The Initiative on Financing for Resilient and Green Urban Global Solutions (FRUGS)

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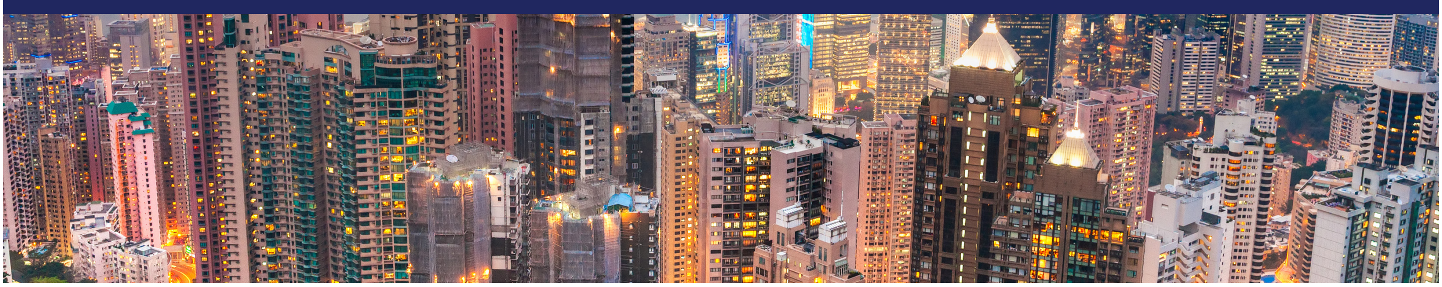

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Aerial view of Tshwane city hall and Ditsong National Museum of Natural History in the heart of Pretoria, South Africa
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ACRONYMS

A.D.	Anno Domini
AfDB	African Development Bank
AGOA	US Government's African Growth and Opportunity Act
AMI	Akiba Mashinani Trust
BAU	Business As Usual
BPS	Budget Policy Statement
BRT	Bus Rapid Transport
CAHF	Centre for Affordable Housing Finance in Africa
CBR	Central Bank Rate
CIDP	County Integrated Development Plan
CSR	Corporate Social Responsibility
CTA	Commodity Trading Advisor
CWSB	Coast Water Services Board
EIA	Environmental Impact Assessment
ERC	Energy Regulatory Commission
ERS	Economic Recovery Strategy for Wealth and Employment Creation
GPS	Global Positioning System
GDP	Gross Domestic Product
GESIP	Green Economy Strategy and Implementation Plan
GHG	Green House Gas
GIZ	Gesellschaft für Internationale Zusammenarbeit GmbH
HfH	Habitat for Humanity International
HMF	Home mortgage finance
ICT	Information and Communication Technology
IDA	International Development Association (of the World Bank)
IFC	International Finance Corporation (of the World Bank)
IPP	Innovation Policy Platform (of the World Bank)
ISUDP	Integrated Strategic Urban Development Plan
JICA	Japan International Cooperation Agency
KAA	Kenya Airports Authority
KeNHA	Kenya National Highways Authority
KES	Kenya Shillings
KERRA	Kenya Rural Roads Authority
KfW	Kreditanstalt für Wiederaufbau
KGBS	Kenya Green Building Society
KIHBS	Kenya Integrated Household Budget Survey
KISIP	Kenya Informal Settlement Improvement Project
KMP	Kenya Municipal Program (of the World Bank)
KNBS	Kenya National Bureau of Statistics

KNBS	Kenya National Bureau of Statistics
KNEB	Kenya Nuclear Electricity Board
KPA	Kenya Ports Authority
KURA	Kenya Urban Roads Authority
LAIFOMS	Financial Operating Management System
LED	Light-emitting Diode
LNG	Liquefied Natural Gas
LPG	Liquid Petroleum Gas
MCG	Mombasa County Government
MDGs	(UN) Millennium Development Goals
MFI	Micro Finance Institution
MPARD	Mombasa Port Area Road Development
MW	Mega Watts
MTP	Medium Term Plan
NEMA	National Environment Management Authority
NHC	National Housing Corporation
NGO	Non-Governmental Organization
NCCRS	National Climate Change Response Strategy
ODA	Official Development Assistance
OECD	The Organization for Economic Co-operation and Development
PPP	Public Private Partnership
ROE	Return on Equity
SACCO	Savings and Credit Cooperative
SAGA	Semi-Autonomous Government Agency
SEZ	Special Economic Zone
SIDA	Swedish International Development Cooperation Agency
SOE	State Owned Enterprise
SPA	Service Provision Agreement
SPV	Special Purpose Vehicle
STS	Seasonal Ticketing System
TICAD	Tokyo International Conference on African Development
UN	United Nations
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNSOA	United Nations Support Office for AMISOM
UPVC	Un-plasticized Polyvinyl Chloride
USAID	United States Agency for International Development
USD	United States Dollars
VDS	Vision Delivery Secretariat
WRMA	Water Resources Management Authority

GLOSSARY

Affordable Housing	Partly-subsidised, partly-bonded BNG houses for which households whose joint monthly incomes range from R3 501 to R15 000, qualify
ANC	African National Congress, South Africa's ruling political party nationally but which is the official opposition party at Tshwane local government level
BASA	Banking Association of South Africa
BBBEE	Broad-Based Black Economic Empowerment
BEPP	Built Environment Performance Plan
BNG	Breaking New Ground, the overarching human settlements policy adopted by the South African Government in 2005
BAU	Business As Usual
BRT	Bus Rapid Transit
CBD	Central Business District
CDM	Clean Development Mechanism
CIP	Capital Investment Framework
CoGTA	(National) Department of Cooperative Governance and Traditional Affairs
CoT	City of Tshwane
DA	Democratic Alliance, South Africa's official opposition political party nationally but which is the ruling party at Tshwane local government level
DBSA	Development Bank of South Africa
DEA	(National) Department of Environmental Affairs
DFI	Development Finance Institution
DHS	(National) Department of Human Settlements
DoE	(National) Department of Energy
DORA	Division of Revenue Act
DoT	(National) Department of Transport
DPW	(National) Department of Public Works
EE	Energy Efficiency
EPWP	Expanded Public Works Programme
FLISP	Finance Linked Individual Subsidy Programme
GBCSA	Green Building Council of South Africa
GCR	Global City Region
GDHS	Gauteng (Provincial) Department of Human Settlements
GEAR	Growth, Employment and Redistribution, the overarching macro-economic strategy adopted by the South African Government in 2000
GESF	Green Economy Strategic Framework
GHG	Greenhouse Gas e.g. carbon dioxide, methane, nitrous oxide
GPF	Gauteng Partnership Fund
HDA	Housing Development Agency
HIFSA	Housing Impact Fund for South Africa
HSDG	Human Settlements Development Grant
IDC	Industrial Development Corporation
IDP	Integrated Development Plan
IDT	Independent Development Trust

IFC	International Finance Corporation
IHS	International Housing Solutions
IMF	International Monetary Fund
Infrastructure	Basic physical systems of a city, which include transport, communication, sewer, refuse, water and electrical systems
IPP	Independent Power Provider
IRPTN	Integrated Rapid Public Transport Network
Jibar	Johannesburg Interbank Average Rate, the money market rate used in South Africa and which is calculated as the average interest rate at which banks buy and sell money
JSE	Johannesburg Stock Exchange
Low Income Housing	Fully-subsidised RDP houses for which households whose joint monthly income does not exceed R 3 500, qualify
LTV	Loan-to-value
MFMA	Municipal Finance Management Act
MIF	Mortgage Indemnity Fund
MIG	Municipal Infrastructure Grant
mSCOA	Municipal standard chart of accounts, a uniform and standardised financial transaction classification framework
MTREF	Medium Term Revenue and Expenditure Framework
NDP	National Development Plan or South Africa Vision 2030, the overarching development plan adopted by the South African Government in 2012
NDPG	Neighbourhood Development Partnership Grant
NEMA	National Environmental Management Act
NERSA	National Energy Regulator of South Africa
NHFC	National Housing Finance Corporation
NURCHA	National Urban Reconstruction Agency
NUSP	National Upgrading Support Programme
OECD	Organisation for Cooperation and Development
PPP	Public Private Partnership
RDP	Reconstruction and Development Programme, the overarching development programme adopted by the South African Government in 1994
RE	Renewable Energy
RHLF	Rural Housing Loan Fund
RoI	Return on Investment
RT	Rapid Transit
SABS	South African Bureau of Standards
SALGA	South African Local Government Association
SARS	South African Revenue Services
SDBIP	Service Delivery and Budget Implementation Plan
SHI	Social Housing Institution
SHRA	Social Housing Regulatory Authority
SMFS	Sustainability Financing Mechanism Strategy
Social Housing	A rental or co-operative housing option for low income persons that is provided by accredited social housing institutions or in accredited social housing projects in designated restructuring areas
SPLUMA	Spatial Planning and Land Use Management Act
SPV	Special Purpose Vehicle

StatsSA	Statistics South Africa
TEDA	Tshwane Economic Development Agency
TOD	Transit Oriented Development
TRT	Tshwane Rapid Transit
UDZ	Urban Development Zone
UN	United Nations
UNS	Urban Network Strategy
Urban Services	Urban governmental services, which include sewage systems, drainage systems, domestic water systems, waste management systems, and public transit systems
USDG	Urban Settlement Development Grant
ZAR or R	The Rand, South Africa's official currency, which was equivalent to 0.843627 USD on 31 March 2018

EXECUTIVE SUMMARY

1.1 City Profile

Popularly known as the Jacaranda City because of the thousands of jacaranda trees that dot its landscape, Tshwane is the administrative capital city of South Africa. It lies 1 339 metres (4 393 feet) above sea level in a fertile valley at the foot of the Magaliesburg Mountain range in the northern part of Gauteng Province. Figure 1 shows the province's location within South Africa. The name *Tshwane i*s sometimes used as an alternate name for the city of *Pretoria* itself. Following the city council's vote on March 8, 2005, it could become the city's new name. On the 26 May 2005 the South African Geographical Names Council unanimously approved that the name Pretoria be changed to Tshwane[1]. The Tshwane metropolitan municipality includes Pretoria, Centurion, Laudium, Eersterust, Akasia and Soshanguve, surrounding areas of Atteridgeville, Crocodile River, Ga-Rankuwa, Mabopane, Winterveldt, Hammanskraal, Temba, Mamelodi, Kungwini, Nokeng and Metsweding[2].

One of the nine provinces of the democratised South Africa that commenced in April 1994, Gauteng comprises the three metropolitan municipalities of Johannesburg, Ekurhuleni and Tshwane and the two district municipalities of Sedibeng and West Rand. Table E1 shows the area coverage of each of these municipalities as well as their respective populations.

Table E1: Area Coverage and Population of Gauteng's Municipalities

Name	Area (KM^2)	Population, 2015	As % to GP, 2015
Johannesburg	1645	4822787	37%
Ekurhuleni	1975	3386544	26%
Tshwane	6345	3161809	24%
Sedibeng	4173	946818	7%
West Rand	4087	833358	6%

(Source: CoT 2017-2021 IDP; IHS Global Insight, 2015)

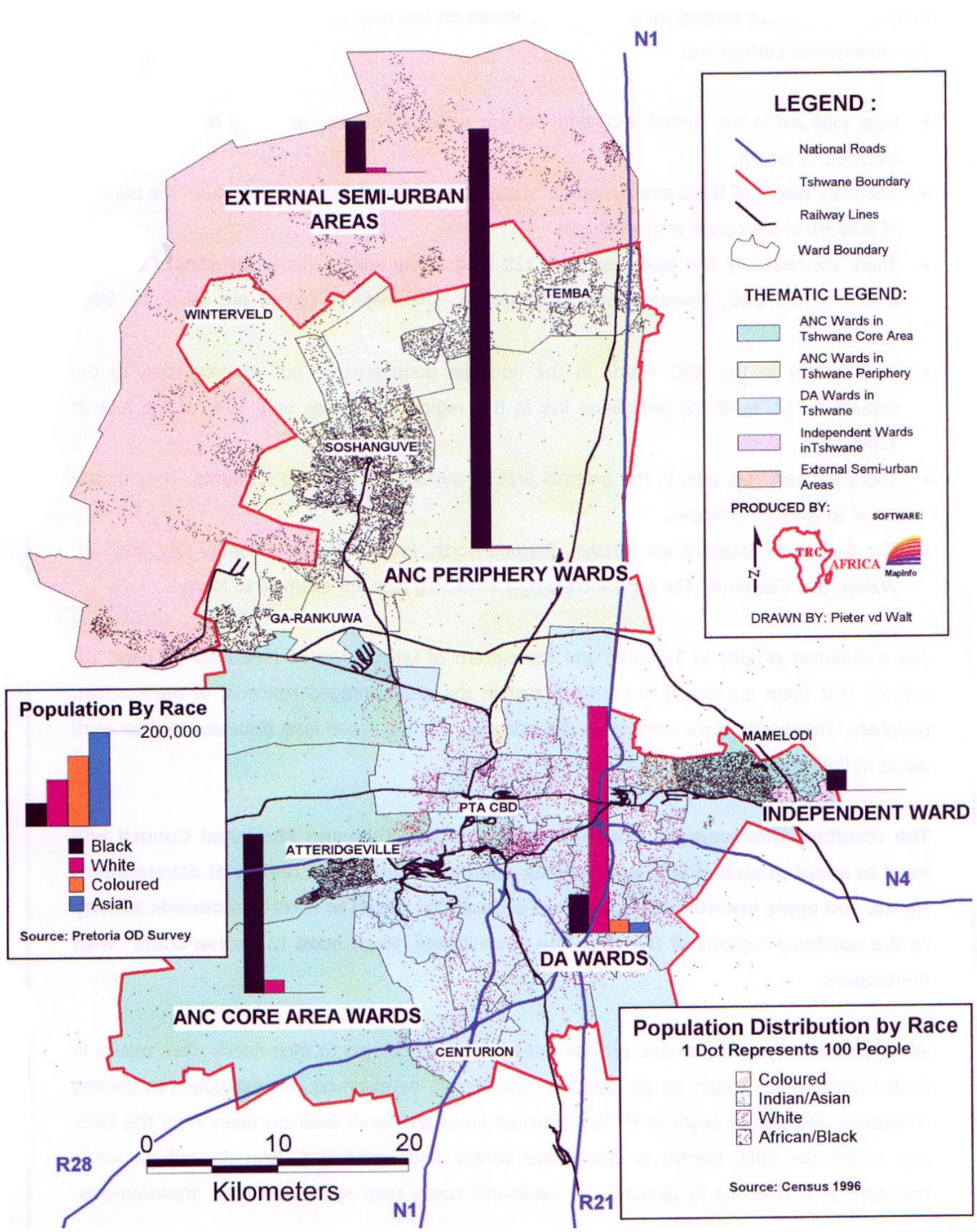
Table E1 conveys Tshwane's land surface extent as 6 345 square kilometres (2,459 miles). This makes it geographically the third-largest metropolitan council in the world – behind New York and Tokyo. It also means that Tshwane covers more than one-third of Gauteng's 18,225 square kilometres of land surface. Tshwane today is the result of thirteen smaller municipalities merging, a process which was completed in December 2000.

Tshwane has a mixed ethnic groups of population consisting of black, white and Asian groups. Some notable features of the population distribution and density (see Figure E1) are:

- The White population is concentrated in the DA Wards in central-south-east Tshwane. Most settlement is low density but there are some medium-density dwellings in Sunnyside and Arcadia.
- The Black population in the ANC Wards in the Core area, is concentrated in Atteridgeville and Mamelodi, which have the highest population densities in the municipality. The western core area is a single ANC Ward, with a very low population.
- The ANC Wards in the northern periphery in Temba, Soshanguve, and Garankuwa account for about two thirds of the Black population of Tshwane (975,000). Settlement densities in these areas are medium to high, but lower than in Atteridgeville.
- The 125,000 people in the external semi-urban areas (mostly Black) live in linear settlements along the main roads leading into Tshwane.
- Only three wards are racially mixed, namely Ward 43, Jan Niemand Park/Eersterust, where the Black and Coloured residents

are integrated but the White residents are geographically separated. The Black and White households in Ward 60 (CBD) are integrated, but the Asian and White residents of Ward 61 (Laudium/Valhalla) live in separate suburbs.

Figure E1 Mixed Ethnic Groups of Population in Tshwane



Source: https://repository.up.ac.za/bitstream/handle/2263/8190/5b3.pdf;sequence=1

Tshwane is estimated at 2,472,612 in 2019. In 1950, the population was 275,331. Pretoria has grown by 391,375 since 2015. Since 2005, it has experienced rapid population growth, which represents a 4.40% annual growth rate (see Table E2).

Table E2 Pretoria Population Data (Urban Area)

Year	Population	Growth Rate (%)	Growth
2019	2,472,612	4.40%	391,375
2015	2,081,237	4.55%	414,917
2010	1,666,320	4.54%	331,873
2005	1,334,447	4.25%	250,861
2000	1,083,586	2.64%	132,583
1995	951,003	0.85%	39,523
1990	911,480	3.62%	148,434
1985	763,046	2.09%	75,029
1980	688,017	1.99%	64,495
1975	623,522	1.99%	58,434
1970	565,088	2.99%	77,378
1965	487,710	3.07%	68,362
1960	419,348	4.30%	79,564
1955	339,784	4.30%	64,453
1950	275,331	0.00%	

Source: http://worldpopulationreview.com/world-cities/pretoria-population/

The city of Tshwane is the administrative capital of South Africa and is the largest municipality, as measured by land mass. Tshwane is also one of the country's eight metropolitan municipalities and the second largest in Gauteng, as measured by GDP. Because of its vibrant economy, Tshwane's population has grown at an average of 3.4 percent per annum, twice the national average of 1.7 percent. Since 2005, the annual population growth rose to 4.4%. In addition, the number of its households has also increased at a faster rate than the national average. Tshwane is an established industrial hub, housing notable manufacturing concerns. All these factors have put immense pressure on the city's public infrastructure such as roads, housing, water, electricity and transport services, as well as increasing the need for it to incorporate green infrastructure solutions in order to reduce carbon emissions.

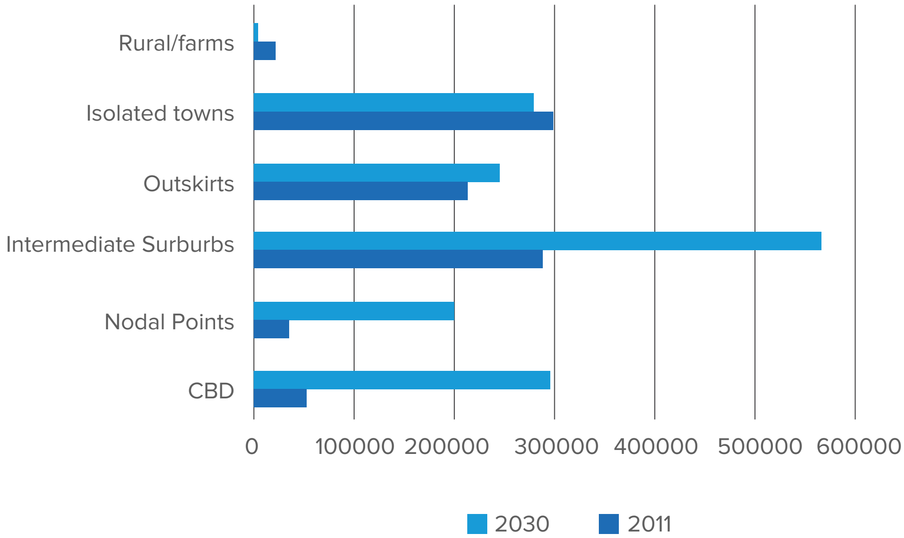
1.2 Housing Needs Assessment

The study has identified that Tshwane is facing challenges in the provision of adequate infrastructure solutions for its residents. The city has a critical shortage of affordable housing stock to address the needs of its growing population. Associated infrastructure services are also lagging behind, as Tshwane does not have adequate financial resources to maintain a big proportion of its existing infrastructure, let alone provide all of its much-needed new infrastructure. Although the green economy in Tshwane is still in its infancy, appropriate structures have been established and projects identified. These projects have the capacity to position the city as a leading green economy once the requisite funding has been obtained.

Under the Business-as-Usual scenario, the number of households in the CBD will increase by 80% (from 52,392 in 2011 to 93,697 in 2030). However, when household aspirations (i.e. socio-economic factors) are taken into account, the number of households in the CBD will increase to 214,156 in 2030, or by about 316%.

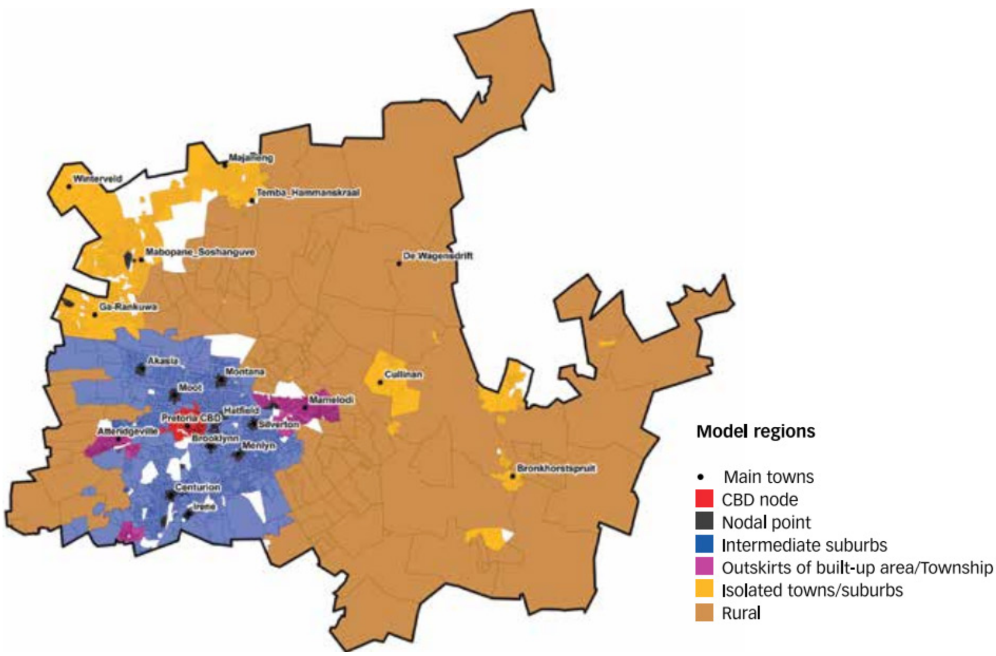
All regions are expected to see an increase in the number of households, except for rural areas and farms, where a decrease is expected by the year 2030 (Figure E2). Regions that will experience significant growth by 2030 are the CBD node, nodal points and intermediate suburbs (Figure E2, E3).

Figure E2 Households in Tshwane in the years of 2011 and 2030



Source: 2015-2016_TR_Chapter_4_Understanding_housing_demand_in_South_Africa.pdf

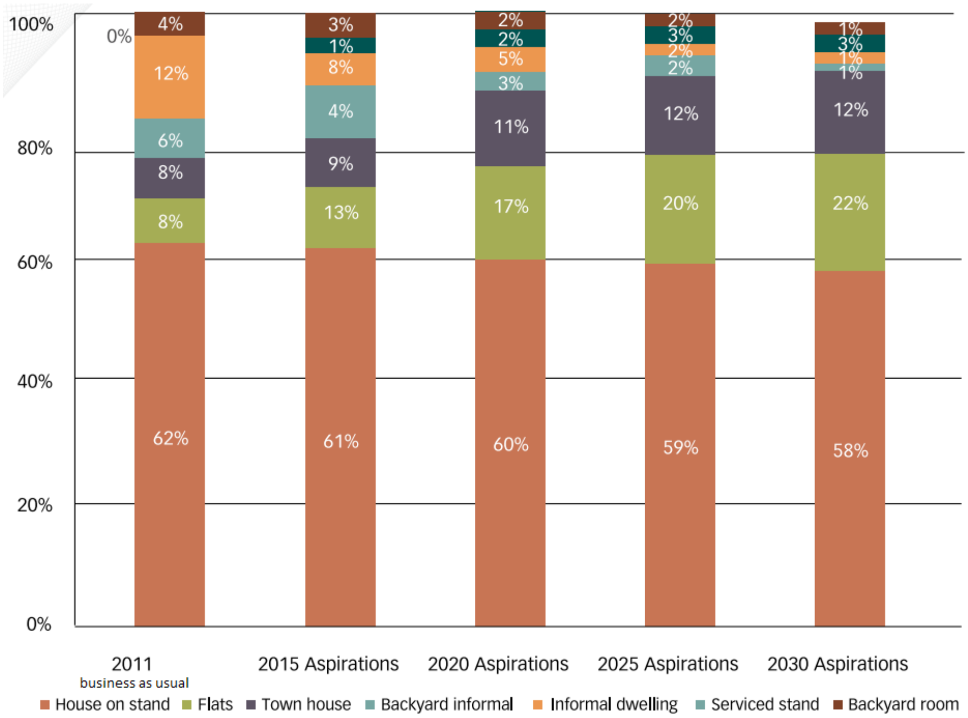
Figure E3 Location Categories of the City of Tshwane



Source: 2015-2016_TR_Chapter_4_Understanding_housing_demand_in_South_Africa.pdf

When assessing the housing needs by the types of housing, it is found that houses on a separate stand (detached or semi-detached houses) are expected to decrease from 62% in 2011 to 58% in 2030. In contrast, over the same period, flats and townhouses will increase from 8% to 22% and from 8% to 12% respectively. This is in line with the shift towards rentals in the CBD and intermediate suburbs, as mentioned above as the categories of location (Figure E4).

Figure E4 Housing needs by the types of housing in Tshwane in 2011 and 2030



Source: 2015-2016_TR_Chapter_4_Understanding_housing_demand_in_South_Africa.pdf

1.3 Financing Opportunities

With a finite fiscus required to do so much, Tshwane relying solely on inter-governmental transfers will not be able to service all the needs of its constituency, at least not optimally. Nor have the collection of rates and taxes, and selling of utilities like water and electricity, on their own, proved adequate. This makes alternative financing sources a must for Tshwane. While grants and subventions would be great these are not easily forthcoming. The city has little choice but to resort to borrowing. As long as certain conditions set by the National Treasury are met, Tshwane will be permitted to borrow from financial institutions and issue bonds.

Several opportunities exist for financing public amenities and initiatives in Tshwane. Almost every sector has a pipeline of planned projects requiring private sector finance. This applies equally to housing, human settlements infrastructure, transport infrastructure and urban services. Particularly attractive opportunities exist to finance catalytic projects relating to affordable housing, infrastructure, as well as providing green solutions that will move Tshwane to being a smart city.

As shown in Table E3, affordable housing, together with the accompanying infrastructure and urban services present viable investment opportunities for private sector investors. These opportunities are bolstered further if consideration is given to low-carbon and climate resilient development. They will demonstrate public benefit and economic growth.

Table E3 Summary of Funding Opportunities

Description	Funding need (R)
Housing	68 billion
Transport network (road)	17.2 billion
Water and sanitation	2.4 billion
Electricity	750 million
Backlog on maintenance of existing infrastructure	7 billion

Investment in the city's afford

Investment in the city's affordable housing market is not only desirable but seemingly also profitable. In this regard, Tshwane offers the following:

- An affordable housing market that is very active
- An affordable housing market that is expanding faster than its overall housing market
- "Affordable areas" that are more stable than the city overall
- "Affordable areas" that are underleveraged
- It is potentially the most affordable city in South Africa to live in
- Its home-lending activity is average, but its house values are above average

Housing, infrastructure and urban services may be separated into revenue generating and non-revenue generating investment opportunities. South Africa has a pro-investment environment. In 2017, 47% of bonds were approved across the industry. As of March 2018, those approval statistics are sitting at 60% – an extremely significant rise. Almost a third of all homes (31%) sold in the Tshwane metro area are to first-time buyers. Properties in Gauteng have grown much more affordable for first-time buyers. In the past decade, Tshwane's house prices fell by 22.5% (after inflation) which boosts the demand[3].

A public transport system (including rail and road) will also generate revenue, which also makes it worth considering for investment purposes. The same will apply to utilities such as water and electricity.

Sub-sovereign loans will likely work with the right conditions and under fair arrangements. In other words, loans can be made directly to Tshwane. The city will provide the necessary guarantees. It could pledge its own properties as collateral. But, as Paulais (World Bank: undated) puts it: "Commercial lenders see no market, a too risky market, or a market that costs too much to service." In theory, then, these loans, if they are indeed forthcoming will be characterised by high interest rates, short durations, no grace period and other severely constraining conditions. But, if loan conditions are too onerous there will be limited or no take up. Depending on the kind of project, appropriate proportions of debt and equity funding can be blended by the investor to make the arrangement viable for the city. Risk-sharing and PPP arrangements will also go a long way to providing a hesitant investor with the necessary comfort.

This does not mean that non-revenue generating housing, infrastructure and urban services are not viable investment opportunities. It means that different instruments should be considered for these. Sovereign loans will likely be more viable. In other words, loan finance can be made indirectly through the National Treasury to Tshwane. Yet, the intermediary need not be the National Treasury. DFIs like DBSA or even the Gauteng Provincial Government will be able to provide a private sector investor with credit enhancement through adjustable bond insurance guarantees. These funding solutions can be positioned within existing funding vehicles or as new structures established in partnership with current market players.

Having positioned itself as Africa's capital city of financial excellence, Tshwane also offers the following:

- A central geographic location;
- An established research and development hub;
- Attractive market fundamentals driven by a growing population;
- A sound regulatory environment that safeguards investor interests;
- A developed financial framework, which facilitates the establishment of innovative funding vehicles to address the infrastructure challenges;
- A preferred destination for human talent from mostly other parts of South Africa, the African continent, and the Indian sub-continent; and,
- An established economy, driven by solid manufacturing and service industries.

Tshwane's political, geographic, demographic, social and economic advantages, make it better-placed than most other municipalities in the country and also in Africa. These make it an attractive investment destination.

1.4 Recommended Further Intervention and Projects in Tshwane

1) Undertake Detailed Sector Analysis:

This study finds that there are huge financing needs in housing and infrastructure in Tshwane. The financing needs for housing is ZAR 6 billion, the financing needs for Transport is ZAR 17.2 billion, the financing needs for Water and Sanitation is ZAR 2.4 billion, the financing needs for electricity is ZAR 750 million. Further FRUGS work can disaggregate the financing needs for different sectors, and provide detailed sector analysis on financing needs and formulate potential bankable projects.

2) Develop a municipal bond market and facilitate bond issuing:

Municipal bonds are quite popular in the United States. About 44,000 subnational entities, including states and municipalities, participate in the municipal bond market. While municipal bond issuance has declined since the financial crisis of 2007-2008, bond issuance still averaged a high US$337 billion between 2011 and 2014. Overall, the municipal bond market has been quite stable in the US; only 71 issuers defaulted in the period of 41 years between 1970 and 2011. In fact, shortly after the financial crisis, between 2010 and 2013, the municipal default rate was only 0.4%. With a well-established capital market, local governments in the US have been widely successful in issuing municipal securities to invest on key infrastructure projects including schools, hospitals, water and sewage facilities, roads, public power utilities, mass transport and airports[4].

The development of municipal bond market in Africa is much slow and difficult, except for South Africa. However, like Tshwane, it has not yet successfully issued municipal bonds despite its first attempt in 2018. Tshwane's foray into the market was intended to raise a 10-year bond of ZAR 1 billion at a pricing of 180 basis points more than the benchmark R186 government bond. It received offers amounting to ZAR 2.1 billion from 11 bidders.

The city wanted to raise the debt to finance capital expenditure for the 2017-2018 financial year. However, the bonds, priced at 10.725% a year, could not be issued after the auditor-general did not issue a "letter of comfort" to finalise the auction. The letter provides a level of assurance that an obligation would ultimately be met.

Further FRUGS work can examine the challenges and obstacles which hinder the issuance of the bonds in Tswhane, and help the city to find ways on how to meet the requirements for municipal bonds, and to rectify its processes to avoid similar incidents in future.

3) Assessment of the Public Financial Management System:

Further FRUGS work can help the city to make a comprehensive assessment of the public financial management system. Assess the weakness and strengths, resources mobilization, municipal revenue generation and allocation, efficiency of services delivery and sustainability of the municipal financial system, and provides technical assistance on how to improve the public financial management system.

4) Promote Private Finance for Urban Infrastructure Delivery:

Tshwane has faced a high debt repayment pressure (see Table E4). Tshwane is the highest among cities in terms of the total cost of debt as a percentage of the total borrowing liability.

Table E4 Borrowing by Cities: Tshwane in Comparison to other cities

Measures of metro borrowing, 2011/12 adopted budgets

Rand thousands	Johannesburg	Cape Town	eThekwini	Ekurhuleni	Tshwane	Nelson Mandela Bay
Total borrowing liability	11 456 835	6 679 271	11 270 509	4 333 358	6 487 030	1 729 021
Proposed borrowing for the financial year	1 000 000	1 357 386	2 000 000	867 935	1 500 000	–
Cost of borrowing for the financial year	1 844 483	966 040	1 819 044	663 579	1 217 198	312 128
Total cost of debt as a % of total borrowing liability	16.1%	14.5%	16.1%	15.3%	18.8%	18.1%
Total cost of debt as a % of own revenue	7.5%	4.8%	9.4%	7.8%	7.7%	6.2%
Total cost of debt as a % of operating expenditure	6.5%	4.4%	8.6%	6.6%	6.7%	4.8%

Source: National Treasury local government database

Further FRUGS work can promote private finance options and public private partnership as important service delivery mechanisms that facilitate rapid infrastructure development. There are different types of PPPs that involve models for risk sharing between the municipality and its partners. In many cases, the private party is in a better position to raise debt and equity to finance the project.

Municipalities can take advantage of private sector expertise, finance and experience in the construction of the infrastructure. Furthermore, the development of PPPs for economically justifiable projects eases the pressure on the municipality's budget, and allows for better allocation of funds towards addressing social needs of the city.

5) Promote and Finance Affordable Housing Projects:

The Tshwane Municipal Government has put affordable housing as one key agenda to meet the growing demand for housing, it promotes social housing. For example, the Tshwane Municipal Government launched the R300-million Thembelihle Village in Tshwane. It was completed in November 2017, with first occupation in February 2018, the project provides safe housing for families in 733 units. The housing project has security features include biometric access control, a closed circuit television (CCTV) security system and 24-hour guarding of the premises[5]. Table E5 presents the pipeline of affordable housing projects.

Table E5: Tshwane - Pipeline of Affordable Housing Projects

Pretoria Projects						Rand Value		
	Project Name	*Location*	*Type*	*Product*	*Number of Units*	*Total Development Cost Estimate*	*Equity Funding Required [30%]*	*Debt Funding Required*
1	Gem Valley	Pretoria East	Mixed Housing	Affordable Housing	**8,400**	**3,910,746,089**	**1,173,223,827**	**2,737,522,262**
2	Onderstepoort [Soshanguve]	Pretoria North	Mixed Housing	Affordable Housing	**2,475**	**953,703,826**	**286,111,148**	**667,592,678**
3	Kirkney Extension 33 & 34	Pretoria West	Mixed Housing	Affordable Housing	**409**	**205,146,391**	**61,543,917**	**143,602,474**
4	Zandfontein [Kirkney 2]	Pretoria West	*Mixed Housing*	Affordable Housing	**9,000**	**4,031,364,686**	***1,209,409,406***	***2,821,955,280***
5	Hestea Park	Pretoria North/East	*Mixed Housing*	Affordable Housing	**2,000**	**913,113,657**	**273,934,097**	**639,179,560**
5					**22,284**	**10,014,074,649**	**3,004,222,395**	**7,009,852,254**

Pretoria Projects Funded in Phases						Rand Value		
	Project Name	*Location*	*Number of Phases*	*Product*	*Number of Units*	*Total Development Cost Estimate/Phase*	*Equity Funding Required [30%]*	*Debt Funding Required*
1	Gem Valley	Pretoria East	9	933	**8,400**	**434,527,343**	**130,358,203**	**304,169,140**
2	Onderstepoort [Soshanguve]	Pretoria North	6	413	**2,475**	**158,950,638**	**47,685,191**	**111,265,446**
3	Kirkney Extension 33 & 34	Pretoria West	2	204.50	**409**	**102,573,196**	**30,771,959**	**71,801,237**
4	Zandfontein [Kirkney 2]	Pretoria West	*10*	900	**9,000**	**403,136,469**	***120,940,941***	***282,195,528***
5	Hestea Park	Pretoria North/East	4	500	**2,000**	**228,278,414**	**68,483,524**	**159,794,890**
5					**22,284**	**1,327,466,059**	**398,239,818**	**929,226,241**

(Source: Author's estimation)

6) Promote Public and Private Partnership and Finance for Housing and Infrastructure:

The Gauteng Provincial Government is embarking on a programme to build sustainable human settlements. It has undertaken to develop 31 mega human settlements in partnership with the private sector and municipalities. These mega projects are located closer to economic opportunities to avoid the segregation of economic opportunities and housing[6].

