State of Cape Town report. The ODTP was presented to the newly elected Council following the August 2016 local government elections. It is envisioned that the ODTP will support the implementation of the IDP and the CTMSDF. One aspect of the ODTP that has been highlighted is the importance of data and indicators to support informed urban development policy and decision-making, as well as the importance of M&E of past and ongoing programmes and projects to assess the effectiveness of developed and implemented plans, whether programmes reach their intended goals, and how. This is a relatively underdeveloped area of work in the City and will require increased understanding of and capacity to develop indicators for and implement corporate, programme-based and project-based M&E, both for the organisation and for Cape Town, its residents and businesses.

4.3 Tools for improving the City's effectiveness and responsiveness

The City is continually seeking to improve on its effectiveness and efficiency as an organisation, on the systems and processes it uses for service planning, reporting and service delivery, as well as on the mechanisms available to residents to provide input to the City on service delivery concerns. For this reason, the administration has launched a number of platforms to deepen its capacity and facilitate engagement with City stakeholders, including specific measures targeted at poorer residents in Cape Town. These include the following:

SAP and enterprise resource planning: The implementation of the City's SAP enterprise resource planning system is the largest in local government in the world and has been running for more than ten years. Development started in 2000, and the SAP system went live in 2003. A 2013 case study of the system's implementation showed that, at the time, the system encapsulated 420 business processes and handled 1,2 million consolidated invoices per month.[349] The SAP system provides a single record of every citizen, with a unique identity allocated to each person, against which all their interactions with the City are recorded. SAP's core value is that it provides a set of procedures that Council and its employees follow to manage the city. Rather than to implement SAP piecemeal, the City uses it for its entire back office, including logistics, human resources and finance. The City's implementation of the SAP software has become central to its success, enabling better monitoring of its service delivery, the maintenance of an accurate billing system, and sound financial management. Thus, SAP is central to the City's achievement of 12 consecutive unqualified audits. For the 2014/15 financial year, the City received an unqualified audit opinion as well as a clean audit status from the Auditor-General of South Africa for the 12th and third consecutive years respectively.[350] Audit consistency has been linked to a resilient organisation: "The more misappropriation, waste and the misallocation of resources can be resisted, the more resilient each government tier and the governance system as a whole will be."[351]

The City continues to invest in SAP, and launched an electronic platform for employee self-service and citizen self-service in 2014. SAP Project Portfolio Management is the latest (2015/16) addition to

349 Saran, 2013.
350 See City of Cape Town, 2015b: 35.
351 Powell & O'Donovan, 2015: 6.

the City's SAP environment and is intended to provide project management intelligence on the 100 biggest capital projects under way in the City.[352] This application is aimed at facilitating better monitoring of large-scale capital project implementation and the City's capital budget spend, as well as providing tools for ensuring that projects meet their medium-term to long-term objectives and address resident and stakeholder needs more effectively. M&E of large capital project programming is also key for understanding what works and why – or not, as the case may be – in order to assess what activities and programmes to scale up, and when and where to change approaches. The City is working on deepening its M&E processes and capacity through the implementation of the SAP Project Portfolio Management system and its related phases, and the development of M&E frameworks for larger programmes and projects. This includes testing M&E principles and frameworks by applying them to completed projects, such as the Valhalla Park integrated recreation hub, as well as ongoing large-scale bulk infrastructure and TCT projects across the city.

Call centres: To expedite the different types of service queries, the City operates dedicated technical operations centres for emergencies (107), electricity and water-related queries, transport information as well as corporate issues.[353] The various call centre lines received a total of 3 072 930 calls in the 2014/15 financial year, with an average waiting time of 2 minutes to have a call answered, and 10 seconds for the transport and emergency lines. The corporate call centre has consistently exceeded the target of 80% first-time call resolution. The City also has a dedicated toll-free hot line for the Copperheads, the City's task team dealing with metal theft.

FreeCall lines: Between January and December 2015, the City installed 32 FreeCall lines, which are located in municipal buildings, housing offices, cash offices, libraries, clinics and community facilities throughout Cape Town. This brought the total number of FreeCall lines installed since 2009 to 142.[354] Access to these telephone lines makes it easier for even more residents to report faults, register complaints and make service requests and enquiries, at no cost to themselves. Many informal settlements, including some without any Telkom infrastructure, benefit from these new lines.

Service notifications: Due to growing calls from a number of City departments for more consistency and reliability in handling citizens' complaints and requests, the service notification system was established as a way of improving and better managing local government service delivery. The service notification system is part of a larger notification system operated by the City and was created to ensure the efficient receipt, tracking and resolution of citizens' complaints and requests by City departments.

A service notification is created every time a service request is received.[355] The system enables the City to measure how long it took to deal with complaints, and where and how often particular services fail, and can thus be used to monitor service delivery and improvement over time. Understanding service delivery trends enables the City to plan more proactively and informs budget provision to areas of need.[356]

Tracking service notification responsiveness is intended to support service delivery management. During the period 1 July 2014 until 30 June 2015, some 822 179 calls were received, up from 782 098 received during the previous financial year (2013/14).

In terms of the City functions receiving the highest call volumes, a comparison of the data for 2014/15 and 2013/14 reveals that service delivery issues relating to electricity (technical), sewer, water and solid waste were prominent in the past financial year. However, water and sanitation or meter queries as well as electricity (financial) and meter-reading issues were more frequent in 2014/15. Call volumes relating to law enforcement increased, while those relating to electricity (technical), sewer, water and housing (existing) service delivery issues declined. Comparing service notification data for 2014/15 with that of 2013/14, the largest decline observed was for calls relating to electricity service delivery concerns.

> The City's eServices platform allows residents and businesses to transact with the City online, saving time and money.

eServices: The City's Information Services and Technology Department started developing and testing the City's eServices platform in 2010, and the platform was launched in 2012. The online platform allows residents and businesses to transact with the City from the comfort of their own homes or offices, saving them time and money.[357] Using a single log-in, residents and businesses can electronically transact with the City around municipal accounts, log service delivery complaints or queries, and most recently, renew car vehicle registrations. The Smart Cape initiative, which makes internet available to the public at all municipal libraries, is part of a strategy to bring free internet access to all. Access to the internet and computers is a key tool for economic and social development, enabling residents and small businesses to take advantage of

352 See http://spprac.com/case-study-city-of-cape-town/.

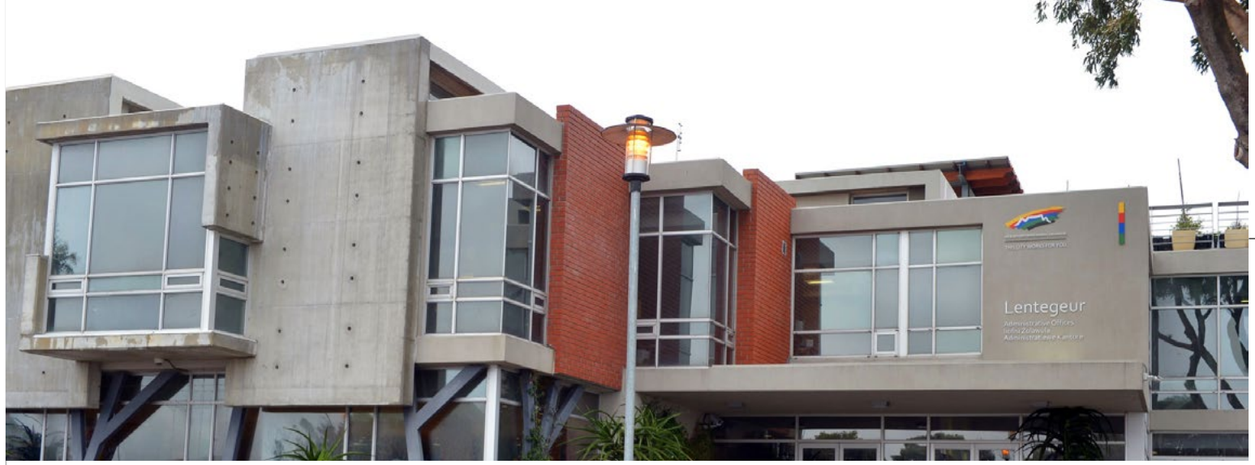
353 For quality assurance purposes, all calls are recorded. To track progress on complaints, callers are given a reference number and the name of the agent who dealt with their call.

