

Stellenbosch Municipality

INTEGRATED HUMAN SETTLEMENT PLAN (Draft)

2018

Stellenbosch Municipality:
Department of Human Settlements & Property Management

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TABLE OF CONTENTS

List of tables

List of figures

List of maps

Abbreviations and acronyms

Glossary of terms

1. FOREWORD	1
2. EXECUTIVE SUMMARY	1

PART A: PLANNING CONTEXT **16**

3. BACKGROUND	16
3.1 Introduction	16
3.2 Terms of reference	16
3.3 Purpose	17
3.4 Objectives	18
3.5 Study area	19
3.6 Participation and review	19
3.7 Planning approach	20
3.8 Methodology	21
3.9 Project deliverables	23
3.10 Legal requirements	23
3.11 Requirements identified in the (draft review) IDP 2017–2022	24
3.12 Report structure	24
4. SETTING THE SCENE	25
5. LEGISLATIVE AND POLICY CONTEXT	26
5.1 Housing policy directives	26
5.2 Housing subsidy and quantum	27
6. URBAN DEVELOPMENT CHALLENGES	28
6.1 Human settlements	28
6.2 The economy	37
6.3 Urban resilience (climate change)	40
6.4 Transport and mobility	42
6.5 Infrastructure	42
6.6 Heritage	43
6.7 Environment	43

PART B: STATEMENT OF VISION **45**

7. VISION	45
8. DEVELOPMENT PRINCIPLES	46
9. CHANGE TOOLS	47
10. STRATEGY DEVELOPMENT	48
10.1 Stellenbosch (Town)	48
10.2 Franschhoek	49
10.3 Klapmuts	50
10.4 'Other Settlements'	51

PART C: SCENARIO DEVELOPMENT **52**

11. FORECAST OF LAND TAKE-UP BY NODE AND LAND-USE	52
11.1 Development of three economic-growth scenarios	52
11.2 Historic residential demand	53
11.3 Forecast of residential demand by scenario	54
11.4 Determining the net and gross take-up of land	55
11.5 Allocating the demand for land to nodes by land-use	58
12. DETERMINING GROWTH-AND-DEVELOPMENT PATHS	64
12.1 Readjusted allocation based of nodal positioning strategies	64
12.2 Placemaker model	67
13. PLACEMARKER MODEL APPLIED	70
13.1 Stellenbosch (Town)	70
13.2 Franschhoek	71
13.3 Klapmuts	72
13.4 Investment framework: municipal perspective	73

PART D: MANAGEMENT POLICY FRAMEWORK	79
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14. THEME-RELATED STUDIES	79
14.1 Stellenbosch Municipal Spatial Development Framework, May 2017	79
14.2 Stellenbosch Town Spatial Development Framework, May 2016	81
14.3 Stellenbosch Water Master Plan, December 2011	81
14.4 Sustainable Transit-oriented Development study: Adam Tas Corridor	82
14.5 Northern Extension Draft Feasibility Report, January 2016	82
14.6 Klapmuts Special Development Area (draft report), June 2017	83
14.7 Stellenbosch 2017 Housing Strategy	84
14.8 Emergency Housing Assistance Policy	85
14.9 Draft Informal Settlement Upgrading Policy and Strategy, March 2015	85
14.10 Rental Housing Strategy and Plan, March 2016	85
15. SPATIAL GUIDELINES	86
15.1 Hierarchy of nodes	86
15.2 Land-development areas	87
15.3 Urban edge	90
15.4 Densities	91
15.5 Social amenities	93
16. LAND GOVERNANCE GUIDELINES	93
16.1 Highest-and-best use	93
16.2 Municipal-owned land	94
16.3 State-owned land	95
16.4 Guidelines for the governance of municipal- and state-owned (urban) land	95
17. TRANSPORT AND MOBILITY GUIDELINES	95
18. INFRASTRUCTURE GUIDELINES	96
19. CLIMATE CHANGE GUIDELINES	97
20. HOUSING GUIDELINES	98
20.1 Forecast demand for residential units (summarised)	98
20.2 Housing market segmentation	99
20.3 Housing strategy	100
21. MSDF (SPATIAL) GUIDELINES APPLIED (MUNICIPALITY-WIDE)	105
22. LAND-DEVELOPMENT GUIDELINES APPLIED BY SELECTED NODE	106
22.1 Stellenbosch (Town)	106
22.2 Franschhoek	113
22.3 Klapmuts	115
22.4 'Other settlements'	117

23.GOVERNMENT-DRIVEN HOUSING SUPPLY (HOUSING PIPELINE)	120
23.1 Housing pipeline 2016	120
23.2 Housing pipeline 2017	124
23.3 Housing pipeline 2018 (based on provincial funding allocations)	128
23.4 Proposed housing pipeline	129
24.MUNICIPAL HOUSING ACCREDITATION	133

BIBLIOGRAPHY

ANNEXURES

- Annexure 1:** Investment framework: municipal perspective
Annexure 2: Stellenbosch (Town) Placemaker model applied
Annexure 3: Franschhoek Placemaker model applied
Annexure 4: Klapmuts Placemaker model applied

NOTE 1:

- The use of the word 'Stellenbosch' refers to the entire municipal area of Stellenbosch Municipality (WC024) which includes urban and rural areas, and
- The wording 'Stellenbosch (Town)' refers to the town of Stellenbosch.

LIST OF TABLES

- Table A1:** Project deliverables and timelines
- Table A2:** Report structure
- Table A3:** Summary of housing options (ownership and rental)
- Table A4:** Population size and growth in the Stellenbosch urban areas since 2001, by population group
- Table A5:** Historic gross land take-up by node 2000 - 2015
- Table A6:** Contribution of sectors to the GVA of the Stellenbosch economy at constant 2010 prices in 2015
- Table A7:** Sectoral employment share of the Stellenbosch economy in 2015
- Table C1:** How historic municipality-wide growth in demand was calculated
- Table C2:** Forecast method of residential and non-residential demand until 2036
- Table C3:** Take-up forecast 2016 – 2021
- Table C4:** Estimated growth in demand in municipal area
- Table C5:** Demand/need forecast by scenario in the municipal area by 2036
- Table C6:** Historic gross land take-up by node 2000-2015
- Table C7:** Method of allocating cumulative growth in demand for land by node and typology
- Table C8:** Allocation (as percentages) by node and land-use of cumulative growth in demand for land (m²) by 2036
- Table C9:** Split by node and land-use of cumulative growth in demand for land (m²) by 2036 – Business-as-usual scenario
- Table C10:** Split by node and land-use of cumulative growth in demand for land (m²) by 2036 – Consensus scenario
- Table C11:** Split by node and land-use of cumulative growth in demand for land (m²) by 2036 – Junk scenario
- Table C12:** Split by node and land-use of cumulative growth in demand for residential units by 2036 – Business-as-usual scenario
- Table C13:** Split by node and land-use of cumulative growth in demand for residential units by 2036 – Consensus scenario
- Table C14:** Split by node and land-use of cumulative growth in demand for residential units by 2036 - Junk scenario
- Table C15:** Method of allocating cumulative growth in demand for land by node and typology
- Table C16:** Allocation (as percentages) by node and land-use of cumulative growth in demand for land (m²) by 2036
- Table C17:** Split by node and land-use of cumulative growth in demand for land (m²) by 2036 - Business-as-usual scenario
- Table C18:** Split by node and land-use of cumulative growth in demand for land (m²) by 2036 - Consensus scenario
- Table C19:** Split by node and land-use of cumulative growth in demand for land (m²) by 2036 - Junk scenario
- Table C20:** Synopsis of key outputs from the application of the development paths by scenario - Stellenbosch (Town)
- Table C21:** Synopsis of key outputs from the application of the development paths by scenario - Franschoek
- Table C22:** Synopsis of key outputs from the application of the development paths by scenario - Klapmuts
- Table C23:** Business-as-usual (residential)

Table C24: Municipal infrastructure provision (R' million) - Business-as-usual scenario
Table C25: Consensus scenario (residential)
Table C26: Municipal infrastructure provision (R' million) - Consensus scenario
Table C27: Junk scenario (residential)
Table C28: Municipal infrastructure provision (R' million) - Junk scenario
Table D1: Proposed (but not approved) changes to previous MSDF
Table D2: Key finding(s) of Stellenbosch Water Master Plan, 2011
Table D3: Key finding(s) of STOD study (Adam Tas Corridor)
Table D4: Investment rationale *by node*
Table D5: Investment rationale *within node*
Table D6: Dwelling densities (gross) by selected node (dwelling units per hectare)
Table D7: Population densities by selected node (persons per hectare)
Table D8: Gross dwelling densities used (municipality-wide)
Table D9: Application of spatial guidelines (municipality-wide)
Table D10: Changes to urban edge: Stellenbosch (Town)
Table D11: Land surplus/shortage (ha) by scenario within proposed urban edge by 2036 Stellenbosch (Town)
Table D12: Changes to urban edge: Franschhoek
Table D13: Land surplus/shortage (ha) by scenario in Franschhoek by 2036
Table D14: Changes to urban edge: Klapmuts
Table D15: Land surplus/shortage (ha) by scenario in Klapmuts by 2036
Table D16: Historic gross land take-up by settlement 2000-2015
Table D17: Allocation of cumulative growth in demand for land by 2036 to 'other settlements'
Table D18: Land surplus/shortage (ha) by scenario in 'other settlements' by 2036
Table D19: Proposed urban edge changes in the 'other settlements'
Table D20: Housing pipeline 2016 (funds requested)
Table D21: Housing pipeline 2016 (funds allocated)
Table D22: Projects in 2017 housing pipeline
Table D23: Housing pipeline 2017
Table D24: Housing pipeline 2018
Table D25: Proposed housing pipeline

LIST OF FIGURES

Figure A1: Planning and implementation path of Stellenbosch IHSP
Figure A2: UDS Study framework (as confirmed and applied in IHSP)
Figure A3: Composite graph of housing delivery context (May 2018)
Figure A4: Diversity scores
Figure A5: Population growth (municipal area)
Figure A6: Population growth (urban areas)
Figure A7: Change in affordability 2011/2012 to 2016 (market value of properties and household income): Stellenbosch urban areas
Figure A8: All residential transfers per price band in Stellenbosch Municipality (2005-2015)
Figure A9: Land take-up between 2000 and 2015: Stellenbosch (Town)
Figure A10: Land take-up between 2000 and 2015: Franschhoek
Figure A11: Land take-up between 2000 and 2015: Klapmuts
Figure A12: Square metreage of houses greater than 80 m² completed in municipal area – historic vs 5-year forecast
Figure A13: Square metreage of flats/townhouses completed in municipal area – historic actual vs 5-year forecast
Figure A14: A changing SA economy

- Figure A15:** A comparison of the GVA trends (in 2010 constant prices) for the primary, secondary and tertiary sectors in the Stellenbosch Municipality
- Figure A16:** Sector contributions to the GVA of Stellenbosch for 1995 and 5-year increments to 2015
- Figure A17:** Comparing GVA contribution with unemployment by area within the Stellenbosch Municipality
- Figure A18:** Projected annual precipitation
- Figure A19:** Climate vulnerability of the urban areas in the Stellenbosch municipal area
- Figure C1:** Hub-and-spoke model applied

LIST OF MAPS

- Map A1:** Study area of the Integrated Human Settlement Plan
- Map D1:** Approved changes to the Stellenbosch
- Map D2:** Nodal focal points based on TOD approach in Stellenbosch (Town)
- Map D3:** Klapmuts development opportunities
- Map D4:** Location of informal settlements in the Stellenbosch municipal area
- Map D5:** Stellenbosch (Town): Land-development areas (conceptual)
- Map D6:** Stellenbosch (Town) urban edge
- Map D7:** Droë Dyke/Libertas Transformation Zone: Developable land (approximate)
- Map D8:** Franschhoek: Urban edge and land-development areas (conceptual)
- Map D9:** Klapmuts: Urban edge and land-development areas (conceptual)
- Map 10:** Stellenbosch (Town): Land-development areas and housing pipeline (conceptual)
- Map 11:** Stellenbosch IHSP (May 2018): Land-development areas and housing pipeline by node (conceptual)

ABBREVIATIONS AND ACRONYMS

BNG:	Breaking New Ground (RDP or give-away houses)
CWDM:	Cape Winelands District Municipality
CPI:	Consumer price index
CRU:	Community residential units
CV:	Coefficient of variation
CWPPA:	Cape Winelands Professional Practices in Association
DC:	Development contribution (or charge)
FLISP:	Finance-Linked Individual Subsidy Programme
GBA:	Gross building area
GDP:	Gross domestic product
GLA:	Gross leasable area
GVA:	Gross value added
IGSC:	Intergovernmental Steering Committee
IHSP:	Integrated Human Settlement Plan
IRDP:	Integrated Residential Development Programme
KPA:	Key performance area
KPI:	Key performance indicator
LDA:	Land-development area
LOS:	Level of service
LSDF:	Local Spatial Development Framework
LUPA:	Western Cape Land Use Planning Act, 2014 (Act 3 of 2014)
MEC:	Member of Council [member of executive council of WCG]
MIDP:	Municipal Integrated Development Plan
MIG:	Municipal Infrastructure Grant
MSDF:	Municipal Spatial Development Framework
MTEF:	Medium Term Expenditure Framework
NMT:	Non-motorised transport
PHP:	People's Housing Project
PV:	Present value
r:	Correlation coefficient
RAP:	Rural Area Plan
RDP:	Reconstruction and Development Programme
Sapoa:	South African Property Owners Association
SDF:	Spatial Development Framework
SEMF:	Strategic Environmental Management Framework
SHI:	Social Housing Institution
SHRA:	Social Housing Regulatory Authority
SME:	Small, medium enterprises
SPLUMA:	Spatial Planning and Land Use Management Act, 2013 (Act 16 of 2013)
Stats SA:	Statistics South Africa
STOD:	Sustainable transit-oriented development
TOD:	Transit-oriented development
UDS:	Urban Development Strategy
UISP:	Upgrading of Informal Settlements Programme
VAT:	Value added tax
WCG:	Western Cape Government

GLOSSARY OF TERMS¹

Actual operating income

Actual operating income includes revenue foregone (deducted) and excludes grants, subsidies, and other income defined as follows: 'other income' includes interest on overdue accounts and on investments, public contributions and donations, and 'other income' as stated in the financial statements of the Municipality.

¹ Some of these definitions were obtained from the City of Johannesburg Metropolitan Council, *Spatial Development Framework*, 2040, and adapted to be more study-specific.

Affordable Housing

Housing for the non-indigent in the house price bands associated with household incomes between R3500 and R25 000 per month, and property values between R160 000 and R580 000; also known as the gap-house-price bands.

Backyard dwelling

Dwelling unit subsidiary to a main residential dwelling unit.

Capital expenditure (capex)

Expenditure on infrastructure and superstructure.

Change tool

A tool that could potentially drive change in attempting to guide preferred growth-and-development paths for the urban areas of the Stellenbosch Municipality.

Climate exposure

The nature and degree to which an area is exposed to significant climatic variations.

Climate sensitivity

The degree to which a system is affected, either adversely or beneficially, by climate-related stimuli, either directly or indirectly.

Climate adaptive capacity

The ability of a system to adjust to climate change, climate variability and extremes to moderate potential damages, take advantage of opportunities, or to cope with the consequences.

Coefficient of variation (CV)

In a data series, a coefficient of variation is a statistical measure of the dispersion of the data points around the mean.

Consolidation Zone

An area that is experiencing specific development pressure and where incremental approaches to development, regulation and the maintenance and upgrading of infrastructure will be considered to accommodate natural progression.

Construction area

'Construction area', as defined by Sapoia, includes non-rentable areas like lift wells, staircases and the width of outside walls. Put differently, it is the area of the building envelope times the number of storeys (but only where all storeys are of the same size). It is typically used for expressing building-construction costs per m².

Correlation coefficient

A number between +1 and -1 calculated so as to represent the linear interdependence of two variables or sets of data. The higher the number (close to +1 or -1), the higher the correlation between two variables. A minus sign in front of the number indicates an inverse relationship.

Demand

See Effective demand.

Densification

A process of development that intensifies urban land use within the area.

Developable land

Developable land means the land has a realistic potential of acquiring development rights. It includes 'brownfields' and 'greenfields' development.

Development contribution (or charge)

Development charges (DCs) serve to cover the capital costs of external services and infrastructure, the implementation of which is the responsibility of the Municipality.

Development path

Allocation of scenario-based growth in demand for developable land by type and by node based on the hub-and-spoke approach (with specific reference to the cumulative land demand by 2036).

Development strategy

Facilitating complementary and supplementary land uses aligned to a specific economic sector activity.

Dwelling density (gross)

The number of dwelling units in a given area, calculated as dwelling units per hectare (du/ha); 'gross' means that communal areas like streets and public open space (POS) is included.

Dwelling unit

Building structure in which people live (as per Eskom SPOT building count).

Economic-growth scenario

A forecast of the growth in demand for developable land based on an assumed macro-economic growth path for the country.

Economic-growth strategy

A nodal positioning strategy to guide the development of a preferred 20-year growth-and-development path.

Effective demand

Effective demand is demand that the consumer can actually afford. It is an economic concept that implies that the consumer has the financial wherewithal to afford that which he or she 'demands'. Give-away housing does not constitute 'demand' in the economic sense but rather a social need. Many sources erroneously refer to 'demand' when they mean 'social need'.

Funds-flow outcome

Funds-flow outcome = f(development path, growth trajectory).

Gross Building Area (GBA)

The area that represents the footprint of the building times the number of storeys (provided the storeys are all the same size of the footprint). Thus, GBA includes un-rentable areas like lift shafts, stairways and the breadth of the outer walls. This term equates to Construction Area, as proposed by Sapo.

Gross domestic product (GDP)

The total value of goods produced and services provided in a country during one year.

Gross value added (GVA)

The value of production or output within the borders of a specific area for any specific year.

Growth area

An area where land development is preferred (partially determined by the market).

Growth path

The 'how much' (in rands) and 'what type' of land development as well as 'when' it is likely to occur (fully determined by the market, excluding housing for the indigent and 'soft' and 'hard' infrastructure).

Growth-and-development path

This path essentially entails an approach to urban development that refers to the how much, when, where and what type of land development should be permissible to deal with the challenges,

opportunities and constraints associated with governance, spatial, social, economic and environmental factors as structural drivers prevalent in urban areas.

Growth trajectory

The mathematical curve that development investment could follow.

Highest and best use

The most probable use of a property that is physically possible, appropriately justified, legally permissible, financially feasible and which results in the highest value of the property being valued. (Source: International Valuation Standards Council, 2011). The Afrikaans term – *mees renderende gebruik* – is more descriptive.

Housing for the indigent

Housing in the lowest price class, including 'give-away' (or RDP) houses.

Inclusion zone

Areas outside the current urban edge with vested rights to use land *for an extended urban function (at scale and location)*.

Inclusionary housing

An intervention to encourage developers to offer a gradient of residential price classes in larger developments.

In-situ upgrading

Upgrading is a staged process of improvement of quality of life in informal settlements, based on incremental provision of services and tenure. It should seek to maximise in-situ development in appropriate areas and minimise relocation.

Iron inventory

The proportion of developable land that is permanently vacant and available for development in order to prevent pent-up demand developing. It can be compared with the minimum inventory that a trading company should have to prevent stock-outs.

Job-housing mismatch

A spatial distribution whereby the location of jobs is not 'easily' accessible from where people live (more so time-wise than distance-wise).

Land take-up

Increase in the urban built-up area.

Land-use diversification

A mixing of land uses.

Main-Place

For purposes of the population census, the country is divided into various geographical units. For instance (from large to small): Province → District Municipality or Metro → Local Municipality or Metro → Main-Place → Sub-Place (SP). As an example, Klapmuts is a Main-Place, with Sub-Places Bennetsville, Klapmuts SP, Weltevrede Park, Mandela City.

Municipal Infrastructure Grant (MIG)

The Municipal Infrastructure Grant is a municipal infrastructure funding arrangement. It combines all the existing capital grants for municipal infrastructure into a single consolidated grant.²

² Source: <http://www.cogta.gov.za/mig/docs/3.pdf> viewed on 3 October 2017.

Placemaker

The notion that each node has a specific focus (or marker) that differentiates it from another node. In this study, it relates to a specifically proposed economic focus of a node (for instance, being essentially tertiary or secondary sector in character). The placemaker concept consists of two parts, viz. location and economic focus (positioning).

Population density

The number of people in a given area, calculated as the number of people per km² or per ha.

Precinct plan

A plan that provides detailed development guidelines based on the growth-and-development criteria applicable to a Transformation Zone, taking directive from higher-order plans.

Primary sector of the economy

An economic sector that includes the following sub-sectors: agriculture, mining, forestry and fishing. See also: Secondary sector, Tertiary sector.

Restructuring Zone

A demarcated area to accommodate social housing projects.

Secondary sector of the economy

An economic sector that includes the following sub-sectors: manufacturing, electricity, gas and water supply as well as building and construction. See also Primary sector, Tertiary sector.

Social housing

Subsidised state programme of *rented* housing for households earning between R2500 and R7500 per month.

Social infrastructure

Assets that accommodate social services, such as schools, libraries, clinics and public facilities. Sometimes referred to as 'soft' services or infrastructure.

Sprawl

A development pattern that disperses development versus focusing/concentrating it.