In 2002, the Gauteng Provincial Government established The Gauteng Partnership Fund's (GPF's) to address the lack of access to finance and the weak delivery of affordable housing. The Fund's mandate is to facilitate the evolvement of affordable housing in Gauteng via influential partnerships with all stakeholders through innovative strategies that benefit all players. The Fund is tasked as a catalyst for the mobilisation of private-sector investment into the housing market, the GPF was given a one-off grant from government. This financial backing is used to mitigate the risks to the private sector of investing in the low-end housing sector.

An example of the success the Fund has achieved is the 2005 Brickfields Experience project. The project, supported by the GPF and a number of partners, marked the biggest public–private housing partnership in South Africa at a cost of R98-million, which provided 809 mixed-use units of sizes varying from 37 m2 to 76 m2. Another successful project is Tau Village, in Tshwane[7]. Table E6 presents Pipeline of Infrastructure and Urban Services Projects.

Table E6: Tshwane - Pipeline of Infrastructure and Urban Services Projects

Project description	Project Value
Energy and Electricity	
Refurbishment of power stations	R 1 123 000 000
Electricity for All	R 227 600 000
New bulk infrastructure	R 176 000 000
Townlands (Marabastad)	R 124 200 000
Hostels (Saulsville and Mamelodi)	R 20 000 000
AMVI infrastructure (smart meters)	R 950 000 000
New connections	R 34 700 000
11 kV overhead network	R 14 000 000
Transport	
TRT - Transport infrastructure	R 750 000 000
Roads and Storm Water	R 121 000 000
Mabopane Station modal interchange	R 54 100 000
TRT – Transport infrastructure (bus-way, depots, stations, non-motorised transport)	R 750 000 000
Flooding backlogs – networks & drainage canals	R 369 900 000
Upgrading of Garsfontein Road	R 12 000 000
Internal roads - northern areas	R 18 200 000
Wonderboom Airport	R 21 500 000
Mabopane Station modal interchange	R 54 100 000
Communication	
E-Initiative	R 20 000 000
Water and sanitation	
Water provision	R 144 900 000
Reservoir extensions	R 50 000 000
Waste water treatment works facilities	R 203 000 000
Replacement & upgrading: redundant bulk pipeline infrastructure	R 50 500 000
Refurbishment of water networks and backlog eradication	R 80 000 000
Sewage	R 147 000 000

(Source: Tshwane 2017/18 BEPP, 2017-2021 IDP)

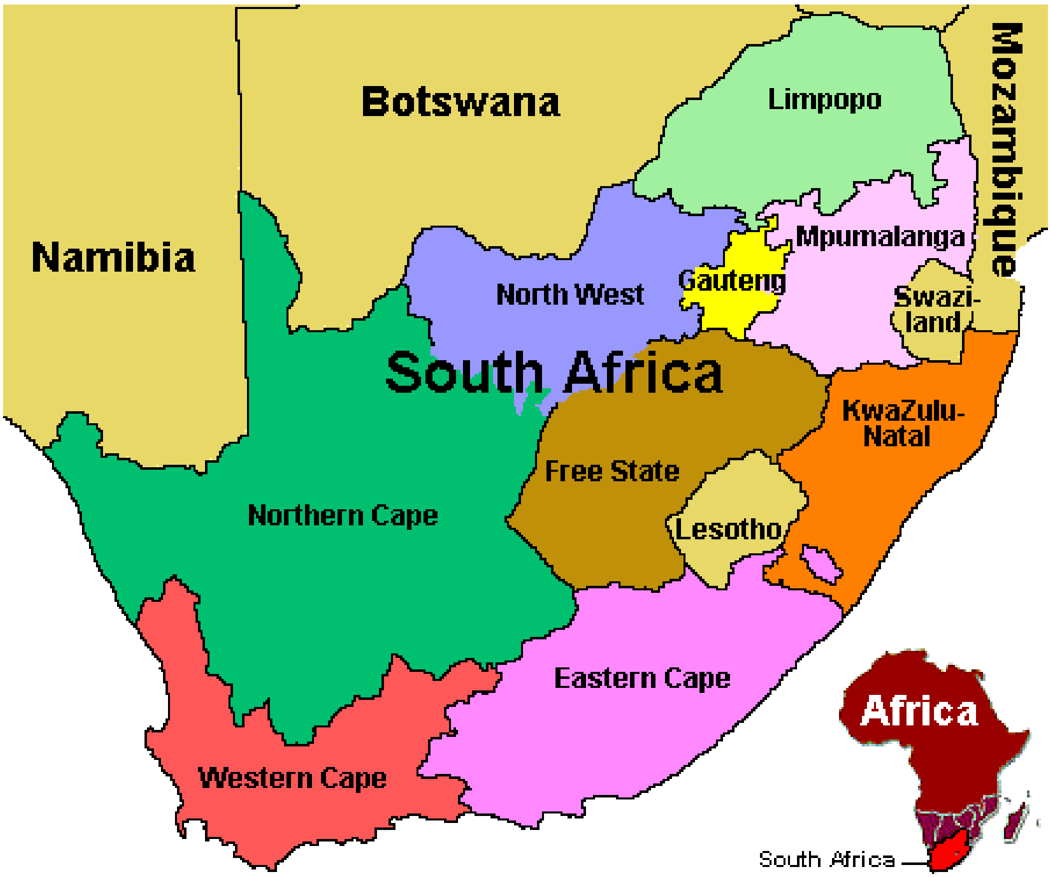
Chapter 1

Urbanisation, Economic and Financial Systems

1.5 Background

Popularly known as the Jacaranda City because of the thousands of jacaranda trees that dot its landscape, Tshwane is the administrative capital city of South Africa. It lies 1 339 metres (4 393 feet) above sea level in a fertile valley at the foot of the Magaliesburg Mountain range in the northern part of Gauteng Province. Figure 1 shows the province's location within South Africa.

Figure 1: South Africa Provincial Map



(Source: www.maps-africa.blogpost.co.za)

One of the nine provinces of the democratised South Africa that commenced in April 1994, Gauteng comprises the three metropolitan municipalities of Johannesburg, Ekurhuleni and Tshwane and the two district municipalities of Sedibeng and West Rand. Table 1 shows the area coverage of each of these municipalities as well as their respective populations.

Table 1: Area Coverage and Population of Gauteng's Municipalities

Name	Area (km^2)	Population, 2015	As % to GP, 2015
Johannesburg	1 645	4 822 787	37%
Ekurhuleni	1 975	3 386 544	26%
Tshwane	6 345	3 161 809	24%
Sedibeng	4 173	946 818	7%
West Rand	4 087	833 358	6%

(Source: CoT 2017-2021 IDP; IHS Global Insight, 2015)

Table 1 conveys Tshwane's land surface extent as 6 345 square kilometres (2 459 miles). This makes it geographically the third-largest metropolitan council in the world – behind New York and Tokyo. It also means that Tshwane covers more than one-third of Gauteng's 18 225 square kilometres of land surface. Tshwane today is the result of thirteen smaller municipalities merging, a process which was completed in December 2000.

Figure 2 shows the location of Gauteng's municipalities in relation to each other. It also shows the division of West Rand and Sedibeng into local municipalities, as is the norm for district municipalities in South Africa.

Figure 2: Gauteng Municipal Map

(Source: www.wikipedia.org)

Tshwane is divided into seven functional regions. This regional model makes the local government more efficient and effective as officials are better able to plan and coordinate the city's interactions with its residents.

Figure 3: Tshwane Regional Map (Tshwane's seven regions)

(Source: Adapted from www.google.co.za)

Although Tshwane's regions do not have names, they may be described as follows:

Region 1 : Old North West (e.g. Rosslyn)
Region 2 : Old North East (e.g. Hammanskraal)
Region 3 : Old Central Western (e.g. CBD, Brooklyn)
Region 4: Old Southern (e.g. Centurion)
Region 5 : Old Nokeng tsa Taemane (e.g. Cullinan)
Region 6 : Old Eastern (e.g. Menlyn, Mamelodi)
Region 7 : Old Kungwini (e.g. Bronkhorstspruit)

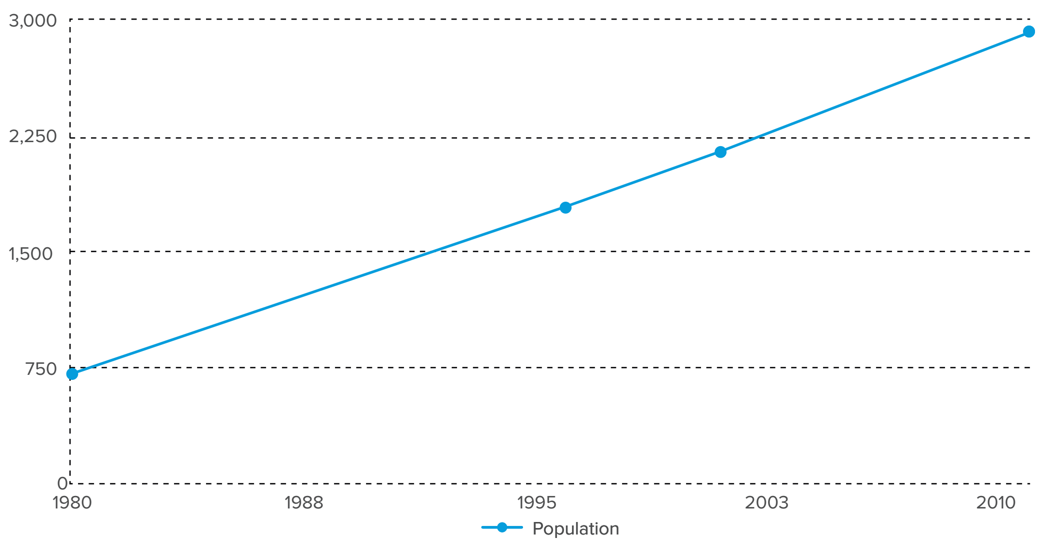
The Presidency, headquartered at the Union Buildings, and all 35 national government departments such as Public Works, Human Settlements, Transport, Economic Development, and National Treasury, are based in Tshwane. Additionally, government-sponsored national development finance institutions such as the Development Bank of Southern Africa, Industrial Development Corporation, Land Bank, National Housing Finance Corporation, Independent Development Trust, National Urban Reconstruction Housing Agency, are located within its precincts or in Johannesburg (Africa's economic power-house), about 55 kilometres (34 miles) away to the south-west.

1.6 Population Growth and Urbanisation Patterns

At the time of the last census in 2011, Tshwane had the fifth largest population among South Africa's eight metropolitan municipalities. A constant statistic of 71.9 percent suggested that, measured over a decade from 2001 to 2011, the city had a large and stable proportion of working age residents. Other than a spurt by Asians from 2008 to 2010, the pattern for the growth of the different race groups appeared to be settled.

Figure 4 shows Tshwane's population growth rate for the 30-year period from 1980 to 2010.

Figure 4: Tshwane - Population Growth (1980-2010)

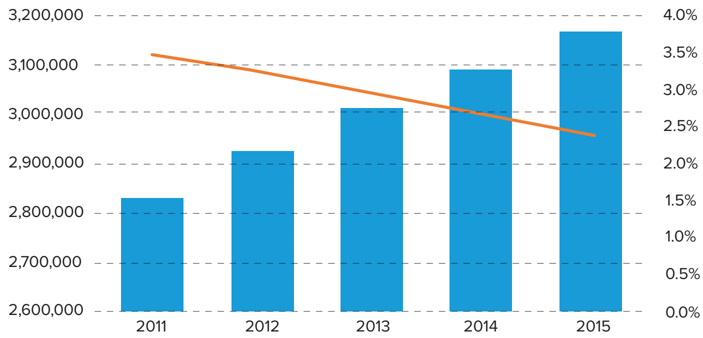


(Source: StatsSA)

Though Figure 4 shows a consistent upward growth in population, the accompanying statistics are not reliable. Growth has not always been natural. The municipality's boundaries have often been changed through the consolidation or incorporation of other smaller municipalities. Data gathered then also related to the "old" Pretoria whose boundaries do not match those of the "new" Tshwane. Since around 2011, however, the city's boundaries have been mostly fixed.

Figure 5 shows the key statistics for Tshwane's population growth year-on-year from 2011 to 2015.

Figure 5: Tshwane - Population Growth (2011-2015)



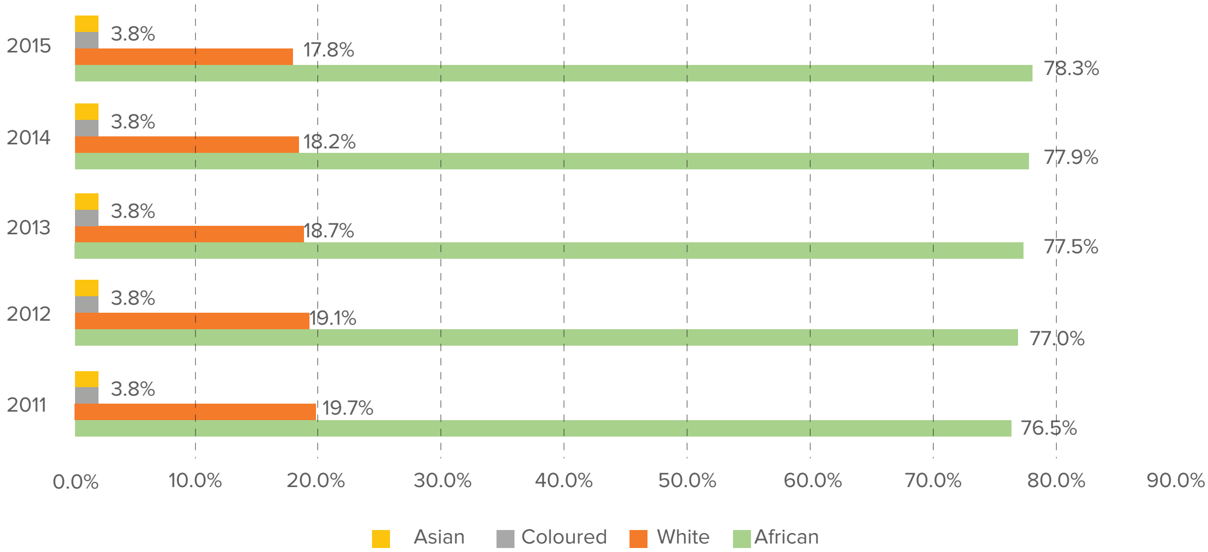
	2011	2012	2013	2014	2015
Population	2,829,507	2,921,204	3,007,655	3,087,974	3,161,809
Population growth rate (%)	3.5%	3.2%	3.0%	2.7%	2.4%

(Source: CoT 2017-2021 IDP; IHS Global Insight, 2015)

As shown in Figure 5, Tshwane's population increased from 2.83 million in 2011 to 3.16 million in 2015. During this period the average yearly growth rate was 2.96 percent. But, it has been decreasing every year with a high growth rate of 3.5 percent in 2011 to a low growth rate of 2.4 percent in 2015. An interesting statistic is that Soshanguve, located in the north of Tshwane, had grown from 24 000 people in 1950 to 775 000 people in 2015. This is a growth of 3 100 percent.

The racial profile of Tshwane's population is shown in Figure 6.

Figure 6: Tshwane - Racial Profile (2015)

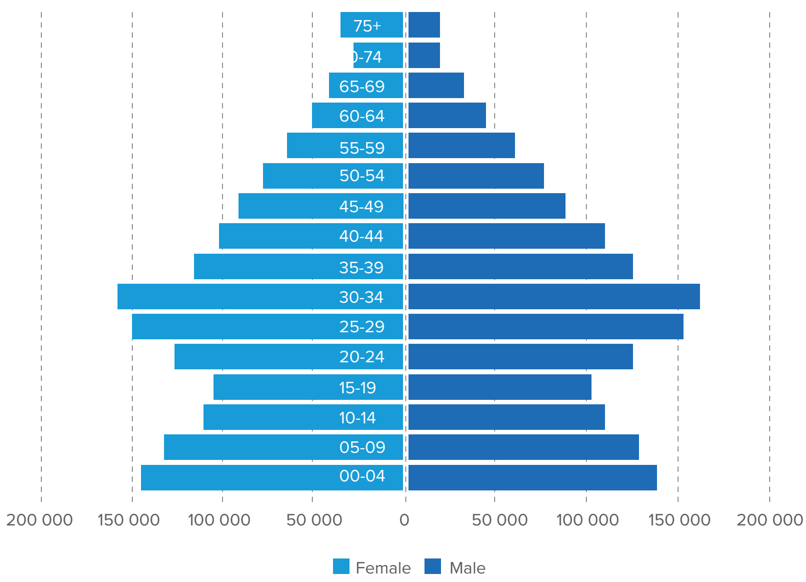


(Source: CoT 2017-2021 IDP; IHS Global Insight, 2015)

Figure 6 shows that Tshwane's population comprises mainly Africans (78.3 percent; 1.8 percent higher than it was in 2011) and whites (17.8 percent; 1.9 percent lower than it was in 2011).

Figure 7 shows Tshwane's population in terms of gender and age.

Figure 7: Tshwane - Gender and Age Profile (2015)



(Source: CoT Annual Economic Landscape Report, 2015; IHS Global Insight, 2015)

The most prominent age categories shown in Figure 7 are 30-34 years old and 25-29 years old. These are followed by 0-4 years old; 5-9 years old; 20-24 years old and 35-39 years old. This means that Tshwane has a generally young population.

1.6.1 Current Status of Urbanisation and Household Structure

A relatively high rate of urbanisation and of family formations are closely linked to a relatively high growth in household numbers.

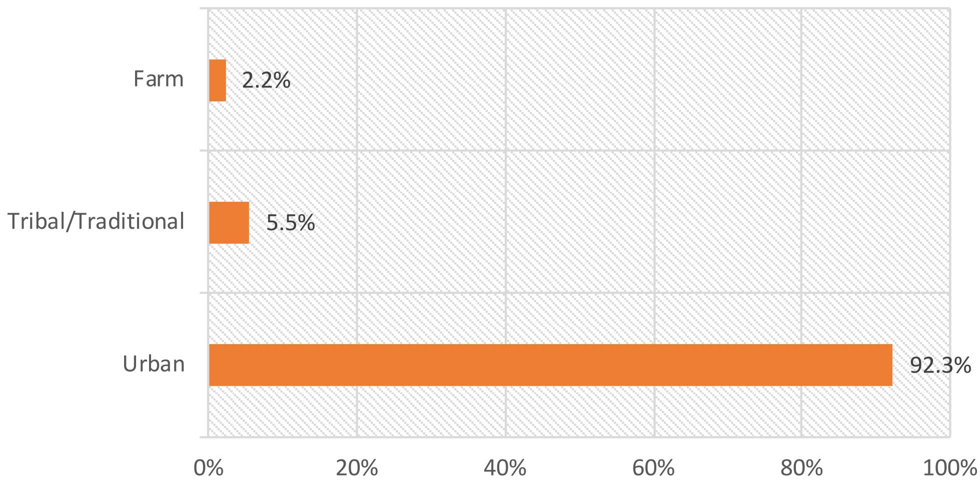
The number of households in Tshwane increased from 459 122 in 1996 to 606 025 in 2001 to 911 536 in 2011. This represented a new household formation rate of 4.68 percent per year over the 15-year period. Udjo (2015) has projected that there will be 1 411 567 households in Tshwane in 2021 out of a Gauteng provincial projection of 5 693 293. This represents a projected 54.9 percent increase in the number of Tshwane households from 2011 to 2021.

The strong growth in the number of households is consistent with the city's population comprising mostly young adults and infants. Young adults tend to form new households, as do newcomers from other parts of the province, country and continent. Statistics also point to joint families splintering into nuclear families and single-parent families: in 1996 the average household size in Tshwane was 3.86; in 2011 it was 3.21; and, in 2021 it is projected to be 2.9.

Regional and national in-migration are significant factors. With mining operations decreasing and with mines now focusing on employing local people, it is apparent that Tshwane has replaced Johannesburg as the city of choice for large numbers of people arriving from the SADC region (Malawi, Zimbabwe, Lesotho, Mozambique and Swaziland). The Tshwane CBD is full of foreign job seekers and informal traders. It is also the nearest big city for South Africans escaping the rural areas, especially the areas that once housed six of the ten former Bantustans. These are KwaNdebele, Bophuthatswana, Lebowa, Venda, Gazankulu and KaNgwane. As Tshwane is the central government's administrative centre, officials on transfer or promotion often resettle in the city from other parts of the country.

As shown in Figure 8, settlement type is a good indicator of the rate of urbanisation.

Figure 8: Tshwane - Settlement Type



(Source: StatsSA)

Figure 8 confirms that Tshwane is ultra-urban, with 92.3 percent of its total land mass considered urban areas, 5.5 percent considered traditional tribal areas and 2.2 percent, farm areas. This is typical of Gauteng which is the province with the smallest land coverage yet with the largest population. As can be seen in Figure 2 above, three of the seven metros in South Africa, namely, Johannesburg, Tshwane and Ekurhuleni are situated in Gauteng within touching distance of each other.

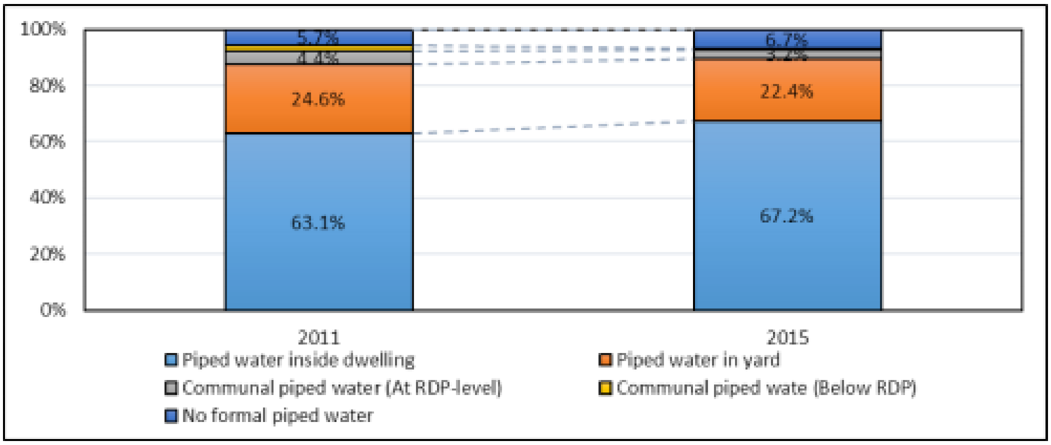
Urbanisation does not imply only formal housing units (e.g. free-standing brick houses, flats). Global Insight has estimated that in 2011, some 20.4 percent of Tshwane's housing units were informal (e.g. shack) and another 1.6 percent were categorised under "other," which includes traditional units (e.g. huts, rondavels) and non-traditional units (e.g. caravans, wendy-houses). By 2015, the figure for informal housing units had decreased to 18.3 percent, which suggests that there has been progress in the official upgrading of informal housing units. But, "other" had increased to 2.0 percent. This resulted from the increase in the number of houses being built using alternative building systems.

Although sources seem to provide only estimates and, moreso, differ even in this regard, by most accounts the figures relayed for the shortage of low income (RDP) houses are: South Africa, 1.2 million; Gauteng, 600 000; and, Tshwane, 200 000. The figures generally quoted for the shortage of affordable (BNG) houses are: South Africa, 800 000; Gauteng, 500 000; and, Tshwane, 150 000.

According to 2013 statistics, 155 948 households in Tshwane were living in informal housing units within an informal settlement and another 83 378 households were living in backyard units within a formal settlement. According to the city's Housing Needs Register, in 2017 there were 166 832 households awaiting government subsidised housing units.

Basic services are part of the urbanisation inventory. Figure 9 shows how water is supplied to Tshwane households.

Figure 9: Tshwane - Household Water Supply (2011, 2015)



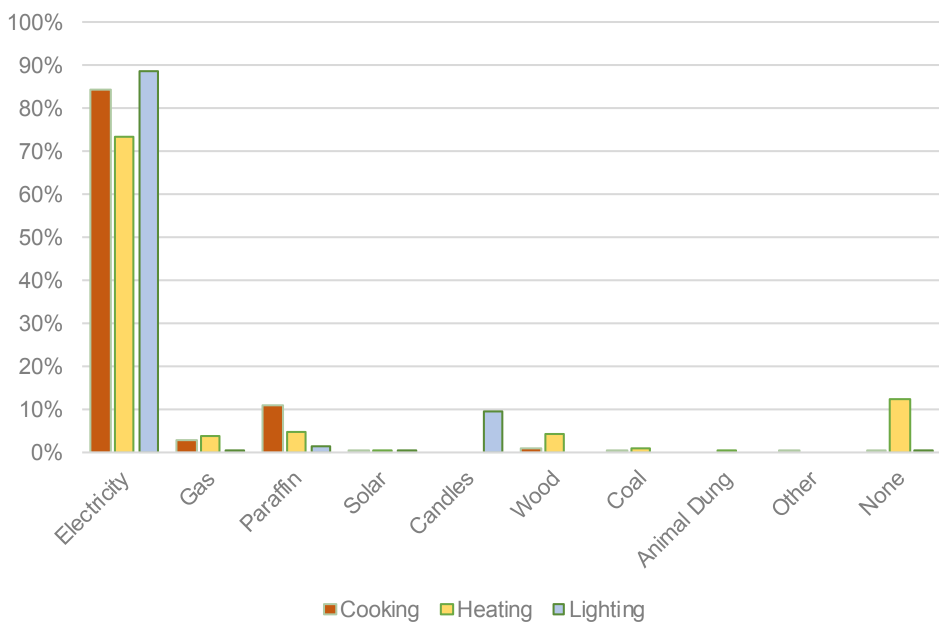
(Source: CoT 2017-2021 IDP; IHS Global Insight, 2015)

In 2001, less than half (46.2 percent) of Tshwane households had piped water inside their housing units. By 2011 this had increased to 63.1 percent and by 2015, to 67.2 percent. With another 22.4 percent of households having piped water supplied to a tap in their yard, by 2015 89.6 percent of households had piped water supplied to their properties, whether inside or outside the housing unit.

In addition, 90.6 percent of Tshwane households receive water supplied by the city or a private water scheme; about 2.8 percent use boreholes; and, about 3.4 percent, water tanks. Seemingly, no household receives its water from springs, dams, rivers or water vendors.

The source of energy for cooking, heating and lighting is another good indicator of urbanisation patterns. Figure 10 shows that 84.2 percent of Tshwane's households use electricity for cooking, 73.5 percent use it for heating and 88.6 percent, for lighting. This is generally in keeping with urbanised arrangements. The use of gas and solar energy, however, do not necessarily imply the same. The use of wood (1.1 percent of households for cooking, 4.3 percent of households for heating and 0 percent of households for lighting) and paraffin (10.8 percent of households for cooking, 4.7 percent of households for heating and 88.6 percent of households for lighting) could suggest mostly rural settings. Animal dung, for long a traditional form of fuel, is no longer used anywhere in Tshwane for cooking, heating or lighting.

Figure 10: Tshwane - Household Energy Supply

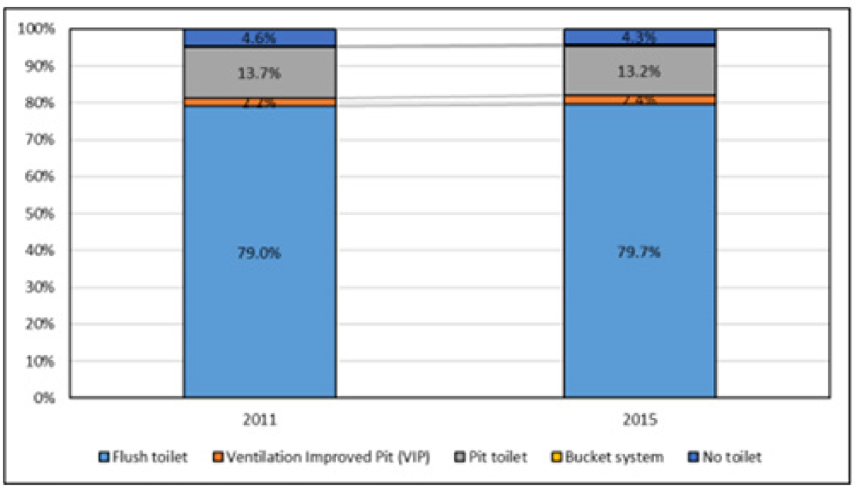


(Source: StatsSA)

In 2011, 13.8 percent of Tshwane households did not have electrical connections. In 2015, this had increased to 15.2 percent. This suggests that the supply of household electricity connections has not been able to keep up with increased demand resulting from new household formations and in-migration.

Figure 11 shows household sanitation arrangements in Tshwane.

Figure 11: Tshwane - Household Sanitation Services (2011, 2015)

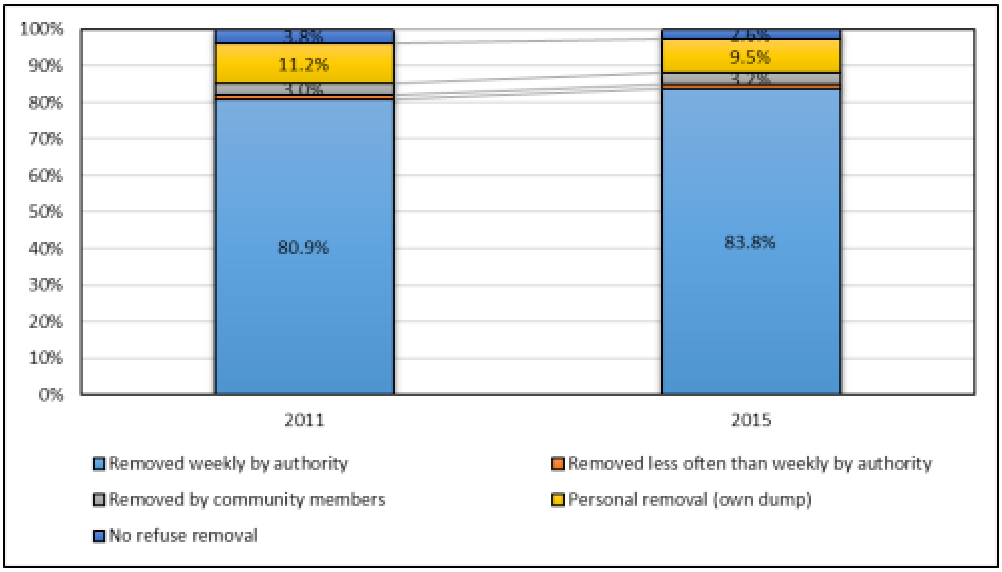


(Source: CoT 2017-2021 IDP; IHS Global Insight, 2015)

In 2001, some 68.4 percent of Tshwane households had flush toilet connected to a sewer system. In 2011, this had increased to 79 percent and in 2015, to 79.7 percent. Although provisioning in this regard has been happening at a good rate it is noteworthy that by 2015 some 4.3 percent of households still had no toilet and another 16 percent used either a pit toilet or bucket toilet.

Figure 12 shows household refuse removal arrangements in Tshwane.

Figure 12: Tshwane - Household Refuse Removal Services



(Source: CoT 2017-2021 IDP; IHS Global Insight, 2015)

By 2015, some 83.8 percent of Tshwane households had their refuse removed once a week by the city. This was a 2.9 percent increase from 2011. In addition, a small proportion of households had their refuse removed less often by the city. Still, a substantial 15 percent of households have to make personal or communal arrangements or go without any form of refuse removal.

1.6.2 Projection of Urbanisation by 2030

The populations of Monaco, Hong Kong and Singapore are 100 percent urban. At 40 percent, Africa is the least urbanised continent. But, its urbanisation rate of 3.5 is the highest. By 2030, Africa's population is expected to be 50 percent urban [World Bank, Urbanisation in Africa: Trends, Promises and Challenges].

In 1950, 42 percent of South Africa's population was urban. Today, it is 62 percent. According to the UN World Population Prospects (2017), over the next five years about 600 000 South Africans a year will move from rural to urban areas. The UN Report has also predicted that South Africa's population in 2030 will be 56.72 million. But, the Pardee Centre for International Futures based at Denver University in the United States has predicted that it will be 63.62 million. The Pardee Centre for International Futures has also predicted that South Africa's growth rate in 2030 will be 0.72 and its urban population will comprise 43.21 million people [www.Pardee.du.edu.com].

According to the UN World Population

Prospects (2017), Tshwane's population will grow by 2.29 percent (104 000 people) in 2020, 1.6 percent (194 000 people) in 2025 and 1.19 percent (155 000 people) in 2030.

The World Bank has estimated that it will cost about $ 93 billion (R 1.1. trillion) per year to address Africa's infrastructure requirements [www.sitesources.worldbank.org]. The African Development Bank budget of $ 360 billion (R 4.2 trillion) for infrastructure investment in Africa until 2040 will not be enough. Other sources, in addition to self-funding, will be needed. In South Africa, the government has planned to spend R 3.2 trillion on infrastructure between 2012 and 2020.

Tshwane Vision 2055, included in this Report as Annexure 1, is the city's long-term strategy. Inter alia it has to balance spatial development with spatial redress. Iniquitous socio-spatial arrangements in Tshwane, as it is in almost all the urban areas of South Africa, have been characterised by a one-directional transformation and desegregation of urban space. Wealthy Africans, Indians and coloureds generally own and occupy properties in former white group areas like Swartkop in Centurion, Wonderboom and Menlyn. The reverse trend of poor whites, Indians and coloureds owning and occupying properties in former African areas is almost nil.

The city's roadmap to 2055 anticipates the following six outcomes:

- A resilient and resource efficient city
- A growing economy that is inclusive, diversified and competitive
- Quality infrastructure development that supports liveable communities
- An equitable city that supports happiness, social cohesion, safety and healthy citizens
- An African City that promotes excellence and innovative governance solutions
- South Africa's capital with an activist citizenry that is engaging, aware of their rights

Tshwane Vision 2055 is summarised in Figure 13:

Figure 13: Summary of Tshwane Vision 2055

By 2020 we would have completed our planning for the transition

The focus of the City of Tshwane will be on the continued addressing of the triple threat of poverty, inequality and unemployment while at the same time planning for the continued but now more low carbon focus infrastructure development and investment. As the period is characterised by continued urbanisation, the City will look at focusing on developing a City capital infrastructure development policy and regulatory framework that will enable it to make the transition to a greater focus on reducing its carbon footprint.

By 2030 we would be transitioning to low carbon infrastructure development

In the period 2020 - 2030, the global economy will be characterised constrained by growth due to international policy obligations on emission reductions. Thus, the push for the City to transition to a low carbon infrastructure focus intensifies.

By 2040 we would have achieved spatial transformation

In the period 2030-2040, the City of Tshwane would have fully integrated new urbanism as well as the spatial development principles outlined in the NDP 2030 to reverse the legacy of apartheid spatial injustice. Furthermore, the City of Tshwane's spatial approach will begin to more support spatial sustainability, spatial resilience, spatial quality and spatial efficiency[204].

By 2055 we would have quality infrastructure development that supports liveable communities

Actions aligned with the Outcome will be planned and implemented, with continued focus on investing in low carbon infrastructure that reduces the City of Tshwane's carbon footprint while at the same time support the development of liveable communities using new urbanism principles.

(Source: Tshwane Vision 2055)

It follows that all Tshwane's short- and medium-term strategic plans and documents should respond to these outcomes and intended milestones. In introducing the city's 2017-2021 IDP, Mayor Solly Msimanga said: "Our desired vision for 2030 [is] that of a prosperous capital city through fairness, freedom and opportunity. The new vision capitalises on our position as SA's capital." The 2017-2021 IDP is included in this Report as Annexure 2.

Figure 14 shows the city's "package of plans" that must align to achieve this common vision.

Figure 14: Tshwane's Package of Plans

PLANNING DOCUMENTS

Metropolitan Spatial Development Framework

The MSDF provides a spatial representation of the City's vision and spatial transformation agenda. In so doing, the MSDF outlines spatial planning directives, as well as spatial development concepts.

Regional Spatial Development Frameworks

RSDFs follow directly from the MSDF and expand on the spatial development concepts on a regional scale to provide an overall development structure, including key structuring elements and broad zones for development, in addition to identifying specific intentions for development in line with spatial planning directives.

Development Intervention Portfolios

Local Spatial Development Frameworks

LSDFs provide detail to the RSDF on a more localised scale by defining specific development opportunities within an area and the spatial structuring mechanisms required to unlock them. At the LSDF level the desired built form is defined, broad development guidelines are proposed, and spatial interventions are identified.

Precinct Plans

Precinct plans focus on a small scale area, node or corridor. The intention of a precinct plan is to provide spatial form and detail to the proposals of the LSDF. Precinct plans generally include more detailed design guidelines and proposed development controls, as well as an an action plan for the implementation of projects within the precinct.