354 City of Cape Town, 2016.

355 The request can be received either by telephone to the City's centralised call centre, or via SMS, e-mail, over the counter or through written correspondence. Complainant receive a reference number, allowing them to follow up on their complaints, and as soon as an issue has been resolved, the notification is closed. All calls are captured, and more than one call may relate to the same issue or complaint. Therefore, service notification data are not of a scientific standard; yet, the data provide a useful indication of residents' issues.

356 City of Cape Town, 2014.

357 The site also allows users to register their pets, access the City's careers portal, as well as link to third-party websites where residents and businesses can transact on related matters, such as pay traffic fines. See the website at http://www.capetown.gov.za/City-Connect/all-city-online-services/all-our-online-services.



developmental opportunities made available on these platforms.[358]

Community Satisfaction Survey: Since 2007/8, the City has undertaken an annual Community Satisfaction Survey to gather detailed feedback from Cape Town's residents and businesses regarding the services it renders. Strict sampling rules are applied when selecting the respondents for the residents' survey to ensure that they are representative of the entire population of Cape Town and the City's health districts. The eighth annual perception survey (2014/15) took place towards the end of 2014 and comprised 3 000 face-to-face interviews with residents and 700 telephonic interviews with formal businesses in Cape Town. It also included eight focus groups with residents, property developers and small businesses to probe and investigate issues in more depth. The results of the survey since 2007/8 reflect increasing levels of satisfaction with the City's service delivery among both residents and businesses, as measured from the baseline eight years ago.

However, the overall residents' satisfaction rating of the City's services in 2014/15 had decreased slightly since the previous year. This reflects the challenge of maintaining high levels of satisfaction in the face of continued growth in demand for services as a result of increasing levels of urbanisation, considering that the City's population has grown by 30% over the past ten years. It also reflects the broader context of a challenging economic environment, which is largely beyond a local government's control and may have influenced residents' perceptions. Despite these factors, the mean overall satisfaction rating of the City's services by residents was 2,8 (on a five-point rating scale) in 2014/15, which represented an improvement on the rating of 2,4 received in 2007/8. Overall, the 2014/15 business perception survey results indicate that the businesses in Cape Town generally display a high level of satisfaction with the services they receive from the City. The mean overall satisfaction rating of the City's services by businesses was 3,5 (on a five-point rating scale), also up from the 2007/8 rating of 2,9.

The City continues to use these survey results to inform and refine the planning and implementation of municipal services across the metro in line with IDP objectives and programmes. The survey results are also being used to ensure constant enhancement of service delivery standards.

5. Building urban governance practice for the future

In terms of the South African Constitution, local government is obligated to provide residents with the opportunity for real engagement and influence over matters that affect their daily existence. As the sphere of government closest to communities, local government or municipalities bear a greater responsibility to be accountable in the way they govern, and "to encourage the involvement of communities and community organisations in the matters of local government". [359]

Urban governance is both the processes and structures that emerge from this relationship between civil society and local government (or 'the state').[360] Thus, key elements of an action agenda for, and measures of, good urban governance practice revolve around inclusivity,[361] transparency, participation, as well as taking a long-term perspective.[362] State capacity – of the local government– is another key ingredient and support mechanism for the exercise of urban governance. The evidence reviewed in this as well as the previous edition of the State of Cape Town report illustrates that a number of these challenges are being actively addressed. Some, however, remain work in progress, such as the building of substantive community engagement in local government decision-making.

In Cape Town, NGOs active around urban development concerns have also sought to build constructive

358 The Smart Cape webpage is the landing page on Smart Cape computers and serves as a directory of useful articles in different categories, including health, careers, women, government and others. See www.smartcape.org.za.

359 Section 152 of the Constitution highlights a number of rights applicable to the people of this country, including communities' right to be involved in local governance.

360 Lange, 2009.

361 This renewed inclusivity is evidenced by, for example, the emergence of efforts at a global level to draw more actors into a global dialogue and new formations in the search for solutions for the multiple and intersecting crises. For example, the G7 has been expanded into the G20 to include developing countries, some of which are becoming the new centres of global power. In parallel, global civil society has given rise to new, trans-world, cross-cutting non-governmental formations such as the 99% movement, the Occupy movement and the Arab Spring. See Institute for Futures Research, 2012.

362 UN-Habitat, 2012.

dialogue by raising civil society awareness and capacity to participate in, for example, 'right to the city' dialogues, and by attempting to form broad urban forums that can potentially engage with the City across different ward boundaries and across communities.[363] These efforts are amplified by the National Planning Commission's call for an active citizenry as an essential requirement for delivering on the NDP 2030.[364] A number of public forums focus on what it may mean to be an 'active citizen' in the South African context, to understand the barriers to active citizenry, and to propose solutions of how these might be addressed.[365] What is emerging is an understanding within communities and civic organisations that 'participation' is considered neither 'real engagement' nor 'influence.'

The Habitat III issue paper on urban governance[366] proposes three dimensions that need to be addressed to improve urban governance, namely knowledge, appropriate policies, and engagement. These include aspects such as the following:

Knowledge

Cities need to increasingly include and draw on diverse voices to better understand and formulate appropriate responses to local urban challenges. Cities further require adequate resourcing and the legal mandates to address residents' needs in an integrated and coherent way.

Appropriate policies

Policies need to be implemented that would foster the following:

The capacity to collaborate and work transversally: All stakeholders (especially those in metropolitan areas) need the skills[367] to work in an integrative way to capitalise on service provision efficiencies. Furthermore, building a strong(er) culture of cooperation would assist to overcome fragmented governance at a metropolitan scale, using appropriate financial and legal (incentivising) tools.

Accountability: Improved accountability mechanisms – such as performance monitoring, transparent budgets, adequate public asset management, public reporting, and access to information – would help foster sound municipal and metropolitan governance. Local government can deepen inclusive governance practices by building all residents' capacity to fully participate in local political, social, economic and cultural life.

Advancing the importance of data and urban development indicators for (inclusive) planning: Access to information is necessary for fostering real engagement and meaningful participation by all stakeholders within cities, and inclusive planning has the potential to better address inequalities and the needs of marginalised and vulnerable groups and communities. Improved data gathering is critical for evidence-based policy-making and decision-making, and thus also for enhanced urban governance. Data and indicators need to be available for citywide and sub-city spatial levels to support local planning and monitoring of urban development.