Strategic land-development application

An application was categorised as strategic if the proposed land development relates to (mostly) large tracts of (vacant) land, inside or outside (if outside, then close to) the urban edge and considered as one-titled unit or grouped together.

Superstructure

Top structures or buildings.

Tertiary sector of the economy

An economic sector that includes the following sub-sectors: trade, repairs and hospitality, financial institutions, real estate and business services; community, social and personal services; and government services. Workers in this sector are typically housed in offices.

Theil's entropy index

The Theil index is a statistic primarily used to measure economic inequality and other economic phenomena, though it has also been used to measure racial segregation.

Transformation zone

Areas where coordinated public- and private-sector investment is prioritised (first tier) for urban intensification and/or expansion, i.e. *preferred growth areas*.

Transit-oriented development (TOD)

An approach to development that focuses and intensifies development around public transport facilities, such as public transit stations, and that promotes walkable, mixed-use, dense, urban form and a high-quality public environment.

Urban edge

A demarcated line that represents the outer limit of the urban expansion, with urban development not allowed beyond this limit. The urban edge is adopted as part of a Municipality's Integrated Development Plan (IDP).

1 FOREWORD

To be completed

2 EXECUTIVE SUMMARY (15 pages)

2.1 PLANNING CONTEXT

All indications are that the current Stellenbosch (urban) growth-and-development path leads to inadequate responses by government, public enterprise and households. The responses by all three tiers of government stem from policy directives (as key performance areas) and the allocation of funds by the three tiers, while private enterprise is, unsurprisingly, driven by profitability. Responses by households vary along socio-economic class lines.

*The Stellenbosch Municipality identified the need to set a 'new' (urban) growth-and-development path. A growth-and-development path essentially guides land development to effect change, i.e. to deal with urban challenges, opportunities and constraints. The Urban Development Strategy (UDS)³ attempts to ensure a principle-led response to the use and development of land over a 20-year period. In this context and following the UDS, the **Integrated Human Settlement Plan** (hereafter referred to as the IHSP, or *this study*) addresses the entire spectrum of housing across different socio-economic categories and price gradients.*

The following are some of the urban challenges that were identified in the *Status Quo Report*:⁴

- Segregation along socio-economic class lines (in the form of a race-based urban spatial configuration).
- Severe, structural poverty; more than half of all households in the municipality's urban areas have a monthly income of between R0–R3500. In Franschhoek and Klipmuts, this proportion is 70% (using Census 2011 data).
- Peripheral, disconnected mono-functional land developments occur in the form of low-density sprawl in nodes and in rural settlements to satisfy the demand for upmarket lifestyles.
- Job-housing mismatch, resulting in excessive commuting as a result of a deficit of affordably-priced housing close to job opportunities. The home affordability problem must be ascribed to a supply-side that has not been keeping up with demand, and the crucial question is, what has been restraining the supply of affordably-priced houses.
- Increased population densities mostly in neighbourhoods with sub-standard quality of services and urban environment. Worryingly, there is not a similar increase in the number of dwelling units in these areas with the possibility of overcrowding.
- Degradation of environmental, heritage and agricultural assets, e.g. pollution of rivers and use of agricultural land for ad-hoc and fragmented urban expansion or land banking.
- Lack of addressing the climate vulnerability of urban areas through adopting and implementing specific adaptation measures.
- Lack of tracking, monitoring and reporting on change over time. *Change must be tracked and measured using appropriate metrics if change is to be properly managed.*

³ The Stellenbosch Municipality appointed Rode & Associates ('Rode') in August 2016 as lead consultants to draft the UDS. The (draft) *Urban Development Strategy* was completed by Rode in November 2017 as third project deliverable.

⁴ *Status Quo Report* completed by Rode in May 2017 as second project deliverable. Its purpose was to understand the current urban context by studying the directives and targets for development and service delivery and associated responses. The *Status Quo Report* included a socio-economic as well as a demographic analysis as specialist input. *Both studies were presented as stand-alone reports.*

In recent times, 'new' responses are being shaped by 'new' relationships that exist between the organising elements of urban living and urban space — sometimes resulting in unplanned change. For example, in Stellenbosch (Town), (a) the unwillingness and/or inability to pay rent in Kayamandi led to the invasion of well-located municipality-owned land south and adjacent to Kayamandi, and (b) the reshaping of neighbourhoods through studentification.⁵ Another new phenomenon, albeit planned, is the partitioning of space to accommodate high-order developments, e.g. high-priced gated residential estates. The reasons for the popularity of these developments are security and the demand for upmarket lifestyles.

2.2 PLANNING APPROACH

The drafting of the IHSP follows the UDS and a number of other planning studies, and is but one component of this suite of plans. A key governance imperative is that these plans should be aligned in content, coordinated in process, integrated in output, transformative in outcomes and consistent in the monitoring and evaluation thereof. For example, the growth-and-development path set out in the UDS, implies a changed investment and spatial development framework, and therefore, necessitates a reassessment of market-related and government-driven housing supply (including densities, location, etc.).

The planning approach adopted in preparing the UDS *and the IHSP*, was to make (urban) planning practical and to be sensitive to the signals that the market is transmitting (the market includes government — as a coach, player and referee in the market — private enterprise and households). We did this by developing economic-growth scenarios and strategies, applying financial placemaker modelling and by designating preferred growth areas within nodes.

By applying the placemaker model, we estimated *the financial and economic implications* of implementing the preferred development paths by node. In doing so, we address the following elements of land development: the 'how much', the 'what type' and the 'when' (fully determined by the market, excluding housing for the indigent). The designation of preferred growth areas is an attempt to state *where* growth and investment is preferred for future urban intensification/ expansion.

This plan is not a diktat but an attempt to help government in decision-making and to chart a way forward for public- and private-sector (co-)investment. In this regard, we emphasise that it is crucially important to track and report on changes (and performance) over time; put differently, to measure qualitative outcomes in quantified terms.

Change tools

We mention the following identified change tools⁶ to potentially drive change in the urban areas of Stellenbosch municipality:

1. Integrate urban planning
2. Integrate transport modes, including its management
3. Promote, where practicable, greater socio-economic integration of human settlements
4. Steer appropriate land use and expected land development
5. Facilitate economic development
6. Efficient allocation of municipal resources

2.3 STATEMENT OF VISION

⁵ Loots, R., Sebitosi, B and Swilling, M. 2012. *Sustainable Stellenbosch – Opening Dialogues*, SUNPress, 2012.

⁶ Six change tools were identified in the UDS that formed the basis of effecting the vision for urban growth and development.

The UDS includes a vision, associated principles and nodal positioning strategies. *We propose these statements as part of this study.*

We propose the following vision for urban growth and development over the next 20 years:

'Compact, inclusive, sustainable and transformed towns'

The growth-and-development path is also based on applied *nodal positioning strategies* (or economic-growth strategies). By implication, to designate areas (by node) where the rollout of potential development over the 20-year period can occur based on a specific investment rationale. The selected nodes are: Stellenbosch (Town) as the hub, Klapmuts and Franschhoek as primary nodes and all 'other settlements' combined as a 'secondary node'.⁷

The nodal positioning strategies were developed to best reflect the market's preference for a certain land-use in a specific location, and by implication, shaping public- and private-sector investment in concert with mutual long-term interests. This investment rationale provided a hierarchy of nodes aligned to the rollout of potential development over the 20-year period. Stellenbosch (Town) received the highest priority for public-sector infrastructure spend followed by Klapmuts, Franschhoek and the other settlements combined (in that order).

Importantly, the vision is also supported by designating land-development areas where growth and investment is preferred within a node.

2.4 SCENARIO DEVELOPMENT

Development of three economic-growth scenarios

We forecast the demand for developable land by typology as informant to setting growth-and-development paths.⁸ The demand for land is significantly influenced by growth in the national and local economies, and hence, we did this by constructing three economic-growth scenarios. The three scenarios are:

- The **Business-as-usual** scenario is a mechanistic line-of-best-fit extrapolation over a 20-year period (2016–2036) of historic demand in Stellenbosch Municipality (1996–2015).
- The **Consensus** scenario is low-growth scenario based on the opinions of a panel of economists whom Rode polls every six months.
- The **Junk** scenario is in effect a very-low-growth macroeconomic scenario, constructed by Rode in December 2016.

Two of these scenarios, viz. **Consensus** and **Junk**, reflect respectively low and very-low economic growth in SA over the 20-year forecast period (until 2036). The third, viz. the **Business-as-usual** scenario, is based on the assumption that the historic average growth rate in the Stellenbosch Municipality will be maintained, even though the country's economy might decelerate. This latter scenario is quite likely in light of the popularity of the Western Cape in general and Stellenbosch in particular.

Forecast of residential and non-residential demand by scenario (net and gross land extent; municipality-wide)

We used these scenario-based models to forecast demand for residential⁹ and non-residential¹⁰ land over, first, a 5-year forecast period, viz. 2016 to 2021. From 2022 onwards,

⁷ The term 'other settlements' includes the settlement areas of Dwarsrivier, Wemmershoek, La Motte, Groot Drakenstein, Raithby, Vlotenburg, Koelenhof, Lynedoch and Muldersvlei. The settlement area of Jonkershoek is also included under this term in the Integrated Human Settlement Plan.

⁸ Developable land means the land has a realistic potential of acquiring development rights. It includes 'brownfields' and 'greenfields' development.

⁹ Four distinct housing typologies, viz. *indigent housing* (the lowest house-price class, including 'give-away' houses), *non-indigent houses <80 m²* (the gap/affordable house-price bands),⁹ *non-indigent*

we used the long-term trend in square metreage completed to extrapolate demand to the end of the 20-year forecast period, viz. 2036.

We converted the forecast demand for built space into a prognosticated net demand for *land* by type, at certain dwelling densities and specific to each scenario. Residential allocations are also converted to number of units. We calculated gross land extents (also by scenario) by doubling the net land extents to accommodate the remaining urban land uses such as streets, public open space, etc.

There are notable differences in net land extent required *by typology and by scenario*. The most notable is the land extent required to accommodate housing for the indigent and houses larger than 80 m². These differences are based on the forecast method applied.

The method to determine the net land extent required for housing for the indigent was based on eradicating backlogs and addressing future need (**Consensus** and **Junk** scenarios) and for the **Business-as-usual** scenario, on historic supply by government – a figure that is indicative of the past insufficient new supply of housing for the indigent by government. This method estimates a cumulative addition to the inventory of 7805 houses by the year 2036 (see box below). In order to wipe out the 2016 municipality-wide backlog of 11 618 *housing units for the indigent* and to cater for the growing need, 17 847 units need to be built between 2016 and 2036. This need forecast applies to both the **Consensus** and **Junk** scenarios.

What are the future needs for non-indigent housing?

We estimate that there will be a cumulative new demand for more than 20 000 *gap/affordable houses* in the municipal area by 2036.¹¹ In the price class above R580 000,¹² we estimate that by 2036, there will be a cumulative new demand for about 3000 stand-alone houses and a cumulative new demand of between 2500 and 3500 for flats/ townhouses, depending on the growth scenario used.

The total gross land area required by 2036 (cumulative, municipality-wide and including non-residential demand) under the **Business-as-usual** scenario is about 1338 ha, while the **Consensus** and **Junk** scenarios amount to about 995 ha and 740 ha respectively. Note that the municipality-wide historic land take-up (all land-uses combined) between 2000 and 2015 amounts to only about 481 ha in total.

Allocating the demand for land to nodes by land use

The next step was to create a development path by allocating the forecasts to the various nodes. For this, we used a hub-and-spoke approach, i.e. to designate nodes for a focused economic activity and to emphasise a specific land-utilisation outcome. Applied to the Stellenbosch economy, the town of Stellenbosch can be considered as the hub with Klapmuts and Franschhoek as (primary) nodes and all 'other settlements' combined as a 'secondary node'.

The following three methods of land allocation were considered by applying the hub-and-spoke approach:

- Proportional historic land take-up by node (historic analysis period 2000–2015)

houses >80 m² (middle to luxury house-price bands)⁹ and *flats/townhouses* (associated with all price bands).

¹⁰ Office, retail and industrial land use.

¹¹ Houses in the price bands associated with property values between R160 000 and R580 000.

¹² Note that the method used to determine the cumulative new demand for the Business-as-usual scenario, assumes growth in demand is impervious to the economy and would be similar to historic demand. The other two scenarios are based on assumed macro-economic growth that is lower than the historic average growth of the SA economy and, as a result, produced lower demand estimates.

We decided against using this method as we expect the split of land-uses between the nodes will change in future and that such an apportionment would not reflect the market's preference for a certain land type in a specific location.

- Reflecting the market's preference for a certain land-use in a specific location — *based on historic trends*.

This 'weighted' allocation was completed but was adjusted to reflect the economic-growth strategies or positioning strategies (see table below).

- Re-adjust allocation *based on the positioning strategies*

The 'reweighted' allocation also sums to the total demand for land by scenario across the municipal area (see table below).

Both allocations used are based on a normalised situation with respect to infrastructure and the stock of developable land.

Split by node and by scenario of cumulative growth in demand for land by 2036 (gross land extent in hectares, all land-uses combined, rounded)					
Based on historic trends					
	Stellenbosch (Town)	Franschhoek	Klapmuts	Other settlement areas	TOTAL
Business-as-usual	999	153	47	138	1338
Consensus	705	158	46	85	995
Junk	517	124	36	62	740
Based on positioning strategies					
Business-as-usual	974	153	82	127	1338
Consensus	698	158	59	79	995
Junk	511	124	45	59	740

The cumulative land extent allocated by node does not differ much between the two methods. The allocation for Franschhoek remains the same. However, the allocation by land use reflects substantial differences in the expected new demand for *office and industrial space* in Stellenbosch (Town) and Klapmuts. This is in line with the positioning strategy to facilitate a services-oriented economy (new demand for offices with associated housing) in Stellenbosch (Town) and a focus on secondary-sector-orientated offerings in Klapmuts (new demand for industrial space).

2.5 PLACEMARKER MODEL

Steering the demand for land requires a quantified, holistic approach that includes spatial, social, financial, economic and environmental perspectives. In order to understand the implications of the scenario-based development paths (i.e. land-type allocation), the quantification of the funds-flow outcomes that results from each path, is required. *This is presented as the strategic investment framework.*

The model has two key drivers that influence future growth, viz. capital expenditure and the growth trajectory. The growth trajectory is the mathematical curve that development investment could follow over the period of 20 years (i.e. growth path by node). Although it is

impossible to forecast a growth trajectory, we opted for a *progressive growth trajectory* in Stellenbosch (Town), be it only for purposes of estimating the future need for infrastructure. We selected a *sustainable trajectory* and *constrained trajectory* for Klapmuts and Franschhoek, respectively. The difference between a 'progressive growth trajectory' and a 'sustainable trajectory' and a 'constrained trajectory' is the mathematical curve that capital expenditure is expected to follow. There is no science in this choice of curve.

The bottom-line outcome of the model is the funds-flow, which could be either a deficit or a surplus. Above the bottom-line are various items that reflect the direct flow of funds when selecting a certain development path coupled with a mathematical growth trajectory. Adjustments are made to the bottom line by considering the following factors:

- Economic impact (indirect impact)
- Employment impact (based on a current minimum wage escalated by 6% per annum)
- Climate change (probability of occurrence applied)
- Social indicators (not included other than employment)

The net result, after applying the adjustments, is a value deficit or surplus.

Through the model, the outcomes of certain variables would offer a direct comparison of the funds-flow outcomes attained for the hub or a particular node (see table below). The variables (of which the magnitudes differ in line with the specific growth trajectory) include the following:

- Development contributions and bulk service requirements (capital spending)
- Operational income
- Operational expenses
- Direct investment (private sector)
- Employment
- Other factors (e.g. climate change, environmental constraints, etc.)

Comparison of present value¹³ (R'million) from the application of the development paths by node and scenario

Item	Scenario		
	Business-as-usual	Consensus	Junk
Stellenbosch (Town)	19 234	17 420	12 266
Franschhoek	1 712	2 247	1 722
Klapmuts	2 006	1 370	987

Considering a 20-year period of assessment, the **Business-as-usual** scenario generates, in Stellenbosch (Town) and Klapmuts, a value surplus/deficit in current (PV) terms that is higher than the Consensus and Junk scenarios. In Franschhoek, the lower PV for the Business-as-usual scenario is ascribed to a doubling of the indigent and gap/affordable housing categories, both smaller than 80 m², which for the purposes of the analysis was combined, creating the higher funds flow.

Municipal perspective (until 2022/2023)

We also considered the strategic investment framework from a municipal perspective. We provided financial information regarding municipal infrastructure provision aligned to a specific scenario based on a preferred growth-and-development path.

¹³ 10% discount rate applied to calculate the present value (PV) (in order to standardise, for comparative purposes, cash flows that occur at different times in the future).

We addressed the following three dimensions of funds-flow that are of importance to the Stellenbosch municipality (as a combined figure by scenario for all three nodes):

- Direct investment in superstructure (top structures)
- Development contributions (2017) (which, for the purposes of interpretation, equate to the external service capital expenditure of the Municipality)
- Gross building area (m²) or bulk that equates to the GBA

For the purposes of planning, bulk infrastructure requirements as budgeted by the Municipality aligns with the development contributions (DCs) paid by developers. The crucial metric to consider, is the capital available for bulk infrastructure in a particular year. For the following three financial years, the Municipality has allocated the amounts stated below (ex MTEF) and we also list our forecast to 2022/2023:¹⁴

R331 million (2017/2018)
R249 million (2018/2019)
R184 million (2019/2020)
R255 million (2020/2021)
R255 million (2021/2022)
R255 million (2022/2023)

Business-as-usual scenario

We calculated that, given the accelerated increase in development, by 2022/2023 the net capital available for bulk service infrastructure is a deficit of R154 million. This implies that R668 million of DCs are required to cover the bulk service requirement, but the Municipality would have insufficient funds, including the previous year's surplus, to introduce bulk services, except if the developer advances at least a R154 million of the DCs, which would then result in a breakeven position with regard to the expenditure requirement for bulk service provision to accommodate development of R2 333 million and 765 000 m² of GBA.

Consensus scenario

The net capital available for bulk-service infrastructure is a deficit of R484 million (also by 2022/2023). This implies that R799 million of DCs are required to cover the bulk service requirement, but similar to the Business-as-usual scenario, the Municipality would have insufficient funds, to introduce bulk services, except if the developer advances at least a R484 million of the DCs, which would then result in a breakeven position with regard to the expenditure requirement for bulk-service provision to accommodate development of R1 983 million and 561 000 m² of GBA.

Junk scenario

The net capital available for bulk service infrastructure is a deficit of R46 million (also by 2022/2023). This implies that R625 million of DCs are required to cover the bulk service requirement. However, similar to the two other scenarios, the Municipality would have insufficient funds, to introduce bulk services, except if the developer advances at least a R46 million of the DCs, which would then result in a breakeven position with regard to the expenditure requirement for bulk service provision to accommodate development representing R1 339 million and 414 000 m² of GBA.

2.6 MANAGEMENT POLICY FRAMEWORK

Up to now, by applying the placemaker model, we have determined *the financial and economic implications* of implementing a selected economic-growth strategy with aligned scenario-based development paths by node; and by implication, the ability (in quantified terms) of the local economy to create jobs. In addition, the quantified and holistic approach to steer the growth in demand for land, also includes *spatial, social and environmental*

¹⁴ The forecast is an average for the first three years and is assumed to remain constant for the latter three years.

perspectives. We consider these perspectives as part of preparing a *management framework* to (further) guide decision-making, i.e. responses by government to expected urban growth and development.

In the next section, we discuss, in brief, the following guidelines: spatial, land governance, housing, transport and mobility, infrastructure, climate change.

Spatial guidelines

Hierarchy of nodes

As part of the management framework, we effectively created a *hierarchy of nodes for growth and investment* by applying *nodal positioning strategies* and by using the *hub-and-spoke approach*. As mentioned, the selected nodes are: Stellenbosch (Town), Klapmuts, Franschhoek and the 'other settlements'. Stellenbosch (Town) is labelled as a first-tier priority-investment area. Klapmuts, Franschhoek and the 'other settlements', in that order, complete the hierarchy.

Land-development areas (LDAs)

Also as part of the management framework, we designate land-development areas with associated policies to guide the implementation of development paths *within a node*. The designated land-development areas are areas where growth and investment is preferred for future urban intensification/expansion. We also provide growth-and-development criteria for the use and development of land, land-utilisation outcome(s) and actions arising out of this policy statement, all specific to a particular designated LDA.

Four land-development areas were designated, viz. (a) Transformation Zone, (b) Consolidation Zone, (c) Inclusion Zone and (d) urban areas outside a designated zone.

The **Transformation Zones** are areas where coordinated public- and private-sector investment is prioritised (first-tier) for urban intensification and/or expansion. Only Stellenbosch (Town) has allocated Transformation Zones, viz. the precinct around the Stellenbosch Station/Adam Tas Corridor and the Droë Dyke/Libertas precinct. The envisaged land-utilization outcome is high-quality, high-performance, dense, mixed-use, connected and transit-oriented urban environments. *A precinct-planning project must be commissioned to plan future urban intensification/expansion in these areas.*

Consolidation Zones are areas that are experiencing specific development pressure, where incremental approaches to development, regulation and maintenance and upgrading of infrastructure will be considered to redress past development imbalances and to accommodate natural progression. In Stellenbosch (Town) these areas are second-tier priority for public-sector infrastructure spend, but first-tier priority for spending in Klapmuts (if inside urban edge), Franschhoek and the 'other settlements'. Note that this priority of spending is linked to the hierarchy of nodes.