BUDGET AND IMPLEMENTATION PLANS

Capital Investment Framework

The Capital Investment Framework forms a part of the MSDF and seeks to guide and inform capital expenditure within the City in alignment with the spatial policies and directives.

Integrated Development Plan

The IDP is the principle strategic planning instrument that guides and informs all planning and development within the City for a five year period. The MSDF and CIF form a core component of the IDP.

Service Delivery and Budget Implementation Plan

The Service Delivery and Budget Implementation Plan (SDBIP) details the implementation of service delivery and the associated budget for the financial year.

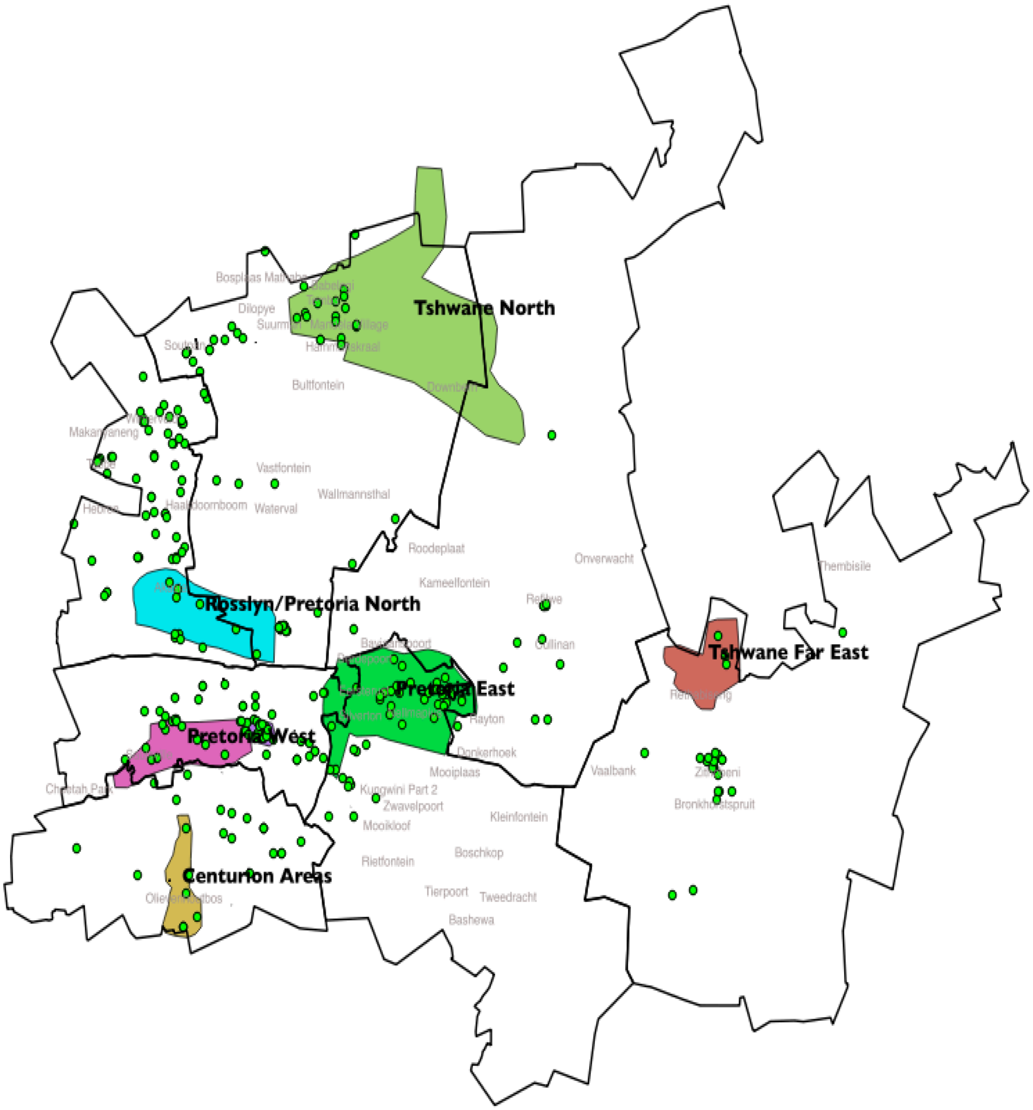
Built Environment Performance Plan

The Built Environment Performance Plan (BEPP) is a requirement of the Division of Revenue Act (No. 10 of 2014) for the eligibility of infrastructure. BEPPs are undertaken each financial year and provide an overview of the municipality's built environment and an indication of how the City is to strategically apply its capital financing so as to trigger spatial integration and transformation, in line with national and local policy objectives. In so doing, the BEPPs seek to spatially align public investment within specific target areas so as to achieve a more integrated, compact, inclusive, liveable, productive and sustainable urban form.

(Source: CoT 2017/18 Built Environment Performance Plan)

The theme of urbanisation receives most attention in the Built Environment Performance Plan (BEPP), which is included in this Report as Annexure 4. Figure 15 shows how Tshwane's BEPP Priority Zones align with its envisaged catalytic projects.

Figure 15: BEPP Priority Zones vs. Tshwane City Projects



(Source: CoT 2017/18 Built Environment Performance Plan)

Figure 15 shows that the city's projects are not ideally aligned to the BEPP priority zones. Slightly more than half of the projects (52 percent) do not even intersect with a BEPP priority zone. For example, only one percent of the capital spend is intended for Centurion, the economic zone in the city that arguably has the most potential.

Tshwane has, like other South African cities, adopted an Urban Network Strategy (UNS), which is a spatial strategy to align public spending and unlock private and household investment. Figure 16 shows the criteria Tshwane has prioritised in its UNS:

Figure 16: Tshwane Urban Network Strategy Priority Criteria

(Source: CoT 2017/18 Built Environment Performance Plan)

The priority criteria are detailed in Table 2 together with their respective weightings.

Table 2: Itemised Urban Network Strategy Priority Criteria and Weightings

People			
Weighting	Criteria	Criteria Weighting	Total Weighting
10 %	Community size (population) within the Nodes	60.0 %	6.0 %
	Proportion of community living in poverty within the Nodes	40.0 %	4.0 %
Access to Basic Services			
Weighting	Criteria	Criteria Weighting	Total Weighting
10 %	Proportion of the community living in informal settlements	14.3 %	1.4 %
	Proportion of community within no access to pied water within 500m of a community stand	14.3 %	1.4 %
	Proportion of community without municipal refuse removal	14.3 %	1.4 %
	Proportion of community without flushing/ventilated toilets	14.3 %	1.4 %
	Proportion of population who use energy alternatives for cooking i.e. with no access to electricity	14.3 %	1.4 %
	Proportion of population who use energy alternatives for heating i.e. with no access to electricity	14.3 %	1.4 %
	Proportion of population who use energy alternatives for lighting i.e. with no access to electricity	14.3 %	1.4 %

People			
Weighting	Criteria	Criteria Weighting	Total Weighting
10 %	Community size (population) within the Nodes	60.0 %	6.0 %
	Proportion of community living in poverty within the Nodes	40.0 %	4.0 %
Access to Basic Services			
Weighting	Criteria	Criteria Weighting	Total Weighting
10 %	Proportion of the community living in informal settlements	14.3 %	1.4 %
	Proportion of community within no access to pied water within 500m of a community stand	14.3 %	1.4 %
Land Development Opportunities			
Weighting	Criteria	Criteria Weighting	Total Weighting
10 %	Vacant land owned by the City of Tshwane	40.0 %	4.0 %
	Strategic development land parcels	60.0 %	6.0 %
15 %	Total rail TOD catchment area	20.0 %	3.0 %
	Total rail TOD catchment area within compact city buffer	-	-
	Proportion of rail TOD catchment area within compact city buffer	30.0 %	4.5 %
	Total TRT TOD catchment area within compact city buffer	30.0 %	4.5 %
	Total area of residential developable land within TOD catchment areas	20.0 %	3.0 %
Housing			
Weighting	Criteria	Criteria Weighting	Total Weighting
10 %	Housing backlog	70.0 %	7.0 %
	Expected housing supply	30.0 %	3.0 %

Relationship with the CBD			
Weighting	Criteria	Criteria Weighting	Total Weighting
30 %	Total area of nodes	-	-
	Area of nodes that falls within the compact city buffer	-	-
	Proportion of total Node area that falls within the compact city buffer	70.0 %	21.0 %
	Distance to CBD	30.0 %	9.0 %

(Source: CoT 2017/18 Built Environment Performance Plan)

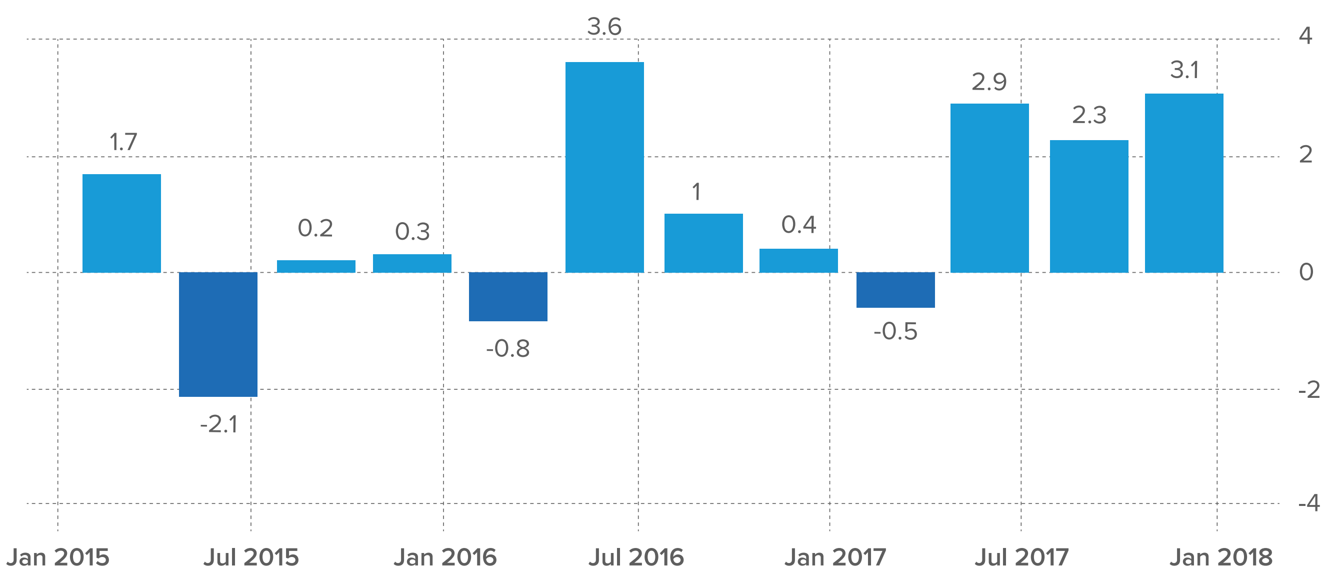
Accordingly, the following should be noted:

- The larger the community size, the more favourably an area will be considered for investment.
- The greater the need for basic services within a node, the higher the node will score within the priority framework. Similarly, the greater the level of poverty within a node, the greater the need for investment and the higher the node will score.
- The more transit precincts within a node, the higher it is likely to be ranked. And, nodes in which development is to happen soonest will rate more highly.
- The higher the demand for travel, the greater the impact of investment and the higher the node will score. And, the further away commuters are from places of employment, the greater the need for improved transportation services or increased local employment opportunities. Also, nodes with higher travel times are given a higher score.
- The larger the housing backlog within a node, the higher it will score. Similarly, where there is greater opportunity to provide formal housing, the higher will be the score.
- The larger the availability of land within TOD precincts, within the compact city buffer and in close proximity to the CBD, the higher the priority to capitalise investment.

1.7 Economic System, Structure and Development

A country's Gross Domestic Product (GDP) is probably the best indicator of the state of its economy and, along with that, its development potential. Figure 17 shows South Africa's GDP for the period January 2015 to January 2018.

Figure 17: GDP Growth Rate – South Africa (2015 - 2018)

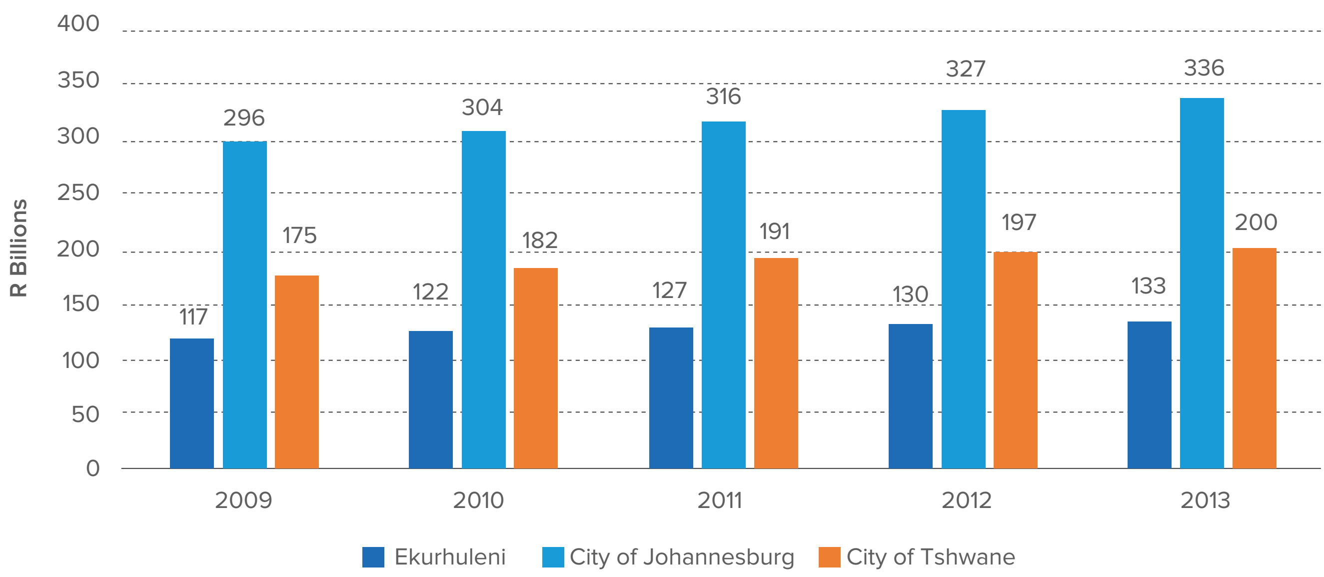


(Source: Tradingeconomics.com; StatsSA)

In 2017, the South African economy started off sluggishly with -0.5 percent annualised growth in the first three months. The year, however, ended very well with 3.1 percent annualised growth in the last three months, which exceeded the market predictions of 1.8 percent. This was the strongest growth in six quarters and meant an overall GDP growth of 1.3 percent for the year. This was better than the 0.6 percent achieved in 2016.

Gauteng contributes the largest share of South Africa's economic activity (36.1 percent in 2013 and 34.0 percent in 2014). The 2013 performance equalled GDP of R 720.19 billion, which made up 7.7 percent of Africa's GDP [www.tradingeconomics.com]. Figure 18 compares the GDP contribution of Gauteng's three cities.

Figure 18: GDP Growth Rate - Gauteng's Metros (2009 - 2013)

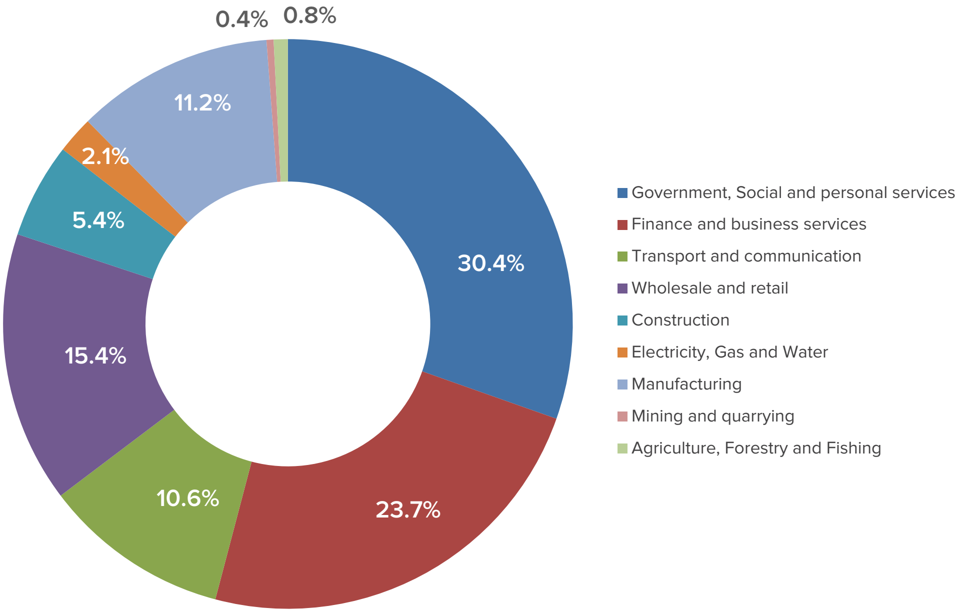


(Source: Tshwane Economic Development Agency; Global Insight)

With a contribution of R 200 billion in 2013, Tshwane contributed 27.8 percent of Gauteng's GDP.

As shown in Figure 19, Tshwane's economy is dominated by the government, social and personal services sector (30.4 percent in 2013) and the finance and business sector (23.7 percent in 2013). Together, these two sectors make up more than half of the local economy.

Figure 19: Tshwane - GDP Contribution by Economic Sector (2013)



(Source: Tshwane Economic Development Agency; Global Insight)

Unsurprisingly, national government work dominates the local economy. And, 134 embassies and high commissions are located in Tshwane. Sometimes called the diplomatic capital of South Africa, the city has the largest concentration of diplomatic and foreign missions in the world after Washington DC in the United States.

Tshwane is also a tertiary learning and research hub. Besides four universities - University of Pretoria (UP), University of South Africa (UNISA), Medical University of South Africa (MEDUNSA) and Tshwane University of Technology (TUT) - it is also home to seven of the eight national science councils. Most other professional councils are located in Johannesburg, the neighbouring metropolitan municipality.

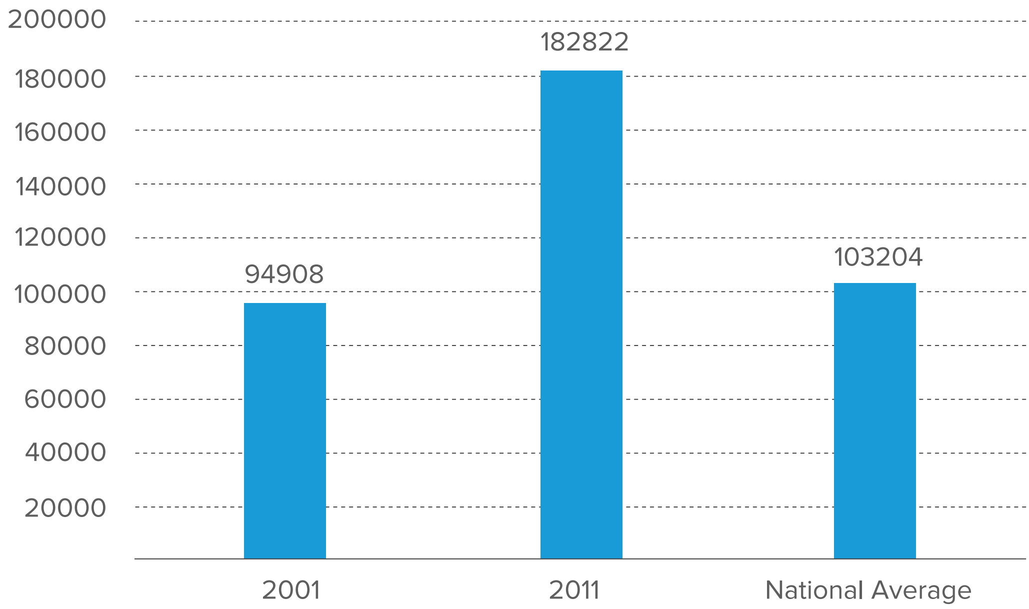
Besides government work and community services, there are a few other established and emerging economic sectors in Tshwane. The city has more than 30 Johannesburg Stock Exchange (JSE) listed companies. There is a well-established manufacturing sector, the biggest of which is the automotive industry. The anchor automotive assembly plants for BMW, Nissan and Ford are all located within a ten kilometre radius of the CBD.

In 1975, Rosslyn in Tshwane became the first location in the world outside Germany to establish a BMW plant. BMW employs about 1 700 people here. It also recently announced plans to invest R 6 billion to expand the plant's capacity. In 2015, Nissan was producing about 40 000 vehicles a year at its Rosslyn plant, although this was still short of the 50 000-threshold set by the central government's incentive scheme for car manufacturers. By the end of 2018, the facility expects to double its production to 80 000 vehicles a year before targeting its full capacity of producing 100 000 vehicles a year. Ford Motor Company has invested R 3.6 billion in its assembly plant in Silverton in Tshwane, employing about 3 700 people, mainly from nearby Mamelodi. In 2012, the company sold over 47 000 vehicles (Ford and Mazda). Currently, the plant produces 110 000 vehicles a year, most of which are exported to 148 different countries [www.engineeringnews.co.za].

Compared to other parts of South Africa, Tshwane seems to be experiencing less poverty. As shown in Figure 20, per capita income is much higher in Tshwane, compared with the national average: in 2011, the figure for Tshwane was R 182 822 and for South

Africa, R 103 204. Unemployment is also lower in Tshwane when compared to the national average. These figures, however, should be discounted on the basis that the city has a relatively high Gini coefficient of 0.64, an indication of high levels of inequality.

Figure 20: Tshwane - Personal Income Per Capita



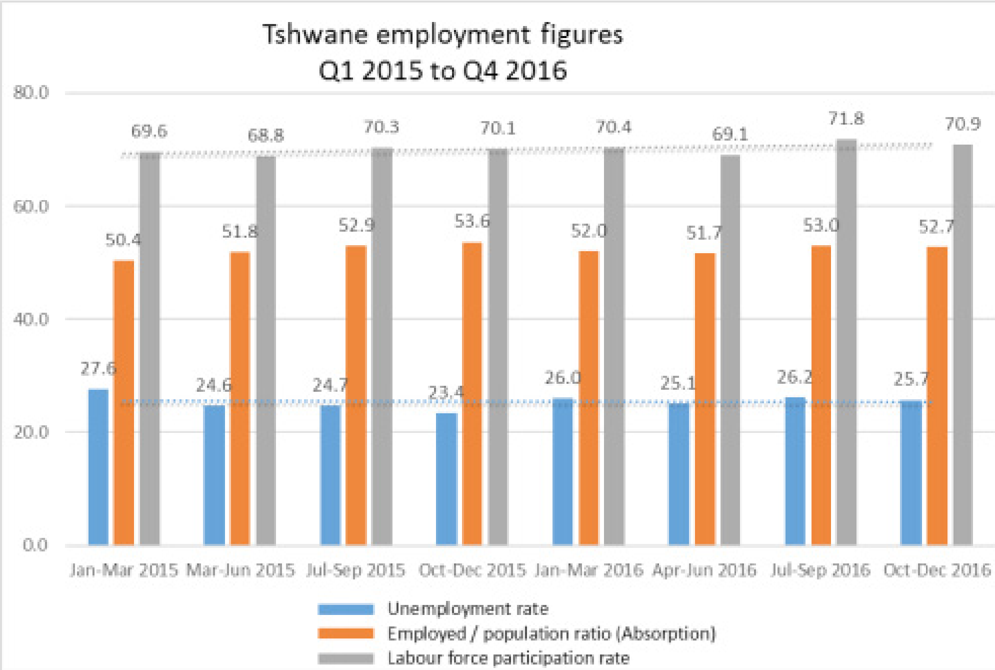
(Source: StatsSA)

For provinces, Gauteng has the highest nominal personal income per capita (R 70 000 per annum); and, for cities, Tshwane has the highest nominal personal income per capita (R 79 100 per annum) followed by Johannesburg (R 76 550 per annum) and Cape Town (R 73 980 per annum). Between 2012 and 2014, however, the real per capita income in Tshwane and Johannesburg declined by 7 percent and 7.3 percent respectively. In Cape Town, real personal income per capita rose by 3.3 percent [www.businesstech.co.za].

Unemployment in Tshwane remains a concern even though it is below the provincial and national averages. In defining unemployment, StatsSA refers only to people without work but who are actively looking for work. In other words, people who are passively looking for work, and others who are able and willing to work but who, for whatever reason, have given up looking for work would not be counted in this category. While it is stated then that 345 356 people in Tshwane aged from 15 to 64 are unemployed, if the category of "discouraged work seeker" was added to that it would be 409 451 people. And, nor can it be stated with certainty that the 612 750 people in the "not economically active" category are all not willing or able to work. In fact, the 2011 census also found that over 44 percent of people in the age group 15 to 64 had no income at all. Not considered at all – and which also seem to be labour-related problems in South Africa – are the issues of underemployment and misemployment.

Tshwane's employment status is shown in Figure 21.

Figure 21: Tshwane - Employment Status (2015 - 2016)



(Source: StatsSA QLFS Trends 2008 to 2016 Q4)

Despite the bleak picture painted in Figure 21 where about one in every four persons of the labour force is generally unemployed, Tshwane's unemployment rate, notwithstanding some periodic fluctuations, has effectively decreased from 31.6 percent in 2001 to 25.7 percent by the end of 2016.

Looking to the short-term future, the World Bank has predicted that in 2018 South Africa's economy will grow by 1.1 percent; the International Monetary Fund (IMF) has predicted that it will grow by 0.9 percent; the United Nations predicted 2.0 percent; the Organisation for Economic Cooperation and Development (OECD), 1.7 percent and the South African Reserve Bank (SARB), 1.4 percent. The World Bank estimation suggests that South Africa's growth rate will be the third lowest in Sub Saharan Africa, with only Equatorial Guinea and Zimbabwe lower than it.

Table 3 shows other important short-term economic projections. The unemployment rate is expected to continue to fluctuate but with a net decrease expected between now and 2020. The decrease is not expected to be significant. Government debt to GDP, the inflation rate and interest rate are also expected to rise marginally during this period.

Table 3: Economic Projections for South Africa (2018 – 2020)

Overview	Actual	Q2/18	Q3/18	Q4/18	Q1/19	2020	
GDP Growth Rate	3.10	2.5	2	1.5	1.9	2.1	percent
Unemployment Rate	26.70	28	27.8	27	27	24	percent
Inflation Rate	4.00	4.4	5	4.8	4.9	5.1	percent
Interest Rate	6.50	6.5	6.5	6.5	6.5	7	percent
Balance of Trade	430.00	-565	-5434	-7176	472	-1700	ZAR Million
Government Debt to GDP	53.10	54	54	54	54	56	percent

(Source: Tradingeconomics.com; StatsSA)

Over the longer term, the OECD has predicted the following growth rates for South Africa: 5.24 percent (in 2019); 5.07 percent (in 2020); and, 4.31 percent (in 2030). The World Bank has projected that by 2030 South Africa will be the 23rd largest economy in the world with a total GDP output of $ 810.6 billion (R 9.61 trillion).

1.8 Jurisdictional Design and Environment

There are three categories of municipalities in South Africa. These are [SALGA: Handbook for Municipal Councillors]:

Category A - metropolitan municipality, which has exclusive authority to administer and make rules in its area. A metropolitan municipality can have up to a maximum of 270 councillors. At the moment, South Africa has eight such municipalities. Tshwane is such a municipality: it is made up of seven regions, 105 wards, and 210 councillors.

Category B - local municipality, which shares the authority in its area with the district municipality of the district in which it falls. Local councils with more than seven councillors are divided into wards. A ward is a defined geographic area within a municipality. A district or local municipality may have no less than three but no more than 90 councillors. South Africa currently has 226 local municipalities.

Category C - district municipality, which has authority to administer and make rules in an area that includes more than one local municipality. Within each Category C municipality, there are a number of smaller Category B municipalities. District municipalities play a supportive role to local municipalities. The local municipalities are grouped into 44 district municipalities.

Tshwane is one of eight Category A municipalities.

1.9 Municipal Financial System

National departments, provincial departments, public entities and Parliament are required to adhere to the Public Finance Management Act No.29 of 1999 (PFMA). An equivalent Act was required "to secure sound and sustainable management of the financial affairs of municipalities and other institutions in the local sphere of government; [and] to establish treasury norms and standards for the local sphere of government". This equivalent Act is the Municipal Finance Management Act No.56 of 2003 (MFMA).

The municipal financial system in South Africa is refined on an ongoing basis. In 2009, the National Treasury introduced Municipal Budget and Reporting Regulations for norms and standards relating to the credibility, sustainability, transparency, accuracy and reliability of municipal budgets. And, all municipalities and municipal entities were expected to adopt the Municipal Standard Chart of Accounts (mSCOA) by July 2017. It prescribes the method and format that should be used to record and classify all expenditure (capital and operating), revenue, assets, liabilities, equity, policy outcomes and legislative reporting. It also strengthens public sector accountability and reporting.

Tshwane's ability to achieve its objectives and goals is affected by how "mature" (developed) its financial management is. The range is from level 1 (which represents a very low functioning municipality) to level 5 (which represents a very high functioning municipality). It can, therefore, be expected that Tshwane would have different (and, superior) levels of financial management practice as, for example, Lesedi Local Municipality.

Budgets generally have two separate but interrelated parts: a capital budget (CAPEX) and an operating budget (OPEX).

The city's CAPEX for the 2017/18, 2018/19 and 2019/20 financial years amount to R 3.9 billion, R3.8 billion and R4.4 billion respectively. The 2017/18 CAPEX is funded from the following sources:

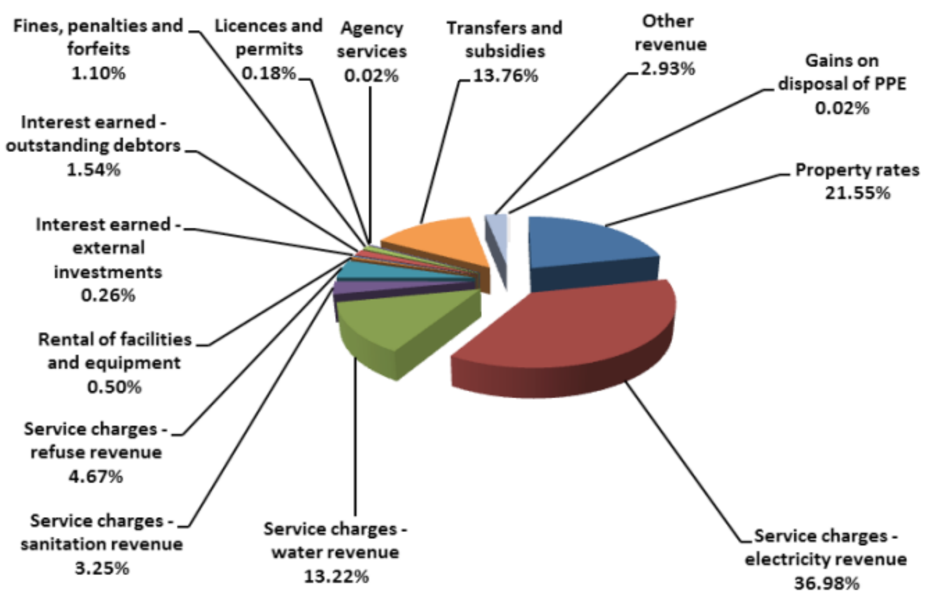
- Internally generated revenue (including public contributions and donations) – R 481 million
- Borrowings – R 1 billion
- Grant funding – R 2.4 billion

Tshwane's funding sources include:

- Government grants and subsidies
- Water and electricity sales
- Refuse removal and sanitation
- Property rates
- Licences and permits
- Fines, penalties and forfeits
- Interests on outstanding debtors and external investments
- Rent from its facilities

Figure 22 shows Tshwane's projected revenue in proportionate terms, for the 2017/18 financial year.

Figure 22: Tshwane – Projected Revenue in proportionate terms (2017/18)



(Source: Tshwane SDBIP, 2017/18)

Tshwane gets the bulk of its revenue from its residents. Three such sources together make up over 70 percent of the city's revenue: electricity sales (36.98 percent), municipal rates and taxes (21.55 percent) and water sales (13.22 percent). Another significant source is government transfers and subsidies (13.76 percent).

In March 2017, Ratings Afrika released its latest Municipal Financial Sustainability Index based on the financial results for June 2016. Of the eight metropolitan municipalities, Tshwane showed the weakest financial profile, scoring 21 out of 100 for financial stability, which was also lower than its 2015 score of 24. This situation is a result of poor operating performance. According to Moneyweb [www.moneyweb.co.za]:

If the capital grants received from government (and earmarked for infrastructure development), are excluded from its income, the accumulated operating deficit, including interest payments, over the last three years amounts to R 5.4 billion. It is made up as follows: 2014 – R 1.4 billion, 2015 – R 1.6 billion and 2016 – R 2.4 billion; and it is getting progressively worse.

It is clear that the operating costs of Tshwane are far too high for its current revenue base. This reflects severe deficiencies in its past budgeting practices and financial discipline.

The municipality's liquidity shortfall had increased from R 1.4 billion in 2014, to R 3.2 billion in 2016. This situation suggests that not only must Tshwane cut its operating costs significantly (with the inevitable consequence of service delivery and infrastructure maintenance suffering) but it may also need to resort to increasing municipal rates and taxes.

Tshwane's current revenue collection rate is 97.3 percent. This is relatively low as about R 600 million is surrendered annually. According to Moneyweb, this accumulation of bad debts will likely result in about R 6.5 billion being written off. This liquidity deficiency impacts negatively on service delivery. But, the city has committed to a turnaround strategy.

Table 4 shows Tshwane's projected revenue for the 2017/18 financial year on a month-by-month basis and for the next two MTREF years on a cumulative basis.

Table 4: Tshwane 2017-2020 MTREF Projected Revenue per Source

Description	Budget Year 2017/18												Medium Term Revenue and Expenditure Framework		
R thousand	July	August	Sept.	October	November	December	January	February	March	April	May	June	Budget Year 2017/18	Budget Year +1 2018/19	Budget Year +2 2019/20
Revenue By Source															
Property rates	528,693	504,983	517,029	493,231	564,877	514,011	543,401	468,572	554,558	569,193	572,907	682,952	6,514,409	6,970,286	7,458,601
Service charges - electricity revenue	954,537	1,049,676	1,063,937	906,785	891,875	912,566	634,271	883,865	887,926	880,326	980,935	1,129,795	11,176,494	11,813,125	12,474,066
Service charges - water revenue	269,480	288,037	421,305	368,091	393,330	326,403	302,987	324,182	333,538	297,868	325,973	345,693	3,996,886	4,224,560	4,460,958
Service charges - sanitation revenue	71,350	75,013	102,872	85,973	82,678	81,779	78,090	81,443	79,689	78,940	80,958	84,095	982,879	1,038,994	1,097,273
Service charges - refuse revenue	117,325	106,134	129,204	116,692	112,126	119,625	112,363	121,351	120,898	114,780	120,439	119,568	1,410,506	1,512,513	1,622,063
Service charges - other	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Rental of facilities and equipment	13,583	13,583	12,459	12,459	12,459	12,559	12,559	12,559	12,689	12,808	12,808	11,339	151,864	166,870	182,866
Interest earned - external investments	6,678	6,678	6,621	6,621	6,621	6,621	6,621	6,621	6,621	6,621	6,621	6,551	79,493	74,609	79,434
Interest earned - outstanding debtors	40,673	40,673	38,764	38,764	38,764	38,764	38,764	38,764	38,764	38,764	38,764	36,472	466,691	380,169	398,996
Dividends received	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Fines, penalties and forfeits	27,740	27,740	27,738	27,738	27,738	27,738	27,738	27,738	27,738	27,738	27,738	27,736	332,854	349,555	368,570
Licences and permits	4,566	4,566	4,566	4,566	4,566	4,566	4,566	4,566	4,566	4,566	4,566	4,566	54,796	58,484	61,759
Agency services	–	–	3,325	–	–	–	3,325	–	–	–	–	–	6,650	22,994	37,440
Transfers and subsidies	834,114	529,337	10,729	103,992	59,424	1,197,400	124,244	32,628	1,252,663	5,000	5,000	5,000	4,159,532	4,425,895	4,747,475
Other revenue	80,857	83,333	73,475	71,130	73,508	73,372	73,542	73,542	73,575	73,575	73,576	63,593	887,079	924,704	977,067
Gains on disposal of PPE	490	490	490	490	490	490	490	490	490	490	490	490	5,880	1,242	1,312
Total Revenue (excluding capital transfers and contributions)	**2,950,086**	**2,730,244**	**2,412,512**	**2,236,531**	**2,268,456**	**3,315,892**	**1,962,961**	**2,076,321**	**3,393,716**	**2,110,668**	**2,250,775**	**2,517,851**	**30,226,013**	**31,964,001**	**33,967,882**

(Source: Tshwane SDBIP, 2017/18)

For the 2017/18 financial year, among other income sources the city expects to receive R 11.12 billion from electricity sales, R 4.00 billion from water sales and R 6.51 billion from property rates. Table 5 shows the breakdown of the 2017-2020 MTREF projected revenue in Rand terms.