Building urban and community resilience: Local government should ensure that planning processes include building systems and processes to advance security and development, inter alia through engaging residents, promoting social cohesion, and fostering a sense of social and economic mobility and community agency. This is especially important for marginalised groups and people in informal areas, and fragile communities exposed to rising levels of armed violence and crime, which can be considered a chronic stress that diminishes the resilience of individuals, families and households, as well as communities that are exposed. Building resilience would also require local government to foster a long-term perspective on urban sustainability by engaging in activities that help combat climate change, preserve ecosystems and biodiversity, and build more local communities that are more resilient to natural and human threats.

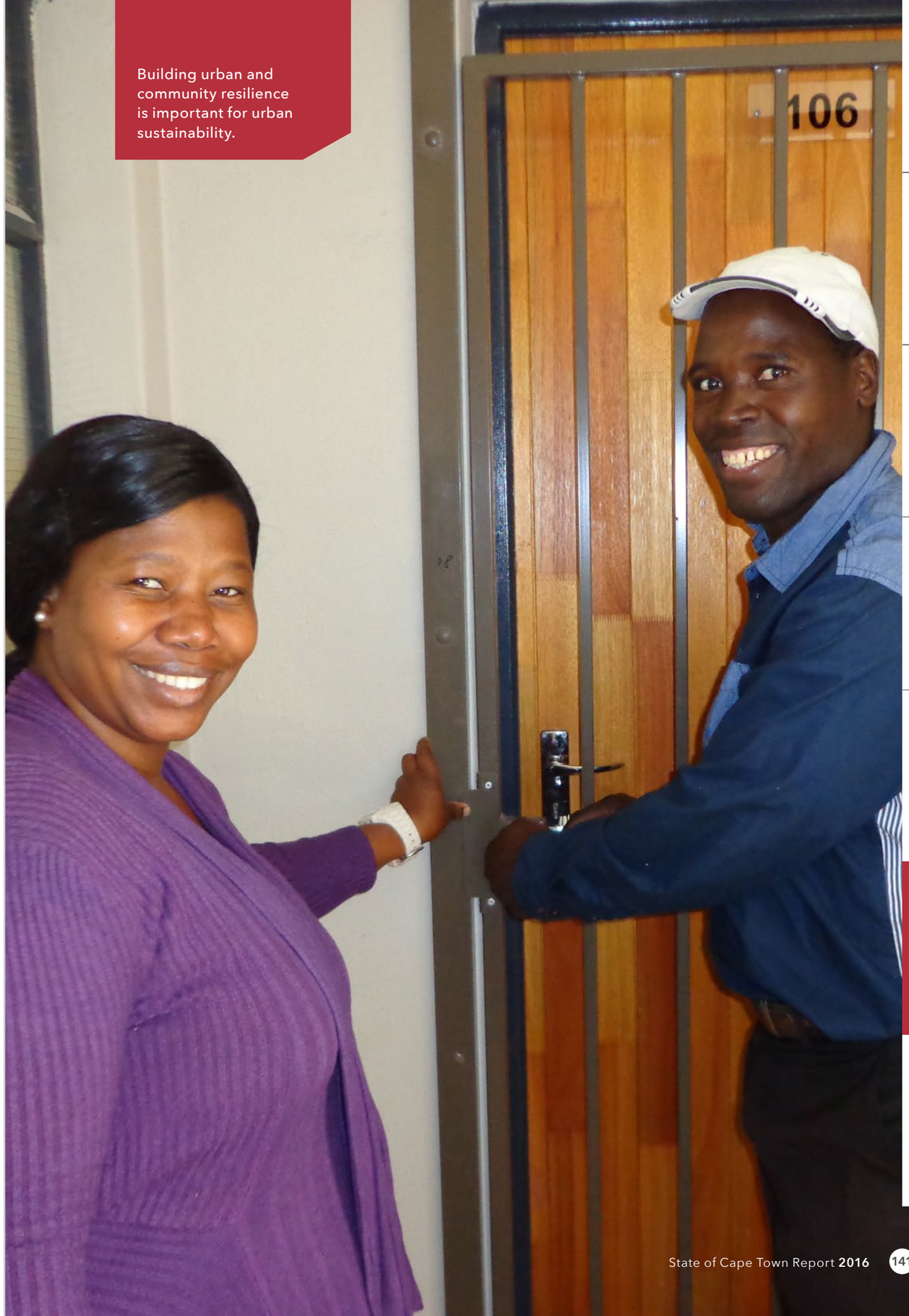
Implementing anti-corruption mechanisms, in line with applicable international standards: This would foster trust in government institutions, including local government.

Engagement

Partnerships and collaboration are crucial to ensuring universal access to services and preserving public goods – even more so in an increasingly complex urbanised world, where local governments carry greater responsibility for urban management, service delivery, and providing for the needs of ever larger numbers of people. The expansion and deepening of these challenges would require a greater willingness to reach out beyond the private sector, civil society organisations and other spheres of government, and also involve marginalised communities, who are often difficult to engage, as well as youth, women and communities in informal settlements. A key opportunity is to explore how to best draw on resources within communities for the benefit of improved urban governance. This would include building on the existing connections between community-based organisations and local communities, and the resultant social capital. Residents and marginalised communities and social groups should be encouraged to engage in group activities that strengthen social capital within communities, including through participating in community-based sport bodies, religious organisations and volunteering opportunities at various levels.

The Habitat III proposals for urban governance actions above resonate

363 See for example the Development Action Group (www.dag.org.za), Isandla Institute (http://isandla.org.za/) and other dialogues to engage broad-based thought leadership around the current development challenges in South Africa (see http://www.goedgedachtforum.co.za).
364 Cabinet approved the NDP in September 2012.
365 In a different context, active citizenship has been defined as "empowering individuals, enabling them to feel comfortable in democratic culture, and feeling that they can make a difference in the communities they live in". See European Commission, 2007.
366 UN-Habitat, 2015.
367 Skills listed include combining "organizational structures, budget and assets management, enhanced mobilization of endogenous resources, integrated urban planning, inclusive service delivery, enforcement of legal frameworks, promotion of economic and social development as well as gender responsive planning and budgeting". See UN-Habitat, 2015.



Building urban and community resilience is important for urban sustainability.

with the City, and several of these issues and proposed action areas are being explored as part of the ODTP engagements and consultations. The ODTP process will build on the lessons learnt from working within the transversal system put into practice in the City in 2015. While the ODTP process is about (internal) organisational change, it is informed by the local urban development challenges, and by the need to respond better to the Cape Town urban context and for improved partnerships with marginalised communities and social groupings. Cape Town has its share of fragile communities – whether as a result of informality or chronic exposure to persistent crime – responsive to innovative approaches that will recognise and build on their knowledge and draw on them as positive agents in their own development.

6. Conclusion

The issues above are suggested by UN-Habitat experts as urban governance issues to attend to as part of the global development agenda for 2015 to 2030, in a context where the global population is predominantly urbanised. The issues identified in new urban governance research in South Africa, referenced earlier in the chapter, overlap with some of the issues identified by UN-Habitat, notably the need for inclusivity, partnerships with marginalised communities, and the need for the right skills to work with tension and conflict.

As a well-run administration, the City has well-established internal systems that promote accountability and transversal operations, among others. The re-visioning of urban governance as extending beyond urban management, also including meaningful engagements with urban residents and stakeholders, and drawing in new and diverse voices, creates a new field of opportunity for the City to seek out and foster engagements and relationships (including the confrontational) with a range of stakeholder communities and social groups whom it may have previously approached as clients. In an increasingly complex urban context, the City has the opportunity to (re)consider clients and recipients of City services as active partners in Cape Town's development.