The **Inclusion Zones** are areas outside the current urban edge with vested rights (historically approved) to use land *for an extended urban function (at scale and location)*. We propose that these areas (*if inside the study area; except for Jonkershoek*) be included within the relevant urban edge.

The areas outside a designated zone are areas with low priority for *public-sector infrastructure spend*, except for maintenance of infrastructure.

Urban edge

The IHSP confirms and apply the urban edges as demarcated in the UDS. The following principles apply to the various urban edges:

- Apply the designated land-development areas to steer the implementation of the preferred development path(s) within a node.
- Incorporate designated Inclusion Zones within an urban edge.
- The use and development of land must optimise the use of existing resources and infrastructure.
- Implement, as part of the annual review of the municipal Integrated Development Plan, a one-year review cycle of the urban-edge delineation. This means that areas outside the urban edge and *designated (or to be designated) as Consolidation Zones* can be considered for inclusion during the annual review process.¹⁵ However, the proposal to include these areas must be *motivated qualitatively and quantitatively by the applicant in terms of the relevant growth-and-development criteria and land-utilization outcomes*.

Densities

The dwelling densities have been increasing in Stellenbosch (Town), Klapmuts and Franschhoek but are still significantly lower than the targeted densities set in planning policy and studies.

Population densities also increased and are expected to increase by about 25% (to 4100 persons per km²) in 2031. This expected increase in the number of urban residents will mainly be absorbed in the three larger towns. We calculate that 91% of the people living in the *urban areas* of the municipality in 2031 will reside in Stellenbosch (Town), Klapmuts or Franschhoek. We caution that these increased population densities will occur in neighbourhoods that are currently characterised by sub-standard quality of services and urban environment. Worryingly, there has not been *an increase in the number of (recorded) dwelling units* in these neighbourhoods.

We consider varying dwelling densities when we convert the forecast demand for built space into a prognosticated (municipality-wide) net demand for land specific to each scenario. We calculated the net demand in both the **Consensus** and **Junk** scenarios based on achieving dwelling densities higher than the norm (general average).¹⁶ The **Business-as-usual** scenario is based on continued low-density sprawled growth,¹⁷ and as such can be regarded as the upper end of the expected demand for land.

The specified densities in the *Stellenbosch Water Master Plan* must be used as benchmark for future land development with the intent to achieve higher densities for all land-use types in all towns/settlements. However, given the land-utilisation outcome in a Transformation Zone, densification should be considered as 'strategic intensification to create a hierarchical network of high-density nodes interconnected with affordable and efficient mass transit, in which case average densification becomes an emergent outcome, not a policy objective'.¹⁸

Guidelines for land governance

The use of well-located public-owned land is a potential driver of spatial transformation. However, government-driven land development results mostly in marginal (and cheaper) land (owned by government, often on the periphery of urban areas) being used for subsidy

¹⁵ To be considered at a pre-application meeting and taken forward into the annual review process.

¹⁶ We used an erf size of 75 m² for houses <80 m² and 500 m² for houses >80 m².

¹⁷ We used an erf size of 120 m² for houses <80 m² and 700 m² for houses >80 m².

¹⁸ Swilling, M. ca. 2016. "Resource requirements of future urbanization", unpublished paper delivered at International Resource Panel (IRP) conference, convened by UNEP. Video accessed on 24 October 2017 at: <https://www.youtube.com/watch?v=X-jM7t-MFcc>. Eventually to be published as an IRP report and will be cited as: Swilling, M., Hajer, M. et al. Forthcoming. *The Weight of Cities: Resource Requirements of Future Urbanization*. A report for the International Resource Panel. Paris: United Nations Environment Program (UNEP). Collaborating Institutes: Utrecht University, CSIRO, Urban Morphology Institute, UCSB, UMN.

housing. This is owing to a trade-off between the upfront cost of land and life-cycle costs to the residents in far-off locations.

In a practical sense, state intervention can provide access to well-located land for the urban poor¹⁹ – but at a cost to either the landowner, the state (all spheres) or the developer (or a combination of these parties). It seems to us, it is unfair²⁰ to expect a private owner or developer to carry these costs, which leaves the spheres of state to foot the bill.

It is noted that the Stellenbosch Municipality owns 4 219,4 hectares of urban and rural land spread out in fragments across the entire municipal area. The tradability of this land, is by choice, low as the Municipality prefers long-term lease agreements as contractual arrangements with third parties rather than selling outright. Arguably, this is one of the reasons why house prices are so high in Stellenbosch (Town) (the supply side is artificially constrained).

Of particular concern in the context of using state-owned land for urban expansion in the Droë Dyke/Libertas Transformation Zone, is the very cumbersome nature of acquiring state-owned land. In this regard, we propose that the Municipality, after finalising and approving the commissioned land audit, determine site-specific development potential or highest-and-best use (for brownfields and greenfields development) in the preferred growth areas.^{21, 22}

We do not provide detailed information about state-owned land in the municipal area, simply because accurate information is not available.

Transport and mobility guidelines

Better and coordinated transport and land-use planning would lead to, *inter alia*, a reduction of travel and transport needs. To this end, the concepts of interconnected nodes and transit-oriented development have been promoted in spatial plans. The goal was to achieve land-use/transport integration as a qualitative outcome.

However, current responses by private enterprise and households are not in line with this goal. For example, recent developments in Koelenhof and Klapmuts are still mono-functional residential developments with the private car as preferred transport mode between productive activities, i.e. forced commuting.²³ When considering land-use management, small gains have been forthcoming as some goals of the TOD approach were achieved (e.g. higher densities and a mix of housing types), but, crucially, the 'transport link' is missing. In this report, we address, amongst other issues, this 'link' through the growth-and-development criteria for the use and development of land in the designated land development areas (in particular, for Stellenbosch (Town)). The work to be done in facilitating the desired land-utilization outcomes in Transformation Zones, would allow for a *planning scope and scale* to consider the issue of land-use/transport integration at town level.

Infrastructure guidelines

The level of municipal infrastructure does indicate insufficient capacity to meet future demand for especially water, sewerage and solid waste disposal. However, sufficient infrastructure capacity is available for the expected development in the Droë Dyke/Libertas

¹⁹ Households earning less than R3500 per month.

²⁰ Thus, it may not pass muster of the Constitution.

²¹ This needs to be done for land in the urban and rural areas.

²² We propose the Municipality must immediately start with steps to acquire state-owned land in the Droë Dyke/Libertas Transformation Zone for urban development.

²³ There is a very low concentration of formal jobs in Koelenhof and that middle to high-income earners prefer to use private transport. The average monthly income of residents leasing property in Nootgedacht Village is more than R50 000 (Source: information provided in April 2017 by Ms C Brand, sales consultant in Nootgedacht Village).

precinct, except for the need to construct a R35 million water reservoir.²⁴ In this regard, funding and capacity constraints are a real and pertinent input for development within the towns/settlements.²⁵

Allocation in the budget of the Municipality links to infrastructure provision in the context of a supply or constraint due to available capacity. Planning and the availability of infrastructure capacity from any external source is beyond the control of the Municipality, but the supply of infrastructure and bulk services would rest with the private party if the Municipality's funding is constrained. Development charges (DCs) are, therefore, included to compensate for the requirements of the external bulk services. These contributions were dealt with in the placemaker modelling calculations.

With respect to solid waste, there is limited capacity at the current operating cell of the landfill in Devon Valley, and no alternative landfill option has been secured to date. Possible diversion technologies will greatly reduce the waste stream, but will not eliminate the need for landfill capacity. In this regard, the Municipality will have to transport waste that cannot be recovered, to another landfill site. A two-year window period exists for the Municipality to establish the required infrastructure to transfer and transport such waste.

Part of a long-term disposal solution, is to create additional capacity at the Devon Valley landfill by rerouting overhead electrical lines cross this area. This option will no doubt provide valuable airspace by linking the two mounds of waste. A high-level calculation indicates that some 1,2 million m³ of capacity could be provided by filling this area.

Climate change guidelines

The use and development of land are key determinants of climate vulnerability in urban areas. In this regard, the municipality must respond to climate change by adopting and implementing specific adaptation options, viz.

- avoid vulnerability to climate-change impacts or
- adjust the urban environment to minimise vulnerability.²⁶

The avoidance-driven strategy entails the choice of location for different land uses as the adaptive mechanism. The choice of location for the minimisation of impact should focus on criteria such as economic development, connectivity, attractiveness, etc. rather than climate change.

The primary adaptive mechanism in this case is optimisation of designs to lower sensitivity to climate change impacts. This can be done at varying scales through urban design and building design.

Housing guidelines

The following strategic guidelines are proposed to steer government-driven land development in the urban areas:

- Provide adequate, affordable, accessible, resource-efficient, safe, resilient, well-connected and well-located housing, with special attention to the proximity factor and the strengthening of the spatial relationship with the rest of the urban fabric and the surrounding functional areas.²⁷

²⁴ Comment made by Mr D Lombaard at a meeting held on 17 August 2017.

²⁵ Considered in the *Stellenbosch Water Master Plan*, December 2011.

²⁶ Roggema, R. (2009). *Adaptation to climate change. A spatial challenge*. Dordrecht, New York: Springer.

²⁷ United Nations, *New Urban Agenda*, January 2017 (*Resolution adopted by the General Assembly on 23 December 2016*).

- Residential (and associated non-residential) land development must be guided by the 'statement of vision' as set out in **Part B** of this report and based on the specifications of the applicable land-development area.
- The following strategic guidelines are proposed to steer government-driven land development:
 - Prioritise the implementation of housing delivery programmes in accordance with the proposed investment framework, hierarchy of nodes and designated land-development areas.
 - Prioritise the implementation of the *Integrated Residential Development Programme* in the Droë Dyke/Libertas Transformation Zone and in the following Consolidation Zones (in order of priority): Kayamandi, Jamestown, Idas Valley, Cloetesville and Klapmuts.
 - Prioritise the implementation of the *Social Housing Programme* in the following Transformation Zones: Droë Dyke/Libertas and STOD (Adam Tas Corridor) and Consolidation Zones: Kayamandi, Jamestown, Idas Valley (more specifically, on erf 3363), Cloetesville, Klapmuts and Franschhoek.
 - Prioritise the upgrading of informal settlements.
 - Implement an Emergency Housing Programme in Consolidation Zones in accordance with (a) the need of the beneficiaries and residents, as well as (b) the structure, (c) function, and (d) purpose of the specific area.²⁸
 - Provide and maintain municipal services and infrastructure in Inclusion Zones to set norms and standards for each service.
 - Conduct due diligence assessments and/or feasibility studies of proposed government-driven land developments.
- The following strategic guidelines are proposed to steer private-sector-driven land development in the urban areas:
 - Encourage developers to offer a gradient of residential price classes in larger developments in Transformation Zones and on well-located land outside these zones. This can include on-site or off-site inclusionary housing opportunities.
 - Prioritise high-density, mixed-use and transit-oriented development in Transformation Zones.
 - Create co-investment opportunities based on appropriate implementation and incentive plans and/or integrated business models.
 - Land-development applications should quantitatively and qualitatively consider the applicable growth-and-development criteria by land-development area (see **§16.2**).

In terms of these guidelines, the Transformation Zones are targeted to accommodate the bulk of new residential supply in the municipal area — the commissioning of a precinct-planning exercise to plan future urban intensification/expansion in these areas must follow the UDS study.

Land development guidelines applied by node

Stellenbosch (Town)

Up to now, we have addressed a number of issues related to the implementation of the 'new' growth-and-development path in Stellenbosch (Town). As one of the key criteria used to designate land-development areas (and as a change tool), we next discuss the availability of developable land in the town, and motivate designating two Transformation Zones.²⁹

The 20-year demand for land exceeds the developable land available (*as a conservative estimate*) inside the current urban edge. Hence, we identified the inclusion of designated land in the Droë Dyke/Libertas precinct. This notwithstanding, there is likely to be a shortage of

²⁸ The identification and planning of (new) emergency housing sites must be part the annual review of the MIDP.

²⁹ Developable land means the land has a realistic potential of acquiring development rights. It includes 'brownfields' and 'greenfields' development.

developable land at the specified densities, under the **Business-as-usual** (337 ha) and **Consensus** (90 ha) scenarios. The **Junk** scenario shows a surplus of 76 ha developable land.

Transformation Zone: STOD (Adam Tas Corridor)

The Sustainable Transit Oriented Development (STOD) approach features prominently in previous planning reports. These reports include a proposed implementation model that was considered as do-able over the short- to medium-term. As a result, a study was commissioned to investigate the role, function and character of the Adam Tas Corridor as a potential catalyst for change in the way the town works.³⁰ The area along the Adam Tas Corridor has been designated as a Transformation Zone in this study.

However, we caution that, from studying the literature,³¹ it is clear that public-transport ridership does not drive property-development decisions around transit nodes. Developers regard the transit node as a bonus, not an incentive. There is consensus that market forces ultimately drive the successful development of an area with profitability as the critical criterion and driver of a successful TOD. Also, the creation of a civic precinct at such a node, would not by itself provide the impetus for market-related land intensification.³²

Transformation Zone: Droë Dyke/Libertas

The site, mostly greenfields, lies between Technopark and the Stellenbosch Golf Course to the south, Die Boord to the east, Main Road 310 to the north and the proposed new Technopark Link Road to the west. We use the 16 (sixteen) growth-and-development criteria applicable to a Transformation Zone to motivate designating the site as a Transformation Zone.

From this, it is clear that on-site land development would be in line with the concept of 'opening up of new bio-regionally appropriate areas for urban expansion' stated in the 'Shaping Stellenbosch' initiative. Key criteria are (a) the positive investor sentiment (including the expression of interest by the Stellenbosch University), i.e. the opportunity to shape *public- and private-sector co-investment* in concert with mutual long-term interests, and (b) the site lending itself to achieving land use/transport integration, more so than any other location around Stellenbosch (Town).

Franschhoek

Like Stellenbosch (Town), we have already addressed a number of issues related to the implementation of the 'new' growth-and-development path in Franschhoek. The paragraph below includes reference to the availability of developable land in the town as one of the key criteria in designating land-development areas.³³

The 20-year demand for land under the **Business-as-usual** and **Consensus** scenarios, exceeds the developable land available (*as a conservative estimate*) inside the proposed urban edge. These scenarios show land shortages of 22 ha and 27 ha respectively at the specified densities. The **Junk** scenario shows a surplus of 6 ha of developable land.

Klapmuts

³⁰ *Sustainable Transit Oriented Development Study: Adam Tas Corridor*, June 2017.

³¹ For the literature review, the writer of this report is greatly indebted to Johan Gericke who generously allowed him to cite heavily from his unpublished paper titled *Critical criteria for successful TDAs*, dated 27.11.2014. Note that Transit Oriented Development (US) is also known as TDA = Transport Development Area (British).

³² There is mention of locating new municipal offices on the Van Der Stel Sportsgrounds (also see **§15.5**)

³³ Developable land means the land has a realistic potential of acquiring development rights. It includes 'brownfields' and 'greenfields' development.

We have already addressed a number of issues related to the implementation of the 'new' growth-and-development path in Klapmuts.

The entire area within the urban edge has been designated as a Consolidation Zone, excluding the two Inclusion Zones, viz. two separate portions of Portion 41 of Farm 748. Areas outside the urban edge have also been designated as Consolidation Zones, owing to 'specific development pressure'. Land-development applications involving these areas, should quantitatively and qualitatively consider the applicable growth-and-development criteria.

The 20-year demand for land under all three scenarios, is less than the developable land available (*as a conservative estimate*) inside the proposed urban edge.³⁴ At the specified densities, the surplus developable land is in the order of 63 ha (**Business-as-usual**), 86 ha (**Consensus**) and 101 ha (**Junk**). Furthermore, the historic land take-up of 56 ha (over the analysis period 2000—2015) in Klapmuts is not insignificant as we regard the town's growth potential as high. That is why we used a *sustainable growth trajectory* for secondary-sector economic activities.

Distance-wise, Klapmuts is actually slightly closer to Paarl (13,9 km, measured to the corner of Lady Grey and Main St) than to Stellenbosch town (16,6 km, measured to 84 Bird St). On top of that, Klapmuts straddles the border of the two municipalities. Thus, we propose that the Municipality, in collaboration with Drakenstein municipality, commission the *drafting of a long-term development strategy for Klapmuts and surrounds*. In this regard, we recommend an approach and methodology similar to the drafting of this report, but including a precinct-planning study.

'Other settlements'³⁵

We have already addressed a number of issues related to the implementation of the 'new' growth-and-development path in the 'other settlements'. These settlements, in their entirety, we designate as Consolidation Zones, except Muldersvlei, Koelenhof, Vlottenburg and Raithby. Mostly located in rural settings, with surrounding land of very high heritage, environmental and agriculture significance, the intent should be to use only developable land within the respective urban edges to create inclusive and sustainable settlements/neighbourhoods.

It is notable that about 60% of historic land take-up in these settlements (over the analysis period 2000—2015) was for residential development (with associated facilities and infrastructure). For example, Nooitgedacht Village constitutes the entire 6 hectare take-up in Koelenhof over the analysis period.

The 20-year demand for land under all three scenarios and for all settlements combined, is less than the developable land available (*as a conservative estimate*) inside the proposed urban edges.³⁶ The combined land required for development at the specified densities, is in the order of 128 ha (**Business-as-usual**), 80 ha (**Consensus**) and 59 ha (**Junk**).

Government-driven housing supply

It is stated that the municipal 'housing pipeline' serves as the housing strategy until the *2008 Integrated Human Settlement Plan* is reviewed and adopted — *the purpose of this study*. In this IHSP, we confirmed and applied the 20-year growth-and-development path set out in the

³⁴ Developable land means the land has a realistic potential of acquiring development rights. It includes 'brownfields' and 'greenfields' development.

³⁵ The term 'other settlements' includes the settlement areas of Dwarsrivier, Wemmershoek, La Motte, Groot Drakenstein, Raithby, Vlottenburg, Koelenhof, Lynedoch and Muldersvlei. The settlement area of Jonkershoek is also included under this term in the Integrated Human Settlement Plan.

³⁶ Developable land means the land has a realistic potential of acquiring development rights. It includes 'brownfields' and 'greenfields' development.

UDS. This led to a proposed pipeline to guide future delivery of government-driven housing in the Stellenbosch municipal area.

It is proposed that the Municipality continues with the Stellenbosch (Town) projects (except the Nietvoorbij project) and give a high priority to housing projects in the Transformation Zones: (a) Droë Dyke and (b) Van der Stel Sports complex precinct — both transit-oriented developments. Implement the *Integrated Residential Development Programme* in the Droë Dyke/Libertas Transformation Zone and the *Social Housing Programme* in demarcated Restructuring Zones in both Transformation Zones. The implementation of the *Integrated Residential Development Programme*, *Upgrading of Informal Settlement Programme* and *Social Housing Programme* should (also) receive a high priority in the following Consolidation Zones (in order of priority): Kayamandi, Jamestown, Idas Valley and Cloetesville. Considering the multi-year provincial allocation, the funds allocated to these projects amounts to about 78% of the total allocation — confirming the UDS investment rationale (by node).

We propose a high priority for the implementation of the UISP in Klapmuts and a medium priority in Franschhoek. About 18% of the multi-year provincial allocation has been allocated to implementing the programme in Klapmuts, but no funds have been allocated for Franschhoek.

We do not allocate any demand for indigent houses to the 'other settlements'. We propose that the planned delivery of housing to these settlements, be reprioritised in the context of the UDS growth-and-development path. However, we acknowledge that some of these settlements are experiencing specific development pressure, where incremental approaches to development, regulation and maintenance and upgrading of infrastructure can be considered to redress past development imbalances and to accommodate natural progression.

PART A: PLANNING CONTEXT

In **Part A** we state the background, purpose, context and methodology of the *Integrated Human Settlement Plan* and present our understanding of what has shaped the current urban (residential) scene. *Most of these findings are the coming-together of previous work contained in our Status Quo Report³⁷ and the Urban Development Strategy (UDS).³⁸*

Methodology (in brief):

Part A

- State the purpose of this study
- Consider legislative and policy context
- Report on the current urban residential scene

Part B

- Confirm and apply UDS statement of vision

Part C

- Confirm and apply UDS growth-and-development paths, i.e.
 - Three economic-growth scenarios
 - Forecast demand for residential land by 2036 and cumulative net (and gross) demand for residential land by scenario (municipality-wide)
 - Allocations of scenario-based growth in demand for residential land by type and by node
 - Application of the placemaker model to quantify the funds-flow outcome by scenario and by node (relevant to the provision of housing)

Part D

- Confirm and apply UDS guidelines to steer the implementation of growth-and-development paths within a node — e.g. apply designated land-development area(s) and associated housing guidelines
- Review and consolidate housing supply by government

3 BACKGROUND

3.1 INTRODUCTION

All indications are that the current Stellenbosch growth-and-development path leads to inadequate responses by government, public enterprise and households. The responses by all three tiers of government stem from policy directives (as key performance areas) and the allocation of funds by the three tiers, while private enterprise is, unsurprisingly, driven by profitability. Responses by households vary along socio-economic class lines.