Table 5: Tshwane - 2017-2020 MTREF Projected Revenue in Rand terms

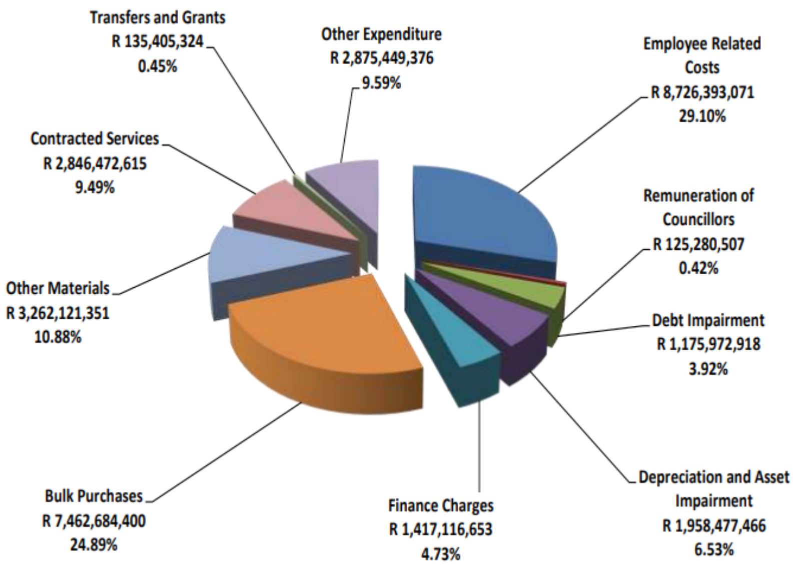
Funding Source Description	Budget 2017/18	%	Budget 2018/19	Budget 2019/20
Council Funding	376,000,000	9.74%	500,000,000	650,000,000
Public Transport, Infrastructure Systems Grant	679,189,840	17.59%	396,285,230	426,086,000
Neighbourhood Development Partnership Grant	20,000,000	0.52%	30,000,000	45,000,000
Urban Settlements Development Grant	1,567,922,550	40.62%	1,646,976,580	1,739,911,310
Integrated National Electrification Programme	30,000,000	0.78%	40,000,000	40,000,000
Capital Replacement Reserve	5,000,000	0.13%	5,000,000	5,000,000
Community Library Services	9,507,000	0.25%	10,000,000	10,500,000
Borrowings	1,000,000,000	25.90%	1,000,000,000	1,300,000,000
Public Contributions & Donations	100,000,000	2.59%	150,000,000	150,000,000
Social Infrastructure Grant	34,000,000	0.88%	-	-
LG SETA Discretionary Allocation	6,000,000	0.16%	8,000,000	-
Intergrated City Development Grant	32,664,650	0.85%	37,673,700	39,783,400
TOTAL	**3,860,284,040**	**100.00%**	**3,823,935,510**	**4,406,280,710**

(Source: Tshwane SDBIP, 2017/18)

The bulk of Tshwane's MTREF funding comes from the Urban Settlements Development Grant (R 1.6 billion), borrowings (R 1 billion) and the Public Transport, Infrastructure Systems Grant (R 680 million).

Figure 23 shows Tshwane's projected expenditure in proportionate terms, for the 2017/18 financial year.

Figure 23: Tshwane - Projected Expenditure in proportionate terms (2017/18)



(Source: Tshwane SDBIP, 2017/18)

Tshwane's biggest expenses are salaries and other employee-related costs (29.1 percent) and water, electricity and other bulk purchases (24.9 percent).

Table 6 provides a detailed breakdown of the items listed in Figure 23. It shows Tshwane's projected expenditure for the 2017/18 financial year on a month-by-month basis and for the next two MTREF years on a cumulative basis.

Table 6: Tshwane - 2017-2020 Projected Expenditure in Rand terms

Description	Budget Year 2017/18												Medium Term Revenue and Expenditure Framework		
R thousand	July	August	Sept.	October	November	December	January	February	March	April	May	June	Budget Year 2017/18	Budget Year +1 2018/19	Budget Year +2 2019/20
Expenditure By Type															
Employee related costs	717,134	714,270	702,132	700,556	1,054,108	699,496	704,180	700,556	698,176	700,179	702,882	685,105	8,778,772	9,439,307	10,072,202
Remuneration of councillors	10,956	10,956	10,403	10,403	10,403	10,403	10,403	10,403	10,403	10,403	10,403	9,740	125,281	132,672	140,102
Debt impairment	99,846	99,846	97,866	97,866	97,866	97,866	97,866	97,866	97,866	97,866	97,866	95,489	1,175,973	1,269,943	1,344,921
Depreciation & asset impairment	168,093	168,045	163,122	163,048	163,048	163,128	163,048	163,048	163,131	163,048	163,048	157,498	1,961,302	2,106,141	2,225,084
Finance charges	121,199	121,198	117,894	117,894	117,893	117,893	117,893	117,891	117,892	117,891	117,892	113,926	1,417,357	1,199,598	1,145,762
Bulk purchases	922,061	1,029,737	952,918	511,116	517,000	504,602	466,349	517,012	498,742	541,602	496,711	504,833	7,462,684	7,902,983	8,361,356
Other materials	450,896	263,044	264,845	268,245	283,178	254,226	250,004	248,815	227,982	226,881	250,700	275,285	3,264,102	3,518,605	3,771,551
Contracted services	718,539	210,441	201,671	205,022	204,562	196,467	197,963	194,792	183,401	190,080	184,340	178,139	2,865,416	2,965,098	3,275,913
Transfers and subsidies	4,196	4,196	4,159	4,159	4,159	4,159	4,159	4,159	4,159	4,159	4,159	4,159	49,980	53,438	56,523
Other expenditure	413,468	288,940	243,906	224,454	215,393	239,309	219,943	200,933	223,190	203,300	225,963	195,164	2,893,962	3,117,287	3,294,660
Loss on disposal of PPE	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Total Expenditure	**3,626,389**	**2,910,674**	**2,758,915**	**2,302,761**	**2,667,608**	**2,287,550**	**2,231,807**	**2,255,474**	**2,224,942**	**2,255,408**	**2,253,963**	**2,219,339**	**29,994,829**	**31,705,074**	**33,688,076**

(Source: Tshwane SDBIP, 2017/18)

Employee-related costs are projected to increase by 7.5 percent in the 2018/19 financial year and by 6.7 percent in the 2019/20 financial year. Bulk purchases are projected to increase by 5.9 percent in the 2018/19 financial year and by 5.8 percent in the 2019/20 financial year.

1.10 Financing of Housing, Infrastructure and Urban Services

South Africa has an advanced financial and banking system. But its banks generally have rigid, onerous requirements for providing development and end-user finance. To provide development finance, they usually require between 20-30 percent equity contribution by the owner or developer. For end-user finance, they tend to serve almost exclusively the top-end of the housing market. Despite legislated and self-regulatory requirements, banks contribute very little to the development of the low income housing market. In the affordable housing market, their role remains unsatisfactory. The net result is that government has to virtually single-handedly financially support the development of the low income and affordable housing markets. This happens on two levels: intergovernmental and municipal.

A large proportion of expenditure for housing, infrastructure and urban services is financed by grants from the National Treasury and provincial allocations. Set out in terms of the Division of Revenue Bill No.4 of 2017 and Provincial Gazette No.68 of 2017 respectively, Table 7 shows the allocations made to Tshwane during the current MTREF cycle.

Table 7: Tshwane – 20172020 MTREF Projected Transfers and Grants

Description	2017118 Medium Term Revenue 4 Expenditure Framework		
	Budget Year 2017118	Budget Year *1 2014*19	Budget Year *2 2014*20
RECEIPTS:	R'000	R'000	ROW
Operating Tran stars and Grants			
National Government:	3 875 608	4 287 952	4 600 115
Local Government Equable Share I EOS)	2 1 32 788	2 404666	2 661 272
Fuel Levy (FL)	1 44 413	1 487 277	1 527 361
Finance Management Grant (FMG)	2 650	2400	2 200
Urban Settlement Development Grant	48492	50 937	53 812
Expanded Public Works Programme Incentive (EPWP)	20 451	-	-
Pubic Transport Network Operations Grant (PING)	221 049	336 024	348 450
Integrated Cry Development Grant (CDG)	5 764	6 648	7 021
Provincial Government:	217 173	137 943	147 360
Primary Health Care (PHC)	46 541	49 837	51 997
Emergency Med cal Services (EMS)	65 993	70 515	74 464
HIV and Aids Grant	12 720	13 591	16 899
Human Settlement Development Grant (WSOG)	90 664	-	-
Sports and Recreation : Community Libraries	1 255	4 000	4 000
Other grant providers:	66 751	-	-
Development Bark of South Africa (DBSA)	61 00b	-	-
Trelo Bosha Grant - Research and Development	5 751		
Total Operating Transfers and Grants	4 1 59 532	4 425 895	4 747 475
Capital Transfers and Grants			
National Government	2 329 777	2 150 936	2 290 781
Urban Settlement Development Grant (USDG)	1 567 923	1 646 977	1 739 911
Pubic Transport Infrastructure 4 Systems Grant (PTNG)	679 190	396 285	426 066
Integrated National Electrification Programme (INEP)	30 000	40 000	40 000
Neighborhood Development Partners tip Grant (NDPG)	20 000	30 000	45 000
Integrated City Development Grant ICOGI	32 665	37 674	39 783
Provincial Government:	43 507	10 000	10 500
Sport and Recreation: Community Libraries	9 507	10 000	10 500
Social Infrastructure Grant (SIG)	34 000	-	-
Other grant providers:	6 000	8000	-
LG SETA Discretionary grant	6 000	8000	
Total Capital Transfers and Grants	2 379 284	2 168 936	2 301 281
TOTAL RECEIPTS OF TRANSFERS 4 GRANTS	**6 538 816**	**6 594 831**	**7 048 756**

(Source: CoT 2017-2021 IDP)

As can be seen, there is a range of grants and subsidies from central government and provincial government that Tshwane can rely on to supplement its other revenue sources. The biggest is the Local Government Equitable Share, which is an annual allocation the city gets from the National Treasury, and the USDG.

Some of these grants are explained below.

1.10.1. Unconditional Grants

- **Local Government Equitable Share:** The primary role of the local government equitable share is to assist municipalities in providing basic services to poor households. Through this, local government's share of nationally raised revenue, supplementing municipal own revenues, are distributed to municipalities.

- **Regional Services Council Levy Replacement Grant:** Prior to 2006, district and metropolitan municipalities raised levies on local businesses within their areas through an RSC levy. This source of revenue was replaced in 2006/07 with the RSC Levy Replacement Grant and the Sharing of the General Fuel Levy, which was allocated to all district and metropolitan municipalities respectively, based on the amounts they had previously collected through the levies and the amount of fuel sales generated.

- **Special support for councillor remuneration:** Councillors' salaries are subsidised in poor municipalities. This support is calculated separately to the local government equitable share and is additional to the governance costs allocation provided in the institutional support component of the local government equitable share formula.

1.10.3 General Transfers

- **Municipal Infrastructure Grant (MIG):** The largest infrastructure transfers are through the MIG, which supports government's objective of expanding service delivery and alleviating poverty. The MIG finances the provision of infrastructure for basic services, roads and social infrastructure for poor households in all non-metropolitan municipalities.

- **Infrastructure Conditional Grant (ICG):** National transfers for infrastructure, including indirect or in-kind allocations, to entities executing specific projects in municipalities.

- **Urban Settlements Development Grant (USDG):** The purpose of the USDG is to assist metropolitan municipalities to improve urban land production to the benefit of poor households. Their revenues are supplemented to reduce the real average cost of urban land; increase the supply of well-located land; enhance tenure security and quality of life in informal settlements; improve spatial densities; and, subsidise the capital costs of acquiring land and providing basic services for poor households.

- **Neighbourhood Development Partnership Grant (NDPG):** The grant supports the development of community infrastructure and aims to attract private-sector investment that improves the quality of life of residents in targeted underserviced neighbourhoods.

- **Integrated National Electrification Grant (INEG):** The purpose of this grant is to implement the Integrated National Electrification Programme (INEP) by providing capital subsidies to municipalities to address the electrification backlog of occupied residential dwellings, clinics and the installation of bulk infrastructure and rehabilitation and refurbishment of electricity infrastructure in order to improve the quality of supply.

- **Electricity Demand-side Management Grant (EDMG):** The grant aims to improve energy efficiency demand-side management in houses and commercial buildings, reducing energy consumption.

- **Regional Bulk Infrastructure Grant (RBIG):** This grant aims to provide regional bulk water and sanitation across several municipal boundaries. In the case of sanitation, it supplements regional bulk collection and regional waste-water treatment works.

- **Municipal Disaster Grant (MDG):** This grant is allocated to the National Disaster Management Centre in the Department of Cooperative Governance and Traditional Affairs (CoGTA) as an unallocated grant to local government.

- **Public Transport, Infrastructure and Systems Grant (PTISG):** The purpose of the grant is to provide for accelerated planning, construction and improvement of public and non-motorised transport infrastructure and services.

1.10.3. General Transfers

- **Capacity Building Grant (CBG):** This grant assists municipalities to improve their management, planning, technical, budgeting and financial management skills.

- **Expanded Public Works Programme Incentive Grant (EPWPIG):** This is a financial incentive for municipalities that exceed minimum targets for the employment of EPWP workers on infrastructure projects.

- **Water Services Operating Subsidy (WSOS):** This grant funds the transfer of water schemes from the national government to municipalities. It covers staff-related costs and direct operating and maintenance costs, while provision is also made for the refurbishment of infrastructure.

Table 8 shows the demand and need for government subsidised housing in Tshwane.

Table 8: Tshwane - Housing Demand and Need

SOURCE OF DEMAND / NEED	NUMBER OF HOUSING UNITS
Units in informal settlements	155 948 households (in 2013)
Backyard units in formal settlements	83 378 (in 2013)
Housing needs register	166 832 (in 2017)

(Source: Tshwane 2017 BEPP)

In 2013, an estimated 155 948 units in Tshwane were located in 178 informal settlements. Today, the city has 192 informal settlements. Importantly, not all the units in informal settlements are shacks: some are permanent houses located in areas under traditional authorities. It can be assumed that the 83 378 backyard units (again, not all are shacks) mainly represent affordable housing demand in general and affordable rental demand in particular.

According to BEPP 2017, there are some 2 482 hectares of land suitable for housing development within Tshwane's IRPTN. Potentially, at an average density of 80 units per hectare, a total of about 198 577 housing units can be built on this land. About 65 048 of these units can be built around railway stations and another 133 529 along the BRT routes. Based on the nature and character of surrounding areas which the network runs through, the development potential is estimated at 77 330 (39 percent) low income units, 57 357

(29 percent) middle income units and 63 890 (32 percent) high income units. The nature of development varies between redevelopment (in old areas), densification (subdivision etc.), and infill development (on green fields sites). The typical housing typologies to be developed comprise 2, 3 and 4 storey walk-up facilities.

Table 9 shows the development potential per region and per income category.

Table 9: Tshwane - Developable Land per Region

			Residential Units				Residential Units			
	Developable Area	Residential Area	High Income	Middle Income	Low Income	TOTAL	High Income	Middle Income	Low Income	TOTAL
IRPTN NETWORK	ha	ha								%
Region 1	640	470	3 759	5 842	27 987	37 588	6%	10%	36%	19%
Region 2	187	159	6 524	4 231	2 004	12 758	10%	7%	3%	6%
Region 3	1339	848	15 410	25 277	27 120	67 807	24%	44%	35%	34%
Region 4	509	381	16 306	10 150	4 049	30 505	26%	18%	5%	15%
Region 5	93	55	804	585	3 010	4 399	1%	1%	4%	2%
Region 6	711	569	21 087	11 271	13 160	45 519	33%	20%	17%	23%
Region 7	0	0	-	-	-	-	0%	0%	0%	0%
TOTAL Alternative	**3479**	**2482**	**63 890**	**57 357**	**77 330**	**198 577**	**100%**	**100%**	**100%**	**100%**
%			**32%**	**29%**	**39%**	**100%**				

(Source: Tshwane 2017 BEPP)

It is evident that the highest potential for low income housing development around the IRPTN is in Region 1 (36 percent), Region 3 (35 percent), and Region 6 (17 percent).

The demanding situation places increasing pressure on Tshwane. It faces the following challenges [National Treasury: Cities and the Management of the Built Environment]:

- **The growing number of poor people in its midst:** The situation of an already large number of unemployed people is made worse by the current economic downturn, with job losses impacting on the ability of households to pay municipal rates and user charges, and increasing demand for free basic services. There is also additional pressure to provide infrastructure to support subsidised housing developments and provide free basic services.
- **Supply side constraints to economic growth:** Tshwane provides much of the infrastructure and services that support economic activities. A failure to provide this infrastructure to scale and on time creates a bottleneck that constrains private investment. A higher than average economic growth rate has placed added pressure on it to expand and refurbish infrastructure.
- **An inefficient urban form:** Tshwane's sprawling, low density nature imposes significant costs on households, firms and the public sector. Poor households

must bear the costs of long transport journeys and low levels of community cohesion, while the public sector must subsidise access to both housing and public transport. Tshwane has to provide infrastructure networks across vast distances, particularly to give poor households access.

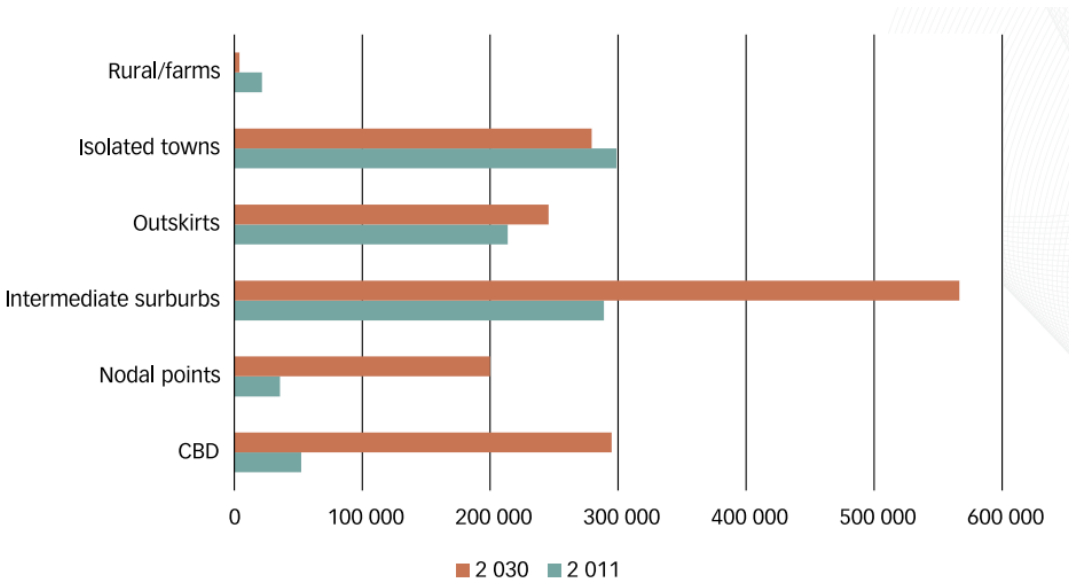
- **Rising demand for urban services:** Population growth and the declining average household size place increasing pressure on Tshwane, which delivers many services (such as water or electricity) at the level of the household rather than the individual. Backlogs in the provision of land and housing are reflected in the growth of informal settlements in the city.

1.11. Assessment of Housing Needs

The study has identified that Tshwane is facing challenges in the provision of adequate infrastructure solutions for its residents. The city has a critical shortage of affordable housing stock to address the needs of its growing population. Associated infrastructure services are also lagging behind, as Tshwane does not have adequate financial resources to maintain a big proportion of its existing infrastructure, let alone provide all of its much-needed new infrastructure. Although the green economy in Tshwane is still in its infancy, appropriate structures have been established and projects identified. These projects have the capacity to position the city as a leading green economy once the requisite funding has been obtained.

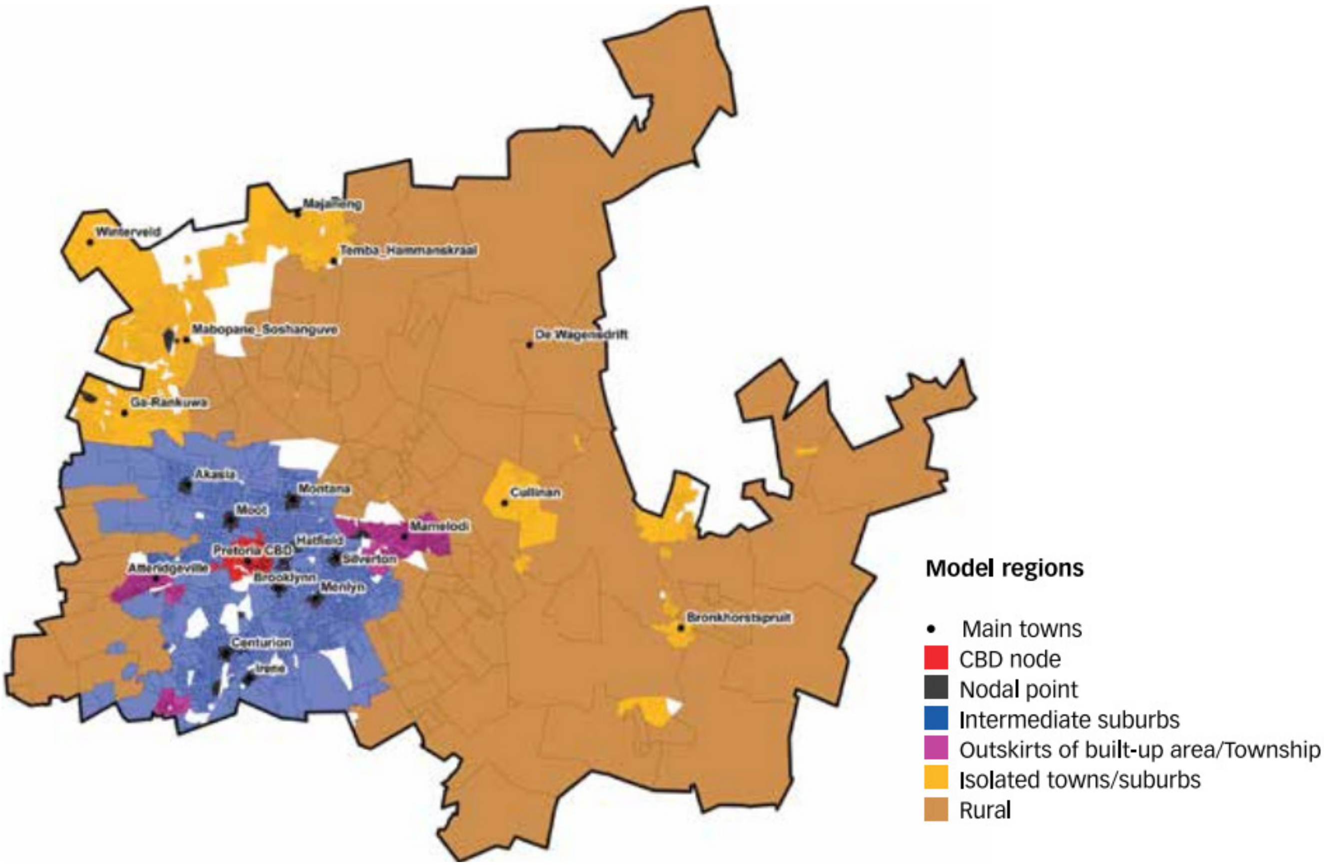
Under the Business-as-Usual scenario, the number of households in the CBD will increase by 80% (from 52,392 in 2011 to 93,697 in 2030). However, when household aspirations (i.e. socio-economic factors) are taken into account, the number of households in the CBD will increase to 214,156 in 2030, or by about 316%. All regions are expected to see an increase in the number of households, except for rural areas and farms, where a decrease is expected by the year 2030 (Figure E2). Regions that will experience significant growth by 2030 are the CBD node, nodal points and intermediate suburbs (Figure E2, E3)

Figure E2 Households in Tshwane in the years of 2011 and 2030



Source: 2015-2016_TR_Chapter_4_Understanding_housing_demand_in_South_Africa.pdf

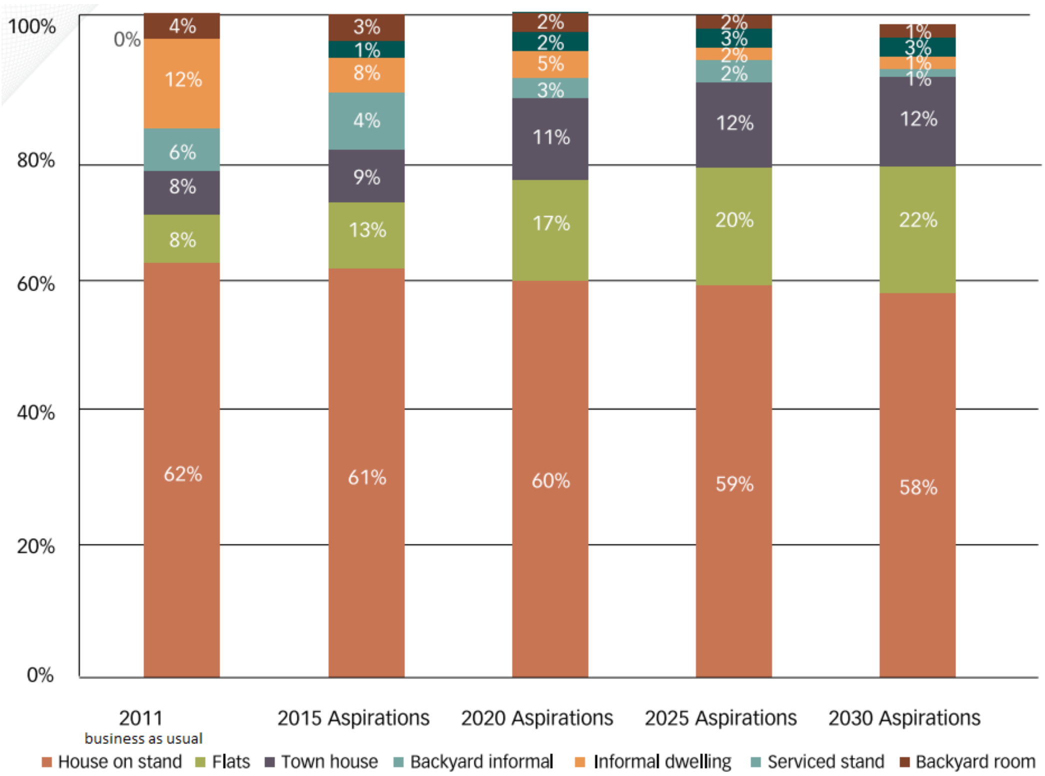
Figure E3 Location Categories of the City of Tshwane



Source: 2015-2016_TR_Chapter_4_Understanding_housing_demand_in_South_Africa.pdf

When assessing the housing needs by the types of housing, it is found that houses on a separate stand (detached or semi-detached houses) are expected to decrease from 62% in 2011 to 58% in 2030. In contrast, over the same period, flats and townhouses will increase from 8% to 22% and from 8% to 12% respectively. This is in line with the shift towards rentals in the CBD and intermediate suburbs, as mentioned above as the categories of location (Figure E4).

Figure E4 Housing needs by the types of housing in Tshwane in 2011 and 2030



Source: 2015-2016_TR_Chapter_4_Understanding_housing_demand_in_South_Africa.pdf

Chapter 2

Financing Housing, Infrastructure and Urban Services

2.1. Financing Housing

Although there are about 36 active banks in South Africa, the sector is dominated by the "big four": Standard Bank, Absa Bank, First National Bank and Nedbank. Historically, banks have competed with each other and been generous in funding housing for higher net worth individuals. According to Property24, the average price of a property (including but not limited to houses) in Tshwane today is R 2 211 906. And, there are currently 33 912 properties for sale in the city. In Tshwane East alone there were some 7 500 properties worth R 8 billion on sale last year. This is higher than Sandton (R 6.4 billion), often regarded as "the square kilometre with the most expensive real estate on the Africa continent". Seemingly, the most sought after price range in Tshwane East is R 800 000 – R 1.5 million, which has seen 1 516 repeat sales from October 2016 to September 2017.

Banks have, however, not shown the same amount of enthusiasm for affordable housing aspirants. Affordable housing comprises both ownership and rental. Ownership units are either fully bonded; or, partly-bonded and partly-subsidised (through the Finance Linked Individual Subsidy Programme, or FLISP). Rental units are either public rental (social housing) or private rental.

First, government established mechanisms such as the Mortgage Indemnity Fund (MIF) to get banks to voluntarily service the affordable housing market. The sector has tried self-regulation: for example, the Financial Sector Charter was also intended to achieve the same objective. But, all these initiatives have had limited success.

Now, the Financial Sector Code compels banks to meet certain affordable housing goals and targets. Yet, the affordable housing market continues to struggle. Interest rates on affordable housing loans are usually one or two percent higher than ordinary market-related home loans. And, as banks are not keen to provide 100 percent home loans, there are also depository constraints for those seeking loans for affordable housing. Banks are also generally unwilling to process FLISP applications. This is a graded subsidy provided for households earning R 3 501 per month (who get R 87 000, the biggest quantum possible under this programme) ranging up to R 15 000 per month (who get R 20 000, the smallest quantum possible under this programme).

The central government has also been struggling to boost affordable housing. With a discounted rate for government employees, the 30-year home loan that was launched in 2016 by the Government Employment Housing Scheme in conjunction with a private sector investor, SA Home Loans, is yet to properly take off. And, the impact of government-owned wholesale investors NHFC and Rural Home Loan Fund (RHLF) has been negligible, with it being almost nil at the moment while they, together with National Urban Reconstruction Agency (NURCHA), are busy amalgamating to form the National Human Settlements Development Bank of South Africa.

The situation is thus: of the 153 702 home loans issued nationally across all housing market segments in 2016, only 21 464 (14 percent) were for affordable housing.

Big private developers must also share the blame. According to StatsSA, annual delivery by the private sector has declined dramatically since 2008 when 70 058 housing units were delivered outside the subsidised market. In 2016, only 41 489 housing units nationally were reported as completed – a marginal increase compared to the previous year (39 666 in 2015).

Coupled with the general unwillingness by banks to provide loans in the affordable housing market is the general inability by households to afford such finance. Besides the high unemployment rate (25.6 percent in Tshwane at the end of 2016) about 30 percent of households nationally receive social grants. Moreover, some 83.4 percent of households nationally earn less than R 20 000 per month. Exceeding even inflation, the rise in building costs has made a bad situation worse. The net result has been that in 2017 the lowest an affordable housing could be built for was R 392 000. In ordinary home lending, a household would need to have a monthly income of at least R 15 000 to qualify to buy it [CAHF: Understanding the Challenge in South Africa's Gap Market].

Figure 24 shows the national problem of increasing housing unaffordability. Tshwane shows the same characteristics.

Figure 24: South Africa: Average Household Income vs. Average House Price (2001-2013)

(Source: NHFC Strategic Document, 2014)

In the second quarter of 2017, Tshwane's estimated average house price growth rate was 4.48 percent year-on-year, translating into negative real house price growth of -0.72 percent year-on-year. By the first quarter of 2018, the city was still experiencing negative house price growth (-0.8 percent year-on-year). In fact, as has been the case for the other two metros in Gauteng, this "correction" of house price growth in Tshwane had started in the first quarter of 2008, when its decline was 122.7 percent. Since then, the city's cumulative real house price growth has been -22.7 percent [FNB: Property Barometer, July 2017].

Cumulative house price growth in Tshwane over the past five years is estimated to have been the highest (59.95 percent) in the Winterveld-Mabopane-Soshanguve-Ga-Rankuwa-Hammanskraal region. But, it is likely that distortions are caused by the delivery of fully government-subsidised houses in the former African townships.

In the fourth quarter of 2017, the two most expensive regions, Pretoria East and Pretoria South East, showed low year-on-year house price growth of 1.81 percent and 1.57 percent respectively. Some of the more affordable, older areas like Pretoria West (7.99 percent), Akasia (7.02 percent) and Pretoria North (5.7 percent) showed better year-on-year house price growth [FNB: Property Barometer, July 2017].

About 75 000 registered subsidised units have been built in Tshwane since 1994, or just 4 percent of all government sponsored stock registered nationally. This represents about 15 percent of the city's registered housing stock, subsidised or not. It must be noted, however, that a significant number of subsidised housing units have not yet been registered.

The banks play a minimal role in low income housing. Households that earn R 3 500 and less per month qualify for a fully government subsidised RDP housing unit, typically 40 square metres in extent. Critics consider these houses to be inadequate in terms of size and quality of construction. Currently, this subsidy is R 160 573 per household. The qualifying criteria are:

- Applicant must have been on the municipal housing demand database for a minimum period of 10 years.
- Priority is given to applicants over the age of 40 years and / or with special needs.
- Applicant is married or living with a long-term partner or single or divorced with others who rely on his or her income.
- Applicant is a South African citizen or has a permanent resident's permit.
- Applicant is over 18 years of age or if under 18, married or divorced with others who rely on their income.
- Applicant's monthly household income before deductions is less than R3 500.
- Applicant or partner have never received a subsidy from the government.
- Applicant or partner have never owned property.
- Applicant and family will live on the property bought with the subsidy.

Although subsidy planning is centralised, housing subsidies are managed by the provinces. Recent developments have also necessitated municipalities becoming more actively involved. These included the introduction of the USDG and the accreditation of large urban municipalities to manage public housing programmes. Another was the withdrawal of proposals to form regional electricity distributors thereby emphasising the role of municipalities in the provision of basic services.

By cities performing these functions, integrated planning and spatial development will be supported and there will be greater accountability to communities. But, the successful transference of these functions requires clarity on roles and functions, reforms to intergovernmental fiscal arrangements, improved capacity at the local level and adequate resources and incentives to effectively address the spatial legacy of the past. It also requires cities themselves to make clear trade-offs between the development of social and economic amenities near residential areas, and a transit-based development approach that seeks to increase the mobility of residents and thus their access to existing amenities and opportunities.

Tshwane has identified and assessed 30 informal settlements for inclusion under the National Upgrading Support Programme (NUSP). Table 10 shows the list of 16 that were approved.

Table 10: Tshwane - NUSP Informal Settlement Projects

Name of Informal Settlement	Region
Portion 27 and 28 Hatherley	6
Portion 1 Hatherley	6
Kanana	6
Mahube Valley Ext 2	6
Mahube Valley Ext 15 (Stoffel Park)	6
Mamelodi Ext 10 Phase 2	6
Mamelodi Phase 1	6

Name of Informal Settlement	Region
Mamelodi Phase 3 and Mountain View	6
Nellmapius Ext 6	6
Phomolong (Transnet and Erf 34041)	6
Pienaarspoort (Plot 45)	6
Sekampaneng A	2
Sekampaneng V	2
Soutpan	2
Botshabelo Res	1
Donkerhoek	5

(Source: Tshwane 2017 BEPP)

The large majority of the informal settlements approved under NUSP are in Region 6. No informal settlement in Regions 3, 4 and 7 were approved [BEPP 2017].

Tshwane has also started giving effect to another national human settlements programme, the Community Residential Units (CRU) Programme. This programme aims to provide secure, stable rental tenure for lower income households. As shown in Table 11, the focus is on hostel conversions.

Table 11: Tshwane - CRU Housing Projects

Project Name	Total Number of Units	Deliverable for 17/18
Saulsville Hostel	To be determined by final layout	Town Planning & Detail Design Approval.
Mamelodi Hostel	To be determined by final layout	Town Planning & Detail Design Approval.
Kingsley Hostel	To be determined by final layout	Town Planning & Detail Design Approval.
Zithobeni Hostel	To be determined by final layout	Town Planning & Detail Design Approval.

(Source: Tshwane 2017 BEPP)

The national Social Housing Programme, which aims to provide secure, rental tenure for slightly better-off households that prefer renting or, for whatever reason, are not yet in a position to buy a house. Social Housing is a special type of affordable rental housing.

There are eight Social Housing Institutions (SHIs) active in Tshwane:

1. Housing Company Tshwane (HCT)
2. Yeast City Housing (YCH)
3. Africa Lemuel Properties
4. Namapendlo Social Housing Institution NPC
5. Urbanscape Development Pty Ltd
6. Amasu Properties Pty Ltd
7. THH Riet 2 Pty Ltd
8. Toro ya Africa

Table 12 shows the SHIs' current involvement in the delivery of social housing units.