Chapter 5: Urban governance reference list

City of Cape Town. 2012.

City of Cape Town. 2013.

City of Cape Town 2014. Showcasing excellence: Mayor's portfolio of urban sustainability. Available at: http://resource.capetown.gov.za/documentcentre/Documents/City%20research%20reports%20and%20review/CCT_Mayors_Portfolio_of_Urban_Sustainability_2014-06.pdf.

City of Cape Town. 2015a. Contributions to the City of Cape Town (Policy Number 41636). Approved by Council: Adjourned meeting of 29 May 2015 held on 2 June 2015. Available at: http://resource.capetown.gov.za/documentcentre/Pages/PageNotFoundError.aspx?requestUrl=http://resource.capetown.gov.za/documentcentre/Documents/By-laws%20and%20policies/Contributions%20to%20the%20City%20of%20Cape%20Town%20-%20(Policy%20number%2041636)%20approved%20on%2002%20June%202015.pdf.

City of Cape Town. 2015b. Annual Report 2014/15.

City of Cape Town. 2016. 'City's services are a free call away.' Media Release, January 2016. Available at: http://www.capetown.gov.za/media-and-news/City's%20services%20are%20a%20free%20call%20away.

Cloete, F, 2008. 'Service delivery: Conceptual and practical issues and challenges' in Bertus de Villiers (ed.), Review of provinces and local governments in South Africa: Constitutional foundations and practice. Konrad-Adenauer-Stiftung Occasional Papers. Johannesburg: Konrad-Adenauer-Stiftung November . Available online at http://www.google.co.za/url?sa=t&rct=j&q=&esrc=s&source=web&cd=3&cad=rja&uact=8&ved=0CC4QFjAC&url=http%3A%2F%2Fwww.kas.de%2Fwf%2Fdoc%2Fkas_15071-1522-2-30.pdf%3F090204111036&ei=YHmVU5LmCcWI7AabvYA4&usg=AFQjCNHAKUaBQJSEXbRNLkztyo4ha5INNA&bvm=bv.68445247,d.ZGU

Department of Cooperative Governance and Traditional Affairs (COGTA). 2009a. State of local government: overview report. Pretoria: COGTA.

Department of Cooperative Governance and Traditional Affairs (COGTA). 2009b. Local government turnaround strategy: Working together, turning the tide in local government. Pretoria: COGTA.

Diphoorn, T. 2014, 'The private security industry in urban management,' in Christoph Haferburg & Marie Huchzermeyer (eds.), Urban governance in Post-apartheid Cities Modes of Engagement in South Africa's Metropoles. (Urbanization of the Earth, Volume 12), pp197-209.

European Commission. 2007. Learning for Active Citizenship: A Significant Challenge in building a Europe of Knowledge 2005. Available at: http://ec.europa.eu/education/moreinformation/doc/activecit_en.pdf.

Finance and Fiscal Commission. 2014. 'Review of Local government infrastructure grants: recommendations for reform', September, p50. Available at: http://www.ffc.co.za/index.php/docman-menu-item/reports/804-review-of-local-government-infrastructure-grants-recommendations-working-paper-for-distribution/file.

Finance and Fiscal Commission. 2015. Improving the Performance of Municipalities Through Incentive-Based Grants. Submission for the 2014/15 Division of Revenue. Available at: http://www.ffc.co.za/docman-menu-item/reports/610-2014-2015-tr-chapter-12-improving-the-performance-of-municipalities-through-performance-based-grants

Haferburg, Christoph & Marie Huchzermeyer (eds.). 2014. Urban governance in Post-apartheid Cities Modes of Engagement in South Africa's Metropoles. (Urbanization of the Earth, Volume 12). University of KwaZulu-Natal Press.

Institute for Futures Research. 2012. Business Futures 2012. Launch presentation. Held at the University of Stellenbosch Business School (USB), Bellville. 28 November.

Katz, Bruce. 2014. 'Unleashing Metro Growth—What the U.K.'s City Growth Commission Can Teach the U.S'.

Kirshner, J. 2014. 'Reconceptualising xenophobia, urban governance and inclusion,' in Christoph Haferburg & Marie Huchzermeyer (eds), 2014, Urban governance in Post-apartheid Cities Modes of Engagement in South Africa's Metropoles. (Urbanization of the Earth, Volume 12), pp 117-134.

Lange, F.E. 2009. "Urban governance An essential determinant of city development?" World Vision Institute for Research & Development. Theory and Practice Scientific Series. Available at: https://www.worldvision-institut.de/_downloads/allgemein/TheorieUndPraxis_6_UrbanGovernance.pdf.

Ley, Astrid, 2014, 'Entangled or empowered? Networks of grassroots organisations and NGOs in housing and human settlements processes', in Christoph Haferburg & Marie Huchzermeyer (eds), 2014, Urban governance in Post-apartheid Cities Modes of Engagement in South Africa's Metropoles. (Urbanization of the Earth, Volume 12). pp 155-175.

Miraftab, F. 2007. Governing Post-Apartheid Spatiality: Implementing City Improvement Districts in Cape Town.' Antipode 08/2007; 39(4):602 - 626.

Naidu, R, n.d. 'Public Participation and Ward committees,' Available at: http://ddp.org.za/information-material/research-unit/research-themes/citizenship-participation/Public%20Participation%20and%20Ward%20committees.pdf.

Ntenga, L. 2013. Chapter 15: The Impact of Unfunded Mandates in South African Intergovernmental Relations. In Submission for the 2012/13 Division of Revenue: Technical Report. Finance and Fiscal Commission. Available at: http://www.ffc.co.za/index.php/submissions/commission-submissions/submission-chapters#Submission2015.

Pernegger, Li. 2014. 'The agonistic state: metropolitan government responses to city strife post 1994,' in in Christoph Haferburg & Marie Huchzermeyer (eds), 2014, Urban governance in Post-apartheid Cities Modes of Engagement in South Africa's Metropoles. (Urbanization of the Earth, Volume 12). pp 61-78.

Powell, D. 2012. "Imperfect Transition – Local government reform in South Africa 1994 – 2012." In Susan Booysen (ed.). Local Government Elections in South Africa. Parties, People, Politics. Bloemfontein: Sun Press. Available at: http://www.africansunmedia.co.za/Portals/0/files/extracts/Local%20Elections%20Extract.pdf.

Powell, D.M. & O'Donovan, M. 2015. Municipal Audit Consistency Barometer: Audit consistency as a measure of resilience in local government. UWC: Dullah Omar Institute. Available at http://dullahomarinstitute.org.za/multilevel-govt/mlgi/municipal-audit-consistency-barometer.

Republic of South Africa, 2015.

Rubin, M. 2014. 'Johannesburg's Bad Buildings Programme: the World Class City hegemony at work?' in Christoph Haferburg & Marie Huchzermeyer (eds.). Urban governance in Post-apartheid Cities Modes of Engagement in South Africa's Metropoles. (Urbanization of the Earth, Volume 12). pp 211 -230.

Saran, C. 2013. 'Case study: How SAP runs Cape Town,' Computer Weekly, 30 April 2013. Available at http://www.computerweekly.com/news/2240182802/Case-study-How-SAP-runs-Cape-Town.