*The Stellenbosch Municipality identified the need to set a 'new' growth-and-development path. A growth-and-development path essentially guides land development to effect change, i.e. to deal with urban challenges, opportunities and constraints. The Urban Development Strategy (UDS) attempts to ensure a principle-led response to the use and development of land over a 20-year period. In this context and following the UDS, the **Integrated Human Settlement Plan** (hereafter referred to as the IHSP, or *this study*) addresses the entire spectrum of housing across different socio-economic categories and price gradients.³⁹ The 'rural' component of the growth-and-development path was, amongst others, informed by the Status Quo Report (dated March 2017) of the *Rural Area Plan*.⁴⁰*

3.2 TERMS OF REFERENCE

The Department of Economic Development and Planning of the Stellenbosch Municipality was tasked to commission the drafting of a Stellenbosch Municipal Urban Development Strategy, *which included the drafting of the IHSP.*

³⁷ *Status Quo Report* completed by Rode in May 2017 as second project deliverable.

³⁸ (Draft) *Urban Development Strategy* completed by Rode in November 2017 as third project deliverable.

³⁹ Inclusive of housing demand in non-urban areas.

⁴⁰ A study known as the *Rural Area Plan* was commissioned by the Municipality. Its purpose was to mainly consider the urban-like pressures experienced in rural areas.

The Municipality appointed Rode & Associates ('Rode') in August 2016 as lead consultants to draft the UDS. Rode in turn appointed sub-consultants as part of the multi-disciplinary project team.

The completion of the *Status Quo Report* and the UDS as second and third project deliverables respectively, are followed by the drafting of the IHSP. The purpose of the *Status Quo Report* was to understand the current urban context by studying the directives and targets for development and service delivery. The *Status Quo Report* included a socio-economic and demographic analysis⁴¹ as specialist input. *Both these studies were presented as stand-alone reports.*

The focus of the UDS was to develop, assess and map *growth-and-development path(s)* and set *guidelines* to steer decision-making on the implementation of these paths. A designated growth-and-development path, if implemented, promotes/guides development to the preferred locations. These locations are conceptually designated in the UDS at town and/or local level (i.e. precinct).

The focus of the IHSP is to address the residential component of the growth-and-development path in sufficient detail and at the appropriate planning (and technical) level, viz. town, precinct and in some cases, at site-specific level. This is done by

- a. Confirming and applying the UDS findings and proposals, e.g. the allocated growth in demand for residential land and units by scenario, by node and by type and expected rollout of potential development (including the flow of funds)
- b. Addressing the (quantitative) supply of housing (or housing delivery), for example, in the lowest house-price class (entirely government-driven) and in the offering of a gradient of residential price classes in larger developments (viz. inclusionary housing).

The IHSP *does not include* business models to guide public- and private-sector co-investment and cross-subsidisation.⁴² We acknowledged that officials will be empowered in negotiating development outcomes with the private sector through such business models informed by investment strategies and parameters within the confines of the available housing programmes and which relate to the use of mechanisms such as development charges and incentives.

3.3 PURPOSE

The drafting of the IHSP follows the UDS and a number of other national, provincial, regional and local *planning* studies, and is but one component of this suite of plans. The aim of all these studies was to operationalise constitutional mandates (see **Figure A1**).

A key governance imperative is that these plans should be aligned in content, coordinated in process, integrated in output, transformative in outcomes and consistent in the monitoring and evaluation thereof. For example, the growth-and-development path set out in the UDS, implies a changed investment and (spatial) development framework, and therefore, necessitates a reassessment of market-related and government-driven housing supply, with specific reference to the municipality's housing pipeline.⁴³

The Municipal Integrated Development Plan (MIDP) is the primary directive for governance at local level (reviewed annually) and should include programmes and projects by all tiers of government (also see **Figure A1**). The purpose of the IHSP is to serve as an issue-specific informant (with a multi-year timeframe) of the MIDP.

⁴¹ *Socio-economic and Demographic Analysis Report* completed by Rode in February 2017.

⁴² Confirmed by officials from the Stellenbosch Municipality and the Western Cape Government at meetings held on 12 and 22 February 2018.

⁴³ Received from Mr L Welgemoed (Western Cape Government) on 17 January 2018.

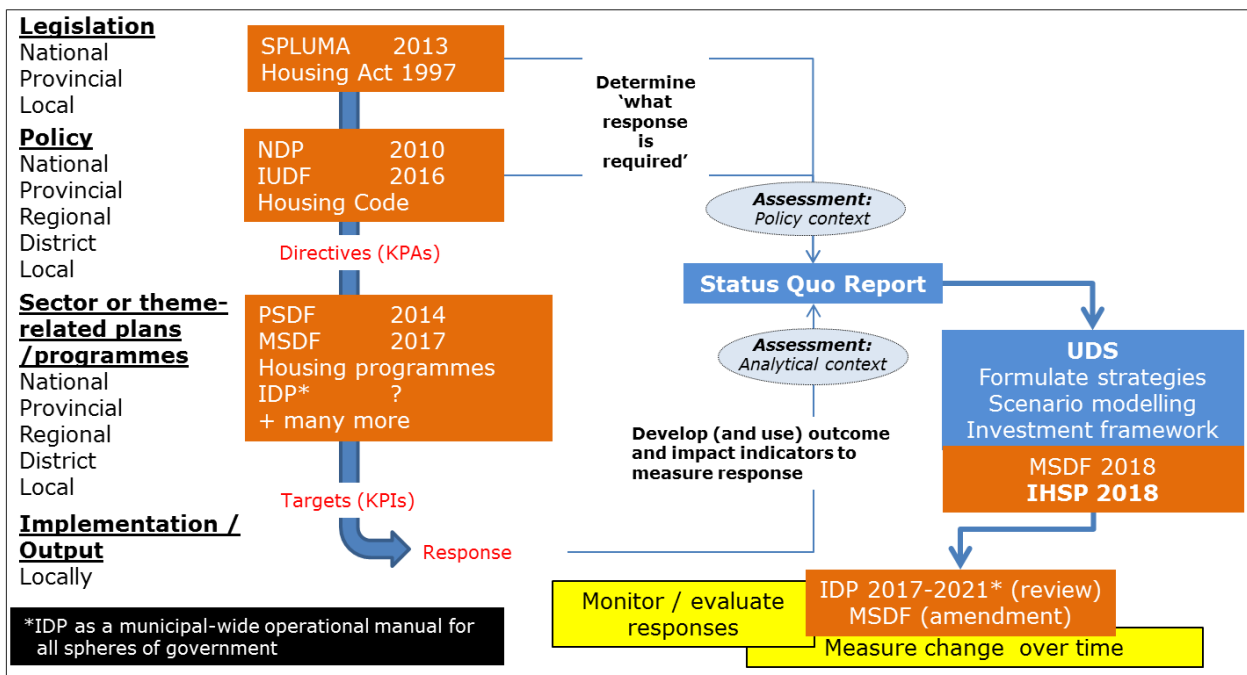


Figure A1: Planning and implementation path of Stellenbosch IHSP

3.4 OBJECTIVES

3.4.1 Study objectives

The key objectives of this study are to:

- Be compliant with relevant legislation and policy directives
- Confirm and apply the following elements of human settlement addressed in the UDS:
 - c. Statement of vision
 - d. Growth-and-development paths with specific reference to housing demand (land and units) including the social need for houses i.e. housing for the indigent
 - e. Investment framework with specific reference to the dimensions of funds-flow that are of importance for the Stellenbosch Municipality
 - f. Management framework, i.e. guidelines to steer decision-making on the implementation of the preferred growth-and-development path(s)
- Review and consolidate housing supply (in particular, by government)
- Facilitate dialogue about preferred interventions and preferred growth-and-development outcomes

3.4.2 Strategic objectives⁴⁴

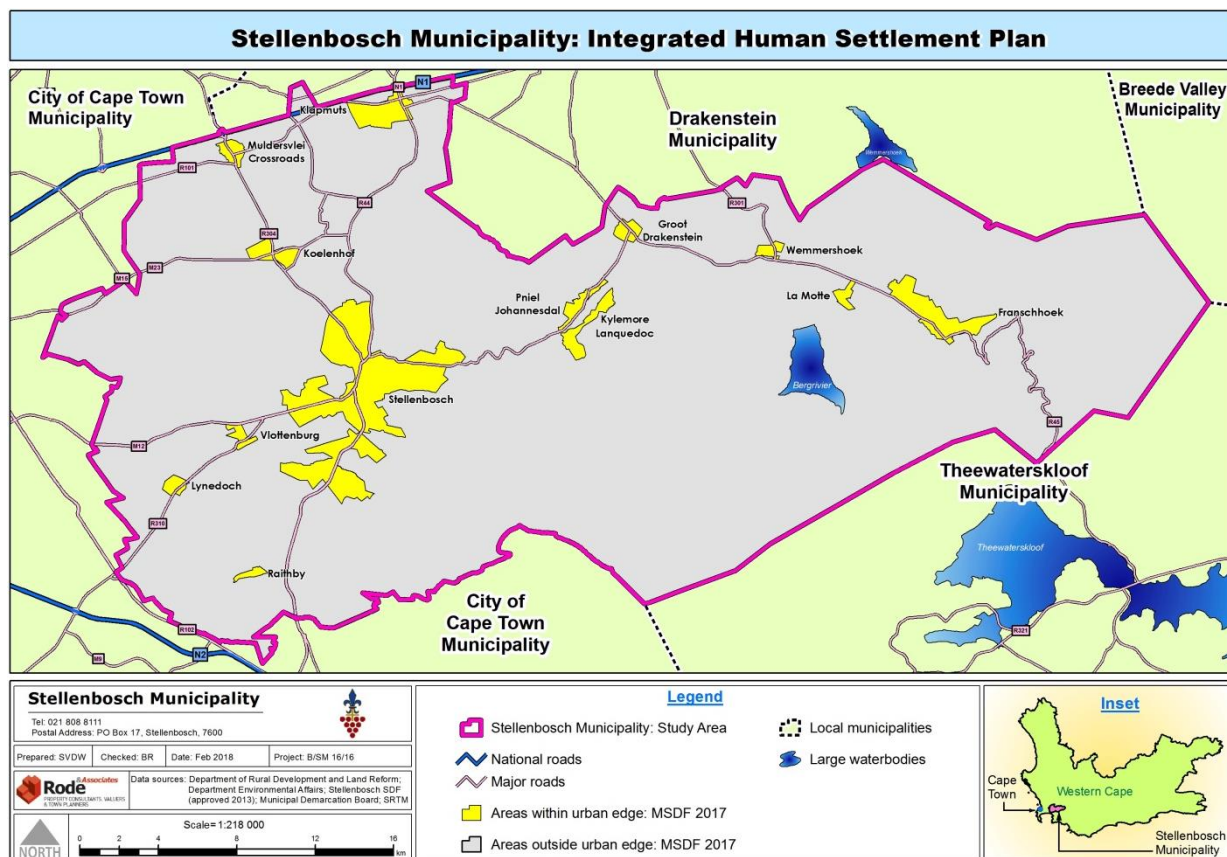
The Western Cape Government (WCG) has identified the development of sustainable human settlements as one of ten key objectives together with the following strategic goals (of which we only provide a reworded version of those goals relevant to this study):

- Improve the functionality, efficiencies and resilience of settlements
- Accelerate the delivery of houses
- Improve living conditions through the Upgrading of Informal Settlements Program (UISP), access to water and sanitation, and housing upgrades
- Promote ownership of property
- Enable increased supply of land for affordable housing and catalytic projects
- Facilitate job creation and empowerment opportunities
- Promote innovation and the 'better living' concept

⁴⁴ Received from Mr L Welgemoed (Western Cape Government) on 17 January 2018.

3.5 STUDY AREA

The study area is the jurisdiction of the Stellenbosch Municipality (see **Map A1** below). This includes the urban or settlement areas inside the respective urban edges — the study area of the UDS — and the rural areas outside these edges — the study area of the *Rural Area Plan*.



Map A1: Study area of the Integrated Human Settlement Plan

3.6 PARTICIPATION AND REVIEW

The drafting process of the UDS (and by implication, the IHSP) has been guided by an Intergovernmental Steering Committee (IGSC) and Project Committee. The provincial government, as member of the IGSC, commented on the draft UDS in a letter dated 6 February 2018.⁴⁵ The next paragraphs include a summary of the comment.

The alignment of the UDS proposals with provincial requirements and guidelines (in general) as well as the strategic direction provided for urban development was commended. However, the following two 'misalignments' were identified: (a) the UDS does not include project-specific planning and (b) conceptually, the planned *and prioritised* low-cost housing projects in the current housing pipeline are 'spatially allocated' to areas with low priority for public-sector infrastructure spend. The province also commented on, inter alia, the following:

- The proposed inclusion of Restructuring Zones in certain designated land-development areas requires a re-evaluation of the approved Restructuring Zone in Stellenbosch (Town).
- The average dwelling density should be 65 dwelling units/hectare. Our response: **Table 10** includes the average gross density under the **Consensus** and **Junk** scenarios as 65 du/ha.
- Consider the inclusion of backyarders in the formal housing market.

⁴⁵ Official comment by the Directorate: Planning (Department of Human Settlements Western Cape); with specific focus on alignment between the UDS and provincial requirements and guidelines regarding human settlement development.

3.7 PLANNING APPROACH

Planners and politicians typically consider the following constraining factors when contemplating, in particular, spatial planning:

- a. Employment and unemployment patterns, including socio-economic trends and demographic shifts (for instance, bringing jobs to the people or vice versa).
- b. Availability of, or the potential to, provide efficient public transport, and transport in general.
- c. Capacity of existing infrastructure and the Municipality's ability to spend capital on new infrastructure, as well as the maintenance thereof.
- d. Heritage and environmental constraints, including climate change.
- e. How much developable bulk is still available in existing developments (e.g. in Technopark, Nooitgedacht Village).
- f. How much potentially developable land (by potential land-use) is realistically available within, and just outside, the urban edge (the iron inventory⁴⁶), and the willingness of these landowners to sell to developers (i.e. land ownership).
- g. Developers' preferences.
- h. Public opinion.

Thus, and also in contemplating the supply of non-indigent housing,⁴⁷ planners and politicians are typically dealt a complex hand of cards (factors a–h above) with which they have to play, as a result of which their ability to influence the market through 'strategic interventions' to locate at an 'ideal' location or to invest in an 'ideal' land-use is limited. Part of the reason for this is that planners and politicians can lead the horse (developers) to the water (the 'ideal' tract of land or the 'ideal' land-use), but they cannot make the horse drink.

Chaos theory has brought a new perspective to our understanding of cities as urban spaces. It has shown that factors that control the evolution of a city are self-organizing systems and as such are themselves uncontrollable. Michael Batty, professor of Spatial Analysis and Planning at the University of London, states:

From this perspective follows a new type of action in the city, a new way of urban planning, *which aims not to control but to participate*. (emphasis added) (Sardar, p. 134).

Thus, planners and politicians should be sensitive to the signals that the market is transmitting when considering, amongst others, the 'ideal' location for non-indigent housing. In our planning proposals, we follow the participation philosophy à la Batty. The practical implication of this participation approach is that urban planning should be more flexible than current practise in SA. It should not only consider the ideal world (no inequality, everybody lives close to work opportunities in medium-to-high-density mixed-use and mixed-income urban environments, and has access to affordable⁴⁸ and efficient public transport) but also what would be needed to make it worthwhile for the private sector to partner with the public sector. What is required is an open mind as there are important trade-offs in any business plan of this nature.

The provision of housing for the indigent⁴⁹ adds further constraints such as beneficiaries, to the factors listed above. To ensure consistency in planning and decision-making, we identified growth-and-development criteria to guide the use and development of land specific to each identified 'location'.

⁴⁶ The proportion of developable land that is permanently vacant and available for development in order to prevent pent-up demand developing.

⁴⁷ Affordable Housing above the lowest price class (the 'give-away' (RDP) bracket).

⁴⁸ Affordable to both users and the authority.

⁴⁹ Housing in the lowest price class, including 'give-away' (or RDP) houses.

The planning approach adopted in preparing the UDS *and the IHSP*, was to make (urban) planning practical and to be sensitive to the signals that the market is transmitting (the market includes government — as a coach, player and referee in the market — private enterprise and households). We did this by

- a. developing economic-growth scenarios (economic growth drives demand for built space)
- b. developing spatial strategies by notionally allocating expected new demand for land to various nodes, using the hub-and-spoke approach (i.e. setting development paths)
- c. applying financial placemaker modelling by node (i.e. setting growth paths)
- d. designating preferred growth areas within nodes (i.e. land-development areas based on a specific investment rationale).

By their very nature, spatial development frameworks (and even 'housing or human settlement plans') have a qualitative development planning perspective, and tend to lack depth and understanding of financial, economic and social consequences related to implementation of future development scenarios (and associated strategies). In this regard, we used positioning strategies based on the current socio-economic reality and the expected future sectoral growth of the economy to allocate the growth in demand for land (i.e. suggesting development paths). This allocation is aimed at, *inter alia*, optimally reflecting the market's preference for a certain land-use in a specific location; it is not a diktat but an attempt to help government in decision-making and to chart a way forward for public- and private-sector (co-)investment.

By applying the placemaker model, we estimated *the financial and economic implications* of implementing these preferred development paths by node. In doing so, we address the following elements of land development: the 'how much', the 'what type' and the 'when' (fully determined by the market, excluding housing for the indigent). The designation of preferred growth areas is an attempt to state 'where' growth and investment is preferred for future urban intensification/ expansion.

We emphasise that it is crucially important to track and report on changes (and performance) over time; put differently, to measure qualitative outcomes in quantified terms.

*We believe this approach would make the Municipality's shared vision and associated strategic focus areas more attainable and measurable.*⁵⁰

3.8 METHODOLOGY

In the UDS, we determined and mapped preferred growth-and-development path(s) as confirmation of the most appropriate urban development over the medium to longer term.⁵¹ In line with this statement of intent, we created a strategic investment framework by modelling the funds-flow outcomes that result from each path (at town level). We also provided guidelines to steer and track expected land development.

A growth-and-development path essentially entails an approach to development that refers to the 'how much', the 'when', the 'where' and 'what type' of land development should be permissible to deal with the challenges, opportunities and constraints associated with governance, spatial, social, economic and environmental factors as structural drivers prevalent in urban/rural areas. These include the need for urban transformation and the demands placed on the use of land as a result of in-migration, organic population growth, and the demand and supply of 'services'.

Figure A2 is a graphic illustration of the process followed in drafting the UDS (and by implication, the IHSP) and to determine the scenario-based growth-and-development

⁵⁰ See **Part B, §8**.

⁵¹ As per Section 21(b) and (c) of the Spatial Planning and Land Use Management Act, 2013 (Act 16 of 2013) (SPLUMA).

path(s). In **Part C** of *this study*, under each relevant heading, we provide brief explanations of the methodology used in determining these path(s).⁵²

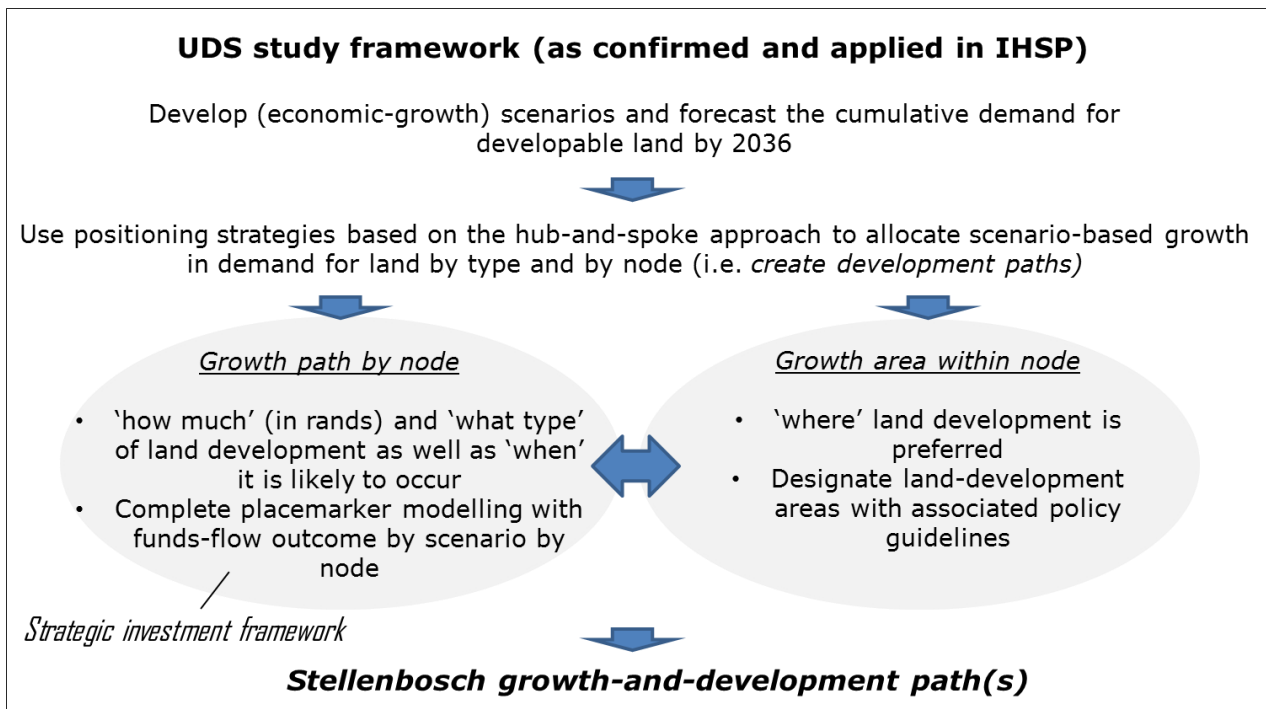


Figure A2: UDS study framework (as confirmed and applied in IHSP)

Three economic-growth scenarios

The setting of a growth-and-development path is based on the likely demand for developable land⁵³ by typology and by node. Since the future is uncertain, and is largely based on the growth of the national and local economy, we forecast the demand for land by constructing three economic-growth scenarios for the national economy, which in turn largely determines the local economy. We constructed the following three scenarios:

- The **Business-as-usual** scenario is a mechanistic line-of-best-fit extrapolation over a 20-year period (2016–2036) of historic demand in Stellenbosch Municipality (1996–2015).
- The **Consensus** scenario is low-growth scenario based on the opinions of a panel of economists whom Rode polls every six months.
- The **Junk** scenario is in effect a very-low-growth macroeconomic scenario, constructed by Rode in December 2016.