Table 12: Tshwane – Social Housing Units

CONSTRUCTION PHASE			
Social Housing Institution	**Project Name**	**Total Number of Units**	**Deliverable for 17/18**
Housing Company Tshwane	Townlands	1 200	400 Units
Housing Company Tshwane	Chantelle x39	1 079	Bulk Infrastructure upgrade.
Yeast City Housing	Thembelihle Village	734	241 Units
THH Riet 2 Pty Ltd	Akasia Place Project	475	Not specified
PLANNING PHASE			
Social Housing Institution	**Project Name**	**Total No. of Units**	**Deliverable for 17/18**
Housing Company Tshwane	Timberlands	574	Town Planning & Detail Design Approval.
Housing Company Tshwane	Sunnyside	264	Town Planning & Detail Design Approval.
Urbanscape Development Pty Ltd	Upstream Development	368	Town Planning & Detail Design Approval.
Amasu Properties Pty Ltd	Bontle Gold View Estate	690	Town Planning & Detail Design Approval.
Toro ya Africa	Ga-Rankuwa x9	Not specified	Town Planning & Detail Design Approval.

(Source: Tshwane 2017 BEPP)

Tshwane aims to accommodate 15 percent of the backlog in social housing projects. Based on this estimation there is a potential market for 20 071 social housing units in the city.

Tshwane has had to get approval from the Gauteng Provincial Department of Human Settlements (GDHS) to make capital subsidies available for affordable housing developments. Currently, the maximum quantum is R36 520 per stand, plus 15 percent geotechnical allowance as may be approved.

While public expenditure on housing increased from 2005/06, the scale of delivery of houses completed and under construction has decreased after peaking in 2007/08. The decrease is partly due to higher prices tendered per unit driven by high demand and high input prices in the construction industry, and partly due to weak planning, project and programme management.

The GDHS emphasises building cohesive and sustainable communities by promoting the use of innovative services and infrastructure. For a few years now, the department has been planning to roll-out mega projects involving various housing types developed along nodes that will provide economic and employment opportunities. It set aside R5.2 billion in HSDG allocations for the 2016/17 financial year; and has allocated R13 billion over the MTREF. One of the mega projects the HSDG is funding is the Nellmapius Project in Tshwane.

Table 13 shows the MTREF distribution for the 77 GDHS-funded human settlements projects that are linked to Tshwane's BEPP priority zones.

Table 13: GDHS-funded Projects in Tshwane - Human Settlements

Priority Zone	No. of Projs.	MTREF 2017/18	MTEF 2018/19	MTEF 2019/20
Centurion Areas	3	R 53 933 000	R 51 315 000	R 30 633 000
Inner City	2	R 6 647 000	R 32 468 000	R 25 629 000
No Intersect	49	R 772 503 000	R 595 158 000	R 709 958 000
Pretoria East	12	R 152 554 000	R 196 709 000	R 199 192 000
Pretoria West	3	R 8 321 000	R 121 265 000	R 78 217 000
Rosslyn/Pretoria North	4	R 14 095 000	R 44 605 000	R 33 284 000
Tshwane Far East	1	R 33 728 000	R 25 518 000	R 22 189 000
Tshwane North	3	R 9 766 000	R 16 272 000	R 11 095 000
Human Settlements Total	77	R 1 051 547 000	R 1 083 310 000	R 1 110 197 000

(Source: Tshwane 2017 BEPP)

Although the provincial department's intention has been to fund projects located in Tshwane's priority zones, 49 of the 77 projects do not intersect with any of the priority zones.

In all, Tshwane has planned to use its own money to fund 60 housing and human settlement projects over the current MTREF. The breakdown is: R 874.4 million in 2017/18, R 1.0 billion in 2018/19 and R 920 million in 2019/20.

2.2. Financing Infrastructure and Urban Services

Intergovernmental infrastructure and urban services projects in Tshwane are funded mainly by the National Department of Public Works (DPW) and the GDHS.

Table 14 shows the inner city regeneration projects that are being funded by the DPW during the current MTREF:

Table 14: DPW-funded Projects in Tshwane - Infrastructure and Urban Services

	Number of Projects	2017/18 Approved Budget	2018/19 Approved Budget	2019/20 Approved Budget
Southern Gateway Precinct	Various Sub Projects	R 350 000 000	R 8 280 000 000	R-
Government Boulevard	Various Sub Projects	R 1 100 000	R-	R-
Northern Gateway Precinct	Various Sub Projects	R 100 000 000	R 8 510 000 000	R-
Capital Hill Precinct	Various Sub Projects	R 50 000 000	R 264 000 000	R-
Civic Precinct	Various Sub Projects	R 50 000 000	R 1 600 000 000	R-

(Source: Tshwane 2017 BEPP)

In the 2017/18 financial year, the DPW will spend R 551.1 million on 5 projects in Tshwane. This amount will increase markedly to R 18.6 billion in the 2019/20 financial year, mainly because of significant allocations to the Southern Gateway Precinct and the Northern Gateway Precinct projects.

During the current MTREF, the Gauteng Provincial Government has allocated just R 1.1 million for infrastructure development in Tshwane.

Of the projects Tshwane has planned to use its own money to fund during the current MTREF, 35 are water and sanitation projects and 73 are electricity projects. Table 15 shows the budgetary breakdown in this regard.

Table 15: City-funded Projects in Tshwane -Infrastructure and Urban Services

Type of Projects	No. of Projs.	2017/18 Approved Budget	2018/19 Approved Budget	2019/20 Approved Budget
Water and Sanitation	35	R 527 304 248	R 503 115 426	R 604 500 000
Electricity	73	R 488 312 146	R 630 154 020	R 580 275 310

(Source: Tshwane 2017 BEPP)

Together comprising 168 projects out of a possible 340 city-wide, it is clear that Tshwane is determined to invest substantially in infrastructure projects during the current MTREF. The full list of 340 projects is detailed in Annexure 6.

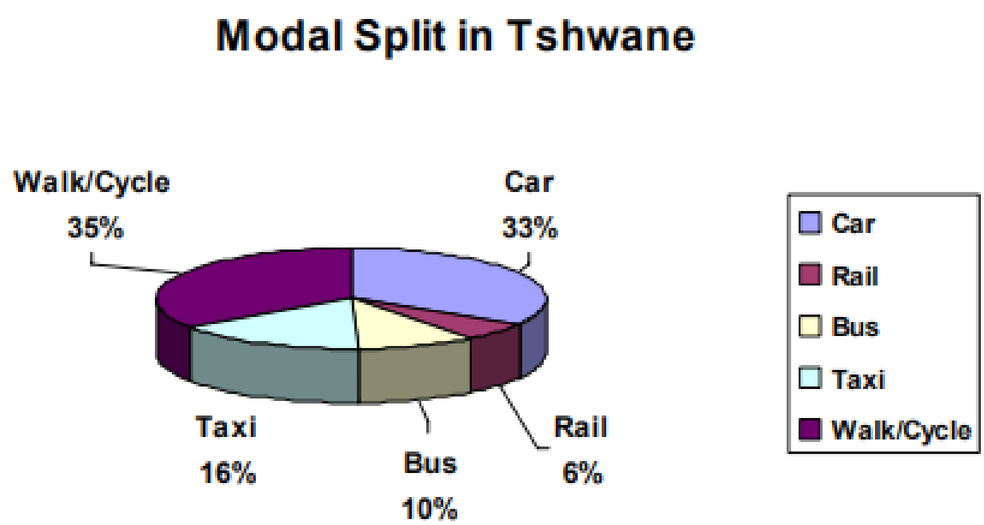
2.2.1. Transport

South Africa has one of the highest road traffic fatality rates in the world, with 31.9 fatalities per 100 000 population. In Africa, only Nigeria has a higher road fatality rate at 33.7 per 100 000 population [World Health Organisation, 2010]. Despite this concerning statistic, South Africa continues to fall short in implementing adequate preventative and mitigating road safety measures. Even the National Road Safety Strategy developed by the National Department of Transport (DoT) has still not yet been approved. The strategy includes a national programme of 13 rapid transit projects in different cities and towns, meant to improve the public transport system and to limit current challenges associated with infrastructural equity and integration; and, road planning, capacity, safety and congestion.

Tshwane has the following transport infrastructure: 5 109 kilometres of surfaced roadway (structural and surface index decreasing due to poor maintenance); 2 173 kilometres of gravel roadway; and, 666 000 registered vehicles.

Figure 25 shows the frequency of the modes of travel used in Tshwane.

Figure 25: Tshwane - Travel Modes



(Source: Tshwane Energy and Climate Change Strategy, c.2007)

The most common mode of transport in Tshwane is walking or cycling (35 percent). About one third of the local population use private vehicles, which is about twice the number that use taxis. The taxi industry is not subsidised, and struggles with under-maintained vehicles and over-competition on routes. It is expected that the Taxi Recapitalisation Programme will address these issues. Tshwane has a good rail network yet only 6 percent of its population use this mode. Old buses need to be replaced and their regularity and time-keeping need improvement.

Tshwane has approved its Comprehensive Integrated Transport Plan (CITP) to roll out its Tshwane Rapid Transit (TRT) system. In 2013, the DBSA approved a loan of R 488 million (of a total facility of R 800 million) to Tshwane Rapid Transit (Pty) Ltd to purchase 171 buses. TRT is the preferred bus operator for Phase 1 of the municipality's integrated transport system. In the 2014/15 financial year, the TRT system delivered 12.07 kilometres of bus lanes, 61 feeder stops, and 30 diesel buses. The TRT service will replace all competing road-based public transport services within its corridors of operation. Affected existing operators will be compensated or incorporated into the bus operating entity that will be responsible for TRT operations [www.dbsa.org.za].

Tshwane's rapid bus transit system is called "A Re Yeng". It will ultimately integrate with other public transport services, such as Gautrain, Metrorail, Tshwane Bus Services as well as Public Transport Operating Grant buses such as PUTCO and North West Star, and taxis. At present, the situation is not optimal. Although A Re Yeng started operating at the end of 2014, the location of some stations are still not finalised. Land portions identified for this purpose remain zoned as streets, while building plans for the stations have not yet been approved. These stations also need to be supplied with water, electricity and sewage connections.

The Gautrain route, which starts (or ends) in Hatfield, services only a small proportion of residents that require public transport. Other than Pretoria Central Station (close to the city's main bus terminus in the CBD), its stations are in the high income areas of Centurion and Hatfield. Ticket prices are relatively expensive for low income households that are located far from economic opportunities. The inefficient land use practices historically combined with urban sprawl dominance add to a problematic public transport system. The aging road network infrastructure and backlogs in the provision of roads - especially in the working-class areas and rural areas of Tshwane – do not help the situation. These are made worse by public transport that is unreliable, unsafe and dispersed.

The Passenger Rail Agency of South Africa (PRASA) is the main Investor of transport initiatives in Tshwane. The city supports the agency in line with central government directives on intergovernmental alignment and collaboration. Table 16 shows the Tshwane projects in the current MTREF that PRASA funds.

Table 16: PRASA-funded Projects in Tshwane – Roads and Transport

Name of Project	2017/18 Approved Budget	2018/19 Approved Budget	2019/20 Approved Budget
Greenview - Pienaarspoort Railway Extension	R150 000 000	R155 000 000	R 192 000 000
Soshanguve Station Upgrade	R8 000 000	R8 000 000	R 5 200 000
Wonderboom Station Upgrade	R 8 000 000	R 8 000 000.00	R 5 200 000
Wolmerton Station Upgrade	R 8 000 000	R 8 000 000.00	R 5 000 000
Wolmerton Depot Modernisation	R 165 697 000	R-	R-
Wolmerton Depot Fencing	R 7 500 000	R-	R-
Loftus (Station Modernisation)	R 2 015 830	R-	R-

Name of Project	2017/18 Approved Budget	2018/19 Approved Budget	2019/20 Approved Budget
Pretoria (Station Modernisation)	R 15 000 000	R 8 000 000.00	R-
Wolmerton (Station Modernisation)	R 8 000 000.00	R 8 000 000.00	R-
Wonderboom (Station Modernisation)	R 8 000 000.00	R 8 000 000.00	R-
Belle Ombre (Station Modernisation)	R 8 000 000.00	R 10 000 000	R-
Kopanong (Station Modernisation)	R 15 000 000	R 15 000 000	R-
Soshanguve (Station Modernisation)	R 8 000 000	R 8 000 000	R-
Phase 1: Barracks (Platform Rectification)	R 25 000 000	R 10 000 000	R-
Denneboom, Mamelodi & Hercules (Platform Rectification)	R 3 000 000	R-	R-
Centurion (Platform Rectification)	R 25 010 000	R 3 000 000	R-
Mears St to N4 Bridge (Platform Rectification)	R 4 000 000.00	R 1 000 000	R-
Mitchell St to Saulsville (Platform Rectification)	R 8 000 000	R 5 000 000	R-
Wolmerton (Depot Modernisation and Fencing)	R 7 500 000	R-	R-
(Depot Modernisation and Fencing)	R 65 697 000	R 100 000 000	R-
Greenview to Pienaarspoort (Railway Extension)	R 50 000 000	R 155 000 000	R-
Corridor Fencing	R 654 192 000	R-	R-
Mabopane (Linkages to Projects)	R 58 000 000	R 5 000 000	R-
Akasiaboom (Linkages to Projects)	R 153 000 000	R 45 000 000	R-
Pretoria (Linkages to Projects)	R 45 000 000	R 17 720 997	R-
Irene (Linkages to Projects)	R 44 500 000	R 10 000 000	R-
Naboomspruit (Linkages to Projects)	R 209 500 000	R 39 000 000	R-
Silverton (Linkages to Projects)	R 20 000 000	R-	R-
Akasiaboom (Linkages to Projects)	R 4 000 000	R-	R-
Silverton (Linkages to Projects)	R-	R-	R-
Irene (Linkages to Projects)	R-	R-	R-
Gezina (Linkages to Projects)	R 4 000 000	R-	R-
Hercules Station & Staging Yard (Linkages to Projects)	R 1 000 000	R-	R-
Denneboom (Linkages to Projects)	R 1 500 000	R-	R-
PRASA Total	**R 1 766 111 830**	**R-**	**R-**

(Source: Tshwane 2017 BEPP)

Altogether, PRASA has approved R 1.78 billion in the 2017/18 financial year for 34 transport projects in Tshwane.

Of the projects Tshwane has planned to use its own money to fund during the current MTREF, 60 are roads and storm-water projects and 23 are public transport projects. Table 17 shows the budgetary breakdown in this regard.

Table 17: City-funded Projects in Tshwane – Roads and Transport

Type of Projects	No. of Projs.	2017/18 Approved Budget	2018/19 Approved Budget	2019/20 Approved Budget
Roads and storm-water	60	R 365 283 724	R 450 198 225	R 506 700 000
Public transport	23	R 679 189 840	R 396 285 230	R 426 086 000

(Source: Tshwane 2017 BEPP)

Tshwane is in the process of undertaking and funding 83 transport-related projects during the current MTREF.

2.2.2. Energy and Power

Tshwane has identified the following energy needs:

(a) Demand side

- Retrofitting buildings and other public infrastructure for continued operation and maintenance of energy efficiency technologies
- Insulating low income houses so that they are cooler in summer and warmer in winter
- Promoting energy efficient appliances (energy saving bulbs, washing machines etc.)
- Providing incentives for industry to save energy and use renewable sources of energy

(b) Supply side

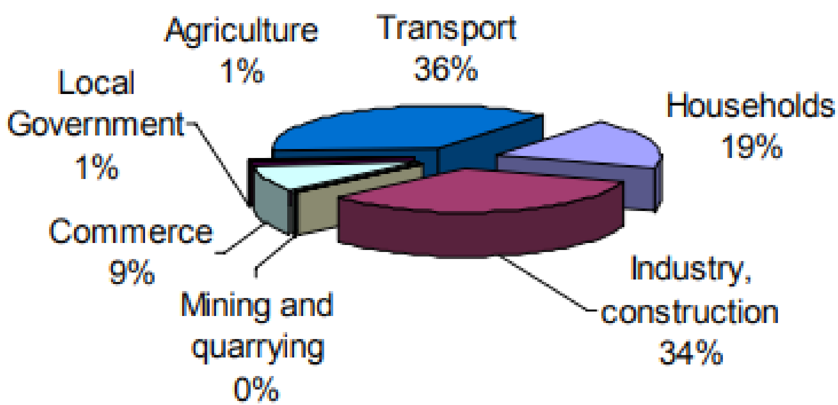
- Investing in renewable energy sources (e.g. increased opportunity for solar energy as projections highlight increasing temperatures over Tshwane)
- Converting waste to energy (e.g. biogas)
- Introducing smart meters to encourage users to manage electricity well
- Putting more stringent measures in place to avoid and punish those found guilty of connecting to electricity illegally

Energy demand in Tshwane is met by the following sources:

- Liquid fuels
- Electricity
- Coal
- Pipeline gas
- Renewable energy

Figure 26 shows the sectoral demand for energy in Tshwane.

Figure 26: Tshwane - Energy Demand by Sector



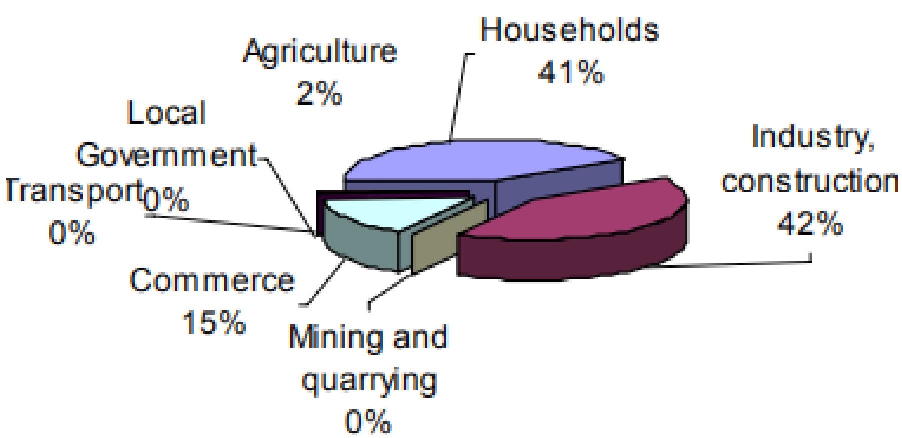
(Source: Tshwane Energy and Climate Change Strategy, c.2007)

The transport sector in Tshwane consumes the most energy. It accounts for 36 percent of the energy demand, and consumes energy through diesel and petrol, which represent 39 percent of the energy supply to the city. Industry and the construction sector is the next biggest consumer (34 percent). Households consume less than one-fifth of the city's energy supply.

Electricity makes up 28 percent of the energy supplied to the city. Household energy demand, however, is mostly for electricity (60 percent) and coal (34 percent).

Figure 27 shows the sectoral demand for electricity in Tshwane.

Figure 27: Tshwane - Electricity Demand by Sector



(Source: Tshwane Energy and Climate Change Strategy, c.2007)

Industry and the construction sector (42 percent) and households (41 percent) together make up over four-fifths of the electricity demand in Tshwane. The commercial sector represents a much smaller, but still significant demand (15 percent).

Tshwane's electricity division is licensed by the National Energy Regulator of South Africa (NERSA) to distribute electricity within its boundaries and in certain adjacent areas. Most of the city's electricity comes from Eskom, the national power utility, under licence for the area. Tshwane currently owns two coal-fired, steam turbine power stations, with a combined capacity of 480 megawatts. The two stations, Rooiwal and Pretoria West, generate electricity to boost the supply from Eskom.

NERSA has set a standard of 7 percent for technical losses and 9 percent for non-technical losses. Non-technical losses include theft, fraud, vandalism and negligence. Tshwane's technical losses increased from R 424 million in the 2014/15 financial year to R 489 million in the 2015/16 financial year. For the same two years, the city's non-technical losses amounted to R 548 million and R 858 million respectively. Altogether, Tshwane's electricity losses represented 16.1 percent of its bulk purchases in the 2014/15 financial year and 19.3 percent, in the 2015/16 financial year.

The city is already implementing the following as part of managing and controlling technical losses:

- Retrofitting streetlights with light-emitting diode (LED) lights
- Re-introducing community involvement in developing solutions that are safe, enhance revenue and improve access to electricity

- Balancing energy from 132 kilo volts to 11 kilo volts
- Implementing a smart grid
- Introducing smart metering

To manage and control non-technical losses, it is implementing the following:

- Weekly cable operations to remove illegal connections
- Daily meter audits
- Normalisation of prepaid meters that are not buying electricity
- Strengthening and refreshment of network
- Installation of tamper-proof boxes

It is in the interests of both Tshwane and individual households that there is an affordable, reliable, adequate and environmentally-friendly energy supply. The 2011 Census recorded that 88.6 percent households in Tshwane had access to electricity. Since then, the municipality has been focusing on investment in bulk infrastructure and network upgrading. During the 2014/15 financial year alone, 9 152 new electricity connections were completed.

About 40 percent of energy consumption falls within the municipal sphere. High consumption, steep price escalations and environmental degradation pose a threat. To mitigate the threat, Tshwane must ensure a sustainable energy-supply mix by increasing its energy efficient (EE) and renewable energy (RE) initiatives, in line with Section 2 of the National Energy Act No.34 of 2008.

Tshwane is already trialling EE and RE initiatives. Donor funding would help but the city is financing these initiatives through local sources, such as the Eskom rebate programme for solar water heating and energy efficient retrofits. The central government is also keen to implement an effective climate change response and the long-term transition to a climate-resilient, lower-carbon economy and society. This will focus on the following:

- Low income housing
- Thermal efficiency in designs
- Affordable lower-carbon public transport
- Climate-resilient technologies

From its own money, the city currently funds 73 electricity projects as follows: R 488.3 million for the 2017/18 financial year, R 630.2 million for the 2018/19 financial year, and R 580.3 for the 2019/20 financial year.

Table 18 shows the electricity tariffs that were implemented for household consumption with effect from July 2017.

Table 18: Tshwane 2017/18 Household Electricity Tariffs

DOMESTIC STANDARD SUPPLY SINGLE- AND THREE-PHASE: CONVENTIONAL AND PREPAID

For a connection with a conventional meter, energy consumed per 30 day period since the previous meter reading is charged per month or part of a month. Prepaid energy purchases are charged per calendar month.

1 – 100 kWh	132.70 c
101 – 400 kWh	155.30 c
401 – 650 kWh	169.20 c
>650 kWh	182.40 c

Electricity & Water tariffs are calculated on a sliding scale.
The more you use, the more you pay.
Save money by saving electricity and water.

(Source: Tshwane Tariffs, 2017-18)

It is national policy that all poor households must have access to free basic services, including electricity. Irrespective of income level and whether or not the household is supplied through credit or prepaid metering system, all Tshwane households receive 50 kilowatt hours of electricity free. The central government is also looking at ways to provide free basic energy through bottled gas to households which are not connected to the grid.

2.2.3. Water and Waste Management

Tshwane's target was that by the end of the 2015/16 financial year, 78.77 percent of formal households would have access to water through a metered water connection. By the end of the 2014/15 financial year it was reported that 80.73 percent of households (735 842 in all) already had access to metered water connection. The city still provides basic water services in the form of Jojo tanks and water tankers to households living in informal areas. Another target was that 77.67 percent of households would have access to water-borne sanitation by the end of the 2015/16 financial year. By the end of the 2014/15 financial year, it was reported that 78.37 percent of households (714 403 in all) already had access to water-borne sanitation.

While the city might have exceeded its targets, ongoing land invasions have resulted in a new demand for water and sanitation services. Managing water demand includes considering quality, rehabilitating water resources, reducing pollution. Rand Water, a water utility that supplies water in Gauteng, has assisted Tshwane to investigate and replace outdated bulk water meters. This has reduced Non-Revenue Water (NRW) to some extent. The need for retrofitting is but one solution: there are still problems linked to inadequate reactive and preventative maintenance, water theft, and ineffective meter reading and billing.

The percentage of Tshwane households with access to communal piped water at RDP level declined from 4.4 percent in 2011 to 3.2 percent in 2015. Similarly, the percentage of households with access to communal piped water below RDP level declined from 2.1 percent in 2011 to 0.5 percent in 2015. And, the percentage of households with no access to formal piped water increased from 5.7 percent in 2011 to 6.7 percent in 2015. Of the 173 informal settlements counted in 2016, only 133 had been receiving potable water service from the city in the form of JoJo tanks and communal standpipes and only 76 were receiving a sanitation service.

Table 19 shows the water tariffs that were implemented for household consumption with effect from July 2017.

Table 19: Tshwane - Household Water Tariffs

This scale is applicable to conventional metering, pre-paid yard metering, assumed and shared consumption billing (residential units only)

	R per kℓ*
0 to 6 kℓ per 30 day period (200 ℓ a day)	9.54
7 to 12 kℓ per 30 days' period	13.62
13 to 18 kℓ per 30 days' period	17.89
19 to 24 kℓ per 30 days' period	20.70
25 to 30 kℓ per 30 days' period	23.66
31 to 42 kℓ per 30 days' period	25.57
43 to 72 kℓ per 30 days' period	27.36
More than 72 kℓ per 30 days' period	29.29

(Source: Tshwane Tariffs, 2017-18)

The water tariffs for the 2017/18 financial year increased by 10.2 percent from the previous year. As already mentioned, it is national policy that all poor households should have access to free basic services. This includes water. Registered indigents are given 12 kilolitres of water free every month. Still, Tshwane expects its revenue from water to be: R 4 billion (for the 2017/18 financial year); R 4.2 billion (for the 2018/19 financial year); and R 4.5 billion (for the 2019/20 financial year).

Sanitation services, which are water-borne, also increased by 10.2 percent for the 2017/18 financial year. The city expects revenue from sanitation services as follows: R 983 million (for the 2017/18 financial year); R 1 billion (for the 2018/19 financial year); and, R 1.1 billion (for the 2019/20 financial year).

Tshwane is currently involved in the following initiatives:

- Encouraging rainwater harvesting for household, industrial and agricultural use (e.g. garden irrigation)
- Promoting projects that make use of waste-water or water from sewerage treatment
- Using water efficient fittings on taps, showers and toilets
- Incentivising the use of drip irrigation systems, which use 30-60 percent less water than conventional sprinkler systems

Waste management is the collection, transport, processing, recycling or disposal, and monitoring of waste materials. It is important to ensure the socio-economic development of Tshwane, the health of its citizens, and the enhancement of the quality of its environmental resources.

The percentage of Tshwane households with access to refuse removal service by community members increased from 3.0 percent in 2011 to 3.2 percent in 2015. And, the percentage of households using personal refuse removal efforts decreased from 11.2 percent in 2011 to 9.5 percent in 2015. The percentage of households with no access to refuse removal services declined from 3.8 percent in 2011 to 2.6 percent in 2015.

Since 2011, the city has managed to replace 85 litre bins with 240 litre bins in all the old townships. Weekly waste removal services are also provided to all formalised and proclaimed areas in Tshwane. Informal settlements receive a basic waste removal service through the collection of 85 litre bins, plastic bags, removal of communal skips and clearing of illegal dumping sites on a weekly basis or when required.

Tshwane is running out of dump-sites. The only ones currently operated by the city are: Onderstepoort, Hatherley, Soshanguve, Ga-Rankuwa, and Bronkhorstspruit. Derdepoort, Valhalla, Temba, Kwaggasrand and Garstkloof had all reached their capacity and were forced to close. Of the five that remain open, Onderstepoort is expected to close in the next few weeks. The Waste Group runs two privately-owned dumping sites at Mooiplaats and Bon Accord.

The city increased its refuse removal by 7.5 percent for the 2017/18 financial year. But, households occupying houses valued R 120 000 and less will pay only R 179, 98. Those with no waste accounts or services must still pay a City Cleaning Levy. Tshwane expects revenue from refuse removal and city cleaning services as follows: R 1.4 billion (for the 2017/18 financial year); R 1.5 billion (for the 2018/19 financial year); and R 1.6 billion (for the 2019/20 financial year).

From its own money, Tshwane will fund 35 water and sanitation projects as follows: R 527 million (for the 2017/18 financial year); R 503 million (for the 2018/19 financial year); and, R 605 million (for the 2019/20 financial year).

Chapter 3

Financing Resilient and Green Urban Solutions

3.1 Financing Needs

In South Africa, the green buildings phenomenon can address many pressing issues of local government such as electricity supply shortages, water shortages, lack of solid waste disposal sites and transportation issues. The 2015/16 GDHS Review mentioned that while significantly altering existing spatial patterns, "the department has the responsibility to modernise urban development and human settlements through the greening of these developments and densifying them in order to counteract the shortage and cost of land in the province."

The benefits of rainwater harvesting and solar energy have been known for a long time in South Africa. Sporadic reports would often showcase some or other household's innovation in this regard. Green buildings have, however, got proper attention in South Africa only in the last decade. For example, from one in 2009, the number of buildings certified by the Green Building Council of South Africa (GBCSA) has risen to over 200.

It is not compulsory for houses to be rated by the GBCSA. But, on request the organisation provides a Green Star SA rating for existing houses. This rating tool (see Annexure 8) was originally designed only for offices and commercial buildings. It has since been adapted for housing as well. The GBCSA also has a Socio-Economic rating tool (see Annexure 9) for housing developments. The organisation provides an Excellence in Design for Greater Efficiencies (EDGE) rating tool (see Annexure 10) for new houses. This was designed by the International Finance Corporation (IFC) and its first trial was in South Africa in 2014.

The following categories are considered during the Green Star rating process:

Management

Indoor Environment Quality (IEQ)

Energy

Transport

Water

Materials

Land Use & Ecology

Emissions

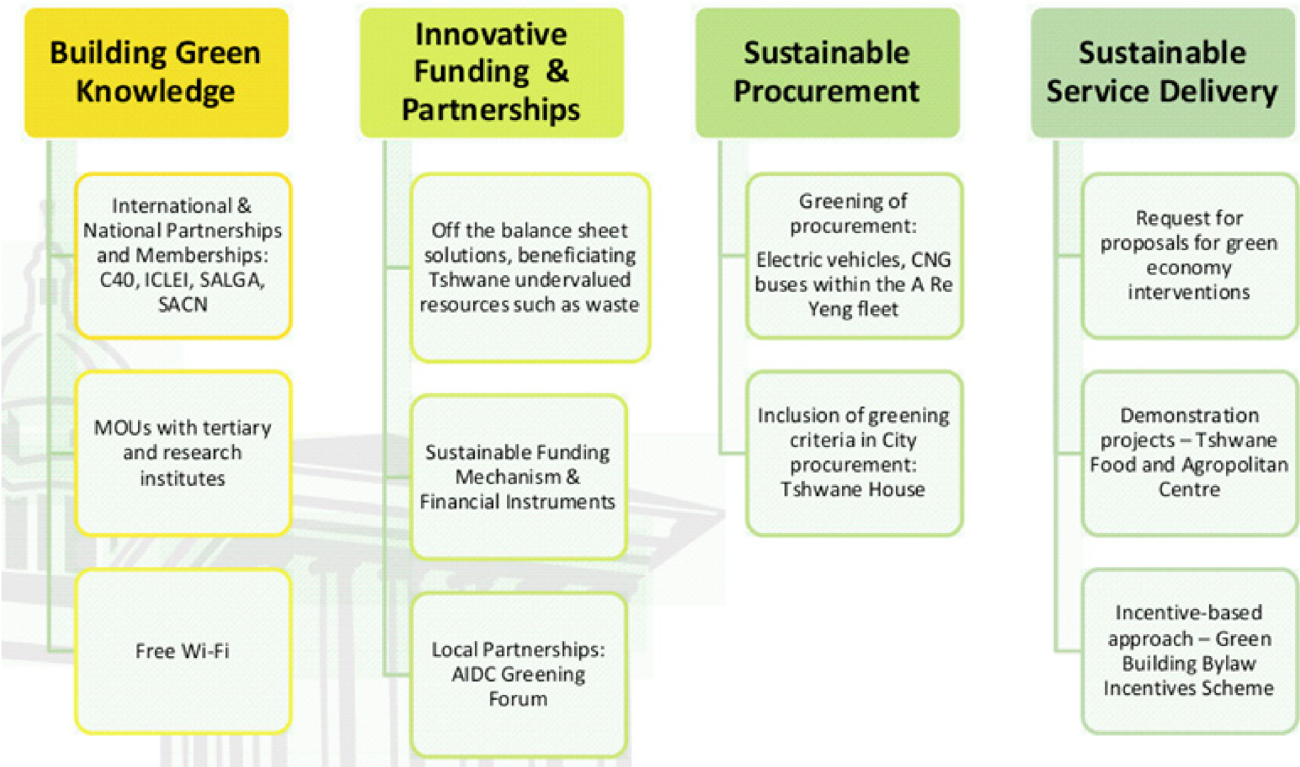
Innovation

The EDGE certificate requires a housing unit to demonstrate a minimum savings of 20 percent in energy, water and embodied energy. So far, over 5 300 homes in South Africa have been enlisted. Referring to the target of 52 000 green certified homes for EDGE certification in the next seven years, the GBCSA Managing Executive, Grahame Cruickshanks, told the 7th International Housing Solutions Affordable Housing Conference (September, 2015): "We are hoping for green certification and green homes to be a norm in South Africa and to be business as usual for developers."

The World Green Building Trends 2016 Report considered South Africa a leader in green buildings based on the level of commitments of green projects. Seemingly, the country "has the highest green building share, trumping countries such as the UK and the US, China, Singapore, Germany, and the historical green building market leader, Australia."

A green economy considers corrective and preventive measures relating to social ("people"), environmental ("planet"), and economic ("profit") challenges. It centres on sustainable development. All activities relating to the production, distribution and consumption of goods and services must result in improved human well-being over the long term. Figure 28 shows the enablers for achieving green economy goals as set by the Tshwane Green Economy Research Network, which is a collaborative knowledge exchange platform to advice and provide research support to the city in its transition to a green economy.

Figure 28: Tshwane's Green Economy Strategy



(Source: Tshwane Green Economy Research Network)

In terms of the strategy, green development initiatives and opportunities are separated into short-, medium- and long-term projects. Although they are given priority they still need to be aligned with Tshwane's budgets and resources (and external funds, where these are available); technological and practical preparedness; and, cater for other important objectives such as social acceptance and job creation. The city has identified housing, infrastructure development, and urban services as three priority areas for resilient and green urban solutions.

To identify additional mitigation and adaptation actions and promote public-private co-operation, the city has developed the Green Economy Strategic Framework (GESF). Tshwane is also finalising a Sustainability Financing Mechanism Strategy (SFMS) to serve as a new model for funding green projects. The SFMS ascertains blockages and market failures, determines the framework for packaging green economy projects to take to the market, and defines the Return on Investment (RoI). The city also aims to capitalise on existing strengths and impetus, including its private sector partnerships.

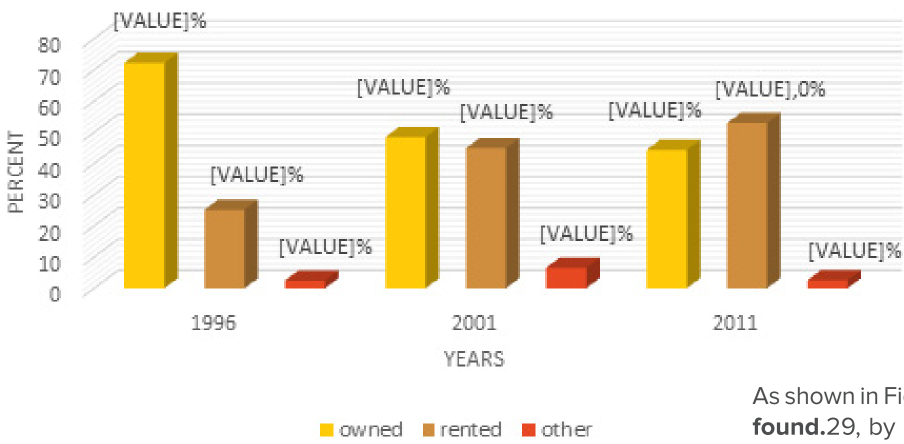
Tshwane has a Green Building Development Policy (see Annexure 11). It is for developments that require planning or building control approval. The policy sets out norms and standards that are either compulsory or promoted by the city. Compulsory norms and standards must be complied with. While promoted norms and standards are optional, non-adherence will disqualify developments from the city's development incentives.

Although the city has also approved a Development Investment Incentives Policy (see Annexure 12), it has yet to draft and promulgate its promised green building by-law.

3.1.1 Housing

The housing market by tenure type in Gauteng is shown in Figure 29.