Satterthwaite, D. 2015. 'The SDGs don't adequately spell out cities' role in implementation.' International Institute for Environment and Development blog. October. Available at: http://www.iied.org/sdgs-dont-adequately-spell-out-cities-role-implementation.

Satterthwaite, D. 2016. 'Editorial: A new urban agenda?' In Environment & Urbanization, Vol. 28 (1), pp3012. Sage Publications. Available at: http://www.academia.edu/23332898/Editorial_A_new_urban_agenda.

Smith, T. 2008. The Role of Ward Committees in Enhancing Participatory Local Governance and Development in South Africa Evidence from Six Ward Committee Case Studies. University of the Western Cape: Community Law Centre. Available at: http://www.ldphs.org.za/publications/publications-by-theme/local-government-in-south-africa/communityparticipation/The%20Role%20Of%20Ward%20Committees %20In%20Enhancing%20Participatory%20Local%20Governance%20And%20Development%20In%20South%20Africa%20Evidence%20From%20Six%20Ward%20Committee%20Case%20Studies%20-Research%20Paper.pdf.

South African Cities Network (SACN). 2007. State of Cities Finances Report 2007. Pretoria: SACN.

South Africa, Government Gazette. 13 March 1998.

Tim, Stephen. 2012. 'New plan for a more prosperous South Africa' Vuku'zenzele. November . Petoria: GCIS. Available at: http://www.vukuzenzele.gov.za/new-plan-more-prosperous-south-africa.

UCLG, n.d. Local Governance. Available at: https://www.uclg.org/en/action/decentralisation-governance.

UN-Habitat. 2012. State of the World's Cities 2012/2013. Prosperity of Cities. Kenya, Nairobi.

UN-Habitat. 2015. Habitat III Issue Papers – 6, Urban governance. May. Available at: http://unhabitat.org/wp-content/uploads/2015/04/Habitat-III-Issue-Paper-6_Urban-Governance-2.0.pdf.

United Nations Population Fund (UNFPA). 2007. State of World Population 2007: Unleashing the Potential of Urban Growth. New York. United Nations Population Fund.

Wenz, L. 2014. 'The local governance dynamics of international accolades: Cape Town's designation as World Design Capital 2014' in Christoph Haferburg & Marie Huchzermeyer (eds), 2014, Urban governance in Post-apartheid Cities Modes of Engagement in South Africa's Metropoles. (Urbanization of the Earth, Volume 12). pp 251-270.

You, Nicholas. 2013. Urban innovation and governance – emerging trends and priorities of 21st century cities. Available at: http://cityminded.org/urban-innovation-and-governance-emerging-trends-and-priorities-of-21st-century-cities-7303.

Conclusion

In a now predominantly urban world, the role of cities is increasingly acknowledged to be pivotal to national, regional and global social and economic development and growth in the 21st century.[370] However, in pursuing social and economic prosperity, cities also need to give equally careful consideration to their environmental footprint. The need for the social, economic and environmental spheres of a city to complement one another to achieve sustainable development now and into the future has gained significant international and local traction in the past two decades, as illustrated in the Rio+20 conference outcome in 2012,[371] where the principles of the SDGs were agreed. The SDGs include an important urban goal (SDG 11), the sub-objectives of which represent priorities for cities in promoting sustainable development.

A New Urban Agenda that addresses the challenges of rapid urban growth and offers a new guideline for managing urbanisation challenges was also officially unveiled in October 2016 and complement and highlight the need to address the SDGs, particularly the urban goal. At the same time, however, some question how 'new' the New Urban Agenda would actually be.[372] This is because many of the goals listed in Habitat I and Habitat II – especially access to housing for low-income residents – still have not been attained 40 years after the first Habitat urban development agenda was unveiled in 1976. However, UN-Habitat cites as one of the reasons for this the fact that urban areas around the world are facing enormous challenges and changes, more than they did 20 years ago since Habitat II,[373] and therefore, even more so 40 years since Habitat I. For this reason, the premise of a New Urban Agenda is that cities are operating in economic, social and cultural contexts that are radically different from the urban model of the 20th century.[374]

370 See for example CDE, 2016; McGranahan & Satterthwaite, 2014.
371 United Nations, 2012.
372 Satterthwaite, 2016.
373 UN-Habitat, 2016.
374 Ibid.

This State of Cape Town 2016 report has built on the 20-year analysis of Cape Town's development that was conducted in the 2014 report, in order to establish the current status, ongoing challenges and new opportunities facing the city's residents and local government administration. Across the social, economic, natural wealth, urban growth and form, and urban governance themes, it has been established that certain indicators reflect improvement; others point to neutrality (i.e. no further/significant improvement or deterioration), while a few reflect a state of deterioration. These are reflected in a high-level overview of each theme below.

> The role of cities is increasingly acknowledged to be pivotal to national, regional and global social and economic development and growth in the 21st century.

Social

The most important part of a city is its people. Cape Town has a diverse population estimated at 4 004 793 in 2016, which makes it the second-largest metro in South Africa (following Johannesburg). It is projected that the city's population will have increased to 4,20 million by 2022.

Health trends in Cape Town show certain improvements. Infant mortality rates, for example, significantly decreased between 2003 and 2012. Similarly, TB cases also decreased between 2010 and 2014. HIV prevalence continued to increase up to 2011, in part because of the increased number of people receiving antiretroviral therapy, which enables them to live longer with the virus. In the period 2012 to 2013, prevalence rates seem to have reached a plateau.

Adult literacy and adult education continues to improve in Cape Town. Learner enrolment numbers in Grade 12 also continue to rise. Grade repetition, however, remains a problem, particularly in Grades 10 and 11, with such learners often failing to complete Grade 12.

To a certain extent, Cape Town continues to reflect aspects of the apartheid legacy, which left South Africa's cities spatially segregated with significant social disparities. For example, Cape Town's Gini coefficient (reflecting income inequality) in 2014 was 0,62 – higher than the 2001 value of 0,60. However, Cape Town's rating on the human development index significantly improved between 2001 and 2013, suggesting that the city has managed to translate its economic success into social development. Similarly, there was a decrease in both households living in poverty between 2012 and 2014, and the number of indigent households between 2003 and 2015.

Challenges associated with food security of urban populations are rising on the international agenda,[375] and South Africa is not immune to this. This is evident in Cape Town, where there has been a downward trend in terms of food security among the adult population (since 2005) and children (since 2010). Food security is tightly linked to the price of food, which in turn is affected by broader economic challenges and cycles. Additionally, prevailing weather conditions/patterns also affect food production and food prices. Climate change is bringing new pressures to food systems and is exacerbating existing ones.[376] The South African drought conditions between 2015 and 2016 as a result of the El Niño weather conditions demonstrate how food prices are negatively affected by poor food production due to unfavourable climatic conditions.

375 Watson et al., 2016.
376 Ibid.

Cape Town is moving in the right direction. The City of Cape Town's five strategic focus areas have had a positive influence.

In 2014/15, Cape Town had the highest overall crime rate compared to all South African metropolitan cities. The city continues to experience the highest rates of murder, attempted murder, sexual crime, common assault crime and robbery with aggravated circumstances. Only the total prevalence of sexual crime in Cape Town has displayed a consistent general decrease over a ten-year period. Future crime trends in Cape Town will be influenced by local economic conditions as well as the efficiency of social institutions, both of which serve as key crime-mitigating factors.