Two of these scenarios, viz. **Consensus** and **Junk**, reflect respectively low and very-low economic growth in SA over the 20-year forecast period (until 2036). The third, viz. the **Business-as-usual** scenario, is based on the assumption that the historic average growth rate in the Stellenbosch Municipality will be maintained, even though the country's economy might decelerate. This latter scenario is quite likely in light of the popularity of the Western Cape in general and Stellenbosch in particular.

The identified tools for effecting change guided the selection of the preferred growth-and-development paths by scenario and by node (see §9). In this regard, we created the nodal positioning strategies to underpin the envisaged outcome for each of the scenarios. We assessed the rollout of the paths in Stellenbosch (Town), Franschhoek and Klipmuts by applying time-based growth trajectories. These trajectories and funds-flow outcomes will help to prioritise public-sector spend (which will, hopefully, reflect the market's preference for a

⁵² The draft UDS includes *detailed* explanations of the methodology used in determining these path(s).

⁵³ Developable land means the land has a realistic potential of acquiring development rights. It includes 'brownfields' and 'greenfields' development.

certain land-use in a specific location). We also designated land-development areas with associated policy guidelines as preferred growth areas for the rollout of potential development over the 20-year forecast period.

3.9 PROJECT DELIVERABLES

In **Table A1**, the basket of reports as deliverables of this assignment and the associated completion dates, are provided:

Table A1 Project deliverables and timelines			
No	Deliverable	Completion date	Status
1	Inception Report	October 2016	Completed
-	Socio-economic and Demographic Analysis Report	February 2017	Completed
2	Status Quo Report	May 2017	Completed
3	(Draft) UDS	November 2017	Draft completed
-	Integrated Human Settlement Plan	May 2018	Completed
4	Final Comprehensive UDS	May 2018	-

This report, viz. Stellenbosch Municipality's *Integrated Human Settlement Plan* follows the *Socio-economic and Demographic Analysis Report*, the *Status Quo Report* and the (draft) UDS as another stand-alone report.

3.10 LEGAL REQUIREMENTS

Administrative

The assignment to draft an *Integrated Human Settlement Plan* is guided by a council decision and legislative requirements. In this regard, the Stellenbosch municipal council decided in September 2016 to:⁵⁴

- a. Proceed with the development of a Municipal Spatial Development Framework (MSDF) for Stellenbosch Municipality (WC024).
- b. Establish an Intergovernmental Steering Committee (IGSC) to compile or amend its municipal spatial development framework in terms of Section 11 of the Land Use Planning Act.
- c. Establish a project committee.
- d. Proceed with all administrative functions to oversee the compilation of a first draft of the Stellenbosch Municipal Spatial Development Framework for council approval in terms of the Municipal Systems Act (2000), the Land Use Planning By-law (2015), Land Use Planning Act (2014) and the Spatial Planning Land Use Management Act (2013).
- e. Use the MSDF as a platform to consider and align the following:
 - (i) Strategic Environmental Management Framework (SEMF)
 - (ii) Rural Area Plan (RAP)
 - (iii) Urban Development Strategy (UDS) leading to a Stellenbosch WCO24 MSDF;
 - (iv) Heritage Resources Inventory
 - (v) Integrated Human Settlement Plan (IHSP) (this study)**
 - (vi) Klipmuts Local Spatial Development Framework (LSDF)
 - (vii) Stellenbosch LSDF amendment to be compliant with the Spatial Planning and Land Use Management Act, 2013 (Act 16 of 2013)
 - (viii) Jonkershoek LSDF amendment to be compliant with the Spatial Planning and Land Use Management Act, 2013 (Act 16 of 2013)
- f. Proceed with the amendment of the current approved MSDF to be aligned with the 2017/18 IDP.

⁵⁴ 2nd Council meeting: 2016-10-05: Item 7.4.4.

- g. To ensure that both the amendment of the existing MSDF and the compilation of the new MSDF run concurrently with the Integrated Development Planning cycle.

The Stellenbosch Municipality informed the provincial Minister of Local Government, Environmental Affairs and Development Planning (letter dated 25 November 2016) and the relevant provincial Head of Department (letter dated 4 November 2016) of the council decision. The Head of Department was also informed about the procedures to invite representatives of the committee and to nominate a representative to the committee, the placement of public notifications⁵⁵ and the attempt to integrate the drafting processes of the MSDF and the IDP of the Stellenbosch Municipality.

3.11 REQUIREMENTS IDENTIFIED IN THE (DRAFT REVIEW) IDP 2017–2022

The following section includes a brief summary of the housing component in the *Draft Review Integrated Development Plan 2017–2022* (dated March 2018) with specific reference to the *Integrated Human Settlement Plan* (approved in 2008).

It is stated that the municipal 'housing pipeline' (annually presented to Council) serves as the housing strategy until the *2008 Integrated Human Settlement Plan* is reviewed and adopted – *the purpose of this study*.

A housing pipeline was approved by Council in August 2017. The current focus is to provide over a 10-year period and through a number of government-driven housing programmes, about 12 000 low-cost units (for ownership and rental) at an estimated cost of R9.5 billion – with social housing and the upgrading of informal settlements as priority programmes. The roll out of these programmes is planned for Jamestown, Kayamandi and Idas Valley as well as the informal settlements in Stellenbosch (Town) and Franschoek. Social housing is to be provided in the approved Restructuring Zones in Stellenbosch (Town).⁵⁶

It is stated that the IHSP must include directives to guide future planning with regard to:

- Settlement form, needs and affordability and, in particular, the demand for all housing typologies
- Special areas to apply overlay zones.

The term 'housing' is used in the MIDP in a few qualitative statements under various titles and subtitles and listed as a 'ward priority' in some wards. The MIDP does not include the housing need/demand/backlog measured in quantified terms. The only measurement of 'housing' is through the listing of a number of housing projects each linked to a three-year budget cycle.

3.12 REPORT STRUCTURE

In **Part A** we state the background, purpose, context and methodology of this study and present our understanding of what has shaped the current (residential) scene. *Most of these findings are the coming-together of previous work contained in our Status Quo Report and the Urban Development Strategy (UDS).*

In **Part B**, we confirm and apply the UDS statement of vision. **Part B** includes reference to the vision, principles, change tools and nodal positioning strategies that served as input in developing scenarios, formulating policy guidelines and creating preferred growth-and-

⁵⁵ Advertisements were placed in three local newspapers in November 2016.

⁵⁶ We, however, propose in this study that the designated Transformation Zones must include a Restructuring Zone, while a Consolidation Zone, if located in Stellenbosch (Town), Klapmuts or Franschoek, can also include a Restructuring Zone (see **§14.2.1**). This would imply a re-evaluation of the approved Restructuring Zones in Stellenbosch (Town).

development path(s). **Parts A** and **B** together, serves as the reference framework for preparing economic-growth scenarios.

In **Part C**, we confirm and apply the UDS growth-and-development paths. In this section, we reference the following:

- a. Economic-growth scenarios
- b. Forecast demand for superstructures
- c. Required quantum of developable land
- d. Allocated growth in demand for land to the selected nodes
- e. Findings of placemaker modelling

In **Part D**, we confirm and apply the UDS-developed policies and guidelines to steer the implementation of development paths within a node, *inter alia*, the designation (and mapping) of land-development areas. *We also review and consolidate government-driven housing supply.*

Table A2 Report structure		
	Task	Description
Part A	Planning context	State the purpose of the study and report on the current urban (residential) scene
Part B	Statement of vision	Confirm and apply the UDS statement of vision
Part C	Scenario development	Confirm and apply the UDS growth-and-development paths
Part D	Management policy framework	Confirm and apply the designated land-development areas with associated policy guidelines; Review and consolidate government-driven housing supply

4 SETTING THE SCENE

The municipal area is one of the ‘pearls’ of South Africa’s small-town sub-regions, characterised by a mix of unique and high-quality assets. These assets are value-forming attributes of growth and development. A key challenge is to conserve and enhance these assets in a change scenario.

The municipal area also includes disparate urban areas (in function and location) meshed together as an administrative unit. This has resulted to a degree in ‘value leakage’ of municipal investment. For example, Klapmuts is said to become “a regional node, and must be developed and managed⁵⁷ in a manner that spans the existing municipal boundaries of Stellenbosch and Drakenstein”.⁵⁸ This (possible) outcome is an important consideration in creating a 20-year growth-and-development path for Klapmuts based on a specific positioning strategy.

What about the structure and function of the respective urban areas? The spatial structure of most of the towns/settlements has been forming over centuries. However, in the second half of the previous century, *apartheid* spatial planning altered to a degree the urban configuration and functionality of some of the towns/settlements.

In recent times, ‘new’ responses are being shaped by ‘new’ relationships that exist between the organising elements of urban living and urban space — sometimes resulting in unplanned change. For example, in response to a need for housing and land, 47 families motivated by their unwillingness and/or inability to pay rent in Kayamandi, ‘invaded’ municipal land

⁵⁷ We understand that this includes the provision of services.

⁵⁸ *Klapmuts Special Development Area, Economic Feasibility Study, Draft Report, June 2017.*

adjacent to the township in 2006.⁵⁹ The 'occupied' area is called Enkanini (which means 'taken by force') and recently, a total of 3300 structures were counted. In response, the Municipality was forced to install infrastructure and provide services, albeit still inadequate to the area. Note that during the IDP roadshow in April 2017, some residents of Stellenbosch (Town) requested the formalising of Papagaaiberg Nature Reserve, i.e. potentially an 'opposing' response to a 'new' relationship. Other examples are the reshaping of neighbourhoods through studentification and the remaking of urban space (e.g. the Jamestown-Technopark node) by partitioning space to accommodate high-order developments, e.g. high-priced gated residential estates.⁶⁰ The reasons for the popularity of these types of residential developments are security and the demand for upmarket lifestyles.

The partitioning of urban space in Franschhoek resulted in two separate geographic entities where people live, viz. Groendal/Langrug and Franschhoek 'town'. There are vast differences between the two areas regarding, *inter alia*, socio-economic, demographic and built-environment elements.

5 LEGISLATIVE AND POLICY CONTEXT

The *Status Quo Report* includes a comprehensive synthesis of legislative, policy and theme-related directives as key performance areas of government. In the document, we report on how 'proper planning' is articulated through these directives and 'which responses are required' from the tiers of government to achieve integrated urban development.⁶¹ Areas of performance are articulated as qualitative outcomes, but not in quantifiable terms (i.e. performance metrics). Hence, local government is quite rightly reliant on its own interpretation of the local outcomes required in adhering to national directives.

The next section includes three aspects of the legislative and policy context for housing delivery, viz. directives, subsidies and housing segmentation (as discussed in the *Status Quo Report* and including any changes since May 2017).

5.1 Housing policy directives

The national housing policy for *government-subsidised housing* is set out in the National Housing Code in terms of Section 4 of the Housing Act, 1997 (Act 107 of 1997). The functions of local government are set out in Section 9 of the Act with a new and 'far-reaching' planning approach for the development of (residential) land introduced by the SPLUMA legislation.

Since 2000, various policy enhancements and amendments were effected. This necessitated a review of the Code in 2009 to mainly align it with the Comprehensive Plan for the Creation of Sustainable Human Settlements ("Breaking New Ground") that was adopted in 2004. The three core programmes of the revised Code implemented in the Western Cape are (see **Figure A3**):

1. The Integrated Residential Development Programme (IRDP)
2. The Upgrading of Informal Settlements Programme (UISP)
3. The Social Housing Programme

It is mainly within these programmes that the housing subsidy scheme is orchestrated by provincial government. In a discussion with officials⁶² of the Western Cape Government, it

⁵⁹ <http://www.sun.ac.za/cst/project/enkanini-informal-settlement/>, viewed on 15.5.2017.

⁶⁰ Loots, R., Sebitosi, B and Swilling, M. 2012. *Sustainable Stellenbosch – Opening Dialogues*, SUNPress, 2012.

⁶¹ We studied, *inter alia*, the following directives: United Nations, New Urban Agenda, January 2017, National Development Plan 2030 and Integrated Urban Development Framework, 2016.

⁶² Meetings with Mr L Welgemoed on 19 October 2016 and with Mr F de Wet on 25 October 2016.

was stated that the IRDP programme was the preferred programme, at the time, but that an even allocation of funds to this programme and to the UISP programme over the medium term, will level them out as priorities.

Note that the need for an Emergency Housing Programme has been emphasised in a recent judgment in the Western Cape High Court.⁶³

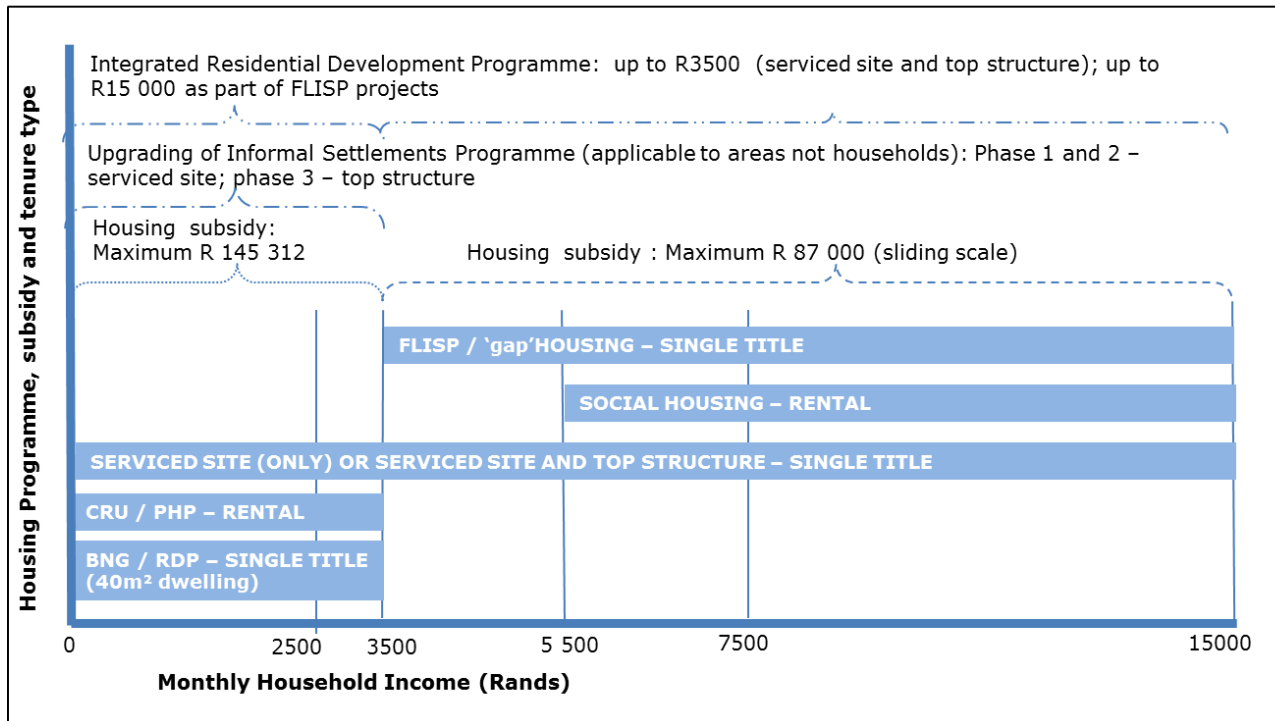


Figure A3: Composite graph of housing delivery context (May 2018)

5.2 Housing subsidy and quantum

A housing subsidy is a grant by government to qualifying beneficiaries for housing purposes. Access to these subsidies is governed by the Constitution, the Public Finance Management Act and the Housing Act, 1997, which requires the Minister to determine national housing policy, as set out in the National Housing Code.

Municipalities are required to annually submit to the provincial government “human settlement plans” (including a housing pipeline) as part of their municipal Integrated Development Plans. Based on the housing need expressed in these plans, and recommendations received from a provincial Project Planning Committee, the provincial MEC allocates housing subsidy funding to municipalities.

In brief, the *subsidy quantum* as allocated by the WCG can be explained as follows (also see **Figure A3**):⁶⁴

- Delivery of a 40 m² dwelling on a 122 m² (Grade A) serviced site at a cost of R145 312⁶⁵ per unit which excludes the cost of land, bulk and link services, provision of social amenities and holding costs (i.e. rates and taxes, maintenance, etc.). Note that although the mentioned size of a serviced site does not provide the required densities of 80 dwelling units per hectare,⁶⁶ it remains the preferred norm⁶⁷ as implemented by the WCG.

⁶³ Western Cape High Court, Case No: 9443/14, 30 August 2017.

⁶⁴ Applicable from 1 April 2018.

⁶⁵ Figure rounded and excluding an additional R5000 to cover possible geotechnical variances.

⁶⁶ WCG acknowledges that this density has not been scientifically proven as best practice.

⁶⁷ In accordance with the so-called ASLA layout.

- In addition to the subsidy amount, an allocation of R6 000 per unit is set aside for land acquisition (or raw-land cost).⁶⁸ The approximate cost of R145 312 to build the required 40 m² BNG house, comprises R21 534.27 (direct cost) plus R 6 910.32 (indirect cost) for (on-site) infrastructural development and R116 867 for the top structure.
- The subsidy amount for higher density housing typologies range from R133 147.82 for a double storey semi-detached unit to R180 104.38 for a three storey walk-up
- The subsidy quantum for an indigent housing unit is around R184 000.⁶⁹ This approximate cost comprises R120 000 (top structure), R45 000 (serviced site), R5 000 (geotech report) and a further R14 000 to cover installation of electricity.

The Western Cape Government has started to use the following criteria to prioritise the allocation of subsidies: Persons who fall within the following categories are favoured, viz. older than 35 years, child-headed households, persons with disabilities and military veterans.

6 URBAN DEVELOPMENT CHALLENGES

This section includes a synthesis of urban development challenges related to *residential* land development presented here as a municipality-wide assessment. Note that the *Status Quo Report* includes settlement area assessments for each town/settlement that is not repeated here. The challenges related to *non-residential* land development as described in the *Urban Development Strategy* is also not repeated here.

6.1 HUMAN SETTLEMENTS

Racial segregation

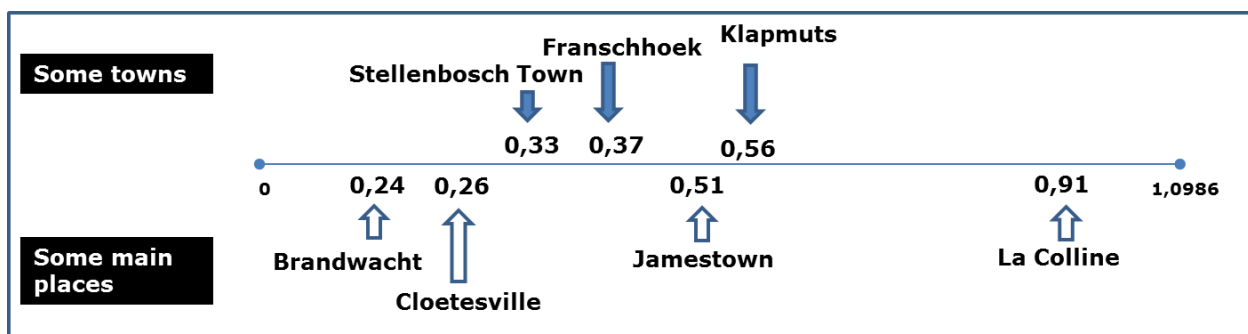


Figure A4: Diversity scores

Source: *Status Quo Report* by Rode, May 2017

We determined the extent of **racial segregation** in *urban areas* by calculating the diversity score for each 'small area' (as defined in Census 2011), as well as the mean and rank for each Main-Place, from large (high diversity) to small (low diversity).⁷⁰ We only considered the three main population groups (white, black and coloured) and a maximum diversity score of 1,0986 (which is $\ln(3)$) means that all three race groups have equal representation in an area. In this regard, the combined score for the *urban areas* is 0,47. **Figure A4** includes the diversity score of some towns and neighbourhoods (as 'Main-Places').

We also used Theil's entropy index to calculate the degree of racial segregation/integration.⁷¹ In this regard, the index value is 0,61 for Stellenbosch *municipal area*, compared with Overstrand, which has the highest value (0,72) of all local municipalities in

⁶⁸ To be confirmed.

⁶⁹ As explained by Mr Vanstavel at the meeting held on 12 February 2018.

⁷⁰ Only the three main population groups were considered, and a maximum diversity score of 1,0986 (which is $\ln(3)$) means that all three race groups have equal representation in an area.