Figure 29: Gauteng - Housing Tenure (1960-2011)

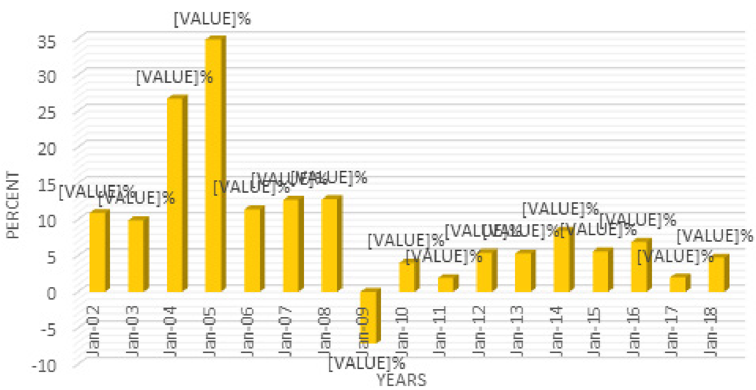


(Source: FNB Property Barometer, December 2012)

As shown in Figure **Error! Reference source not found.**29, by 2011 rental accommodation had grown to more than half of the Gauteng housing market. The affordable rental market made up 70 percent of all rental accommodation in the province.

Figure 30 shows the average house price growth in South Africa in January for each year from 2002 to 2018.

Figure 30: South Africa - House Price Growth (2002 - 2018)



(Source: FNB Property Barometer, March 2018)

The years 2004 and 2005 showed extremely high growth. The other years during the period 2002 to 2008, although not as high, showed good growth. The negative growth in January 2009 suggests that some correction was happening. Since then (January 2010 to January 2018), house price growth has been stable and positive but not as high as it was during 2002 to 2008.

Table 20 shows the average full title house price growth in Gauteng for the period from 2014 to end-June 2017.

Table 20: Gauteng - Average Full Title House Price (2014 - 2017)

	2014	2015	2016	Q3-2016	04-2016	01-2017	Q2-2017
FULL TITLE SEGMENT							
Full Title Average Price (Rand)	1,024,396	1,096,363	1,149,627	1.154.670	1.162.968	1.173.320	1,185,381
year-on-year % change	7.2%	6.6%	5.2%	4.8%	3.9%	34%	34%
quarter-on-quarter % Change				0.7%	0.7%	0.9%	1.0%
2 Bedrooms and Less (Rand)	546,042	576,190	605,540	608.240	609.072	610.504	612,217
year-on-year % change	6.2%	5.5%	5.1%	4.8%	3.2%	1.8%	1.1%
quarter-on-quarter % change				0.5%	0.1%	0.2%	0.3%
3 Bedroom (Rand)	1,042,467	1,110,229	1,171,316	1.176.208	1.186.957	1.202.376	1.220.383
year-on-year % change	6.5%	6.5%	5.5%	5.0%	4.2%	4.1%	46%
quarter-on-quarter % change				0.8%	0.9%	1.3%	1.5%
4 Bedrooms and More (Rand)	1,657,669	1,740,331	1,800,087	1.806.690	1.816.019	1,821.272	1.827.542
• year on year % change	6.3%	5.0%	3.4%	33%	2.8%	2.2%	1.8%
-quartet-on-quarter % change				0.6%	0.5%	0.3%	0.3%

(Source: FNB Barometer, July 2017)

In the full title segment, the highest average price growth in Gauteng was for the 3-bedroom unit. In the second quarter of 2017, the increase was 4.6 percent year-on-year.

Table 21 shows the average sectional title house price growth in Gauteng for the period from 2014 to end-June 2017.

Table 21: Gauteng - Average Sectional Title House Price (2014 - 2017)

	2014	2015	2016	03-2016	04-2016	01-2017	02-2017
SECTIONAL TITLE SEGMENT AVERAGE HOUSE PRICE							
Seel tonal Title Average House Price (Rand)	814 608	878.726	332.638	938.461	950,227	962.814	976.442
• year-on-year % change	7.6%	7.9%	61%	57%	53%	52%	54%
• qrarter-on-quarter % change				1.3%	1.3%	1.3%	14%
Less than 2 Bedroom (Rand)	559.160	632.696	704.538	711.048	729.619	752.004	776,211
- year-on-year % change	85%	13.2%	11.4%	10.2%	9.7%	10.4%	11.5%
• quarter-on-quarter % change				21%	2.6%	31%	32%
2 Bedroom (Rand)	712.577	766,227	814.994	820,393	631.498	844.179	858.141
• year-on-year % change	6.1%	7.5%	6 4%	6.1%	5.7%	57%	60%
- quarter-on-quarter % change				1.3%	1.4%	1.5%	1.7%
3 Bedrooms and More (Rorvd)	1.098.307	1.176,091	V237.295	1.244.463	1.256.033	1.265.647	1.275,448
• year onyoar % change	7.7%	7.1%	52%	4 9%	4.4%	4.0%	36%
• quarter-on-quarter % change				1.1%	0.9%	08%	0.6%
SECTIONAL TITLE PER SQUARE METRE							
Sectional Title Average Prloe (Rand square m	9.032	9,777	10.499	10,581	10.766	10.963	11,163
- year-on-year % change	6.7%	8.3%	7.4%	7.1%	69%	7.1%	7.3%
- quarter-on-quarter % change				1.7%	1.7%	1.6%	1.9%
Less than 2 Bedroom (Rand square metre)	10.924	12.275	13.821	13.980	14.393	14.870	15.337
- year-on-year % change	77%	12.4%	12.6%	11.9%	11.5%	120%	126%
• quarter-on-quarter % change				26%	30%	33%	31%
2 Bedroom (Rand square metre)	9.097	9,777	10,414	10.487	10.650	10,841	11.049
• year on-year % change	66%	75%	65%	63%	61%	64%	69%
- quarter-on-quarter % charge				1.5%	1.6%	18%	1.9%
3 Bedrooms and More (Rand square metre)	8.072	8,657	9,105	9.163	9,258	9.323	9.367
• year on yoar % change	7.1%	7.2%	52%	50%	4 7%	42%	35%
- quarter-on-quarter % change				12%	1.0%	07%	0.5%

(Source: FNB Barometer, July 2017)

In the sectional title segment, the highest average price growth in Gauteng was for the "less than 2-bedroom" unit. In the second quarter of 2017, the increase was 11.5 percent year-on-year. The second highest average price growth was for the 2-bedroom unit (6 percent). The preference for smaller units seems to reflect demand by first-time buyers.

Overall, the price growth for sectional title units is better than that for full title units.

Meeting the demand for housing remains one of Tshwane's biggest challenges. This can be evidenced by the existence of a large number of informal settlements. Since 2011, the city has reduced the number of informal settlements from 150 to 115 through the formalisation of informal settlements. Further, Tshwane has through its formalisation process provided stands to households in 48 informal settlements. Informal settlements and informal dwellings are likely to continue to prevail: the city is an attraction for internal and international migrants who come there in search of education, job opportunities as well as access to various social facilities.

It was established in 2013 (see Table 8 above) that there were 239 326 households in need of housing: 155 948 living in informal settlements and 83 378 living in backyards in formal settlements. Table 22 uses this statistic and the 4.68 average increase in household formation in Tshwane over the fifteen-year period from 2001 to 2011, to estimate Tshwane's current housing finance need. The estimations are also based on the following assumptions: (1) all households living in informal settlements require RDP houses; (2) all households living in backyards in formal settlements require affordable housing (bonded, private rental or social housing rental); the average cost of an RDP housing unit is R 160 573; and, (4) the average cost of an affordable housing unit is R 350 000.

Table 22: Tshwane – Estimated Financing Need for Housing

RDP housing units	196 223
Affordable housing units	104 805
Total housing units	
Funding needed for RDP houses	R 31 235 680 000
Funding needed for affordable houses	R 36 681 750 000
Total funding needed for housing units	**R 67 917 430 000**

(Source: Author's estimations)

It is estimated that Tshwane has a current need of 196 223 low income (RDP) housing units and 104 805 affordable (BNG) housing units. And, R 36.7 billion is required to fund just affordable housing. Altogether, R 68 billion is required to resolve Tshwane's housing backlog.

In South Africa, the existing stock of low income housing is considered inadequate in terms of the quality of building structure and the provision of decent shelter. A gap exists between the need for low income housing, and the capital available to pay to build it. At the moment, a housing subsidy of R160 573 is available per household earning less than R 3 500 per month. And, a top-up amount is available for improved energy efficiency measures.

By integrating different central government programmes (e.g. the Department of Energy's One Million Solar Water Heating Programme), the quality of life of low income households can be improved. Not only will the quality of their houses be better but their access to energy will increase. At the same time, carbon emissions will reduce.

An increasing number of newly-built houses (including low income houses) include energy efficient building adaptations. These are mostly in projects that enjoy grant funding. A prime example is the Kuyasa CDM (Clean Development Mechanism) Project. The project was the first Gold Standard and CDM programme registered in Africa. Kuyasa retrofitted 2 309 low income houses in Khayelitsha in Cape Town with solar water heating, compact fluorescent (CFL) light bulbs, and insulated ceilings. This resulted in a saving of about 2.85 tons of carbon footprint per household per year. Also, the project resulted in noticeable accompanying physical, economic and social benefits. Respiratory health problems decreased among these households and their disposable incomes generally increased. The project also provided employment for some local residents [DBSA: Briefing Note for COP17].

For Tshwane to successfully undertake its own CDM projects, it must include the following considerations in its blueprint:

- Include goals linked to economic and social benefits (e.g. local labour)
- Include cost-effective alternative building technologies and materials
- Use carbon finance
- Packaging low income and affordable housing as PPP investment opportunity, where private capital is blended with public capital.

Although the following highlights the viability of private Investors investing in Tshwane's affordable housing market, much of it also applies to the city's low income housing market.

Tshwane's affordable housing market is very active:

- One-third of the 21 000 houses sold in Tshwane in 2010 were in areas characterised mainly by affordable housing units. This indicates measurable formal market activity in what might be termed "affordable areas". These houses were valued at R 55 billion or 19 percent of the total value of all housing units in the city. Of all the cities, Tshwane has the second highest percentage of affordable houses.
- Of all registered houses in Tshwane, 210 000 are located in areas characterised mainly by affordable housing units. This is 48 percent of the city's total housing stock.
- Of the houses sold in "affordable areas", 65 percent were valued below R 250 000. This indicates some product availability in the lowest end of the affordable housing market.
- Although new registrations have dropped over the past few years, in 2010, about 62 percent of Tshwane's 8 500 new registrations were in "affordable areas". This indicates expanding opportunities for lower income households to advance up the economic ladder through formal home-ownership.

Tshwane's affordable housing market is expanding faster than its overall housing market:

- In 2007, Tshwane held about 10 percent of the country's housing value: by 2010, this had grown to 11 percent. In contrast, the value of affordable houses in Tshwane in 2007 was about 21 percent of the Tshwane housing market: by 2010, its portion had grown to 30 percent.
- Similarly, in 2007, the value of all houses in Tshwane areas characterised mainly by affordable housing units was 18 percent of the city's total housing market: by 2010, this had doubled to 36 percent.
- In 2007, 47 percent of the total number of housing units sold in Tshwane was worth R 500 000 or less. Despite the international financial meltdown, in 2010 this had grown by one percent to 48 percent; and, transactions over R 500 00 had dropped one percent from 53 percent to 52 percent. These developments show stability and growth in affordable houses overall. They also show how local markets

within and across townships and suburbs in the city are expanding opportunities for lower income households to advance up the economic ladder through formal home-ownership.

Tshwane's "affordable areas" are more stable than the city overall:

- Lower churn rates mean that people in Tshwane areas characterised mainly by affordable housing units tend to keep their houses for longer periods than those in areas where affordable houses are absent or minimal or the city as a whole.
- Tshwane home-owners in "affordable areas" have higher levels of equity compared to those in areas where affordable housing is absent of minimal or the city as a whole because of longer tenure and lower bond rates.
- For lower price categories, average sales prices have remained more stable than higher price categories. This helps to better predict where value will be over time.
- High equity levels suggest opportunities for the households living in "affordable areas" to invest in new housing options.

Tshwane's "affordable areas" are not well-located:

- There are a few "affordable areas" located near the inner city and also near jobs and public transport. But, most of the "affordable areas" are located far from the CBD and the Tshwane/Johannesburg corridor.
- Most "affordable areas" have poor access to public and cultural amenities and centres of employment.
- Tshwane's 136 000 registered government-subsidised houses are distributed in a mix of clusters and integrated across the city. This represents an opportunity to establish a robust range of affordable housing solutions, if these assets can be leveraged effectively. Many of these houses will enter the market fully sellable, as the 8-year sale restriction expires over the coming years.

Tshwane's "affordable areas" are underleveraged:

- Tshwane's average LTV of 50 percent is only slightly higher than the national average of 48 percent. "Affordable areas" have lower LTVs, averaging 41 percent. This shows that lower loan amounts are generally available to buy houses in such areas. It also shows that property values are increasing in such areas.
- At 44 percent, Tshwane's "affordable areas" have significantly lower bonded sales rates. This is despite the city's overall above-average rate being 6o percent (the national average is 49 percent).
- House values and prices in the city's "affordable areas" showed more stability and less volatility. This makes projections in this market more reliable.

Tshwane is potentially the most affordable city in South Africa to live in:

- Tshwane's affordability index (the relationship between the average house price and the average household income) is the lowest among all the cities. The average income in Tshwane is able to afford about one-third of the average house price, compared to the other cities, where the average income is able to afford only one-fifth of the average house price.
- Although the city's average sale price of houses in the below R 500 000 category is above the national average, its affordability index results show a much closer relationship between incomes and prices. Higher prices may mean stronger demand, as well as the need for more affordable options.
- Houses sales have generally declined over the past few years due in large part to changing economic conditions. However, houses in Tshwane's "affordable areas"

show more stability and less volatility. This makes projections for this market more reliable. Lower LTV ratios and higher average house values mean that home-owners have more equity in which to invest in new housing opportunities.

- In Tshwane's "affordable areas", LTV rates are 7 percent and 9 percent below the national and city average, respectively.

- The city's average house price is 1.2 times the national average. And, the average price of houses in the below R 250 000 category is 17 percent higher than the national average.

- The lack of affordable houses in which to invest prevents home-owners from leveraging the value of their homes. Considering the above average property values and lower LTVs in Tshwane's "affordable areas", this represents a development opportunity for borrowers with more equity to invest.

Tshwane's home-lending activity is average, while its house values are above average:

- The overall bonded sales rate in Tshwane's "affordable areas" match the average for South Africa's cities (44 percent). But, the city's average bonded sales rate in the "affordable areas" is 16 percent less than the average for cities across the country. This is despite its higher average prices and worth in its "affordable areas" and also overall.

- Tshwane has 11 percent of the country's total home loan volume. This is on par with its share of house values nationally (9 percent).

- In 2010, the average house price in Tshwane's "affordable areas" (R 226 000) was 20 percent below the average house value (R 275 000). Similarly, the average house price in the below R 250 000 category in "affordable areas" (R98 000) was 35 percent lower than the average value in these areas. This shows that houses are under-valued in this market.

3.1.2 Infrastructure and Urban Services

In 2009, Tshwane had allocated 11.1 percent of its budget to repairs and maintenance of existing infrastructure. In 2014, this had decreased to a mere 6.5 percent. Since then, the allocation has been regularly under the 8-10 percent threshold recommended by the National Treasury. In February 2017, Tshwane announced that it had a financing gap of R 7 billion for the repair and maintenance of infrastructure. This figure is likely to grow as the city has been unable to keep up with the backlog in repairs and maintenance. A problem is that while Tshwane in several of its strategic and business documents refers to envisaged projects, these are not always concretised or budget-aligned. For example, mention has been made of the pilot conduit hydropower generation – that is, the transformation of excess energy in pressurised conduits into clean, renewable hydroelectric energy with a turbine - at its Anlin water reservoir. But, there is no information whether this is being rolled-out (or, will be rolled-out) at other reservoirs in the city. Aside from the lack of communication, Tshwane's top five reservoirs which are not being used to maximum effect, are collectively capable of generating over 2 300 kilowatts.

Table 23 shows an estimation of Tshwane's current financing needs for water and sanitation services. The analysis is conducted using the estimated need (26.2 percent of households) and the carrying values of the city's existing infrastructure, to arrive at an estimation of the total value of the infrastructure assets, which represents the scale at which each household has access to the services.

Table 23: Tshwane - Estimated Financing Need for Water and Sanitation Services

Asset values (2014)	R 5 627 740 971
Current values (inflation indexed)	R 6 894 224 682
Total requirement (assuming universal access)	R 9 337 550 360
Funding gap	**R 2 443 325 677**

(Source: Author's estimations)

It is estimated that Tshwane has a funding gap of R 2.44 billion to meet its water and sanitation needs.

Table 24 shows an estimation of Tshwane's current financing needs for electricity services. The analysis is conducted using the estimated need (11.4 percent of households) and the carrying values of the city's existing power infrastructure, to arrive at an estimation of the desired infrastructure level that would guarantee that each household in Tshwane has access to electricity.

Table 24: Tshwane - Estimated Financing Need for Electricity Services

Asset values of existing infrastructure (2014)	R 4 751 965 417
Current values (inflation indexed)	R 5 821 361 970
Total requirement (assuming universal access)	R 6 570 385 971
Funding gap	**R 749 024 001**

(Source: Author's estimations)

The analysis identifies a current financing gap of about R 750 million for electricity services.

Table 25 shows an estimation of the current financing needs for Tshwane's road network. The city has calculated that it needs to pave a total of 2 580 kilometres of gravel road. The author uses current construction rates to arrive at a financing gap of about R 17.2 billion for Tshwane's road transport network.

Table 25: Tshwane - Estimated Financing Need for Transport Infrastructure

Length of gravel roads to be paved	2 860 kilometres
Cost per kilometre	R 6 000 000
Funding gap	**R 17 160 000 000**

(Source: Author's estimations)

Tshwane has identified the following six resilient and green infrastructure development and urban services strategic focus areas:

- Green waste management e.g. reducing waste going to landfills by 25 percent by recycling or recovering materials; converting landfill gas into electricity
- Green water management e.g. reducing water loss; rainwater harvesting
- Green waste-water management e.g. recycling grey water and black water
- Green transport management e.g. converting the city's fleet to electricity or green fuels such as compressed natural gas; phasing in electric vehicles
- Green energy consumption e.g. using energy efficient lights and air conditioners in city buildings and streets
- Green energy production e.g. using roof-tops for photo voltaic (PV) solar to electricity conversions; converting biogas (waste-water, organic waste) to electricity or compressed natural gas

Currently, the following projects are underway in Tshwane:

- **Landfill gas to energy:** In 2015, Tshwane had announced a large waste-to-energy project for its landfill sites and waste-water facilities. It expected to extract methane gas at seven landfill sites, and install bio-digester facilities to generate biogas from waste-water treatment plants and landfill gas. The biogas would be used for electricity generation, industrial heating, and fuelling the city's buses. Constructing gas fuelling stations for buses at depots was also mooted. Now, Tshwane is considering issuing green municipal bonds to finance the project, which is also expected to realise savings.

- **Biomass:** The city has also been planning for a 4.5 megawatt biomass-to-energy plant. For this, it expects to enter into a Power Purchase Agreement with a preferred energy supplier.

- **Sewage sludge:** Sludge-to-biogas and sludge-to-synthetic fuel facilities are also planned for Tshwane's waste-water treatment works.

- **Solar harvesting farm:** The city is in the process of commissioning and implementing a 20 megawatt solar plant to supply power into the electricity grid.

- **Renewable energy and transports:** Tshwane is engaged in several other renewable energy projects. These include renovating two coal fired plants for the use of cleaner fuels, building a solar energy plant, installing solar power heaters in households, and constructing South Africa's first hydroelectric plant.According to the city, it has also launched a number of green projects, including energy efficiency retrofits of municipal buildings, LED street-light conversions, and procuring electric vehicles for its fleet.

3.2 Current Financing Sources and Flows

The public sector is expected to align its spending on housing, infrastructure and urban services with environmental performance indicators. Green products relating to the following will likely require commitments to have these produced locally:

- Sustainable human settlements, built environments and green buildings
- Off-grid, RE solutions
- Cost-effective, EE solutions
- Sustainable water supply and demand management
- Sustainable waste disposable and recycling solutions
- Sustainable transport systems
- Ecosystem services

All the projects identified under resilient and green housing, infrastructure development and urban services require funding that either Tshwane cannot afford or should ideally be financed through public-private partnerships. Tshwane is in the process of finalising its SFMS. The city's solid grant, equity and asset base makes it easier to attract additional funding. Potential investors will put their money into projects that have green economy developmental impact objectives.

The financing sources that are currently available are discussed next.

The Department of Environmental Affairs (DEA) has established a Green Fund, whose vision is to "provide catalytic finance to facilitate investment in green initiatives." With an initial R 800 million made available for projects, the Fund will help South Africa move to a low carbon, resource efficient and climate resilient development path that will deliver high impact social, environmental and financial benefits. The DBSA is the Fund's implementing agent.

Both private and public entities can benefit from the Fund. It will support them through:

- Grants (recoverable and non-recoverable)
- Loans (concessional rates and terms)
- Equity

The Fund has been set up to supplement, not replace, existing fiscal provisioning in this regard. It hopes to attract additional funds from national and international investors. It should not be confused with another green fund that was set up by Business Partners International, a private fund management company, in 2014; and, with an initial capitalisation of R 300 million.

Financing for green solutions are also provided by the following: local, provincial or central government allocations; DFIs such as DBSA and NHFC; and, private sector companies through off-balance sheet arrangements. Central government subsidies that may be used for green solutions include MIG, USDG, PTISG, EEDMG, MDG, MRG, and RBIG; DFIs. In addition, some national departments and DFIs provide incentives to municipalities and developers in this regard.

The National Treasury offers a tax incentive to developers for achieving specified inner city regeneration objectives in Urban Development Zones (UDZ). This scheme covers the following:

- Erecting, extending or improving an entire building
- Erecting, extending or improving part of a building where the part's floor area is at least 1 000 square metres
- Erecting, extending or improving low income housing
- Purchasing such a building or part of a building directly from a developer on or after 8 November 2005

The National Treasury has approved Tshwane's application for a UDZ. The boundaries for city's UDZ are:

- North: Boom Street, Bell Hombre Station and Pretoria Zoo, including Marabastad
- West: Schutte Street / Railway line up to Soutter Street in the South and Retief Street in the North
- South: Railway line up to Nelson Mandela Drive
- East: Nelson Mandela Drive

Tshwane also offers a rebate on land it had alienated after January 2015. The following rebates apply in this regard:

- 50 percent rebate for 5 years if the cost of the investment is R 5 million to R 50 million (only applicable for previously disenfranchised applicants)
- 35 percent rebate for 8 years if the cost of the investment is over R 50 million to R 400 million
- 50 percent rebate for 10 years if the cost of the investment is over R 400 million to R 1 billion
- 70 percent rebate for 15 years if the cost of the investment is over R 1 billion

The city's Green Building Development Incentive Scheme is for developers that comply with SANS 204, a national standard introduced by the South African Bureau of Standards (SABS) for energy efficiency in buildings. For example, buildings must be orientated within 15 degrees of true North in order to minimise unwanted heat gains and losses. Where flush toilets are installed these must have a dual flush capability. Flow rates of shower heads must not exceed 10 litres per minute. In all buildings with a usable area over 200 square metres minimum provision for rainwater harvesting must be made. Sites which have over 500 square metres of hard surface (for instance surface car parking) should demonstrate how 80 percent of run-off water volume will be retained on site. All water used to irrigate landscapes and planting must be sourced from rainwater harvesting. Recycling storage areas should be provided for all buildings with a gross floor area over 500 square metres or for sites where the combined gross floor area is over 500 square metres (such as townhouse developments). Table 26 shows the incentive scheme Tshwane has developed in this regard.

Table 26: Tshwane Green Building Development Incentive Scheme

Ref	Title	Possible Points	Actual Points
EN ENERGY			
EN1	Orientation	1	
EN2	Floor plate depth	1	
EN3	Floor insulation	1	
EN4	Wall insulation	1	
EN5	Roof insulation	1	
EN6	Glazing and solar exposure	1	
EN7	Urban heat island	1	
EN8	Internal lighting power density	1	
EN9	Lighting zoning	1	
EN10	Internal lighting controls	1	
EN11	External lighting controls	1	
EN12	External lighting power ratio	1	
EN13	Water heating	1	
EN14	Hot water pipes	1	
EN15	Heating cooling ventilation	3	
EN16	Energy sub metering	1	
EN17	Renewable energy	5	
WA WATER			
WA1	Toilet flush	2	
WA2	Wash hand basin taps	1	
WA3	Baths	1	
WA4	Showers	1	
WA5	Hot water pipes	1	
WA6	Rain water harvesting	3	
WA7	Onsite retention	1	
WA8	Swimming pools	1	
WA9	Irrigation	1	
WE WASTE			
WE1	Solid waste	2	
TR TRANSPORT			
TR1	Cycling provision	1	
TR2	Cycling routes	1	
TR3	Car parking	1	
TR4	Pedestrian routes	1	
TR5	Local facilities	3	
HE HEALTH			
HE1	Daylight	3	
HE2	External views	1	
HE3	Natural ventilation	2	
	Total	**50**	

Notes

1.	**Score**	**Incentive scheme**	**Key**
	0 - 25	Not eligible	Below minimum
	25 - 30	Not eligible	Meets requirements
	30 - 40	Eligible for 1	Surpasses requirement
	40 - 50	Eligible for 2	Excels
2.	All greyed criteria are mandatory		
3.	Where criteria are listed as Not Applicable for a particular occupancy type, points should still be included.		

(Source: Tshwane Green Building Development Policy)

The city also has a Fast Tracking Incentive Scheme. An average approval takes about 6 to 12 months, if there are no serious objections. But, applications for priority development areas could be processed within 30 days after the close of the objection period.

Though it has yet to be implemented, Tshwane intends introducing a Bulk Services Contribution Rebate, also applicable to priority development areas. Normally, the bulk services contribution, which is often a relatively huge amount, has to be paid before a development commences. The city could discount or waive it completely.

Tshwane has also identified a Capital Infrastructure Investment Incentive. This seeks to link the financing of infrastructure to spatial development. The construction of a road, for example, will be financed through the approval of land use rights over a pay-back period.

The city can also use the DTI's Critical Infrastructure Programme either to increase its capital budget or help private companies to apply for grants. By investing in critical infrastructure, the cost of business for participating companies is lowered. The scheme offers a minimum of 10 percent to a maximum of 30 percent of the total infrastructural development costs. The maximum grant is capped at R 30 million per project.

Chapter 4

Impact of Financing Instruments

4.1 Impacts on the Financial System

Municipalities across South Africa have four main avenues to source their finance for housing, infrastructure and urban services. These are through revenue collected from urban services rendered; property rates and taxes levied; inter-governmental transfers; and, debt raised in the capital markets.

Tshwane's total revenue for the 2015/16 financial year was R 28 billion. For the 2016/17 financial year, it was R 30.57 billion. These revenues were made up of exchange transactions (e.g. sale of electricity, sanitation charges) and non-exchange transactions (e.g. property rates, government subsidies). For the 2015/16 financial year the exchange transactions amounted to R 14.69 billion and the non-exchange transactions, R 11.92 billion. And, for the 2016/17 financial year the exchange transactions amounted to R 16.39 billion and the non-exchange transactions, R 12.46 billion.

4.1.1 Revenue received from providing Urban Services

The main form of exchange transactions is urban services. Table 27 shows the breakdown for the revenue Tshwane has received through providing urban services to its residents and the businesses operating within its boundaries over the two financial years, 2015/16 and 2016/17.

Table 27: Tshwane - Revenue from Urban Services (2015-2017)

Source	2016 (R)	2017 (R)
Sale of electricity	9 699 511 315	10 970 164 261
Sale of water	3 318 948 220	3 368 590 128
Solid waste	1 153 332 147	1 275 795 066
Sewerage and sanitation charges	770 444 414	802 715 732
Other service charges	231 378 360	315 003 382
Total	15 174 923 370	16 732 268 569

(Source: CoT Annual Financial Statement, 2016/17)

The city's biggest revenue in regard to the urban services it provides is through selling electricity and water.

The main forms of non-exchange transactions are: property rates; government transfers; public donations; and, fines and penalties.

4.1.2 Revenue received from levying Rates and Taxes

Tshwane received R 5.36 billion in rates and taxes for the 2015/16 financial year. And, it received R 5.91 billion for the 2016/17 financial year.

The city assesses rates according to the "use" of a property and the "permitted use" of a property. Categories in this regard include: residential, business and commercial, municipal, industrial, educational, agricultural, and vacant land. Tshwane exempts the following properties from rates and taxes: public service infrastructure, protected areas, public worship, State Trust land, and municipal-owned properties that are used by the city.

In terms of its Indigent Policy, Tshwane gives 100 percent rebates to registered needy households. If they meet certain conditions, pensioners, persons with disabilities and those who are medically boarded can also receive rebates. As shown in Table 28, rebates are also given to sub-categories of low income households. The rebate figures apply to the 2017/18 financial year.

Table 28: Tshwane - Household Income Categories Qualifying for Rates Rebates

Minimum Gross Monthly Household Income (R)	Maximum Gross Monthly Household Income (R)	Percentage Rebate (%)
0	7 000	60
7 001	8 000	50
8 001	9 000	40
9 001	10 000	30
10 001	11 000	20
11 001	12 000	10

(Source: Tshwane Rates Tariffs Policy for 2017/18)

It is not known how well this policy is communicated to the city's residents and how many of them apply to benefit from it.

4.1.3 Revenue received from Intergovernmental Transfers

Through the National Treasury, the central government funds several municipal infrastructure projects across the country. This is the way that much of the infrastructure has been funded in the past. The National Treasury allocates a share of the National Revenue Fund to municipalities, which is then directly invested in the required infrastructure. The National Treasury sources its funds from annual taxation receipts, treasury bonds and other instruments.

Tshwane received R 5.97 billion in grants, subsidies and loans from the central government for the 2015/16 financial year. And, it received R 6.12 billion this way for the 2016/17 financial year.

Table 29 shows Tshwane's government grants, subsidies and loans for the current MTREF period.

Table 29: Tshwane - Indicative Central Government Transfers (2018-2020)

Fund Name	2017/18	%	2018/19	%	2019/20	%
Council Funding	R 378 500 000	9.8%	R 502 500 000	13.1%	R 664 800 000	15.1%
Public Transport, Infrastructure Systems Grant	R 679 189 840	17.6%	R 396 285 230	10.4%	R 426 086 000	9.7%
Neighbourhood Development Partnership Grant	R 20 000 000	0.5%	R 30 000 000	0.8%	R 45 000 000	1.0%
Urban Settlements Development Grant	R 1 576 422 550	40.8%	R 1 743 976 580	45.6%	R 1 796 911 310	40.7%
Integrated National Electrification Programme	R 43 275 358	1.1%	R 73 673 000	1.9%	R 70 000 000	1.6%
Capital Replacement Reserve	R 5 000 000	0.1%	R 5 000 000	0.1%	R 5 000 000	0.1%
Community Library Services	R 9 507 000	0.2%	R 10 000 000	0.3%	R 10 500 000	0.2%
Borrowings	R 994 000 000	25.7%	R 900 500 000	23.6%	R 1 228 200 000	27.8%

Public Contributions & Donations	R 81 724 642	2.1%	R 116 327 000	3.0%	R 120 000 000	2.7%
Social Infrastructure Grant	R 34 000 000	0.9%	R-	0.0%	R-	0.0%
LG SETA Discretionary Allocation	R7 000 000	0.2%	R 7 000 000	0.2%	R 7 000 000	0.2%
Integrated City Development Grant	R 32 664 650	0.8%	R 37 673 700	1.0%	R 39 783 400	0.9%
	R 3 861 284 040	**100.0%**	**R 3 822 935 510**	**100.0%**	**R 4 413 280 710**	**100.0%**

(Source: CoT Annual Financial Statement, 2016/17)

The most substantive transfers to the city are the USDG followed by inter-government loans.

4.1.4 Revenue received through Commercial Loans and Bonds

A primary goal of the national policy has been to enable municipalities to access capital markets to help meet their housing, infrastructure and urban services investment needs. Although municipal borrowing has been below the levels anticipated when the Municipal Borrowing Policy Framework was adopted in 2000, the goal of access, at least for metropolitan municipalities, is largely met.

Tshwane has a variety of debt instruments on its balance sheet. Such a portfolio can only be possible due to the maturity in its financial management practice. In its debt portfolio, the city has achieved financial leverage and has a mix of debt from the private sector, government funded loans and inter-governmental transfers as well as its own equity, which mostly comes from user charges and reserves.

In its 2016/17 annual financial statement, Tshwane disclosed a total of R 10.67 billion in non-current loans and bonds; and, R 729 million in current loans and bonds. Table 30 summarises the city's long-term borrowing obligations for the period 2014 to 2017.

Table 30: Tshwane - Summary of Long-Term Borrowings (2014-2017)

	2014	2015	2016	2017
Term loans	1 730 229 171	3 230 014 405	4 430 390 515	4 430 014 405
Municipal bonds	2 177 926 163	2 177 419 005	2 176 302 934	2 177 419 005
Annuity loans	5 342 534	4 852 534 005	4 335 358 128	4 782 513 132
Total	3 908 155 334	10 259 967 415	10 942 051 577	11 389 946 542

(Source: CoT Annual Financial Statements, 2013/14, 2014/15, 2015/16, 2016/17)

Money from Treasury bonds carry the lowest risk and therefore have the lowest interest. By the end of 2017, global investors held 41.4 percent of domestic government bonds, an increase of R 147.8 billion from the previous year. The bond market is a way to reduce borrowing costs, increase the investor base and a means to raise large sums of money for the city that would not be obtainable through a single financial institution.

In addition to providing bilateral loans to the metropolitan municipalities, the DBSA also participates in public bond issuance programmes and other funding including project finance. This is to accelerate the delivery of social and economic infrastructure such as the BRT system. For example, in June 2014, it provided Tshwane with a R1.6 billion long-term loan facility to support its capital expenditure programme. This facility expects to accelerate the eradication of backlogs in water and sanitation, roads, electricity and housing-related infrastructure and to support the city's growth and development initiatives.

Tshwane also raises loans through bonds in terms of Section 46 of the MFMA. In March 2013, the city had raised R 1.38 billion through the issuing of two bonds, one for 15 years and the other for 10 years. This was the first time the city had entered the debt capital markets to finance its capital expenditure programme. The city appointed Standard Bank, its primary transactional banker, as the lead arranger. These bonds were priced at 275 and 220 basis points over R 186 and R 2 023 respectively. This resulted in fixed coupons of 10.2 percent and 9.11 percent respectively.

Table 31 shows the breakdown of Tshwane's 2017 commitments in regard to its long-term borrowings:

Table 31: Tshwane - Details of Loans and Bonds as at 31 July 2017

Source	Loan Terms	Loan Amount
DBSA (unsecured)	20-year loan, Jibar + 2.5% rate, repayable semi-annually, bullet repayment on 30 June 2034	1 600 000 000
DBSA (secured – sinking fund investment)	20-year loan, Jibar floating rate, repayable semi-annually, bullet repayment on 31 October 2019	78 331 528
Nedbank (unsecured)	10-year loan, 11.44% fixed rate, repayable semi-annually, bullet payment on 24 June 2026	1 200 000 000
DBSA (unsecured)	20-year loan, Jibar + 2.5% margin, repayable semi-annually, bullet payment on 30 June 2035	1 500 000 000
DBSA (secured – sinking fund investment)	20-year loan, fixed rate, repayable semi-annually, bullet payment on 30 September 2018	51 682 877
NHFC (secured – mortgage bond over Eloff Building)	93 months, 14% fixed rate, R 53 895.66 monthly instalment	-
Standard Bank (unsecured)	15-year bond, fixed rate, repayable semi-annually, bullet payment on 2 April 2028	573 927 890
Standard Bank (unsecured)	10-year bond, fixed rate, repayable semi-annually, bullet payment on 3 April 2023	848 437 142
Standard Bank (unsecured)	15-year bond, fixed rate, repayable semi-annually, bullet payment on 5 June 2028	755 053 973
Registered stock	Share capital in TEDA, no interest and no fixed terms of repayment	-
Standard Bank (unsecured)	15-year loan, variable rate, repayable semi-annually, last instalment on 29 June 2026	730 546 211
DBSA (unsecured)	15-year loan, variable rate, repayable semi-annually, last instalment on 1 December 2025	1 002 459 589
DBSA (unsecured)	20-year loan, fixed rate, repayable semi-annually, last instalment on 30 June 2029	112 097 892
DBSA (unsecured)	13-year loan, fixed rate, repayable semi-annually, last instalment on 31 March 2021	58 688 619
DBSA (unsecured)	20-year loan, fixed rate, repayable semi-annually, last instalment on 30 June 2028	161 404 760
DBSA (unsecured)	20-year loan, fixed rate, repayable semi-annually, last instalment on 30 June 2028	69 295 670
DBSA (unsecured)	20-year loan, fixed rate, repayable semi-annually, last instalment on 30 June 2028	162 422 712
DBSA (unsecured)	15-year loan, fixed rate, repayable semi-annually, last instalment on 31 December 2021	165 189 664

DBSA (unsecured)	15-year loan, fixed rate, repayable semi-annually, last instalment on 31 December 2021	34 108 273
DBSA (unsecured)	15-year loan, fixed rate, repayable semi-annually, last instalment on 31 December 2021	100 905 273
INCA (unsecured)	15-year loan, fixed rate, repayable semi-annually, last instalment on 31 March 2020	73 687 936
DBSA (secured)	20-year loan, fixed rate, repayable semi-annually, last instalment on 30 September 2018	56 998 686
DBSA (unsecured – sinking fund investment)	15-year loan, fixed rate, repayable semi-annually, last instalment on 31 December 2018	51 803 161
Vuzi Investments (unsecured)	15-year loan, fixed rate, repayable semi-annually, last instalment on 12 December 2021	88 429 376
Vuzi Investments (unsecured)	15-year loan, fixed rate, repayable semi-annually, last instalment on 30 June 2021	34 646 156
Vuzi Investments (unsecured)	15-year loan, fixed rate, repayable semi-annually, last instalment on 31 December 2020	38 979 672
Vuzi Investments (unsecured)	15-year loan, fixed rate, repayable semi-annually, last instalment on 30 June 2020	17 198 145
Vuzi Investments (unsecured)	15-year loan, fixed rate, repayable semi-annually, last instalment on 30 June 2019	4 862 795
Nedbank (unsecured)	10-year loan, variable rate, repayable semi-annually, last instalment on 30 June 2020	142 460 513
Nedbank (unsecured)	10-year loan, variable rate, repayable semi-annually, last instalment on 30 June 2020	143 212 254
Nedbank (unsecured)	13-year loan, fixed rate, repayable semi-annually, last instalment on 31 March 2021	78 985 472
ABSA Bank (unsecured)	13-year loan, fixed rate, repayable semi-annually, last instalment on 31 March 2021	114 943 733
Vuzi (unsecured)	9-year loan, (Jibar) variable rate, repayable semi-annually, last instalment on 30 June 2022	263 157 895
Nedbank (unsecured)	16-year loan, (Jibar) variable rate, repayable semi-annually, last instalment on 1 March 2023	466 865 606
Vuzi Investments (unsecured)	14-year loan, (Jibar) variable rate, repayable semi-annually, last instalment on 1 December 2027	344 827 586
Nedbank (unsecured)	12-year loan, (Jibar) variable rate, repayable semi-annually, last instalment on 1 March 2023	264 335 744
Total		**11 389 946 542**

(Source: Tshwane Annual Financial Statement, 2016/17)

Currently, Tshwane's secured long-term liabilities amount to R 183.47 million and its unsecured long-term liabilities amount to R 11.2 billion. This suggests that there is a good level of support from and trust by financial institutions that include DBSA, NHFC, Standard Bank, ABSA, Nedbank, Inca Investment Company and Vuzi Investment Company.