Economy

The success of the urban economy is directly associated with improved living conditions of its residents, provided that the health and environmental conditions of the city and residents are not adversely affected. The spatial economic analysis has highlighted the importance of encouraging inward growth (as opposed to outward growth) through key growth nodes to ensure sustainable urban development.

Although global economic trends influence the national and local urban economy, it is acknowledged that cities are critical platforms for national, regional and global growth.[377] This is evident in the fact that Cape Town, like many other emerging cities, is outperforming the national economy.

Cape Town is the second-largest contributor to the national GDP, following the city of Johannesburg. Between 2004 and 2014, Cape Town observed a positive growth in GDP per capita, which indicates that economic growth during the period was a result of both population growth, and increased productivity as a result of scale and specialisation.

Cape Town is a primarily service-driven economy. The fastest-growing sectors in Cape Town's economy are predominantly capital-intensive, where highly skilled workers are required. This is evident in the higher GDP growth rate (2,6%) between 2008 and 2015 compared to the average annual growth rate of employment (1,05%) for the same period. There are however opportunities for specialisation in specific industries within the tertiary sector that offer relatively high employment multiplier effects.

Cape Town has the second-lowest strict unemployment rate compared to other large South African metros. Although the strict unemployment rate in Cape Town increased from 19,2% in 2008 to 22,1% in 2015 – primarily as a result of the global economic recession in 2009 – employment levels have largely displayed an upward trend. For example, there was a gradual decline in the unemployment rate from 24,9% in 2012 to 22,1% in 2015. A large part of this decline is attributed to improvements in Cape Town's labour market from 2015 onwards.

Cape Town has the second-lowest proportion (2,23%) of discouraged work seekers compared to other South African metros. The city also has the lowest youth unemployment rate (for those aged 15 to 24) compared to other South African metros. However, at 46,93%, this group is still rather significant in size. A stricter analysis of youth unemployment, which considers only the NEETs (those not in education, employment or training), reveals that Cape Town has the lowest (26,48%) youth NEET rate compared to other South African metros. Youth unemployment is more predominant among females, black Africans and those with incomplete secondary education.

The informal-economy sector in Cape Town plays an important role in absorbing the labour force that the formal economy cannot accommodate. Although the aggregate economic contribution to GDP from this sector may be relatively small, the aggregate improvement in welfare and impact on the lives of the poor is significant.

Natural wealth

The urban SDG, and most likely also the New Urban Agenda, promotes environmentally sustainable cities. Indeed, successful cities provide stimulating environments for their inhabitants, without making unsustainable demands on their natural resources and ecosystems.

Cape Town is often defined by its natural resources and biological diversity due to the uniqueness of these attributes. However, these are being threatened by continuous urbanisation processes. The City has therefore developed a holistic approach to environmental management of Cape Town's unique natural resources through the adoption and implementation of the Integrated Metropolitan Environmental Policy (IMEP), which forms the foundation for the administration's environmental strategy. This policy has generated several strategies, guidelines, plans and tools for the City's strategic sustainable planning.

In terms of air quality, Cape Town has generally performed well in meeting the South African ambient air quality standards for PM_{10} exceedances. Certain local areas displayed poor air quality by exceeding the standard between 2004 and 2011. However, from 2012 to 2015, there were no exceedances.

Energy usage is a major contributor to global climate change as a result of its associated CO_2 emissions. Cape Town has experienced a decline in electricity consumption in the period 2007 to 2012. The City's energy-efficiency and behaviour change programmes and projects have played a significant role in reducing electricity use. The transport sector is the largest consumer of energy in Cape Town, and also the largest emitter of CO_2 into the atmosphere. However, by energy/fuel type, electricity remains the largest emitter of CO_2 into the atmosphere.

Over 60% of the original extent of Cape Town's natural vegetation has been lost, mostly in the lowlands, with urban and agricultural expansion responsible for much of the biodiversity loss over the past century, and urban growth being the main contributing factor since 1994. Although the total area of biodiversity lost has increased, the total area under formal protection has also expanded over the past century, with significant increases since the mid-1990s.

Urban development also has a negative impact on the quality of coastal waters through stormwater discharge (which collects various pollutants on land) and sewage effluent into the sea. The same factors that affect coastal water quality also affect freshwater quality (i.e. rivers and wetlands).

The quality of Cape Town's drinking water is among the highest both in comparison to other South African metros, but also from an international perspective. Although water usage in Cape Town has continued to decrease since 2009, the city's available potable water is an ongoing concern. The recent El Niño climatic conditions have had an impact on dam storage levels. Future climate change conditions will continue to pose a threat to Cape Town's available drinking water.

Waste management in Cape Town continued to improve between 2007 and 2015, with a clear reduction in tonnage of waste disposed during this period. However, there was a slight increase between 2011 and 2015, possibly as a result of increased consumption brought about by economic recovery from the 2009 global economic recession. Waste minimisation displays a general upward trend in Cape Town, with 2015 seeing the highest percentage of waste minimisation over a ten year period.

Urban growth and form

Sustainable development cannot be achieved without significantly transforming urban spaces, by adopting sustainable and effective urban planning and design principles. There is therefore consensus that urban structure, form and functionality need to change as societies change.

Cape Town faces challenges associated with rapid urban growth and development, its impact in terms of increased demand for physical space to house people, along with the related demand for infrastructure and service delivery to a growing population. Additionally, the city's development context is influenced by South Africa's apartheid past, which left South African cities spatially segregated.

The social cost of the apartheid legacy has resulted in a disconnected urban population, with little opportunity for integration across population groups. Peripheral neighbourhoods' uneven access to social amenities has contributed to the various social ills they face (such as gangsterism, drugs and other crimes, high learner dropout rates, etc.).

To meet the city's growing population needs, while managing Cape Town's spatial footprint, the City's focus is on encouraging inward growth through higher density integrated human settlements located along key public transport zones. The current frameworks, strategies and plans for a future Cape Town are all informed by the imperatives to build sustainable, connected and resilient communities.

Urban governance

Whilst social, economic, natural wealth, and urban growth and form aspects are seen as the hardware that is necessary for sustainable urban development, urban governance is considered the software that enables the urban hardware to function.[378] Increasingly, urban governance involves both government responsibility and civic engagement.

Local government in South Africa, including Cape Town, has undergone significant progressive transformation since 1996. As the positioning of cities within a global and national development context is gaining increasing importance in the 21st century, the functions of urban governments are also expanding and increasingly more complex.

The City has a strong track record as a resilient organisation with good accountability measures in place, growing experience in working transversally, and innovative use of technology and smart tools to aid service delivery excellence, such as the expanding SAP implementation, with new

377 CDE, 2016.

378 United Nations, 2015.

modules added over time. In an increasingly complex global (and local) urban context, the Habitat III New Urban Agenda highlights the importance of partnership and inclusive governance as being critical for addressing the (2015-2030) development agenda. Building on the strength of its organisational innovations, the City has an opportunity to apply the lessons it has learned thus far to its ongoing engagement with external stakeholders, namely the residents and businesses of Cape Town, in particular with vulnerable and marginalised communities and social groups.