⁷¹ The Theil Index is a statistic primarily used to measure economic inequality and other economic phenomena, though it has also been used to measure racial segregation.

South Africa. The entropy index value for Stellenbosch *municipal area* is an indication that (unsurprisingly) the different race groupings 'do live apart from each other'.

Socio-economic and demographic shifts⁷²

In terms of a **high-population-growth scenario**,⁷³ it is expected that the number of persons in the *municipal area* will increase to 232 289 by 2031, with 183 544 (79%) living in *urban areas* (see **Figures A5** and **A6**). However, this occurs within a slowing growth rate and declining net migration.⁷⁴

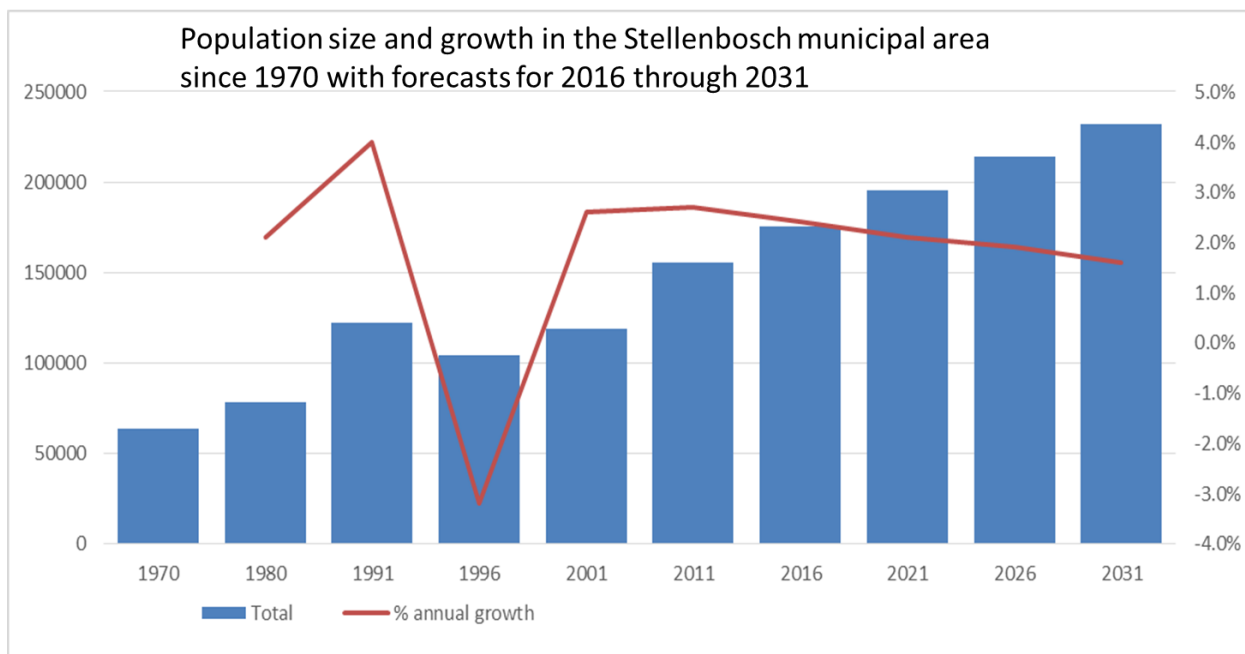


Figure A5: Population growth (municipal area)

Source: *Status Quo Report* by Rode, May 2017

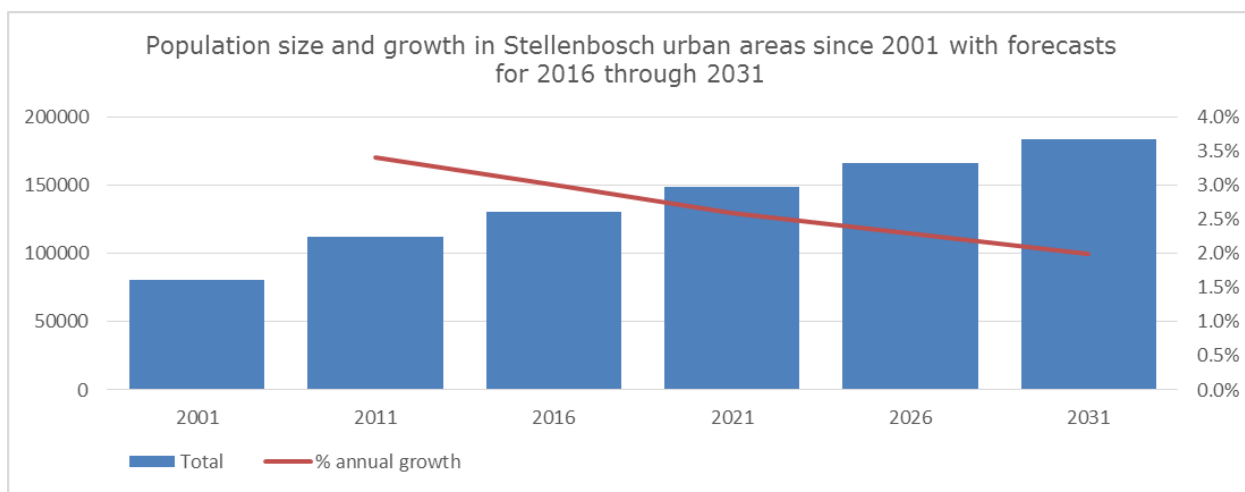


Figure A6: Population growth (urban areas)

Source: *Status Quo Report* by Rode, May 2017

⁷² Note that all relevant definitions as taken from the Census 2011 Metadata report (StatsSA, 2012), is listed in **Annexure 1** of the *Socio-economic and Demographic Analysis Report* and not repeated here.

⁷³ The migration experienced over the 2006-2011 period for all population groups is assumed to continue in the future in absolute terms (i.e. numbers), which implies a deceleration in the growth rate.

⁷⁴ Net migration is the difference between total migration into a region (immigration) and migration out of the same region (emigration).

It is important to also note (over this period) the composition of the population with specific reference to the Black-African and Coloured groupings. In this regard and using the high-growth scenario, the Black-African grouping was 20,4% of the *total population* in 2001, 28% in 2011, and considering the projected population, could contribute about 34,1% to the *total population* in 2021 and 38,3% in 2031. The Coloured grouping contributed 57,5% to the total population in 2001 which decreases, if measured for the same three intervals, to 52,2%, 48,4% and 45,7% respectively. In 2021 and 2031, these groupings will together comprise more than 80% of the total population, as well as the population residing in *urban areas*. Note that almost 94% of the Black-African grouping, which is 14% more than the number in 2001, are expected to reside in the *urban areas* by 2031. Hence, a key question in considering any future growth-and-development path for Stellenbosch should be the amount of resources used by, and allocated to, these groupings.⁷⁵ **Table A4** summarises the population projections for the Stellenbosch *urban areas*.

	2001	2011	2016	2021	2026	2031
Black-African	19 617	38 429	49 748	61 184	72 601	83891
(% annual growth)	-	6,7%	5,2%	4,1%	3,4%	2,9%
% share of population	24,4%	34,2%	38,1%	41,2%	43,6%	45,7%
Coloured	40 813	51 297	56 885	62 376	67 678	72 682
(% annual growth)	-	2,3%	2,1%	1,8%	1,6%	1,4%
% share of population	50,9%	45,6%	43,6%	42%	40,7%	39,5%
White	19 521	20 962	21 924	22 948	23 914	24 834
(% annual growth)	-	0,7%	0,9%	0,9%	0,8%	0,8%
% share of population	24,3%	18,6%	16,8%	15,4%	14,3%	13,5%
Asian	210	447	574	701	814	946
(% annual growth)	-	7,6%	5,0%	4,0%	3,0%	3,0%
% share of population	0,26%	0,3%	0,44%	0,04%	0,4%	0,05%
Unspecified		1191	1191	1191	1191	1191
Total	80 161	112 326	130 322	148 400	166 198	183 544
% annual growth		3,4%	3,0%	2,6%	2,3%	2,0%

Source: *Status Quo Report* by Rode, May 2017

The **urbanisation** trend is evidenced by the percentage share of the total population residing in *urban areas* and residential densities. In 2001, 67,5% of the total population in the *municipal area* lived within the *urban areas*. This percentage increased to 72,1% in 2011 and an estimated 74,2% in 2016. The percentage share of the total population living in *urban areas* could increase further to 76% by 2021 and to 79% by 2031. In this regard, the urban-rural ratio in 2001 was about 2:1 which changed to about 2,5:1 in 2011, and is envisaged to be about 3,1:1 by 2021 and 3,8:1 by 2031.

At the same time, population density was also increasing. The persons per km² in the *urban areas* increased steadily from 2509 in 2011 to 2911 in 2016.⁷⁷ The projected urban population figure of 183 544 in 2031 represents a density of 4100 persons per km² in *urban areas*. The persons per km² in the *municipal area* also increased steadily from 187 in 2011 to 211 in 2016, with a density of 279 persons per km² projected in 2031. The residential densities (dwelling units per hectare) measured in 2015 for Stellenbosch (Town), Franschhoek and Klapmuts were 8,17, 10,22 and 9,94 respectively.

⁷⁵ South Africa still lives in a race-based society, which makes categorisation by race a pragmatic approach. In an ideal world, the categorisation should rather be on a socio-economic basis.

⁷⁶ Using the high scenario (as one of three growth scenarios) to determine the population growth from 2011 onwards, i.e. the migration experienced over the 2006-2011 period for all population groups is assumed to continue in the future in absolute terms (i.e. numbers).

⁷⁷ We used the urban area as defined by the MSDF approved in 2013, as geographic measuring unit.

The average **household size** in the *municipal area* is 3,1. When considering the *urban areas*, the average number of persons per household is 3,0. This figure varies between 2,8 for Stellenbosch (Town) and 4,1 collectively for Dwarsrivier, Koelenhof and Wemmershoek. Of particular concern, is the possibility of **overcrowding** in Cloetesville, Franschhoek, Idas Valley, Kayamandi, Klapmuts, Lanquedoc and Wiesiesdraai because many households living in these towns consist of five or more persons.

In Stellenbosch *municipal area*, 55% of households have a monthly **household income** below R3500, and 82% of households earn less than R15 000 per month (using Census 2011 data). The 'Main-Places' of Kayamandi, Koelenhof, Klapmuts and Franschhoek, in this order, have most households in the R0–R3500 category. In numbers, the towns/settlements of Stellenbosch (Town), Franschhoek, Klapmuts and Dwarsrivier, in that order, have the most households with monthly incomes below R3500 (18 977 of 19 424 or 97%). About 67% of these households live in Stellenbosch (Town). The monthly household income in the R0–R3500 category of all the households living in the *urban areas*, is mostly less than R2500 (on average 85%, i.e. only 15% of households earning between R0 and R3500 have an income between R2500 and R3500).⁷⁸

Almost 59% of the **labour force** residing in the municipal area, live in Stellenbosch (Town) and Franschhoek.⁷⁹ This segment contributes more than 70% of the total GVA of the Stellenbosch economy and of this share, 75% is generated in the tertiary sector (employing highly skilled workers).

The provision of **social amenities** in the municipal area is adequate but under pressure. This pressure is owing to a growing population rather than accessibility, i.e. key social amenities are located within reasonable walking distances from users.

Housing need and affordability

We next consider the **need for houses** in the lowest house-price band in the *municipal area*.⁸⁰ Using 10 000 as a conservative estimate in 2011 and the population growth rates of all the *urban areas* combined, the unsatisfied need is conservatively estimated to be the following:

- 2016: about 11 618 based on a 3% annual growth between 2011 and 2016
- 2021: about 13 231 based on a 2,6% annual growth
- 2026: about 14 844 based on a 2,3% annual growth
- 2031: about 16 404 based on a 2% annual growth
- 2036: about 17 847 based on a 1.7% annual growth rate

In the *rural* and *urban areas* combined, the preference for home ownership in the lower income categories is (unsurprising) almost double that of renting. Also note the ratio between owners and renters (applying to all types of tenure, excluding 'other') of 1:1,9 in the *municipal area* and 1:1,5 in *urban areas*.

We estimated **housing affordability** in the *urban areas* by considering the relationship between household income and property values, and specifically in the lowest house-price class and in the <R3500 income bracket. This was done by comparing the value of the properties (as per municipal valuations in 2012 and 2016) with household income (as per Census 2011 and own inflation-adjusted calculations for 2016).⁸¹ We found the steep

⁷⁸ These rand amounts are all as in 2011.

⁷⁹ The calculation for Stellenbosch (Town) includes wards 7-17 and 22 and 50% of ward 21, and the calculation for Franschhoek includes wards 1 and 2.

⁸⁰ Property values between R0 and R160 000.

⁸¹ We estimated household income for 2016 by applying the growth in the Consumer Price Index (CPI) to the 2011 household income.

increase in property values between 2012 and 2016 resulted in the percentage of properties in the lowest house-price band decreasing significantly (see **Figure A7**).

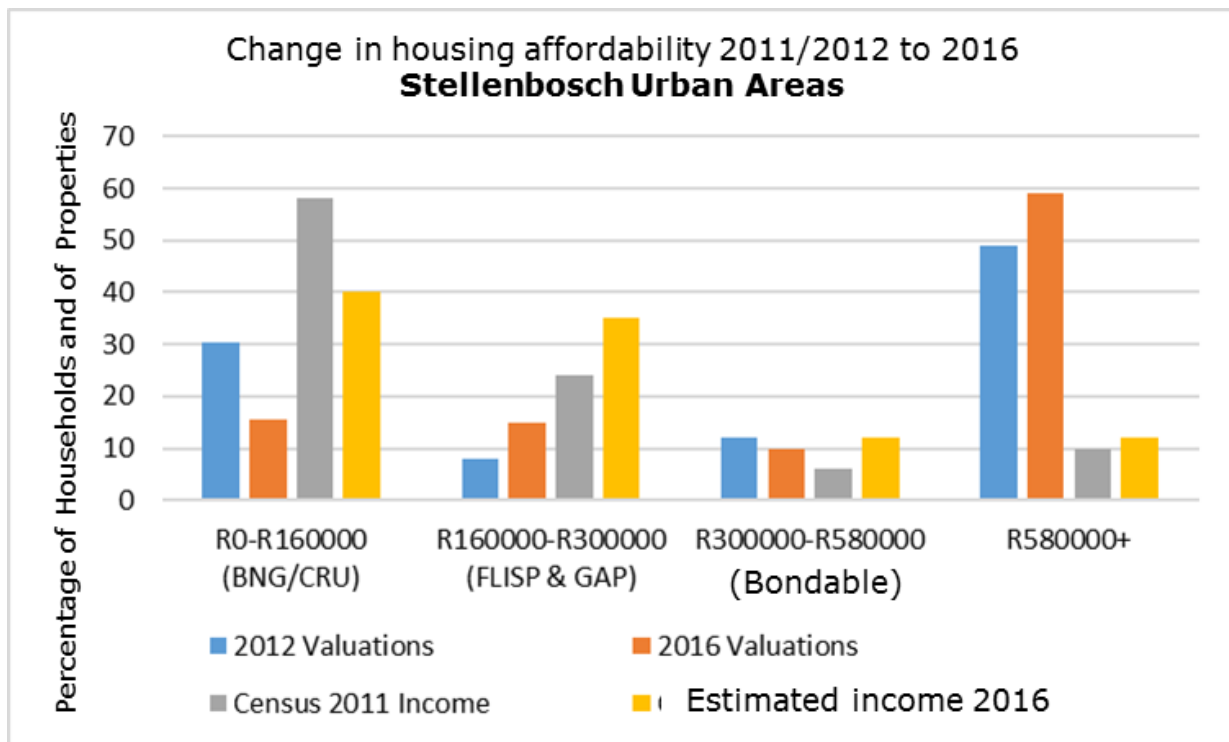


Figure A7: Change in affordability 2011/2012 to 2016 (market value of properties and household income): Stellenbosch urban areas
Source: *Status Quo Report* by Rode, May 2017

Property market

Considering all house-price bands in the *urban areas*, the **mean** and **median values** increased significantly in almost all areas between 2012 and 2016 (data ex the valuation rolls).⁸² The value increase of full-title and sectional-title properties combined in the *urban areas* was 47%, which equals an annual compound growth of 10%.

In interpreting the growth rates for smaller zones, one must bear in mind that one large new development could skew the mean or median substantially. For instance, the introduction of a more upmarket estate in a small, long-existing neighbourhood could push up the mean and median values, which does not mean that the *existing*, older stock in that zone has had a similar growth in market value.

We also determined the **coefficient of variation** (CV) in property values for the *urban areas* combined (data ex the valuation rolls). The price diversity increased from 141 in 2012 to 150 in 2016, i.e. property values became less homogeneous.

We next analyse **residential transfers** in the municipal area for the period 2005 to 2015 to determine the trends⁸³ pertaining to residential transfer activity for the various residential price bands (see **Figure A8**).⁸⁴ There were about 12 000 transfers during this period, with an average annual total of 1090.

⁸² Stellenbosch municipal valuation rolls (2013-2017 and 2017-2021).

⁸³ When we say we analysed the trend of a particular price segment, we mean the analysis was done in constant 2015 rands. This means we deflated previous years' prices using the Absa national house price index. In this way, we compared like with like over time.

⁸⁴ As this analysis was done in early 2017, we excluded 2016 transactions as the time delay between date of sale and registration at the Deeds Office would have meant that the 2016 data would have been incomplete.

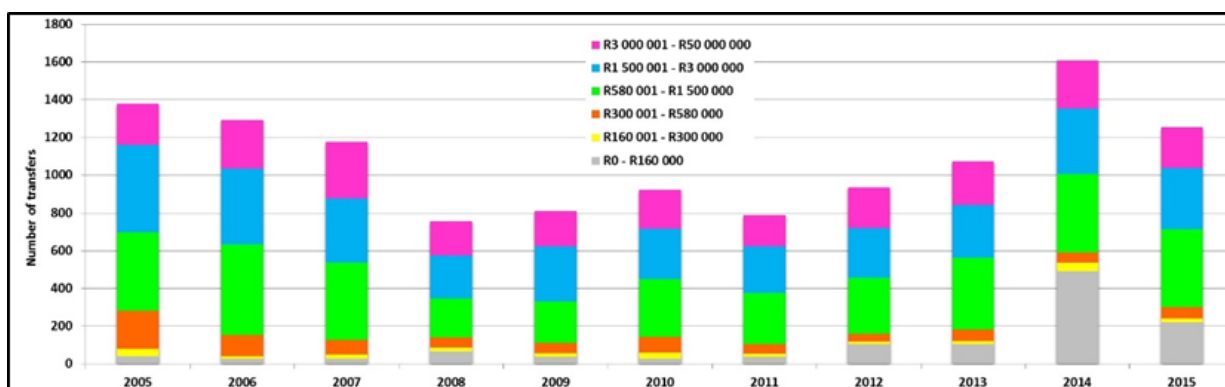


Figure A8: All residential transfers per price band in Stellenbosch Municipality (2005-2015)
Source: *Status Quo Report* by Rode, May 2017

Evident is the sharp downturn in residential transfers in 2008 due to the worldwide credit crunch. Also evident is the gradual uptick in residential transfers since then, combined with a substantial spike in 2014. This can be explained by the high number of transfers in the lowest price band (R0–R160 000) in 2014 in especially Klappmuts and Kayamandi. The increase in the number of transfers in this price band (compared to previous years) started in 2012 and has significantly changed the profile of specifically full-title residential transfers. The majority of sectional-title transfers during the study period occurred in the segment R580 001–R1,5 million.

Historic demand for land (all land-uses combined)

An increase in the built-up area in Stellenbosch (Town) has resulted in **land take-up** of 271 hectares between 2000 and 2015. This was about 60% of the relative share of total land take-up in urban areas over that period – all land-uses combined (see **Table A5**). The 10% share of Klappmuts is not insignificant.

Town/settlement	Land take-up (ha)	Percentage share (rounded to 10)
Stellenbosch (Town)	271	60
Franschhoek	82	20
Klappmuts	56	10
Other	72	10
Total	481	100

Source: *Status Quo Report* by Rode, May 2017 (input provided by Aurecon)

In Figure **A9**, **A10**, and **A11**, the historic land take-up between 2000 and 2015 within the respective urban edges of Stellenbosch (Town), Franschhoek and Klappmuts is shown spatially.⁸⁵

⁸⁵ We used the urban area as defined by the MSDF approved in 2013, as geographic measuring unit.