The sustainability of the city's borrowing depends on a wide range of factors, including the strength of its management team, the type of housing, infrastructure and urban services funded and its revenue management record. Using the traditional gearing ratio within the municipal context does not provide a useful indicator of the sustainability of municipal debt. In terms of Section 48(3) of the MFMA, Tshwane may determine that certain assets are necessary to provide the minimum level of basic urban services and so cannot be used as security for borrowing. Further, many assets now being brought onto the city's books in terms of GRAP 17 are not tradable (e.g. roads and pavements). GRAP 17 also allows Tshwane to use different methodologies to value its assets. As a result, the values reflected in the asset registers may not be comparable.

4.2 Challenges faced by different actors

4.2.1 Central government

For the 2017/18 financial year, the central government had to adjust its debt management strategy to finance a large revenue shortfall. Compared with the 2017 budget projection, the gross borrowing requirement for 2017/18 increased by R 25.1 billion to R 246 billion.

Despite two sovereign credit-rating downgrades in 2017, demand for government debt remains high. Net debt is expected to be R 2.28 trillion in 2017/18, or 48.6 percent of GDP, increasing to R 3.03 trillion, or 52.2 percent of GDP in 2020/21. Still, net debt is expected to stabilise at 53.2 percent in 2023/24. And, debt-service costs have increased to an estimated R 163.2 billion in 2017/18, or 3.5 percent of GDP, and are projected to increase to R 213.9 billion, or 3.7 percent of GDP, in 2020/21. But, even though domestic capital markets will likely remain the government's main source of borrowing, its debt portfolio is well-structured with an emphasis on longer-term loans [www.treasury.gov.za].

The central government also has deposits held by commercial banks and the SARB. At the end of the 2016/17 financial year, these stood at R 204.3 billion. And, these have since increased to pre-fund foreign currency commitments due in 2019/20.

Irrespective of what the central government's financial situation is, municipalities often take it for granted that the National Treasury will provide them with regular grants, subsidies and loans to pay for their housing, infrastructure, urban services and other needs. After all, this is the arrangement in other parts of the world as well. But, South Africa has serious constraints and competition over the available capital that could ordinarily be availed to municipalities for these purposes. Besides, fiscal allocation is not always supported by operational efficiency and the recovery of charges at municipal level. Municipalities may need to rethink their funding strategies. The National Treasury has indicated that, for example, where water infrastructure can recover costs, the capital should be financed from off-budget commercial sources. In this way, the central government carries all the financial risk.

The biggest challenge for the central government is the pooling of sufficient resources through the South African Revenue Services (SARS) and the ensuing apportionment. With an ever-growing population and rate of urbanisation, urban sprawl and increasing government responsibilities, the pressure continues to mount on the fiscus. Tshwane alone contributes 26.8 percent of the province's GDP and 9.4 percent of the country's GDP. This demands a substantial amount through intergovernmental transfers.

Inefficient and ineffective spending by municipalities and state owned entities coupled with their generally poor income collection systems increases risk for the central government. It is critical for government that its exposure to financial risk is managed, and the costs of service delivery are made more efficient. Sometimes the central government provides guarantees to support project finance, in order to keep the cost of capital as low as possible. This imposes a contingent liability on the sovereign debt, which the National Treasury would prefer to avoid.

Other challenges for the central government are linked to land invasions, ever-increasing informal settlements, backyard shacks, affordable rental housing stock shortages, rundown hostels, slum conditions, illegal occupation of houses, illegal dumping, and corruption in the allocation of RDP housing.

4.2.2 Investors

When Investors extend credit to governments, they anticipate viable returns and with minimal risk to their investment portfolios. They prefer to invest in projects that will result in assets that generate cash streams in their lifetime. And, they will withdraw their facilities during recessionary times. They also tend worry about the central government's exposure and financial commitments.

Over the next three years, the South African government will pay R 197.4 billion to service its loans. Of this, R 96.8 billion is due in 2019/20. Though the central government mainly seeks out the domestic capital markets for loans, in September 2017 it started to fully finance its foreign currency commitments by borrowing in global capital markets. The central government intends to increase its foreign financing levels to US$9 billion over the next three years. The fluctuation of the Rand value has necessitated it limiting its foreign currency debt to 15 percent of its total portfolio. This debt currently stands at 8.8 percent [National Treasury: Government Debt and Contingent Liabilities].

Tshwane's Investors are all domestic financial institutions. The main ones are DBSA, Standard Bank, Nedbank and Vuzi Investment Company. The bulk of its borrowings are unsecured, 15- or 20-year loans. According to Tshwane, it has never missed a payment that has been due in this regard.

When raising finance from the private sector, Tshwane faces challenges. Firstly, a lot of the assets on its balance sheet do not have an active market. This makes it difficult to acquire finance against the balance sheet. Its collection rate and administrative performance also affect its credit ratings. Investors tend to be sensitive about these things. Also, the lack of security forces Investors to either turn down a loan request or charge a premium interest rate. Nonetheless, due to its size and general financial discipline, the city is able to acquire both secured and unsecured debt to help it meet its housing, infrastructure and urban services needs.

Investors have little reason to worry although they might want better clarity in the rules governing tariff setting and repayment, and the distinction between commercial-economic and social-development elements of the city's projects. This will help them manage uncertainty. Executive utterances and political posturing that have no basis in policy or law also give them cause for worry. Seemingly, Investors also prefer guarantees which the city is generally not willing to provide. Any new borrowing by Tshwane will likely also create anxiety among its existing Investors. And, they would prefer to see higher levels of debt collection by the city and a more certain income stream.

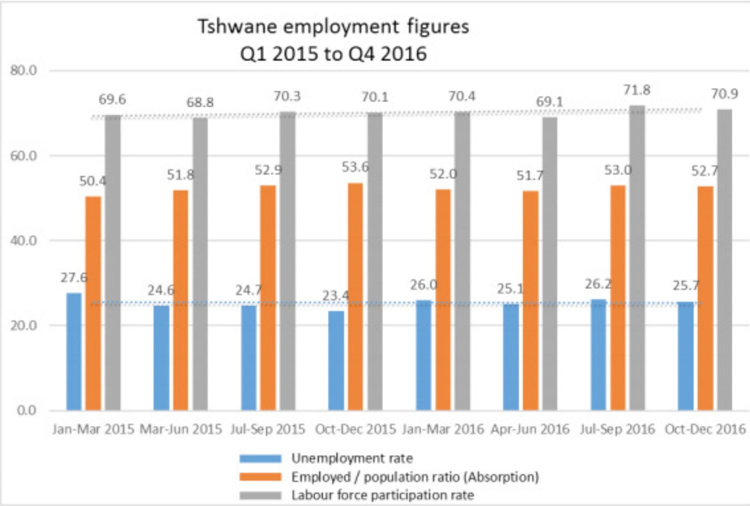
Investors can, however, take comfort from the following developments:

- The South African economy advanced 1.5 percent year-on-year in the last quarter of 2017. This was above market expectations of 1.4 percent and represents the strongest growth since the first quarter of 2015. The SARB has consequently revised its growth prediction for 2018 upwardly from 1.4 percent to 1.7 percent.
- The South African trade balance shifted to R 0.43 billion surplus in February 2018, compared to a downwardly revised R 27.1 billion deficit in January 2018. This was also above market expectations of a R 3 billion deficit.
- The SARB cut its repo rate by 25 basis points to 6.5 percent in March 2018. Earlier, in July 2017, it cut the repo rate by 25 basis points to 6.75 percent, the first reduction in five years (that is, 15 MPC meetings).
- The South African consumer price index increased 4 percent year-on-year in February 2018. This was an improvement from the 4.4 percent in January 2018. It also beat market predictions of a 4.2 rise in inflation. The February 2018 rate was the lowest inflation rate since March 2015.

4.2.3 Residents

Markets are not generally accommodating of low income households. It is no different for Tshwane households trying to access adequate housing. Figure 31 shows the employment rate, and together with that, the affordability levels of Tshwane's population.

Figure 31: Tshwane - Employment Rate (2015 - 2016)

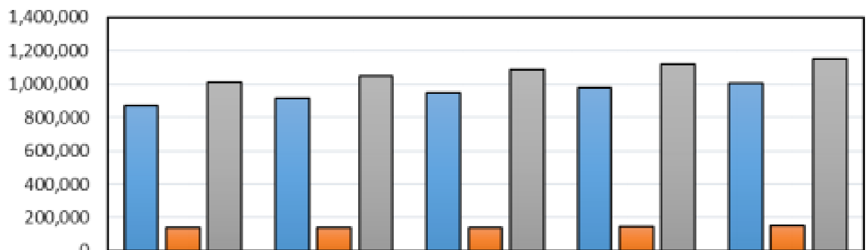


(Source: Tshwane 2017-21 IDP)

The unemployment rate in Tshwane decreased from 26.2 percent in Q3/2016 to 25.7 percent in Q4/2016. But, the absolute number of unemployed people in the city shows that the city had created a negligible number of jobs in two full years. The number of unemployed people decreased from 443 000 in Q1/2015 to 439 000 in Q4/2016.

Another challenge is that there is a sizeable number of people working in the informal sector. Figure 32 shows the split between formal and informal employment in Tshwane.

Figure 32: Tshwane - Employment Sectors (2011-2015)



	2011	2012	2013	2014	2015
Formal sector	871,086	915,088	945,352	979,268	1,002,505
Informal sector	137,300	137,160	141,709	143,020	150,153
Total employment	1,008,387	1,052,248	1,087,061	1,122,288	1,152,657

(Source: Tshwane 2017-21 IDP)

The large number of unemployed people (439 000 in 2016) in Tshwane and people working in the informal sector (150 153 in 2015) have to rely on government-subsidised housing. The problem is that the waiting list for this is very long. High income households find it relatively easy to secure mortgage bonds. Affordable income households find it difficult to finance their property. They are deemed too rich to qualify for government subsidies and too poor to qualify for home loans. Some private companies have capitalised on this lack of financing to lend to them at premium raising costs and interest rates. Still, there remains an acute shortage of affordable housing stock. Nationally, less than 20 000 affordable housing units are built every year.

As shown in Table 32, even those already housed are battling to hold on to their homes.

Table 32: Tshwane - Reasons for Selling Homes

REASONS FOR SELLING AS PERCENTAGE OF TOTAL SALES	Q4 2007	Q1 2008	Q2 2008	Q3 2008	Q4 2008	Q1 2009	Q2 2009	Q3 2009
Downscaling due to financial pressure	16	6	20	29	34	26	33	40
Upgrading	21	13	13	7	8	5	9	5
Downscaling with life change	21	10	13	13	18	11	16	12
Moving for safety and security reasons	14	16	11	9	23	17	26	23
Emigrating	14	16	21	18	4	15	2	2
Relocating within South Africa	4	922	11	12	3	6	1	11
Change in family structure	6	9	8	11	4	13	11	6
Moving to be closer to work or amenities	4	8	3	1	7	6	1	1

(Source: FNB Barometer, September 2009)

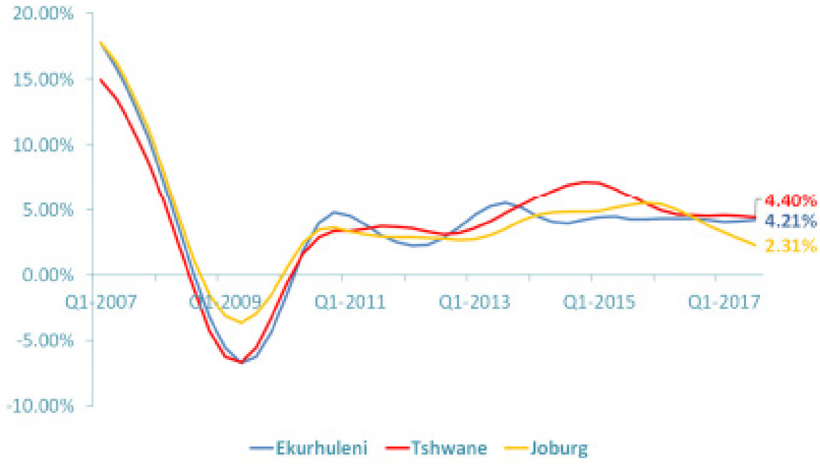
The most common reason for Tshwane households selling their houses is that they are downscaling due to financial pressure (40 percent). This is significant especially when compared to, for example, selling to move closer to work or amenities (1 percent).

This situation is made worse by increased demand. A Social and Rental Housing Market study carried out in the city's CBD in 2014 suggested that between 2014 and 2019, an estimated 5 530 new households would seek housing in the city. This suggested an annual growth in demand of about 1 106 housing units.

Also impairing access is that house prices are generally inordinately high. By the end of the third quarter of 2009, the average house price in Tshwane was already R 746 683. In Centurion it was R 861 310.

Figure 33 compares the average house prices among Gauteng's three cities.

Figure 33: Comparative House Prices among Gauteng Metros (2007-2017)



(Source: FNB Barometer, April 2017)

In Q3/2017, Tshwane's estimated average house price growth rate was 4.40 percent. This was only slightly higher than Ekurhuleni (4.21 percent).

Constraints relating to housing negatively impact on a household's accessibility to infrastructure and affordability of urban services. Although the demand for these is common to all municipalities, it is greatest in the metropolitan municipalities and secondary cities. Despite the several subsidy instruments that are available for urban services, large numbers of households still struggle to meet their accommodation costs. When entering into a rental contract or when buying a house they often estimate their affordability based on the rent or bond instalment only. But, once they occupy the house they realise that housing also includes electricity, water, sewage and refuse removal costs as well as costs relating to security, pool maintenance and garden services. Then there is also the cost of fixing broken cupboards and plumbing leaks, replacing electrical globes and painting and other maintenance of the property that have to be considered.

The erratic, sizeable and frequent increases in electricity, water and other costs also pose a challenge as these are often not budgeted for.

Chapter 5

Alternative Financial Instruments

5.1 New Challenges, Approaches and Instruments

In May 2016, the then Mayor of Tshwane, Kgosientso Ramagopa, unveiled a "shacks to houses" typology called "The Lighthouse" that the city wanted to roll out. This was to be done in conjunction with the DEA's "Working on Fire" Programme. The objectives were to address climate change and climate adaptation challenges as well as create large-scale job opportunities. Design features included withstanding fire (a frequent bug-bear of crowded shack settlements), improved thermal and acoustic qualities, and safe-guards against termites, rodents, floods and bullets (www.gautenguardian.co.za).

Essentially, shacks would be converted to permanent housing structures without the need for the occupants to vacate the shack. This is how the process would unfold. First, the new structure would be built over the shack with the upper floor being completed first. Then, the occupants would move to the upper floor. Once that is done, the shack would be demolished and the ground floor of the permanent structure completed.

Tshwane is a dual city in which a formal, well developed core city co-exists with an extensive, low income and poorly developed peripheral complex which is dependent on the core. This, together with constant urban migration, has introduced challenges to the city which include: urban poverty and unemployment; fragmented and inequitable city structure that induces higher living costs for the poor; and major backlogs in basic services, infrastructure, and housing. Wealth is concentrated primarily in the southern and western areas of the city where access to basic services is good. In contrast, wards in the eastern and northern parts have access to some but not all services.

The size of Tshwane and the diversity of the types of development and infrastructure make it a complex metropolitan municipality to deal with. It has urban and industrial components, each with their own specific challenges. Some common challenges identified through the IDP are:

- **Infrastructure maintenance:** Where infrastructure does exist, it is not always maintained, leading to environmental and other infrastructural problems.

- **Environmental vulnerability:** This includes low-lying areas that are prone to flooding, resulting in infrastructural damage and lack of housing security for many residents.

- **Weak spatial structure and planning:** As Tshwane has grown, so services must be extended over large areas. However, this growth has not always been planned (as is the case when people illegally occupy land), leading to some residents having little access to services such as functional sewage systems, and to traffic and congestion problems.

- **Infrastructure development:** There is a mismatch between existing infrastructure and new development opportunities.

Some areas in Tshwane are considered vulnerable not only from a safety perspective (e.g. the informal settlements) but also from a security perspective (e.g. the absence of proclaimed land in informal settlements). By reducing the number of households living under inadequate arrangements, security of tenure will be simultaneously assured. Some of the programmes to achieve this include:

- Developing CRUs in the various townships around the city
- Upgrading backyard units in the established, formal settlements
- Developing new social housing units
- Revitalising the inner city

Tshwane uses the NDPG to ensure that the social infrastructure is equitably distributed across the city. This is a condition under which it receives the grant from the central government. This forces the city to report on compliance with legislative requirements and how the funds are disbursed. This also requires Tshwane to have a quality assurance system.

Although such controls are important, to some extent it blurs the autonomy of the city and reduces creativity.

Municipalities must align their housing, infrastructural and urban services projects with other sector plans. However, fiscal dumping is a concern. Towards the end of their financial periods, certain national departments sometimes make transfers to municipalities to ensure 100 percent spending of their budgets. This is to the detriment of the municipality.

Capital Investment Framework

The aim of Tshwane's Capital Investment Framework (CIF) is to align and match its spatial strategy with its various sector plans for better investment targeting and prioritisation. It does this by:

- Providing a strategic context for which infrastructure and investments should occur
- Providing information on the current development profile of different areas and interventions
- Proposing spatial-based investment decisions

Table 33 and Table 34 show the Revenue by Vote and Expenditure by Vote respectively, which are meant to ensure that Tshwane achieves the objective of targeted and prioritised investments during the current financial year.

Table 33: Tshwane - Revenue by Vote (2017/18)

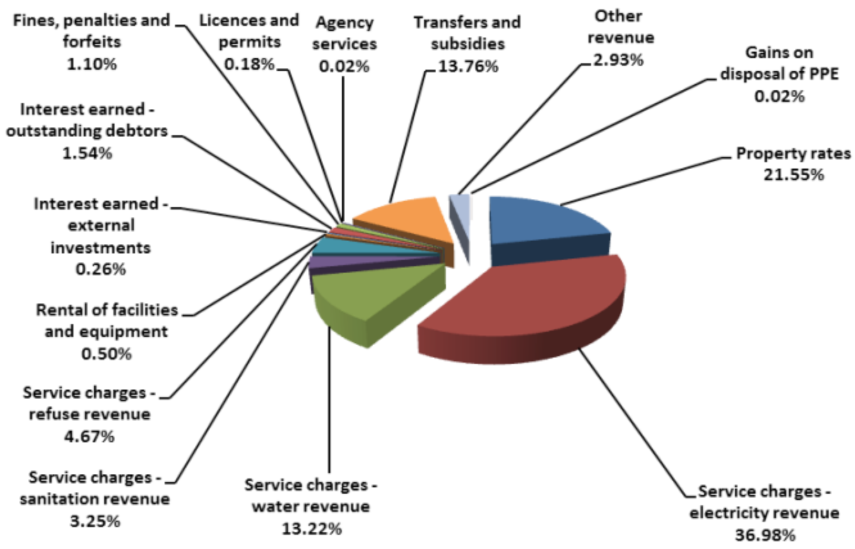
Description	Budget Year 2017/18												Medium Term Revenue and Expenditure Framework		
R thousand	July	August	Sept.	October	November	December	January	February	March	April	May	June	Budget Year 2017/18	Budget Year +1 2018/19	Budget Year +2 2019/20
Revenue by Vote															
Vote 1 - Community & Social Development Services Department	11,154	10,583	7,268	10,049	13,278	1,151	1,151	7,286	1,151	1,151	1,151	1,674	67,047	15,878	16,484
Vote 2 - Economic Development & Spatial Planning Department	39,045	41,927	32,277	31,834	28,952	28,952	32,277	28,952	45,284	28,952	28,952	33,172	400,577	434,266	472,271
Vote 3 - Emergency Management Services Department	27,681	1,284	1,284	21,082	1,284	1,284	21,082	1,284	1,284	1,284	1,284	1,284	81,402	86,830	91,693
Vote 4 - Environment & Agriculture Management Department	7,773	38,005	4,019	4,019	34,240	4,019	34,241	4,019	4,019	4,019	4,019	33,122	175,514	89,060	94,087
Vote 5 - Group Audit & Risk Department	3,514	3,514	3,514	3,514	3,514	3,514	3,514	3,514	3,514	3,514	3,514	3,514	42,165	44,240	46,717
Vote 6 - Group Financial Services Department	1,258,532	1,015,013	542,938	519,141	588,786	1,730,320	567,311	492,481	1,770,868	593,102	596,816	708,035	10,383,343	11,095,348	11,893,736
Vote 7 - Group Property Department	7,773	7,773	7,773	7,773	7,773	7,773	7,773	7,773	7,773	7,773	7,773	7,773	93,279	97,767	102,270
Vote 8 - Health Department	26,263	15	15	19,065	15	15	13,977	15	15	15	15	15	59,442	63,620	69,098
Vote 9 - Housing & Human Settlement Department	44,679	37,312	48,858	69,528	124,197	144,740	154,622	152,414	81,253	53,593	40,208	31,841	983,245	1,087,399	982,298
Vote 10 - Regional Operations & Coordination Department	134,381	123,179	147,175	134,163	129,597	137,096	130,135	139,323	139,870	132,751	138,511	106,936	1,593,116	1,703,962	1,826,259
Vote 11 - Roads & Transport Department	70,244	20,113	32,472	119,423	112,738	151,385	218,363	130,079	142,881	66,831	58,385	72,174	1,195,088	1,085,528	1,120,600
Vote 12 - Shared Services Department	89	89	89	89	89	89	89	89	89	89	89	89	1,063	1,126	1,191
Vote 13 - Tshwane Metro Police Department	27,876	27,876	27,876	27,876	27,876	27,876	27,876	27,876	27,876	27,876	27,876	27,876	334,516	351,317	370,431
Vote 14 - Utility Services Department	1,335,396	1,481,365	1,679,691	1,459,601	1,485,719	1,434,682	1,129,913	1,394,878	1,390,257	1,328,573	1,443,967	1,628,520	17,192,562	17,899,421	19,095,849
Vote 15 - Other Departments	8,090	6,149	10,238	7,229	8,469	9,789	10,129	10,627	11,249	7,771	6,269	10,876	106,882	112,461	123,642
Total Revenue by Vote	**3,002,491**	**2,814,197**	**2,545,486**	**2,434,386**	**2,566,527**	**3,682,686**	**2,352,452**	**2,400,610**	**3,627,382**	**2,257,293**	**2,358,830**	**2,666,900**	**32,709,240**	**34,168,224**	**36,306,626**

(Source: Tshwane 2017/18 SDBIP)

The Tshwane department that has the biggest revenue by vote for the 2017/18 financial year is the Utilities Services Department (R 17.2 billion). This is expected to rise to R 19.1 billion for the 2019/20 financial year.

Figure 34 shows the revenue by type for the 2017/18 financial year.

Figure 34: Tshwane - Revenue Types (2017/18)



(Source: Tshwane 2017/18 SDBIP)

In the 2017/18 financial year, cumulative service charges (for electricity, water, sanitation and refuse removal) are expected to be Tshwane's biggest source of revenue proportionately. This indicates that the revenue by vote and revenue by type are aligned.

Table 34 shows the expenditure by type for the 2017/18 financial year.

Table 34: Tshwane - Expenditure by Vote (2017/18)

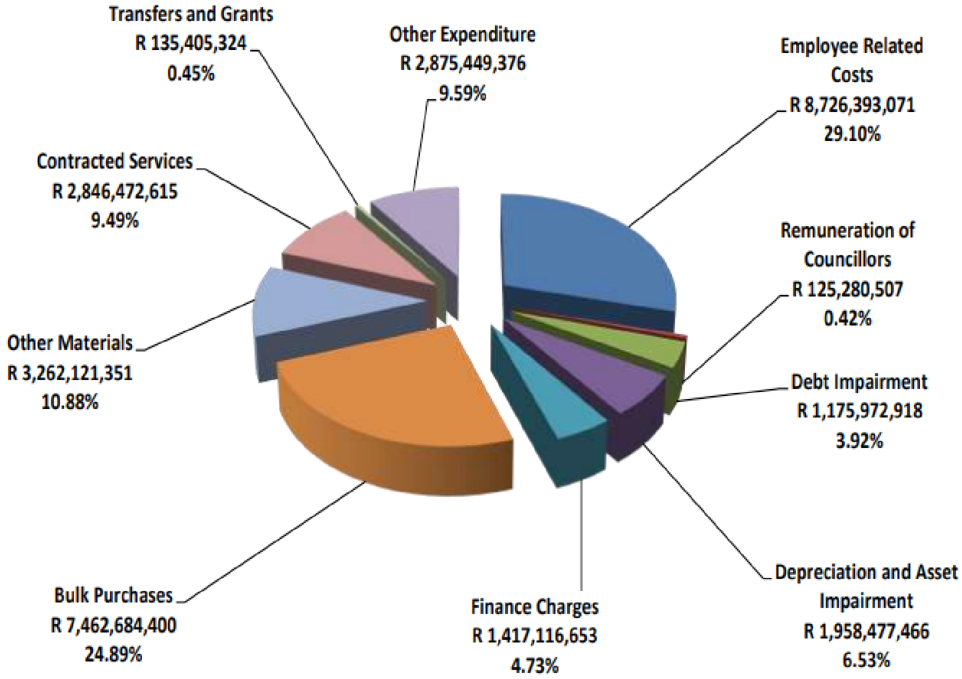
Description	Budget Year 2017/18												Medium Term Revenue and Expenditure Framework		
R thousand	July	August	Sept.	October	November	December	January	February	March	April	May	June	Budget Year 2017/18	Budget Year +1 2018/19	Budget Year +2 2019/20
Expenditure by Vote to be appropriated															
Vote 1 - Community & Social Development Services Department	28,904	34,023	28,283	28,283	42,971	28,332	28,332	34,468	28,332	28,332	28,332	28,339	366,933	359,663	380,961
Vote 2 - Economic Development & Spatial Planning Department	102,277	55,967	51,138	50,820	65,254	48,614	50,999	49,002	48,602	48,625	54,101	42,976	668,376	714,915	771,783
Vote 3 - Emergency Management Services Department	59,892	51,818	51,818	55,936	78,527	51,818	51,845	51,818	51,818	51,818	51,818	51,818	660,745	705,829	753,674
Vote 4 - Environment & Agriculture Management Department	75,228	83,228	55,437	55,437	55,437	55,437	55,437	55,437	55,437	55,437	56,437	23,751	682,139	617,354	654,836
Vote 5 - Group Audit & Risk Department	26,289	26,289	26,289	26,289	30,939	26,289	26,289	26,289	26,289	26,289	26,289	26,289	320,121	337,960	357,650
Vote 6 - Group Financial Services Department	266,988	274,828	275,985	274,828	293,281	272,421	271,988	271,988	271,988	271,988	271,988	273,164	3,291,437	3,211,463	3,267,731
Vote 7 - Group Property Department	42,410	38,875	38,875	38,875	40,244	38,875	38,875	38,875	38,875	38,875	38,875	38,875	471,404	492,178	526,600
Vote 8 - Health Department	32,357	32,357	32,357	32,357	44,812	31,562	31,562	31,562	31,562	31,562	31,562	31,562	395,176	407,916	434,116
Vote 9 - Housing & Human Settlement Department	30,299	29,483	30,066	29,545	32,784	24,252	23,800	22,825	23,495	23,426	22,627	25,370	317,972	338,401	367,608
Vote 10 - Regional Operations & Coordination Department	899,594	242,464	239,209	244,097	328,305	243,092	249,916	236,734	235,290	241,508	234,742	234,694	3,629,647	3,931,654	4,352,978
Vote 11 - Roads & Transport Department	121,278	114,640	114,976	114,646	130,366	114,318	114,590	101,210	100,855	100,837	100,406	100,071	1,328,192	1,495,873	1,574,061
Vote 12 - Shared Services Department	258,285	149,964	105,410	93,371	90,708	105,542	92,817	84,146	105,565	93,750	105,566	84,462	1,369,586	1,450,198	1,534,487
Vote 13 - Tshwane Metro Police Department	160,930	165,652	170,585	167,623	248,453	168,434	170,778	167,681	166,235	165,150	167,445	168,493	2,087,460	2,219,213	2,368,312
Vote 14 - Utility Services Department	1,420,118	1,513,700	1,438,565	994,786	1,047,014	982,058	929,060	987,844	945,038	982,294	965,400	994,510	13,200,387	14,050,825	14,887,168
Vote 15 - Other Departments	101,091	96,937	99,473	95,419	138,065	96,056	95,069	95,145	95,112	95,067	97,925	100,396	1,205,754	1,372,166	1,456,876
Total Expenditure by Vote	**3,625,940**	**2,910,225**	**2,758,467**	**2,302,313**	**2,667,160**	**2,287,101**	**2,231,359**	**2,255,026**	**2,224,494**	**2,254,960**	**2,253,515**	**2,224,770**	**29,995,329**	**31,705,609**	**33,688,841**
Surplus/(Deficit) before assoc.	**(623,449)**	**(96,029)**	**(212,980)**	**132,073**	**(100,633)**	**1,395,585**	**121,093**	**145,585**	**1,402,888**	**2,333**	**105,315**	**442,130**	**2,713,910**	**2,462,615**	**2,617,785**
Taxation	(42)	(42)	(42)	(42)	(42)	(42)	(42)	(42)	(42)	(42)	(42)	(42)	(500)	(535)	(765)
Attributable to minorities													–	–	–
Share of surplus/ (deficit) of associate													–	–	–
Surplus/(Deficit)	**(623,491)**	**(96,070)**	**(213,022)**	**132,031**	**(100,674)**	**1,395,543**	**121,051**	**145,543**	**1,402,846**	**2,292**	**105,273**	**442,088**	**2,713,410**	**2,462,080**	**2,617,020**

(Source: Tshwane 2017/18 SDBIP)

The Tshwane department that has the biggest expenditure by vote for the 2017/18 financial year is the Utilities Services Department (R 13.2 billion). It is expected to rise to R 14.9 billion for the 2019/20 financial year.

Figure 35 shows the expenditure by type for the 2017/18 financial year.

Figure 35: Tshwane - Expenditure Types (2017/18)



(Source: Tshwane 2017/18 SDBIP)

In the 2017/18 financial year, cumulative bulk purchases (mainly including electricity and water) are expected to be Tshwane's biggest expense items proportionately. This indicates that the expenditure by vote and expenditure by type are aligned.

5.2 Cost-reduction approaches for affordable housing

The affordable market in Gauteng (and in South Africa) is the fastest growing housing market. It may be divided into four programmatic types:

- Private ownership
- Public-private ownership (FLISP + home loan)
- Private rental
- Public rental (social housing)

According to FNB Property Barometer (May 2017), the average price increase in this market exceeded all other housing markets, including the affluent housing market. Cumulative five-year growth in this market showed the following rates for Gauteng's three cities:

- Johannesburg (22.7 percent)
- Ekurhuleni (23.8 percent)
- Tshwane (28.6 percent)

This shows that Tshwane's affordable housing market is comfortably more active than those of its provincial counterparts.

For Tshwane, the areas that are most active are:

- Soshanguve, Ga-Rankuwa, Hammanskraal, Mabopane (55.8 percent)
- Pretoria West (33.3 percent)
- Centurion (30.3 percent)

Although the affordable housing market in Soshanguve and the other surrounding former African townships located in the north of Tshwane has shown extremely high growth, the highest growth in Gauteng during the five-year period was Olifantsfontein in Johannesburg (68.7 percent). This could mean that low income people are stretching themselves to buy houses in the former African townships rather than waiting an inordinately long time for RDP units. It could also mean that they can only afford house prices in such areas.

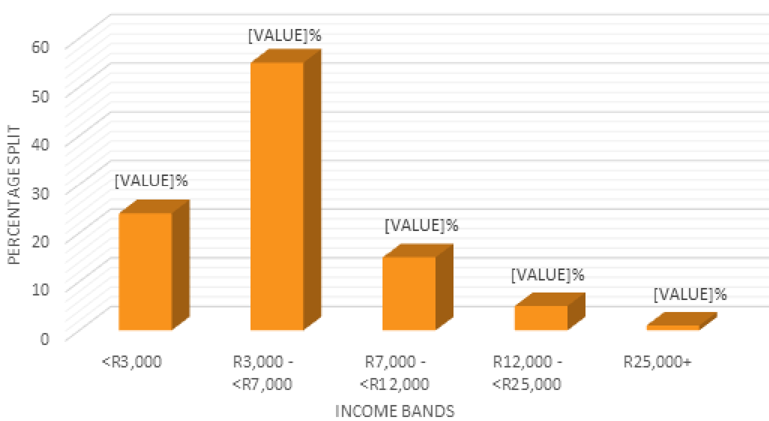
In theory, FLISP was supposed to ease this kind of pressure. Unlike the Project Linked Subsidy, FLISP will not fully subsidise the acquisition of a house. Instead, it is premised on a part-subsidy and part-mortgage arrangement. It was developed in 2003 as part of the Financial Sector Charter negotiations between the banking sector and the central government. It is for households seeking to own their first house. Applicable to households earning from R3 501 to R15 000 per month, FLISP is a subsidy whose objective it is to reduce the initial mortgage loan amount to a level where the monthly loan instalments are affordable over the loan repayment term, or to compensate for any shortfall between the qualifying loan amount and total price of the house, subject to the conditions of the programme. Segmented into 58 income categories, the subsidy amount works on a sliding scale where the lowest salary category (R 3 501 – R 3 600) gets the highest possible amount of R 87 000 and the highest salary category (R 14 901) gets the lowest possible amount (R 20 000).

The GDHS has allocated R 293 million for 66 554 FLISP subsidies over the three financial years comprising the current MTREF.

Just as the affordable market is growing faster than all other housing markets, the affordable rental market is growing faster than the affordable ownership market. All South African cities show strong yields in the affordable rental market. Tshwane's average yield is 8.8 percent [FNB Property Barometer, May 2017].

In Gauteng, rental units now makes up 53 percent of the affordable housing stock. And, as shown in Figure 36, the affordable rental market in Gauteng trumps all other rental markets.

Figure 36: Gauteng - Rental Market by Income



(Source: FNB Property Barometer, May 2017)

Figure 36 shows that 79 percent of the rental market comprises households that earn a monthly income of less than R 7 000.

Affordable rental housing remains a key challenge to Tshwane as it does to most urban areas in South Africa. There is far too little new stock being created for those households that are generally unable to afford more than R 2 500 per month for accommodation costs.