Summary

Reflections across the five themes of this report – social, economic, natural wealth, urban growth and form, and urban governance – suggest that Cape Town is moving in the right direction. There have been clear improvements across the five themes, while certain focus areas have remained unchanged and, to a lesser extent, some have deteriorated. Nevertheless, the City's five strategic focus areas of turning Cape Town into an opportunity city, a safe city, a caring city, an inclusive city and a well-run city have certainly had and continue to have a positive influence in keeping the administration on course. A lot more remains to be done in order to ensure that the city continues on this urban growth path, which will gain further impetus by embracing the guiding principles of the New Urban Agenda and meeting the SDG targets, particularly the targets of the urban goal.

For an extract of key selected statistics from this report, see the accompanying overview document.

Conclusion reference list

CDE. 2016. The Growth Agenda: Priorities for mass employment and inclusion. Cities. Growth Series Report 4. The Centre for Development and Enterprise: Johannesburg.

McGranahan, G. & Satterthwaite, D. 2014. Urbanisation Concepts and Trends. Working Paper, June 2014. International Institute for Environment and Development: London.

Satterthwaite, D. 2016. 'Editorial: A new urban agenda?'. Environment & Urbanization, April 2016.

UN-Habitat. 2016. World Cities Report 2016: Urbanization and Development –Emerging Futures. UN-Habitat: Nairobi.

United Nations. 2012. The Future We Want. Outcome of the Rio+20 United Nations Conference on Sustainable Development, Rio de Janeiro, Brazil, 20-22 June 2012.

United Nations. 2015. HABITAT III Issue Papers: 6 –Urban governance. New York, 31 May 2015 (not edited version 2.0).

Watson, A., Gaspard, A., Lebreton, A. 2016. Climate, Food and the City. FNH-IUFN-UNEP Climate Change Urban Food Initiative Policy Perspectives Paper.

World Bank. 2016. Integrating the Urban Space Economy. South African Urbanization Review – Abridged Version, 2 February 2016.

SPECIALIST ANALYSIS

The City's transversal management system

Purpose of the transversal management system

The implementation of a transversal management system (TMS) within the City has been ongoing since 2012. The purpose of the TMS is to complement the existing hierarchical organisational structure with platforms for communication and decision-making across directorates/departments – and to change the organisational culture from a 'silo' to a more integrated and coordinated system.

About the transversal management system

At the time of writing, the City administration is structured in hierarchical line directorates. This structure enables focus and specialisation in specific areas and provides a clear chain of accountability. However, in a complex operating environment, organisations with vertical silos have their drawbacks, in that the lack of horizontal links between directorates and departments may result in inefficiencies, such as inconsistent and uncoordinated approaches to the same challenge, potential for possible duplication of work (and expenditure), and potential missed opportunities for improved service delivery.

In an increasingly complex urban environment, many of the challenges the City aims to address require collaboration among multiple departments. The TMS is a management device used to ensure that the City's directorates collaborate to improve integration and coordination of service delivery and planning, by creating structures and processes in which political leadership, senior managers and officials can communicate and work together.

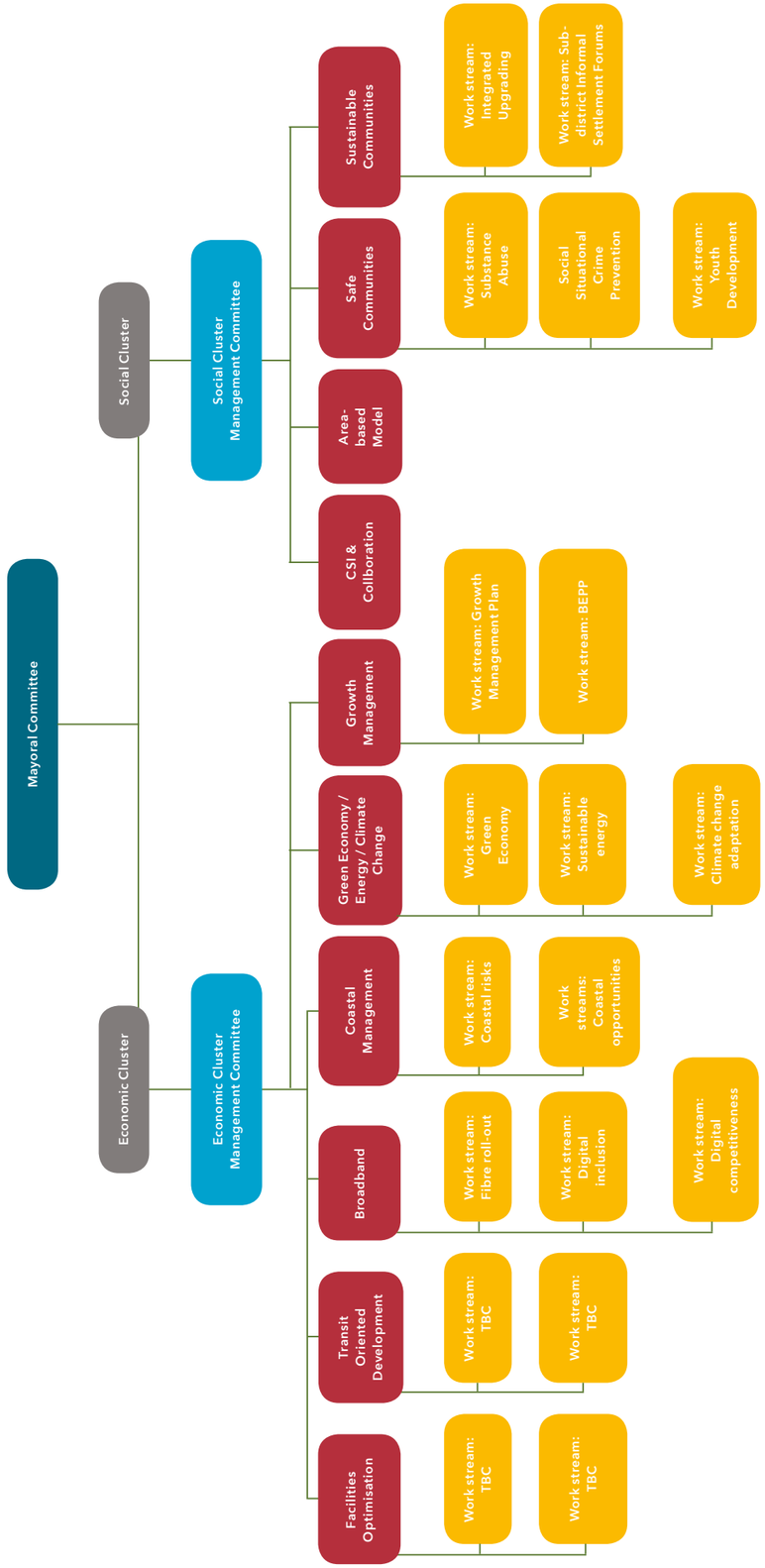
Structure of the transversal management system

The TMS is designed to be flexible enough to adapt to changing conditions, with the Strategic Policy Unit (SPU) acting as a coordinating body. The SPU facilitates the processes of the TMS by assisting in the drafting of terms of reference, providing input on work plans, assisting with reporting, as well as ensuring alignment with, among others, the City's IDP, Social Development Strategy, Economic Growth Strategy, CDS, and the Western Cape Government's ONECAPE2040 strategy.