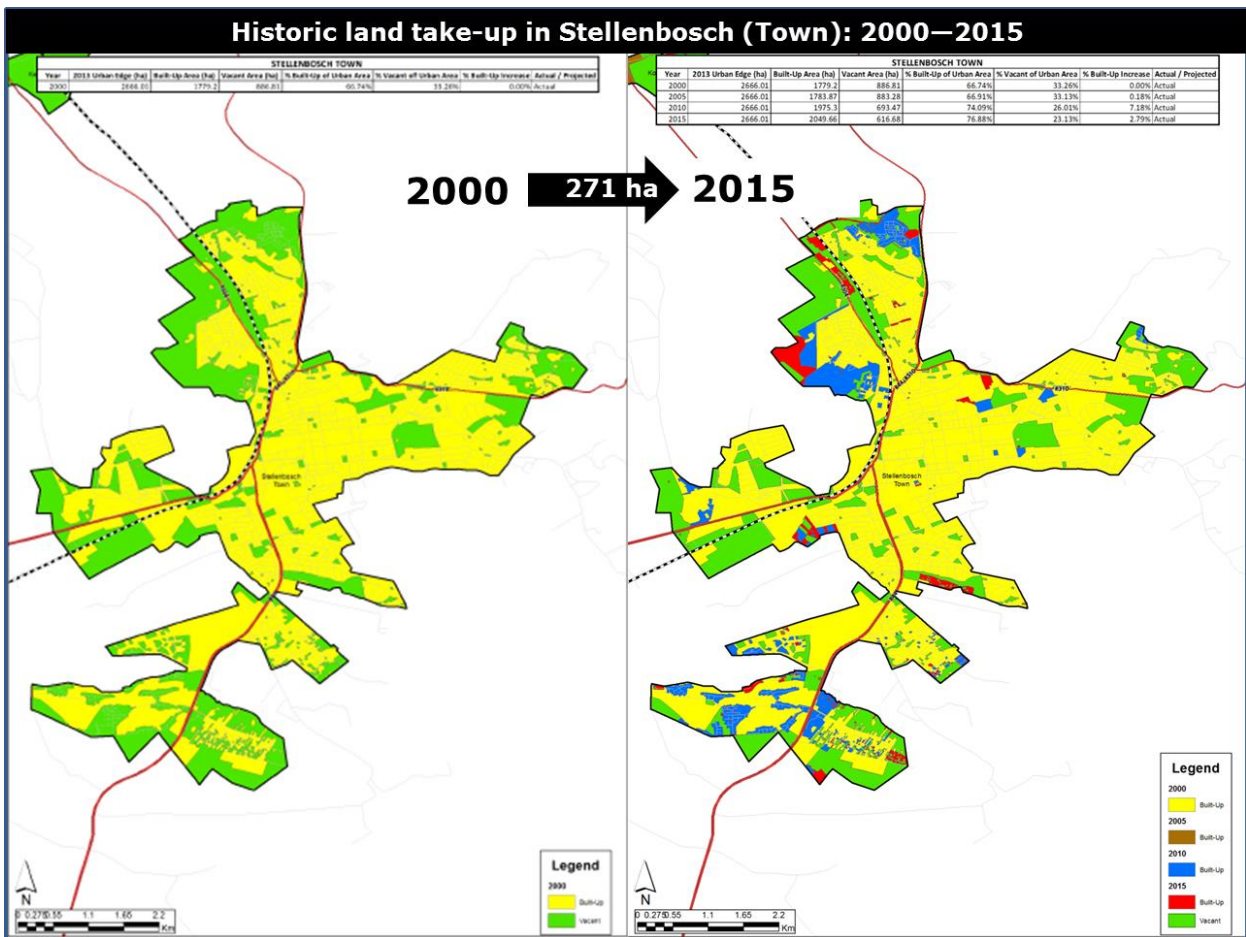


Figure A9: Land take-up between 2000 and 2015: Stellenbosch (Town)
 Source: *Status Quo Report* by Rode, May 2017 (input provided by Aurecon)

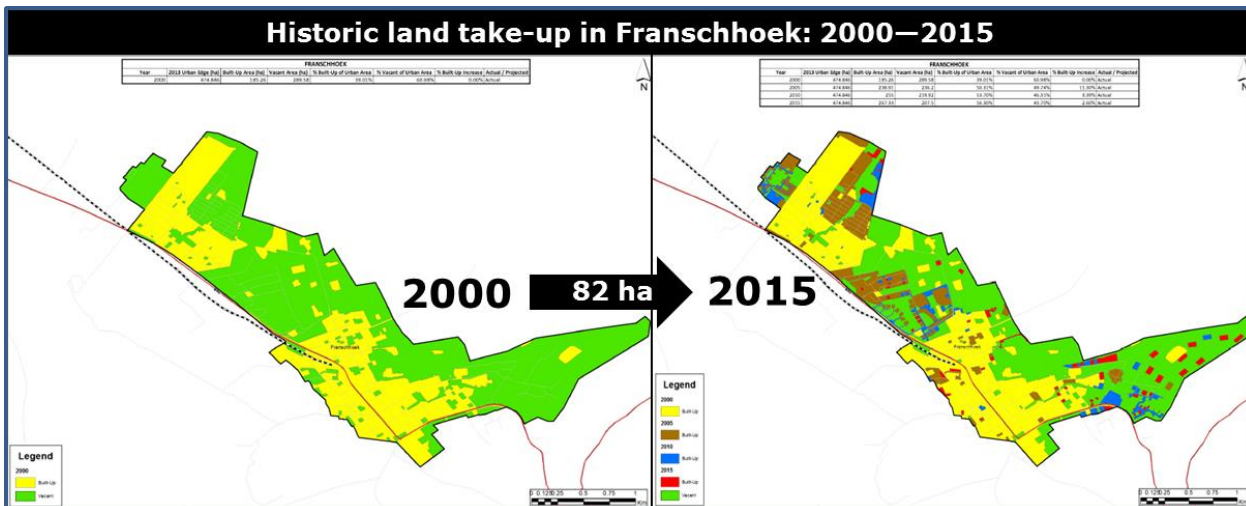


Figure A10: Land take-up between 2000 and 2015: Franschhoek
 Source: *Status Quo Report* by Rode, May 2017 (input provided by Aurecon)

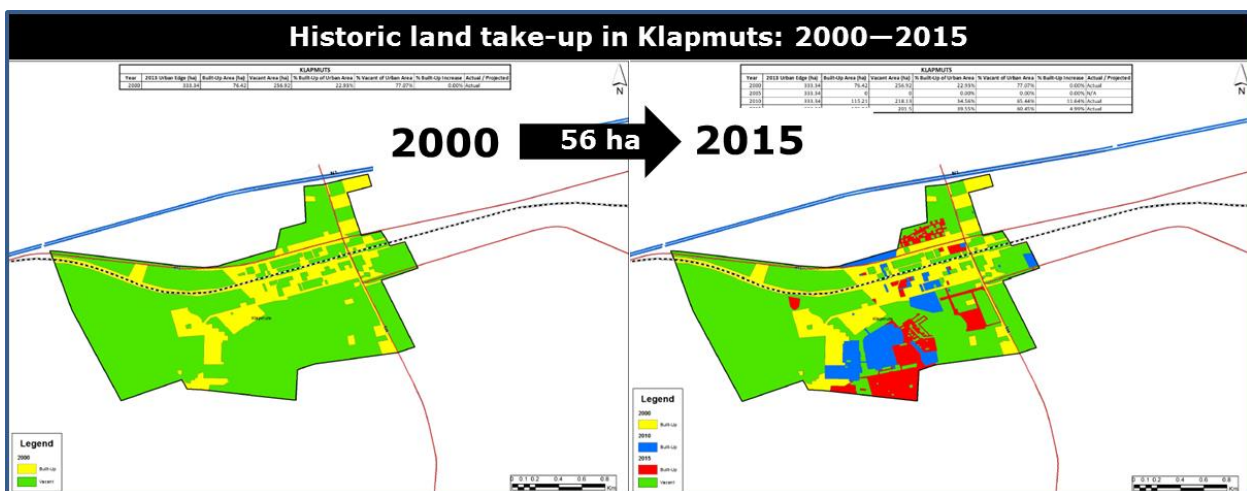


Figure A11: Land take-up between 2000 and 2015: Klapmuts
Source: *Status Quo Report* by Rode, May 2017 (input provided by Aurecon)

It is evident that (fragmented) urban sprawl has occurred over this period in Stellenbosch (Town). The urban growth in Franschoek was mainly infill development, while in Klapmuts, the built-up area expanded towards the south. *This growth (mainly market-driven) does not characterise a specific growth-path or the principles of a shared vision.* In Stellenbosch (Town), middle- to high-income residential development occurred within the urban edge, albeit *on the urban fringes*, while low-cost housing on 'well-located' land came about through land invasion.

Key trends can be identified when considering the **use (and development) of land** based on different types of land-development applications. Almost 70% of all recently submitted strategic land-development applications⁸⁶ had a peripheral location (i.e. contributing to urban sprawl with associated costs), and even more (89%) of these applications were greenfields developments. A very high number, viz. 55% of all land-development applications submitted to the Stellenbosch Municipality between 2007 and 2015, were for, or included, a permanent departure. This is evidence of a changing pattern in the use of land that is not yet accommodated in zoning schemes. Only about 25% of all land-development applications submitted to the Municipality pertains to rural land.

Historic demand for residential land⁸⁷

In the municipal area, the split by typology between 1996 and 2015 is: dwelling houses (74% of the total residential space developed), followed by flats (17%), other residential buildings (6%) and townhouses (3%). The number of houses greater than 80 m² completed since 1996 was about 134 per year, with an average size of about 260 m². Given our demand forecast of roughly 25 000 m² per annum to be completed over the 5-year forecast period (2016–2021) (in terms of our Consensus macro-economic scenario), demand for houses greater than 80 m² is expected to be roughly 96 units per annum (see **Figure A12**). The inherent assumption in the model's forecast is that historically there has been enough developable land⁸⁸ available in the municipal area; in other words, we assume there was no supply constraint on take-up, which would have created pent-up demand. If this were not the case, the model's forecast would be too low compared to the potential future demand.

⁸⁶ An application was categorised as strategic if the proposed land development relates to (mostly) large tracts of (vacant) land, inside or outside (if outside, then close to) the urban edge and considered as one-titled unit or grouped together. The factual information of applications is limited to that which has been made available by the municipal officials in Excel spreadsheets and through completion of a questionnaire regarding land development outcomes.

⁸⁷ See **Part C: Scenario Development** for the methodology used to estimate growth in demand for residential built space over a 20-year forecast period.

⁸⁸ Developable land means the land has a realistic potential of acquiring development rights. It includes 'brownfields' and 'greenfields' development.

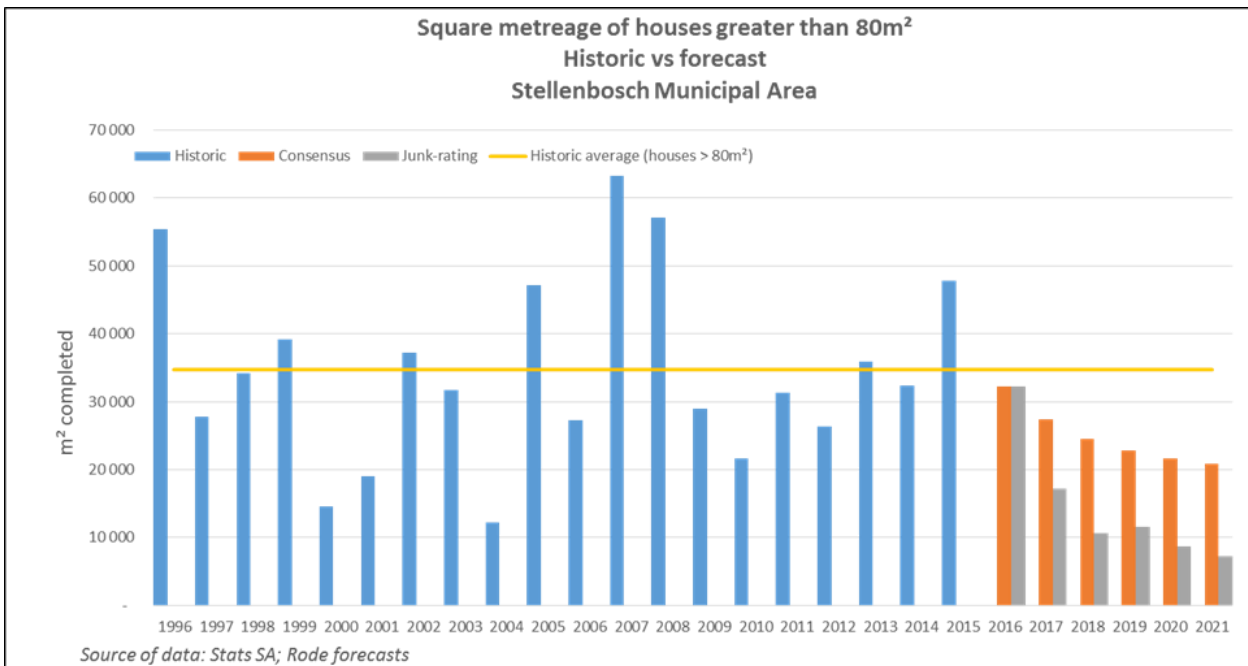
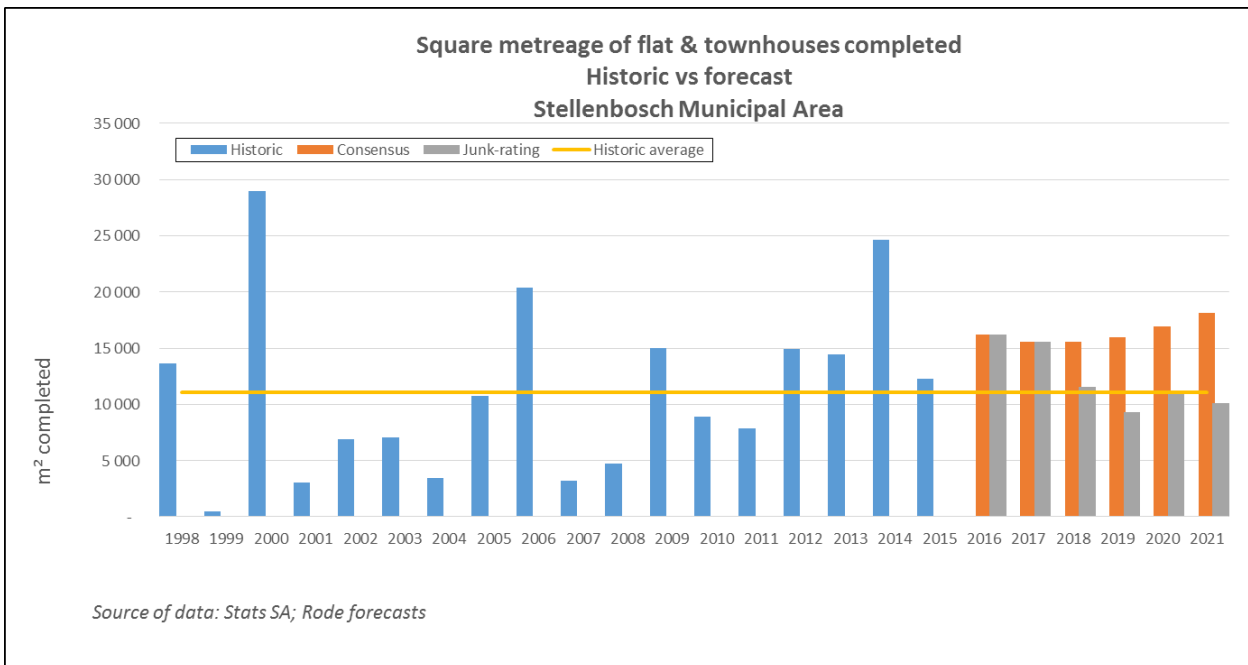


Figure A12: Square metreage of houses greater than 80 m² completed in municipal area – historic vs 5-year forecast

Source of data: StatsSA; forecast by Rode

See **Part C: Scenario development** for the method used to calculate historic demand for houses smaller than 80 m² (viz. housing for the indigent and gap/affordable housing).

The number of flats/townhouses completed since 1996 is about 137 flats/townhouses per year with an average size of about 78 m². Our new-demand forecast (in terms of our macro-economic Consensus scenario) of roughly 16 000 m² of superstructure per annum over the forecast period, implies demand for roughly 210 units per annum (see **Figure A13**).⁸⁹



⁸⁹ The inherent assumption in the model’s forecast is that historically there has been enough developable land available in the municipal area; in other words, we assume there was no supply constraint on take-up. If this were not the case, the model’s forecast would be too low compared to the potential future demand.

Figure A13: Square metreage of flats/townhouses completed in municipal area – historic actual vs 5-year forecast

Source of data: StatsSA; forecast by Rode

Over the eight-year period, between the first quarter of 2008 and the first quarter of 2017 nominal full-title **property rentals** in Stellenbosch (Town) showed growth of roughly 8,1% p.a., while sectional-title property rentals grew by about 10,5% p.a.⁹⁰ Over the same period, building costs (as measured by the CPI) showed growth of roughly 6% p.a. This implies that over the past eight years residential rentals in Stellenbosch were able to grow in *real* terms. This is a straw in the wind that the stock of rental housing is too small.

6.2 THE ECONOMY⁹¹

Over the past few decades, there has been a shift away from the primary sector (agriculture and mining) and the secondary sector (mainly manufacturing) to the tertiary sector (finance, insurance, real estate & trade). This happened in the developed world, and also in South Africa. In fact, this trend accelerated even further in South Africa after 1994, what with the demolition of tariff walls and the resultant crimping of local manufacturing. By 2016, the tertiary sector produced almost 70% of goods and services in South Africa (see **Figure A14**).

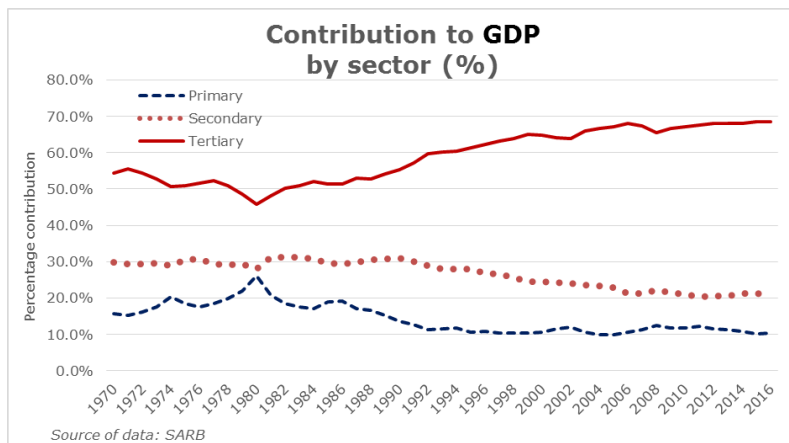


Figure A14: A changing SA economy

The **Western Cape** economy, as measured by gross value added (GVA)⁹² at constant 2010 prices, increased for the period 1993 to 2015 at an annual rate of 3,5% compared to 3% for the whole of South Africa. The **Stellenbosch** economy, also measured by GVA at constant 2010 prices, increased for the period 1993 to 2015 at an annual rate of 2,9% compared to 3,5% for Cape Town and 3,1% for the Cape Winelands District Municipality (CWDM). The GVA of the Stellenbosch economy accounted on average for 2,9% (or R10 460 million measured at constant 2010 prices) of the **Western Cape** economy for the period 1993 to 2015. As a comparison, the Cape Town economy accounted for 72,6% of the **Western Cape** economy over the same period, reaching R276 195 million in 2015.

The GVA trends relating to the primary, secondary and tertiary sectors of the **Stellenbosch** economy from 1993 to 2015, are presented in **Figure A15**. We observe that the primary and secondary sectors of the Stellenbosch economy measured by GVA are indicating declining trend patterns *in absolute terms*, while the tertiary sector has grown significantly, especially from 2002. This has resulted in a strong upward trend in the overall economy as the tertiary sector contributes more than two-thirds of the GVA generated in the Stellenbosch economy. In sum, the Stellenbosch economy is driven by the tertiary sector.

⁹⁰ Source of raw data: TPN.

⁹¹ Source: *Status Quo Report* by Rode, May 2017 (input provided by Multipurpose Business Solutions).

⁹² The value of production or output within the borders of the province for any specific year.

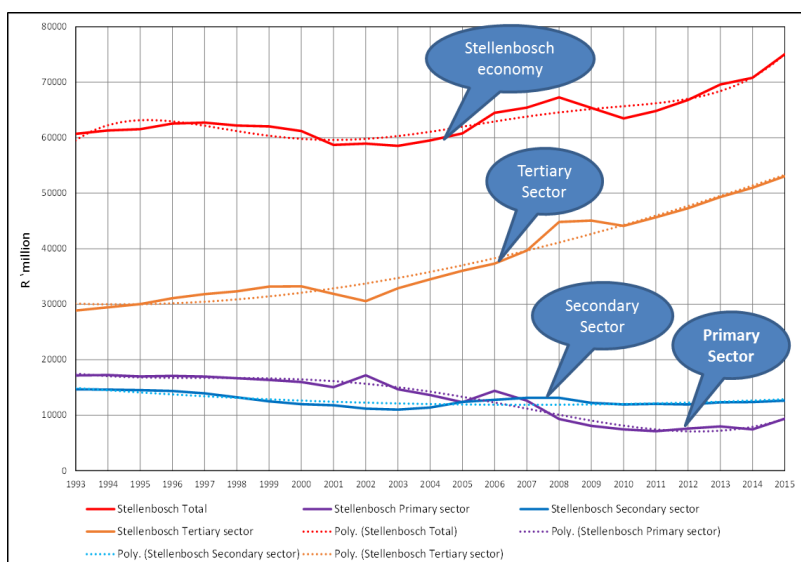


Figure A15: A comparison of the GVA trends (in 2010 constant prices) for the primary, secondary and tertiary sectors in the Stellenbosch Municipality
 Source: Basic data extracted from Easydata.co.za; own calculations

The sub-sector contribution to the GVA of the **Stellenbosch** economy for 2015 is presented in **Table A6**. A comparison of the sector contributions to the GVA for 1995 and in 5-year increments up to 2015 is illustrated in **Figure A16**. It is interesting to note that the manufacturing share is decreasing and finance, insurance, real estate and business services and wholesale and retail trade (including catering and accommodation) are increasing, whereas agriculture, forestry and fishing are flat to decreasing. The high contribution of manufacturing (nearly 17%) can be attributed to, *inter alia*, wine making on the farms.