Affordable rental housing is also needed for more than 60 000 new students studying in the various tertiary institutions in Tshwane. According to the Department of Higher Education (DHE), only 5.3 percent of first year students stay in residences. And, even the limited existing student housing is unsafe, badly located, inaccessible, unaffordable and not academically conducive. Tshwane has put aside R6 billion over the next 3 to 5 years for student housing.

The city has signed a Memorandum of Understanding with the Gauteng Partnership Fund (GPF) to support emerging Social Housing Institutions (SHIs) to develop a strong social housing pipeline and create a platform (in the form of a Tshwane Social Housing Committee) for fostering partnerships and to monitor social housing initiatives in the city. Tshwane has also repositioned its social housing entity, the Housing Company Tshwane (HCT). HCT is now accredited by the SHRA. And, the city has since transferred well-located portions of land to it to develop social housing.

The GDHS has allocated R 3.2 billion for 55 171 social housing units over the three financial years comprising the current MTREF period.

While the central government appears keen to continue to finance the housing needs of the low income households by providing them with fully subsidised RDP houses and the banks appear keen to fully finance the housing needs of high income households by providing them with home loans, the affordable housing market needs all stakeholders to play their part. This includes government providing part-subsidies; banks providing viable home loan products; developers lowering the prices of housing units; suppliers offering discounts or, as the case may be, more realistic prices on building materials; employers providing housing allowances to their employees; and, end users contributing either in financial or sweat equity terms. This arrangement will have the effect of, on the one hand, bringing down the cost of the house and accompanying home loan; and, on the other hand, raising the affordability levels of households.

5.2.1 Opportunities in low-carbon and climate resilient technologies

Averaging 8.9 tons per capita, South Africa is the 16th highest Greenhouse gas (GHG) emitter in the world and the highest among developing countries, which include China and India. South Africa's GHG emissions comprise 1.1 percent of global emissions, yet its GDP is only 0.6 percent of global GDP. GHG emissions in South Africa grew 44 percent from 1990 to 2012. Emissions totalled 346.8 tons in 2010; 367.6 million tons in 2011; and, 464 tons in 2012. The country's heavy reliance on coal gives it a reputation of being a "dirty" energy producer [Worldbank: Cities' contribution to Climate Change].

Yet, South Africa is still rated as an attractive destination for renewable energy investment. But, the viability of new instruments which support low-carbon and climate-resilient development will likely only be assured if there is local production involved. The import tariffs and weak Rand (as well as its volatility) make importing somewhat unpredictable. If there is job creation and the empowerment of blacks and or women then government at all levels will likely be supportive. This is so because the low carbon initiative will be contributing to the achievement of other important socio-economic goals.

Several companies and government entities are busy trialling or marketing low carbon and climate resilient instruments. But, these initiatives are dispersed and their impact seems to be low. In its 2012-2016 IDP, Tshwane had estimated that it would need to meet the following hard infrastructure requirements to ensure sustainable growth:

- 500 000 m3 of water per day
- 1.2 million m3 of sewage to be treated per day
- 2 million tons of solid waste to be managed per annum
- 4 500 kilometres of roads required
- 750 megawatts of electricity to be generated

It is not known how much progress has been made towards the achievement of these targets. Seemingly, either there has been little headway or the new leadership - in 2016, the DA displaced the ANC as the ruling party in the city - has discontinued with them (the city's 2017-2021 IDP does not refer to these targets).

5.3 Improving Financial and Technical Support at the City Level

The Housing Development Agency (HDA) is a national public sector entity that acquires, prepares, develops and manages land for housing and human settlements. It was established in 2009 in terms of the Housing Development Agency Act No.23 of 2008. The HDA partners with a range of stakeholders including national, provincial and local governments as well as communities, developers and investors. It currently focuses on catalytic projects. Catalytic projects are assessed on the following basis:

- Intervention that is required in order to afford access to suitable, well-located land and the associated social infrastructure
- Integration to strengthen the need for compact cities
- Impact that leads to both spatial and social transformation

There is an opportunity for Tshwane to direct a dedicated cash flow, such as the income collected from the service charges, into a development financial entity. This essentially secure and predictable income stream will enable the entity to approach the markets for the funding of infrastructure projects that may not be suitable for ring-fencing on their own (e.g. due to delayed income projections, or heavy weighting of the social component). Potential investors would likely be comforted by such a dedicated income stream from collections, which has a revenue history and which includes a wide range of assets and users. This will effectively be a virtual balance sheet. The income stream, rather than the estimated income from the projected new infrastructure, will then determine the size and conditions of the loan facility. Later on, the income from new infrastructure will then form part of the revenue stream that will be used for further loans in the same manner. Obviously, this approach will work best if the entity's operational efficiency is a given.

5.4 Opportunities for International Financial Institutions and Agencies

Financing flows are generally spread across sectors. But, the 2009 World Bank Report identified that geographical spread is a weakness and that growing urban areas might not be getting due attention.

This applies to Tshwane. The city's infrastructure projects require substantial investment. This situation is appropriate for establishing a project SPV, which will be able to get funding for the capital investment from external sources on the strength of the underlying project. These sources will include debt in a variety of ways such as commercial loans, bonds, and development finance loans.

In practice, the project SPV may require the central government to provide guarantees to the investors. This could be on the debt itself, or the revenue collected by the city. The debt in the SPV will be a contingent liability on the central government's balance sheet, while the financial risk for revenue collection will remain with Tshwane. The investors and users will carry little risk, meaning that the cost of capital should be low. Where there is a large number of users that cannot afford the scheme at its full cost of capital or where they will only be able to afford the scheme at some point in the future, fiscal grants or developmental soft loans will be necessary to support the commercial financing. While the SPV should be able to access most sources of finance, it may not use existing revenue to leverage new finance. It must also be very flexible on the types of infrastructure that will be financed.

Founded in 1996, the Infrastructure Finance Corporation (trading as INCA) was a response to the South African government's call for increased private sector involvement in infrastructure funding. It was well-known for providing unsecured debt finance to municipalities for infrastructure-related projects. But, in 2009, it decided to close down. Seemingly, its shareholders were getting lower returns due to changes in the municipal market, the revised approach by its rating agency and the loss of its competitive edge. By contrast, public sector lending – almost entirely from the DBSA – accelerated sharply during this period, resulting in total public-sector lending exceeding private sector lending for the first time.

Although there has been a recent recovery in private lending to municipalities, there is a concern that both the historical and current levels are still very limited. This is despite the legislative and policy reforms that have been introduced to stimulate private sector participation.

Recent research indicates that the development of the municipal debt market is being limited by the following factors:

- The lack of a developed secondary bond market
- Short maturities on loans
- Poor creditworthiness
- Lack of treasury management capacity

There is a concern about alignment with broader municipal objectives, but this is less problematic for stand-alone, non-conventional infrastructure. Tshwane has already trialled PPPs. This included the Munitoria Project and the Tshwane Fleet Project.

5.4.1 Financial sector development

The South African financial sector is rated one of the most sophisticated in the world. Technologically and from an efficiency perspective, very little can be offered to improve it.

Yet, socially and from an effectiveness perspective, much remains to be done. Home loan, savings and insurance products remain limited. Banks, for example, can improve on developing housing finance products that are flexible, generous, affordable and accessible. Hardly innovative, they essentially offer identical home loan products with only the names of their respective products being different. Most of their financial instruments are of the traditional and restricted variety. Banks do not admit to it but they appear to be systematically withdrawing from the affordable housing market for no other reason that their inability to maintain high profit margins. This has created an opportunity for alternative lenders, who must be contented with lower but still sustainable profit margins. And, they must have the ability to innovate and customise products.

The "big four" banks have a stranglehold on the sector, over which they hold more than 80 percent of market share. Partnerships or funding should be directed towards growing the smaller banks to ensure financial inclusion by low income households. Although by some accounts there has been good growth in achieving this objective, much still needs to be done. Less than half of low income households have access to a bank account. Moreover, bank charges tend to be inordinately high.

5.4.2 Opportunities for Financing

Tshwane presents with the following financing opportunities: waste recycling, harnessing biogas from dumping sites, providing seed capital and other forms of financial assistance for affordable housing developments. There is also an opportunity for clean energy products such as building materials, solar heating and lighting, EE street-lighting and an integrated and sustainable inner-city public transport system including rail and road transport links to the city centre and regions. The city's pipeline projects in the different sectors are detailed in Annexure 6. Yet, the city also appears willing to give effect to any worthwhile or relevant project outside this list which an investor may present to it.

5.4.3 Opportunities for Capacity Building

Capacity building initiatives in South Africa tend to be budget-driven rather than needs-driven.

Outreach programmes for ordinary citizens are seriously lacking. Some of the programmes from which Tshwane households (and, therefore, the city) could benefit include:

- Basic financial literacy
- Basic borrower rights and obligations
- Train the Trainer: Environmental awareness and conservation
- Train the Trainer: How to get a housing subsidy or loan
- Train the Trainer: How to maintain a property
- Train the Trainer: How to save water
- Train the Trainer: How to save electricity
- Train the Trainer: How to manage money

These programmes can be funded or co-funded by the Department of Cooperative Governance and Traditional Affairs (CoGTA), Local Government Sector Education and Training Authority (LGSETA) and Energy Sector Education and Training Authority (ESETA).

Ordinary citizens have very little knowledge and understanding of, for example, FLISP. Yet, even city officials who are required to administer this and other policies and laws have little understanding of the mechanics of these. The following short-courses could be offered to them:

- Understanding Subsidies
- Understanding Mortgages
- Understanding Performance and Monitoring Policies and Laws
- Understanding Development and Planning Policies and Laws
- Understanding Local Government Policies and Laws
- Understanding Real Estate Policies and Laws
- Understanding Monetary and Administrative Policies and Laws

These short courses can be funded or co-funded by the DHS, DBSA, Estate Agency Affairs Board (EAAB), Banking Association of South Africa (BASA) and NHFC.

Currently, the South African Local Government Association (SALGA) is running the Councillor Induction Programme (CIP) for ward councillors throughout the country. It focuses on the role of the ward councillor. Yet, ward councillors have little understanding of important aspects of human settlements, infrastructure and urban services. The short courses listed above for city and other government officials can also be extended to ward councillors.

Coupled with the problem of a shortage of jobs in the sector is the low levels of skills of artisans working in the fields of human settlements, infrastructure and urban services. Courses from which they will benefit include the following:

- Basic Course in Bricklaying
- Basic Course in Plumbing
- Basic Course in Electrical Wiring
- Basic Course in Plastering
- Basic Course in Tiling
- Basic Course in Laying Carpets
- Basic Course in Carpentry
- Basic Course in Painting
- Basic Course in Paving
- Basic Course in Welding
- Basic Course in Roof Construction
- Basic Course in Estimating Building Costs

5.4.4 Opportunities for Partnership and Knowledge Development

There are at least two good examples of the feasibility and desirability of investors getting involved in low income and affordable housing in South Africa.

International Housing Solutions (IHS) is a global private equity investor. In 2007, it launched the South African Workforce Housing Fund (SAWHF), a 10-year and R 1.9 billion private equity fund. The participating contributors include OPIC, IFC, DBSA, PIC and Citi (South Africa). The Fund was expected to fund 50 000 affordable housing units before its termination last year. IHS is now launching its second fund, which includes a green facility designed to improve the efficient use of energy, water and building materials in housing developments.

Launched by Old Mutual in October 2010, the R 9.15 billion Housing Impact Fund of South Africa (HIFSA) seeks to make commercially viable investments in the low income and affordable housing sectors. At the same time, it enables its investors to achieve the highest risk-adjusted return possible and to achieve targeted investment points as defined in the Financial Sector Charter. The Fund finances the acquisition and construction of homes for sale and rent to income-targeted households. It also caters for student accommodation. The Fund will terminate in 2025.

For projects with a dedicated revenue stream, it may be appropriate to explore a partnership (with an associated SPV) based on shared equity between the government and investors. As the cost of equity tends to be higher than the cost of debt, this would be more applicable to schemes for which the investment risk is higher but which can be recovered if managed efficiently. This may be relevant for specific non-conventional, innovative infrastructure such as a desalination plant that has potentially committed users. It is unlikely that the government would want to share equity risk on more traditional strategic infrastructure.

The private investors must offer specific technical or management expertise to the partnership. Governance arrangements must be clear and transaction costs must show risk attached to investors' returns. Such an arrangement would suit large projects with substantial financing requirements. The SPV could access debt finance and possibly also donor funds.

5.4.5 Opportunities for launching and developing new instruments

Other than the GBCSA's implementation of the EDGE rating tool there has been very little financing and greening innovation in regard to housing arrangements in South Africa. Much reliance is placed on imported solutions or products. These tend to be too expensive and their take up is very limited. There has been more than usual interest in solar heating and lighting options for the house mainly because of Eskom's unreliable supply and constant black-outs which, admittedly, now appear to be a thing of the past.

There is a huge opportunity for affordable off-grid solutions. Rainwater harvesting systems, if affordable and aesthetically pleasing, are also likely to do well in the market.

An opportunity exists for the establishment of a private equity fund for affordable housing in Tshwane specifically and in Gauteng generally. Such a fund comprising, for example, R 2.5 billion could deliver about 5 600 affordable housing units (with a maximum unit cost of R450 000) in the first two years.

The purpose of the fund can be to improve the rate, scale and affordability of housing delivery with a particular focus on affordable housing, student accommodation, employer-assisted housing and integrated, catalytic and mega human settlement projects.

- The objectives of the Private Equity Fund for Affordable Housing will then be to:
- Facilitate catalytic human settlement (greenfield) projects
- Revitalise medium and large human settlement projects that have stalled

- Acquire land that is conducive for human settlements development

- Regenerate towns and cities through (brownfield) human settlement projects

- Provide viable investment opportunities for targeted individuals and entities

- Advance the cause of South Africa as a developmental state by promoting BBBEE and mixed housing (race-wise, tenure-wise, use-wise and income-wise); and, helping to overcome end-user housing affordability constraints. Development impact is desired but not in lieu of sound commercial principles.

The main threats to the success of such a fund are the shortage of appropriate land parcels in Gauteng as well as the high-cost of these; protracted municipal approval processes; and, the general lack of borrower equity. But, although there is a general shortage of land in the province there is more than enough land available for the fund to achieve its objectives. Still, the opportunities identified below easily outweigh the threats:

- The demand for affordable housing in Gauteng by far exceeds its current rate of supply.

- This situation inter alia suggests that attractive yields are very likely from investing in the housing market.

- Most affordable housing developers are constrained by the lack of access to adequate and affordable finance.

Mainstream commercial banks are, on the one hand, applying more stringent conditions for borrowing and, on the other hand, approving lower loan amounts (the norm nowadays appears to be 70 percent LTV while not so long-ago 100 percent LTV was common). These have resulted in ordinarily very feasible human settlements projects being stalled.

Chapter 6

Project Identification

6.1 City Priorities for Housing, Infrastructure and Urban Services s

Tshwane's long-term development strategy is detailed in Tshwane Vision 2055, which was launched in September 2013. To ensure that by 2055 it has developed quality infrastructure that supports sustainable human settlements, Tshwane has invested R 1.5 billion for road repairs and maintenance; R 210 million for new energy bulk infrastructure and electrification connections; R 1.5 billion for reservoir extensions, replacing or upgrading water bulk pipeline infrastructure, water networks and developing waste-water treatment works; and, refurbishing the city's power stations and expanding the Roodeplaat and Rietvlei dams.

In order to deliver quality houses at scale and to speedily restore the dignity of its poorest residents, Tshwane launched the Re Aga Tshwane Programme in 2016. An amount of R 304 million was budgeted for this programme during the 2016/17 financial year and a total of R 561 million over the MTREF period.

6.2 Pipeline of Fundable Projects

Several opportunities exist for financing public amenities and initiatives in Tshwane. Almost every sector has a pipeline of planned projects. This applies equally to housing, human settlements infrastructure, transport infrastructure and urban services. And, almost every project requires some form of funding or other. More often, the funding requirements are not specifically detailed: they are negotiable, usually project by project or investor by investor. The city seemingly is receptive to all forms of assistance, within reason and within its social, political and financial mandate and powers. Annexure 6 provides the complete list of projects that the city plans to undertake immediately and in the near future and which relate to housing, infrastructure and urban services.

6.3 Pipeline of Low Income and Affordable Housing Projects

The USDG assists Tshwane to improve land development aimed at benefitting poor households. Under this facility, some 1 830 houses were planned for the city during the 2016/17 financial year. These were in Refilwe Manor, Zithobeni Extensions 8 and 9, Kudube Extension 9, Olievenhoutbosch Extension 60, Mamelodi Erf 29355 and the Fort West area. Another R 538 million was allocated during the same year for the Re Aga ("dignity for all") housing initiative.

Low income housing is fully subsidised from the national fiscus. So, top-structure funding is not generally required for this category. But there could still be opportunities for funding green solutions like solar geysers, heater pumps, and alternative building materials. This is linked to the NDP, Tshwane 2055 and Human Settlements White Paper objectives.

Affordable housing projects are largely driven by the private sector though they usually assume the character of PPPs. This is because developers, social housing institutions and end users often access FLISP subsidies, for households earning R 3 501 to R 15 000 per month; and, social housing subsidies. Tshwane sometimes takes on the developer role. Its affordable housing projects are financed mainly through long-term debt from development finance institutions (e.g. DBSA, NHFC) and the local commercial banks (e.g. Nedbank, FNB).

Financing opportunities for housing project pipelines must be considered against the backdrop of cash-flows that will service the debt and also the size and value of a project.

Table 35 represents affordable housing projects over and above what are detailed in Annexure 6.

The five pipeline projects will altogether deliver 22 284 housing units. The opportunity exists for an investor to finance or co-finance the development of these projects. The investor could finance the full development costs of all five projects (R 10 billion) or just one or two of the projects (e.g. Onderstepoort at R 950 million). Alternatively, an investor may prefer providing only equity finance for all five projects (R 3 billion) or just one or two of the projects (e.g. Onderstepoort at R 286 million). Or, only debt finance for all five projects (R 7 billion) or just one or two of the projects (e.g. Onderstepoort at R 668 million). An investor may even finance only the development costs of the first phases of all five projects or just one or two of the projects. Or, just the equity or debt finance part of these

Other affordable housing projects in Tshwane which an investor may consider include the following: Leeuwfontein (Mamelodi, 457 units, R 300 million); Bontle View (R 540 million, R 296 million); Amandasig (Pretoria West, 300 units; R 95 million); and, Fort West (Pretoria West, 8 178 units, R 3 billion).

To be developed jointly by the GDHS and Tshwane, the Fort West project is located less than seven kilometres away from the CBD: it is adjacent to Lotus Gardens. It falls under Tshwane's Region 3 and forms part of the city's growth corridor. This project has been approved as one of the DHS's twenty-six catalytic projects.

The Fort West project has two phases: Phase 1 (Extension 4) comprises 5 912 housing units and Phase 2 (Extension 5) comprises 2 266 housing units. This is a total of 8 178 housing opportunities with densities of between 80-120 units per hectare. The land is currently owned by Gauteng Province. The project is expected to take seven years to complete and at an estimated cost of R 3 billion with 7 513 job opportunities being created. The land has been made available and the planning concept and design have been completed and approved. But, bulk, link and construction are still at the design stage. Planning is expected to be completed in 2018 with construction taking place from 2019 to 2029. During the assessment of its feasibility, a threat identified was that there was no funding plan evident, though it has been estimated that roughly R 1.65 billion would be required from the private sector.

6.4 Pipeline of Infrastructure and Urban Services Projects Services Projects

The project pipeline for energy and electricity; transport; and, water and sanitation are shown in Table 36.

Table 36: Tshwane - Pipeline of Infrastructure and Urban Services Projects

Table 35 is split into: (a) costs of total development; and, (b) cost of the first phases to kick-start the projects.

Table 35: Tshwane - Pipeline of Affordable Housing Projects

	Pretoria Projects					Rand Value		
	Project Name	*Location*	*Type*	*Product*	*Number of Units*	*Total Development Cost Estimate*	*Equity Funding Required [30%]*	*Debt Funding Required*
1	Gem Valley	Pretoria East	Mixed Housing	Affordable Housing	8,400	3,910,746,089	1,173,223,827	2,737,522,262
2	Onderstepoort [Soshanguve]	Pretoria North	Mixed Housing	Affordable Housing	2,475	953,703,826	286,111,148	667,592,678
3	Kirkney Extension 33 & 34	Pretoria West	Mixed Housing	Affordable Housing	409	205,146,391	61,543,917	143,602,474
4	Zandfontein [Kirkney 2]	Pretoria West	*Mixed Housing*	Affordable Housing	9,000	4,031,364,686	*1,209,409,406*	*2,821,955,280*
5	Hestea Park	Pretoria North/East	*Mixed Housing*	Affordable Housing	2,000	913,113,657	273,934,097	639,179,560
5					22,284	10,014,074,649	3,004,222,395	7,009,852,254

	Pretoria Projects Funded in Phases					Rand Value		
	Project Name	*Location*	*Number of Phases*	*Product*	*Number of Units*	*Total Development Cost Estimate/Phase*	*Equity Funding Required [30%]*	*Debt Funding Required*
1	Gem Valley	Pretoria East	9	933	8,400	434,527,343	130,358,203	304,169,140
2	Onderstepoort [Soshanguve]	Pretoria North	6	413	2,475	158,950,638	47,685,191	111,265,446
3	Kirkney Extension 33 & 34	Pretoria West	2	204.50	409	102,573,196	30,771,959	71,801,237
4	Zandfontein [Kirkney 2]	Pretoria West	*10*	900	9,000	403,136,469	*120,940,941*	*282,195,528*
5	Hestea Park	Pretoria North/East	4	500	2,000	228,278,414	68,483,524	159,794,890
5					22,284	1,327,466,059	398,239,818	929,226,241

(Source: Author's estimation)

Table 35 represents affordable housing projects over and above what are detailed in Annexure 6.

The five pipeline projects will altogether deliver 22 284 housing units. The opportunity exists for an investor to finance or co-finance the development of these projects. The investor could finance the full development costs of all five projects (R 10 billion) or just one or two of the projects (e.g. Onderstepoort at R 950 million). Alternatively, an investor may prefer providing only equity finance for all five projects (R 3 billion) or just one or two of the projects (e.g. Onderstepoort at R 286 million). Or, only debt finance for all five projects (R 7 billion) or just one or two of the projects (e.g. Onderstepoort at R 668 million). An investor may even finance only the development costs of the first phases of all five projects or just one or two of the projects. Or, just the equity or debt finance part of these

Other affordable housing projects in Tshwane which an investor may consider include the following: Leeuwfontein (Mamelodi, 457 units, R 300 million); Bontle View (R 540 million, R 296 million); Amandasig (Pretoria West, 300 units; R 95 million); and, Fort West (Pretoria West, 8 178 units, R 3 billion).

To be developed jointly by the GDHS and Tshwane, the Fort West project is located less than seven kilometres away from the CBD: it is adjacent to Lotus Gardens. It falls under Tshwane's Region 3 and forms part of the city's growth corridor. This project has been approved as one of the DHS's twenty-six catalytic projects.

The Fort West project has two phases: Phase 1 (Extension 4) comprises 5 912 housing units and Phase 2 (Extension 5) comprises 2 266 housing units. This is a total of 8 178 housing opportunities with densities of between 80-120 units per hectare. The land is currently owned by Gauteng Province. The project is expected to take seven years to complete and at an estimated cost of R 3 billion with 7 513 job opportunities being created. The land has been made available and the planning concept and design have been completed and approved. But, bulk, link and construction are still at the design stage. Planning is expected to be completed in 2018 with construction taking place from 2019 to 2029. During the assessment of its feasibility, a threat identified was that there was no funding plan evident, though it has been estimated that roughly R 1.65 billion would be required from the private sector.

6.5 Pipeline of Infrastructure and Urban Services Projects

The project pipeline for energy and electricity; transport; and, water and sanitation are shown in Table 36.

Table 36: Tshwane - Pipeline of Infrastructure and Urban Services Projects

Project description	Project Value
Energy and Electricity	
Refurbishment of power stations	R 1 123 000 000
Electricity for All	R 227 600 000
New bulk infrastructure	R 176 000 000
Townlands (Marabastad)	R 124 200 000
Hostels (Saulsville and Mamelodi)	R 20 000 000
AMVI infrastructure (smart meters)	R 950 000 000
New connections	R 34 700 000
11 kV overhead network	R 14 000 000
Transport	
TRT - Transport infrastructure	R 750 000 000
Roads and Storm Water	R 121 000 000
Mabopane Station modal interchange	R 54 100 000
TRT – Transport infrastructure (bus-way, depots, stations, non-motorised transport)	R 750 000 000
Flooding backlogs – networks & drainage canals	R 369 900 000
Upgrading of Garsfontein Road	R 12 000 000
Internal roads - northern areas	R 18 200 000
Wonderboom Airport	R 21 500 000
Mabopane Station modal interchange	R 54 100 000
Communication	
E-Initiative	R 20 000 000
Water and sanitation	
Water provision	R 144 900 000
Reservoir extensions	R 50 000 000
Waste water treatment works facilities	R 203 000 000
Replacement & upgrading: redundant bulk pipeline infrastructure	R 50 500 000
Refurbishment of water networks and backlog eradication	R 80 000 000
Sewage	R 147 000 000

(Source: Tshwane 2017/18 BEPP, 2017-2021 IDP)

Tshwane owns and operates two coal-fired power stations: one in Pretoria West (180 MW capacity) and the other in Rooiwal (300 MW capacity). Both use outdated technology that must be upgraded. The city aims to use these power stations to produce its own electricity and be an IPP.

It is likely that the stations will be upgraded using an EE and carbon reduction model. The first phase of the upgrade will involve the manufacture of a newly developed combustible fuel mix compound consisting of coal waste, biomass waste, and mineral and manufacturing waste. The full project costs are expected to be R 423 million for Pretoria West and R 705 million for Rooiwal. The incentives offered to private sector investors include approved feed-in tariffs and guaranteed generated energy off-take.

Interlinked with the Rooiwal Waste Water Treatment Works, the Zeekoegat Waste Water Treatment Works is currently treating sewage at full capacity. There is an urgent need for additional treatment capacity.

These projects could be financed through structured funding models (e.g. equity, quasi-equity, mezzanine and senior debt). Table 35 shows the potential affordable housing projects in Tshwane that private sector developers are keen to undertake but for which they appear to be struggling to get funding.

The Townlands Housing Project in Marabastad require the construction of roads, the provision of sewage networks and access to water infrastructure. The redevelopment projects in Saulsville and Mamelodi also require these. Hence the setting aside of an additional amount of R 4.8 billion during the 2016-2017 financial year.

6.6 Pipeline of Resilient and Green Urban Development Projects

Tshwane's pipeline projects for resilient and green energy are shown in Table 37.

Table 37: Tshwane - Pipeline of Resilient and Green Urban Development Projects

Project Description	Project Value
Rainbow Junction	R12 billion
Hazeldean	R44 billion
Waste-to-Energy Park	Not known

(Source: Author's estimation)

Rainbow Junction

Rainbow Junction is a mixed use, lifestyle and business development six kilometres north of the Tshwane CBD. It will be developed on 140 hectares of land along the Appies River. It lies at the centre of what the city regards as the "zone of choice" new key growth node. The development has easy access to key arterial roads and major national highways, as well as strong rail and air connectivity via the Wonderboom Station adjacent to the site and Wonderboom National Airport just three kilometres away. Another significant advantage is that the city is planning to build the biggest transit hub of its multi-billion Rand A Re Yeng integrated rapid transit system at Rainbow Junction. Figure 37 gives an artistic impression of the planned development.

Figure 37: Artist's Impression of Rainbow Junction in Tshwane

(Source: www.google.co.za)

The development will be anchored by a R 2.5 billion, 94 000 square metres Rainbow Mall: it will also include boutique and business hotels, health and educational facilities, residential units and fully serviced business offices facing the four kilometres of river frontage. From the top of the proposed Rainbow Tower, the whole of Tshwane will be visible. It contributes 670 000 square metres of bulk and a R 500 million infrastructure injection into the city. Expected to create around 45 000 jobs, Rainbow Junction will contribute to the Tshwane Vision 2055 objective of building a resilient, liveable and inclusive city through infill development between the outlying northern belt and the city centre, linked to the city's A Re Yeng rapid transit system. Investors and developers are showing keen interest in the development. They are imbued by the following project outcomes:

- A new economic node in the north of the city
- A new vibrant and exciting address comprising well-planned and integrated mixed land use
- Catalytic economic growth within the zone of choice, the city's priority development and investment
- Integration with proposed public transport (TOD) uses
- Integration with the Apies River
- Centrally managed, reinforcing streets as public places that are safe, comfortable and attractive to encourage pedestrian movement
- A competitively attractive and economically viable environment with a distinct and modern African identity
- A sense of place and ownership for citizens and residents in a place where people live, work and play in exceptional surroundings
- Business, culture and entertainment for global business and tourism attraction, while offering the local market something different
- An urban icon worthy of the status of the leading international African capital city of excellence

Hazeldean

Hazeldean is the new nodal development located in the east of Tshwane. Its deadline for completion is 2020, at an expected cost of R 44 billion. Built on 950 hectares of land, Hazeldean is a private development, with support from the city, provincial and national governments. The PWV17, a new R 90 million road, is being built to connect Hazeldean to the N4. Called Hazeldean Boulevard, the new road will link the N4 and the R21. The interchange will be situated between the Solomon Mahlangu and Boschkop off-ramps. Figure 38 gives an artistic impression of the planned development.

Figure 38: Artist's Impression of Hazeldean in Tshwane

(Source: www.google.co.za)

Known as the east capital, Hazeldean is planned as a self-sufficient live, learn, grow, work and play eco-friendly suburban precinct. It offers "full circle living": the lifestyle includes shops, offices, a mall, hospitals, educational facilities, retail and hospitality and tourism components. Developed at a cost of R 2.2 billion, the 100 000 square metres Hazeldean Shopping Mall will house various national and international outlets. Negotiations are under way to establish a station for Gautrain, the rapid rail system as well as A Re Yeng bus transit service there.

Once completed, Hazeldean will comprise 11 000 residential units. It will also include educational facilities and there are plans to include a 40 000 square metres office building and more than 800 000 square metres of commercial floor space.

The Tshwane Metropolitan Spatial Development Framework identifies the Centurion CBD as the business core of Region 4. The node is the same as the town and business centre, previously called Verwoerdburg. Its excellent economic opportunities were detailed in the Centurion CBD Development Framework released in November 2014.

The Centurion CBD Development Framework listed the following catalysts:

- Prime location within Gauteng's "economic triangle";
- A rapidly emerging top-end technology and logistics industry;
- Scope and potential for significant expansion and development;
- Policy shifts; and,

- Infrastructure developments (e.g. Gautrain, BRT, African Gateway Precinct - which include the Tshwane International Convention Centre; and, the Symbio City Project – which includes the Zwartkop x 28 development).

The growth of Centurion, however, has had some drawbacks. The old town has largely lost its small-town charm and ethos (its apartheid ramifications notwithstanding). If spearheaded by green technology and job creation initiatives, there is a real opportunity to arrest this dropping in the built form, public space and landscape and embrace new urbanism precepts that will confirm it as a sustainable and sought-after residential, business and holiday destination. According to the Centurion CBD Development Framework, opportunities lie in the following:

- Improving accessibility, connectivity and efficiency (e.g. increasing and improving regional vehicular access off the N1 and N14 to the CBD core; increasing and improving vehicular and pedestrian linkage and connectivity between the CBD core and the adjacent residential areas; consolidating public transport routes and facilities that traverse the area; increasing level of mixed land; increasing the provisioning of parking infrastructure and systems serving the CBD core; and, designing around pedestrian and cycling priorities).
- Enhancing the environmental quality and vitality (e.g. rehabilitating the Hennops River and Centurion Lake as an ecological corridor and improve their water quality; improving the quality of through deploying green principles; upgrading water reticulation infrastructure and management in areas with high levels of sinkhole risk; and, promoting energy efficient building typologies).
- Establishing a sense of belonging, identity and dignity (e.g. strengthening the roles and functions of districts and precincts; encouraging built form that contributes to street and neighbourhood cohesiveness; and, upgrading and enhancing imageability of public space)

Tshwane plans to integrate its waste management system with its electrical system by establishing a Waste-to-Energy Park. The aim is to convert landfill gas into electricity. Soon, it also intends to set up a 20 megawatts solar power station. The electricity generated by it will be fed directly into the grid resulting in very low transmission loss.

Nissan SA is being supported by the city on its planned roll-out of the Nissan Leaf, the world's first affordable, zero-emission car. A hatch-back of average size, this car is able to seat five adults. And, it has a range of more than 160 kilometres (100 miles).

Tshwane also plans to build a green international convention centre and an international agro-ecology institute and academy. In addition, it hopes to roll out efficient solar power and heat producing devices that will be installed at carports in public car parks to supply energy to electrical vehicles, street lights and traffic lights. Each public building's car park will become a space similar to the petrol station of today.

Chapter 7

Conclusions

South Africa is, in some important respects, a unique country. Development and advancement must be equitable and non-discriminatory. But, resources spent on development and advancement must be counter-balanced with resources spent on reparation: justness necessarily requires a pro-poor, pro-black bias or what is constitutionally termed "fair discrimination." Fair discrimination involves transformational and remedial tools such as employment equity, black economic empowerment and land restitution. In financial terms, this arrangement presupposes outright and cross subsidisation.

Low income households (that is, those households whose joint monthly income do not exceed R 3 500) qualify for a fully-subsidised RDP house. Households that earn a joint monthly income ranging from R 3 501 to R 15 000 qualify for a partial (FLISP) subsidy. Termed, affordable (or, BNG) housing, these must then be topped-up with home loans from financial institutions. This arrangement is called loan hybridisation. And, households that earn a monthly income of over R 15 000 do not receive any government subsidisation.

With a finite fiscus required to do so much, Tshwane relying solely on inter-governmental transfers will not be able to service all the needs of its constituency, at least not optimally. Nor have the collection of rates and taxes, and selling of utilities like water and electricity, on their own, proved adequate. This makes alternative financing sources a must for Tshwane. While grants and subventions would be great these are not easily forthcoming. The city has little choice but to resort to borrowing. As long as certain conditions set by the National Treasury are met, Tshwane will be permitted to borrow from financial institutions and issue bonds.

Affordable housing, together with the accompanying infrastructure and urban services present viable investment opportunities for private sector investors. These opportunities are bolstered further if consideration is given to low-carbon and climate resilient development. They will demonstrate public benefit and economic growth.

Table 38: Summary of Funding Opportunities

Description	Funding need (R)
Housing	68 billion
Transport network (road)	17.2 billion
Water and sanitation	2.4 billion
Electricity	750 million
Backlog on maintenance of existing infrastructure	7 billion

(Source: Author's estimations)

Table 38 shows that Tshwane has a number of current housing, infrastructure urban services financing needs, which are expected to continue on an upward trend due to a growing population that is not being matched by expanded infrastructure services.

Investment in the city's affordable housing market is not only desirable but seemingly also profitable. In this regard, Tshwane offers the following:

- An affordable housing market is very active
- An affordable housing market that is expanding faster than its overall housing market
- "Affordable areas" that are more stable than the city overall
- "Affordable areas" that are underleveraged
- It is potentially the most affordable city in South Africa to live in

Its home-lending activity is average, but its house values are above average.

Housing, infrastructure and urban services may be separated into revenue generating and non- revenue generating investment opportunities. Wholesale or retail loans for housing will require repayment. That makes it worth considering for investment. A public transport system (including rail and road) will also generate revenue, which also makes it worth considering for investment purposes. The same will apply to utilities such as water and electricity.

Sub-sovereign loans will likely work with the right conditions and under fair arrangements. In other words, loans can be made directly to Tshwane. The city will provide the necessary guarantees. It could pledge its own properties as collateral. But, as Paulais (World Bank: undated) puts it: “Commercial lenders see no market, a too risky market, or a market that costs too much to service.” In theory, then, these loans, if they are indeed forthcoming will be characterised by high interest rates, short durations, no grace period and other severely constraining conditions. But, if loan conditions are too onerous there will be limited or no uptake. Depending on the kind of project, appropriate proportions of debt and equity funding can be blended by the investor to make the arrangement viable for the city. Risk-sharing and PPP arrangements will also go a long way to providing a hesitant investor with the necessary comfort. The National Treasury, a DFI or a commercial financial intermediary could provide credit enhancement through adjustable bond insurance guarantees.

This does not mean that non-revenue generating housing, infrastructure and urban services are not viable investment opportunities. It means that different instruments should be considered for these. Sovereign loans will likely be more viable. In other words, loan finance can be made indirectly through the National Treasury to Tshwane. Yet, the intermediary need not be the National Treasury. DFIs like DBSA or even the Gauteng Provincial Government will be able to provide a private sector investor with the necessary guarantees.

From the above, it is clear that Tshwane is better-placed than most other municipalities in the country and also in Africa. It has political, geographic, demographic, social and economic advantages. These make it an attractive investment destination.

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