All elements of the TMS report to the Mayoral Committee (Mayco). Directorates and departments are organised into two clusters, namely social and economic. Both clusters deal with cross-cutting issues and come together for an annual joint cluster meeting. Two cluster committees are constituted under the themes of social and economic issues, with each comprised of relevant Mayco members, executive directors and portfolio committee chairpersons. The City Manager, together with the Executive Management Team, is responsible for the work within directorates, including the work in the cluster system. Executive directors participate in management committees and subcommittees in order to provide input to the respective management committees of the social and economic cluster. Work groups are established around specific issues that require a transversal approach and are comprised of members from multiple departments. For example, the Economic Cluster Management Committee oversees the work groups on TOD, broadband, coastal management, green economy/energy/climate change, and growth management, while the Social Cluster Management Committee oversees the work groups on corporate social investment and collaboration, the area-based model, safe communities, and sustainable communities. These work groups adjust, consolidate or dissolve as necessary within the flexible system (see figure 1 for an example).

The Capital Programme Monitoring Support (CPMS) Unit was created with a project management capacity to drive key projects and support the work groups. The CPMS Unit's project managers are assigned to the transversal work groups to help drive the implementation of projects.

Figure 1: The City's transversal management system structure*



*At the time of writing, May 2016

CASE STUDY

The City's open-data project

Overview

Open data represents the notion that City data should be freely available to the public, to use and reproduce as they wish, without restrictions from copyright, patents or other mechanisms of control, at most subject to the requirement to attribute and/or share-alike.[368] The City recognises the central role that open data can play in improving government and governance, and in stimulating growth through innovation in data-driven products and services.

The opening up of City data enables data-driven decision-making: businesses, policymakers, civil society organisations and individuals can see progress and make accurate, informed decisions on issues that affect people's lives.

The open-data project aims at supporting:

- the "well-run city" pillar of the IDP by making it easier for members of the public to access data, enhancing transparency and empowering citizens to hold the City to account. The portal aims to make available information that is useful and empowering for citizens, thereby facilitating engaged citizenship;
- the "opportunity city" pillar of the IDP, specifically the objective to create an enabling environment to attract investment that generates economic growth and job creation. Innovators and entrepreneurs use open data to design new kinds of products and enhance their competitiveness. Businesses use open data to plan new locations;
- the Economic Growth Strategy programme in prioritising competitiveness in City business improvement initiatives, specifically where this relates to governance and oversight, and improving the competitiveness of the broader economy of Cape Town.

368 Allowing the redistribution and reuse of a licensed work on the conditions that the creator is appropriately credited, and that any derivative work is made available under the same, similar or a compatible licence.

Open data at the City

The open-data project is aimed at establishing and incrementally populating a single, online open-data portal for information and data generated by the City, and making it easily and freely accessible to members of the public.

The open-data project has followed a phased approach. Phase 1 had two components. Firstly, the Open-Data Policy was approved towards the end of 2014, with inputs from various internal and external stakeholders. The second deliverable was the open-data portal with initial content and agreed functionality. Both of these components have been successfully completed.

Phase 2, which is currently under way, focuses on enhancing both content and functionality in line with the needs of internal and external open-data stakeholders. At the time of writing,[369] more than 70 datasets have been made available on the portal. An additional component of phase 2 is the need for more engagement with both internal and external open-data stakeholders in order to better understand their data needs as the project develops further.

The DI&GIS Department is the overall manager of the open-data project. From a content perspective, the custodians include all departments who supply data for dissemination on the portal. Technical support is provided by the IS&T and Strategic Communications departments.

369 End May 2016

Outcomes

The open-data portal is aimed at making data accessible to the public and external stakeholders. Therefore, the project removes departmental barriers to accessing data, as information is now available centrally. As a result, nothing prevents one department from accessing another's data on the open-data portal. As more datasets become available and are updated on the open-data portal, City departments will be able to make better decisions by including the available information in their processes. Transversal work in the City will be supported as barriers to access the data from different departments are removed or reduced.

The value of the open-data project lies in the sharing of data about the City and its operations. It assists citizen engagement by making it easier for members of the public to access and analyse City data in different areas of interest. It enhances transparency and empowers citizens to hold the City to account. The portal aims to make available information that is useful and empowering for citizens, including the ability to request/propose additional datasets that may be of interest to users. It enables innovators and entrepreneurs to use City datasets to design new kinds of products, expand their business, build social capital and engage in civic life.

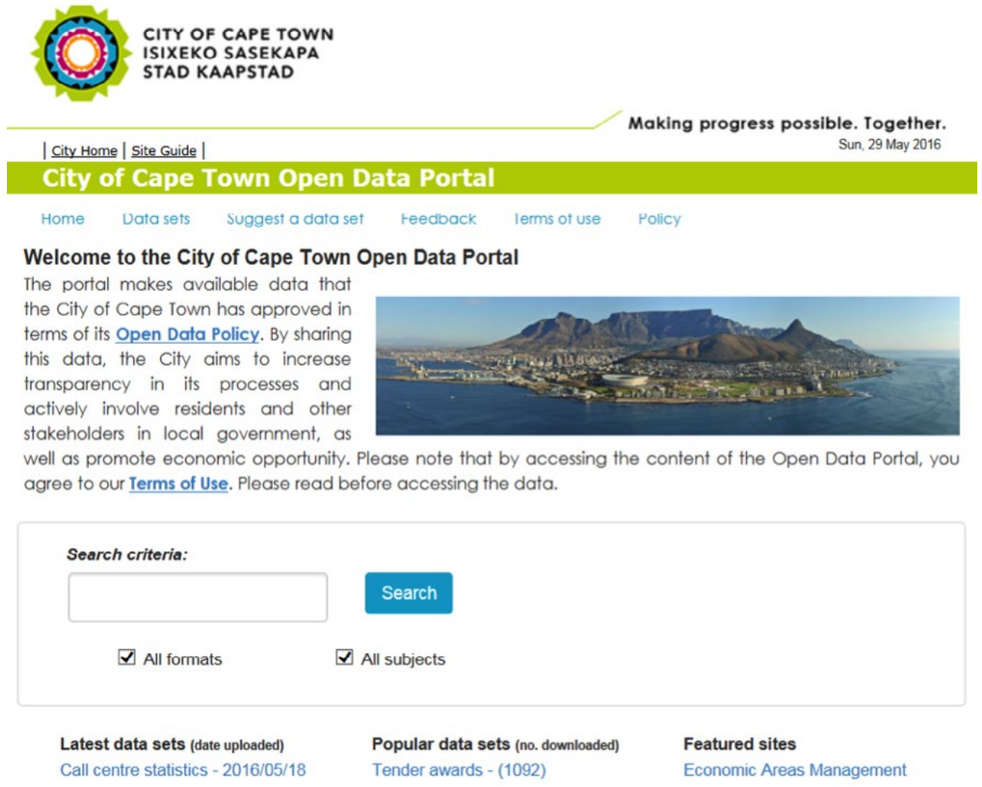
Another value-added outcome of the open-data project is the development and enhancement of innovative products and services by businesses and the public at large.

The data from the portal have already been requested for a number of applications in areas such as electricity loadshedding and air quality monitoring. Researchers have also requested data to evaluate the benefits of public access centres.

The City's open-data portal has generated interest among other South African cities and national departments, particularly around experiences and lessons learnt. Already, Open Data Durban has engaged with the City's open-data project team in order to learn from our experience. The National Department of Public Service and Administration also consulted the City about its lessons, before implementing their own open-data portal, which may possibly be linked to the City's portal in future.

Visit the City's open-data portal at http://web1.capetown.gov.za/web1/OpenDataPortal/.

Figure 1: A screenshot of the City's open-data portal



CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

Making progress possible. Together.