Table A6
Contribution of sectors to the GVA of the Stellenbosch economy at constant 2010 prices in 2015

Industry	GVA 2015, R'm	Avg annual % growth 1993-2015	% contribution to Stellenbosch economy, 2015
Agriculture, forestry and fishing	665	0,8	6,4
Mining	18	-3,9	0,2
Manufacturing	1 754	-0,2	16,8
Electricity and Water	103	2,7	1,0
Construction	418	5,7	4,0
Wholesale & retail trade; catering and accommodation	1 947	5,5	18,8
Transport & accommodation	1 065	7,8	10,2
Finance and business services	2 707	4,8	25,8
Community, social and other personal services	696	3,2	6,7
General government services	1 059	1,1	10,1
Total	10 460	3,2	100,0

Source: Basic data extracted from Easydata.co.za; own calculations

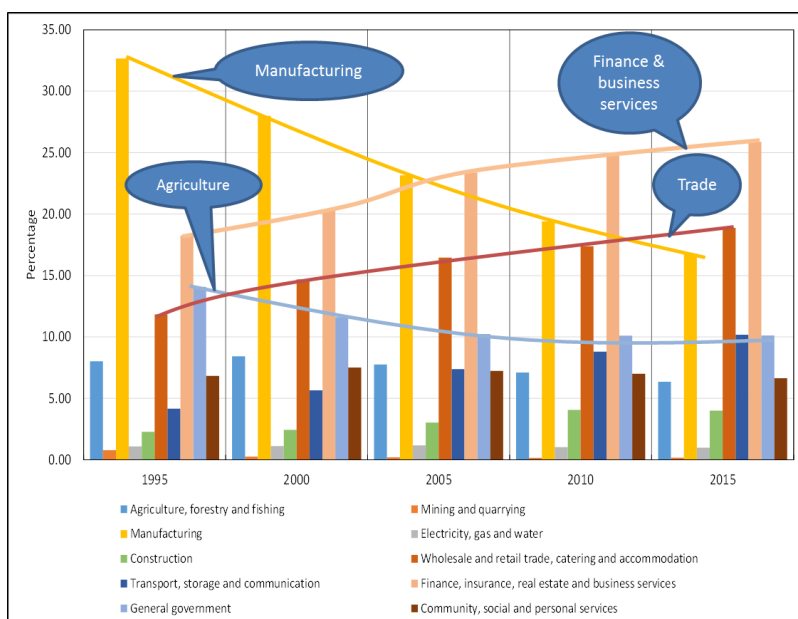


Figure A16: Sector contributions to the GVA of Stellenbosch for 1995 and 5-year increments to 2015

Source: Basic data extracted from Easydata.co.za; own calculations

We also considered sectoral employment by sector in the **Stellenbosch** economy (see **Table A7**). Wholesale and retail trade (including catering and accommodation) recorded the most employees, followed by finance, insurance, real estate and business services, agriculture, forestry and fishing, and manufacturing. An analysis of the shares indicate that the largest sector contributed 26,6% to total employment.

Industry	Employment	Average annual % growth 1993-2015	% share of the Stellenbosch economy employment, 2015
Agriculture, forestry and fishing	9 334	-2,7	12,4
Mining	27	2,7	0,04
Manufacturing	7 694	-0,7	10,3
Electricity and water	142	2,2	0,2
Construction	4 789	-0,8	6,4
Wholesale & retail trade; catering and accomm.	19 994	2,8	26,6
Transport & accommodation	4 498	3,4	6,0
Finance and business services	11 354	5,0	15,1
Community, social and other personal services	9 642	2,4	12,8
General government services	7 565	0,9	10,1
Total	75 039	0,97	100

Source: Basic data extracted from Easydata.co.za; own calculations

In **Figure A17** we compare the unemployment rate (%) (blue line) with the contribution (%) to total GVA by selected nodes (orange line). We observe the following:

- One would intuitively expect a negative correlation between the two variables (higher contribution to GVA leads to lower unemployment). However, the opposite is true ($r=0,42$). Particularly noticeable is that the two main nodes that make the largest contribution to GVA – Stellenbosch Town (61%) and Franschhoek (10%) – also have the highest unemployment rates, viz. 17% and 21% respectively. The explanation for this must be that nodes with higher economic activity attract hopeful job seekers, who then generally do not find a job.

- b. An exception is Klappmuts, which has a low contribution to GVA (4%) but nevertheless has a high unemployment rate (16%). We understand this was brought about by a resettling programme of unemployed people some time ago.
- c. Nevertheless, the unemployment rates in all nodes are lower than in SA in general.
- d. But, with the driver of the economy being the tertiary sector, where higher knowledge and skills are required, the prospects for these job seekers finding employment must be rated slim. This has important political implications, as in the rest of SA. Spatial policy cannot solve this problem as the underlying problem is education and training, which is not a local competency.

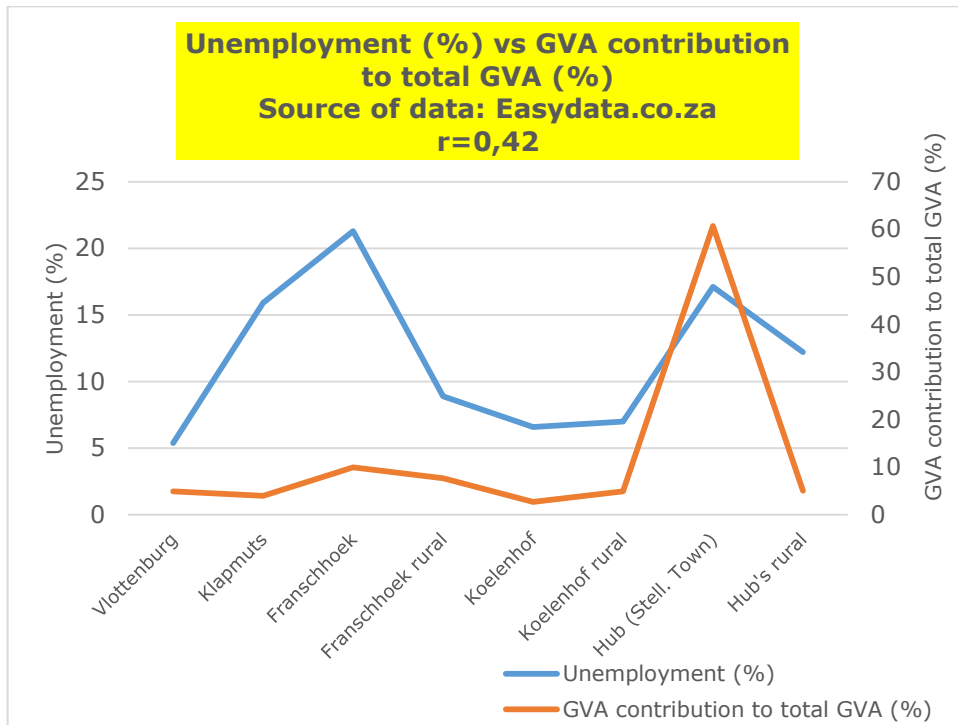


Figure A17: Comparing GVA contribution with unemployment by area within the Stellenbosch Municipality

Source: Basic data extracted from Easydata.co.za; own calculations

6.3 URBAN RESILIENCE (CLIMATE CHANGE)⁹³

Urban resilience is seen as a disaster-risk reduction and mitigation intervention in the planning and management of urban areas. Exposure to hazards such as floods, earthquakes, fires, infectious diseases, industrial accidents, etc. in urban areas is increasing as a result of high concentrations of people, buildings and infrastructure.

The following paragraphs present a high-level overview of the meteorological climate changes that are likely to occur over the urbanised areas within Stellenbosch municipal area over the next four decades.⁹⁴ Modelling was done with the aim of informing the decision-making processes regarding urban growth and development. Using climate projection data requires the acceptance of various uncertainties and would normally be part of drafting a climate change adaptation plan.

It is projected that there will be a general drying trend in the western part of the country over the period 2030–2045 (including the Stellenbosch municipal area) (see **Figure A18**).⁹⁵

⁹³ Source: *Status Quo Report* by Rode, May 2017 (input provided by Aurecon).

⁹⁴ The *Status Quo Report* includes more comprehensive reporting on the meteorological climate changes that are likely to occur over the urbanised areas within Stellenbosch municipal area over the next four decades.

⁹⁵ https://www.westerncape.gov.za/text/2015/march/western_cape_climate_change_response

There is some agreement that areas where either increasing or decreasing rainfall volumes are expected, rainfall will be focused into a shorter timeframe. Some areas are exhibiting a shifting in the rainfall onset and cession timing. The rain season is decreasing in length; in the frontal areas of the western and southern areas of the country, winter rainfall is compressed and the dry summer is extended. While it is generally expected that there will be a decrease in the number of rainfall days each year, it's highly likely that there will be an increase in precipitation intensity and the occurrence of more extreme events when it does rain.

The following four risks were identified to allow the development and monitoring of climate-change indicators:

- Riverine flood risk in winter and risk to property and infrastructure
- Extreme storm and wind damage
- Extreme temperature and heat-wave risk
- Veld-fire risk

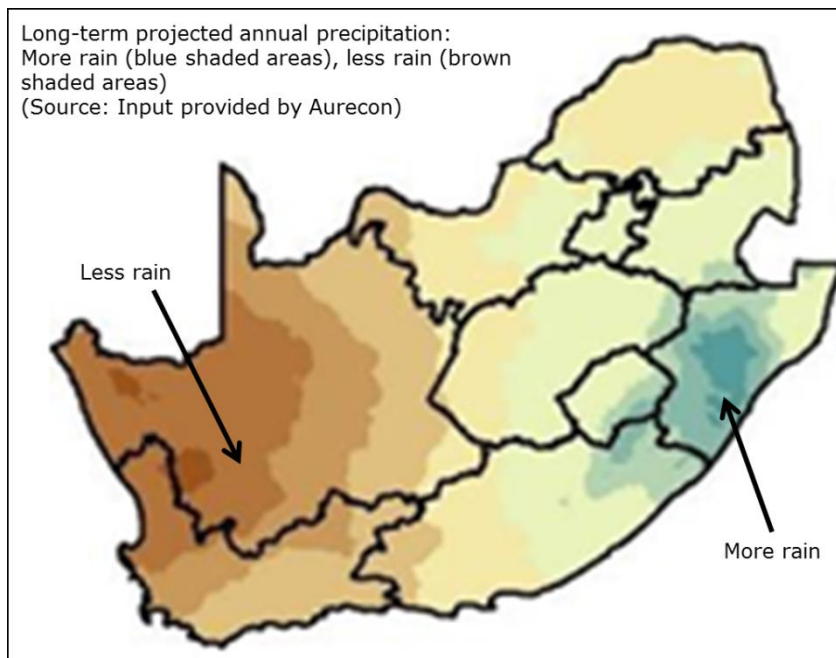


Figure A18: Projected annual precipitation

The indicators that were selected are an expression of the climate vulnerability of the urban areas in the Stellenbosch municipal area. The vulnerability comprises the current and future climate *exposure*, the *sensitivity* and the *adaptive capacity* of the urban areas.⁹⁶

All the urban areas will be potentially susceptible to the risk associated with flooding, storms, extreme temperatures and veld fires. This degree of susceptibility or climate vulnerability is a function of the current and projected changes to the risks as informed by the meteorological and situational exposure indices, and the societal resilience as measured by the sensitivity and adaptive capacity indices. In an area where there is a potentially higher sensitivity and a deficit in adaptive capacity, the existing as well as projected exposure will be amplified, presenting a greater climate vulnerability to each of the identified risks. Conversely, increased adaptive capacity and lowered sensitivity will act to mitigate the exposure and ultimately the climate vulnerability of each area to the climate risks.

strategy_2014.pdf.

⁹⁶ McCarthy, J.J. et al. (eds.). 2001. *Climate Change 2001: Impacts, Adaptation, and Vulnerability – Contribution of Working Group II to the Third Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge University Press, Cambridge, UK.

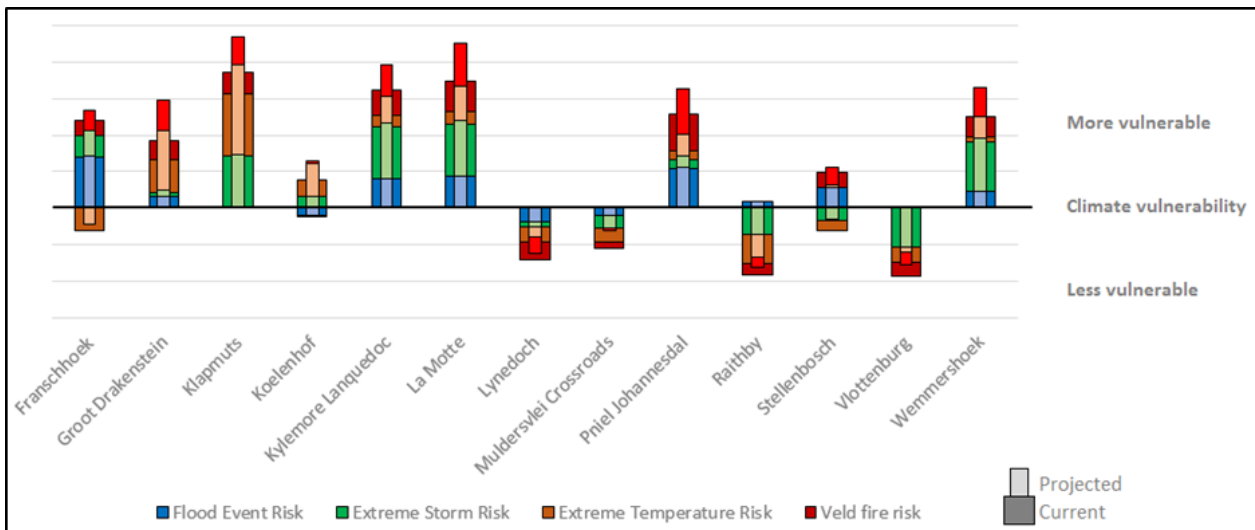


Figure A19: Climate vulnerability of the urban areas in the Stellenbosch municipal area
Source: *Status Quo Report* by Rode, May 2017 (input provided by Aurecon)

6.4 TRANSPORT AND MOBILITY

One of the greatest negative impacts on urban living is the time, cost and energy consumed when travelling between productive activities. These are typically classified as home, work, education, retail and leisure activities.

Stellenbosch (Town) has unacceptable traffic congestion, i.e. restricted mobility by private car (and minibus taxi), a lack of public transport and a lack of parking in the central business and University campus areas. Several factors contribute to this situation, with congestion occurring at different times and locations.

Better and coordinated transport and land-use planning would lead to a reduction of travel and transport needs, i.e. improved mobility. Achieving this (qualitative) outcome was the Municipality's intention by promoting, *inter alia*, the concept of 'inter-connected nodes'.⁹⁷ However, recent developments in Koelenhof and Klappmuts, does not achieve the intended land use/transport integration (see **Part B, §9.2**). In this regard, the following questions need to be asked about the travel characteristics of, particularly, rail and road users in the municipal area: Where do trips start and end, and what transport modes are used and why?

The urban form and transport system both have a direct impact on the efficiency of the other. A car-based transport system can only support lower-density urban form due to the substantial space required for roads and parking. High-density, mixed-use nodes (and corridors) not only ensure greater efficiency of higher occupancy public transport modes, but also enable walking and cycling due to the shorter distances between origin and destination.

It is an imperative that urban development, particularly in Stellenbosch (Town), be optimised around the transport sector to improve liveability for inhabitants and visitors. Planning for accessibility through low-cost and low-carbon transport would increase social and environmental sustainability. However, such a system must provide a similar Level of Service (LOS) as the private car does currently (and the extent to which it would be able to maintain this in future). This would also not only ensure, but possibly even improve, economic sustainability.

6.5 INFRASTRUCTURE

⁹⁷ This concept first appeared in the MSDF approved by Council in February 2013. Note that 'connectedness' is based on rail and road links.

In urban areas in the municipality, over 90% of households have access to piped *water* inside the house or on a community stand. The current bulk water input into the water network is 30,000 kilolitres per day (kl/d) with a 29% level of 'unaccounted for water' (UAW). The existing *water distribution systems* in Stellenbosch (Town), Franschhoek, Dwarsrivier, Klipmuts and Raithby, have insufficient capacity to provide for future growth. It was reported in 2011 that about 38,6% of the water (supply) infrastructure is in a poor or very poor condition and requires upgrading. This notwithstanding, four of the Municipality's five water supply systems have blue-drop status.

Flush toilets and *electricity* are available to more than 90% of households in the urban areas. A number of *waste-water treatment works* have recently been upgraded. According to the Electrical infrastructure Master Plan, most of the urban and peri-urban networks have adequate capacity for the current loading conditions.⁹⁸

The Stellenbosch Municipality disposes on average 9 992 tonnes of *waste* per month at its Devon Valley Landfill site. Note that on average 596 tonnes of garden waste and 2 963 tonnes of builder's rubble have been diverted from landfilling due to chipping and crushing respectively. Included in the disposed waste figures is some 5 673 tonnes of excavated soil that is received on average per month at the landfill for which no alternative use currently exist. *From the latest survey, the remaining life of this landfill is less than two years.* In addition, the collection service of the Municipality is under strain with 4 of the 10 collection vehicles out of service.

Water resource

The Municipality must ensure the sustainability of water resources through, *inter alia*, the following measures:

- Implement urban water conservation and demand management programmes
- Lessen dependence on inter-basin transfer
- Assure supply levels of 'external' water sources
- Ensure 10% additional capacity (headroom) when considering the maximum 24-hour water demand in the peak month of the year

The state of all of the rivers in the municipal area is of great concern. Regular sewage leaks and overflows into rivers and groundwater result in eutrophication, ecosystem degradation and the spread of disease. Storm water discharge into the sewer system is a massive problem during rainy winter months. It is proposed that water pollution reduction measures be instituted and to re-establish and protect indigenous riverine ecosystems.

6.6 HERITAGE

The Stellenbosch Municipality commissioned the Cape Winelands Professional Practices in Association (CWPPA) to prepare a Heritage Inventory of large-scale landscape areas in the rural domain of the municipal area informing proposed heritage areas. A full 'Tangible Heritage Resources Inventory' (*inclusive of all urban areas*) will be prepared. This inventory will be a key informant in the preparation of the next Municipal Spatial Development Framework and is not discussed in this study.

6.7 ENVIRONMENT⁹⁹

How did past urban land-use and management practices impact on the key ecological infrastructure assets and their ability to deliver services to society? In the assessment done as part of this study, we considered the following five aspects: agriculture, hydrology, vegetation, ecosystem status and protected areas.

⁹⁸ Electrical infrastructure Master Plan, June 2015.

⁹⁹ Source: *Status Quo Report* by Rode, May 2017 (input provided by Aurecon).

The approval of strategic land-development applications close to, and on either side of, the urban edge has resulted in the loss of agricultural land and associated landscapes. Private enterprise is also prepared to put its own equity at risk and to purchase agricultural land with development potential based on latent demand.

In Stellenbosch (Town) a total of about 214 hectares of land used for 'agricultural practices' (or about 8% of all land within the urban edge) was lost to urban development between 2000 and 2015. In Franschhoek, over the same period, a total of 50 ha of agricultural land (or 10% of all land within the urban edge) was lost and in Klapmuts, 33 ha or about 10% of all land within the urban edge.

Indigenous vegetation found in the urban areas is under great threat from urban sprawl, and to a lesser extent from agricultural activities. We believe that the legislated functions to regulate the use, weakening or destruction of water sources are not adequately performed in the urban areas. The responsibility to conserve or restore ecosystems, which provide cost-effective options for climate-change adaptation and disaster risk reduction, is not being taken either. Habitats have become fragmented and disturbed, resulting in poor ecosystem functioning and ecological connections.

Water pollution as a result of illegal waste disposal, the discharge of untreated grey water, chemicals from agricultural practices and excessive water abstraction, has caused damage to the river systems.

PART B: STATEMENT OF VISION

Part B includes the vision, principles, change tools and nodal positioning strategies as informants in developing scenarios and creating a preferred growth-and-development path. *This statement of vision is confirmation of previous work contained in the UDS.*¹⁰⁰

Methodology (in brief):

Part A

- State the purpose of this study
- Consider legislative and policy context
- Report on the current urban residential scene

Part B

- Confirm and apply UDS statement of vision

Part C

- Confirm and apply UDS growth-and-development paths, i.e.
 - Three economic-growth scenarios
 - Forecast demand for residential land by 2036 and cumulative net (and gross) demand for residential land by scenario (municipality-wide)
 - Allocations of scenario-based growth in demand for residential land by type and by node
 - Application of the placemaker model to quantify the funds-flow outcome by scenario and by node (relevant to the provision of housing)

Part D

- Confirm and apply UDS guidelines to steer the implementation of growth-and-development paths within a node — e.g. apply designated land-development area(s) and associated housing guidelines
- Review and consolidate housing supply by government

7 VISION

We mentioned that the Integrated Development Plan is the primary directive for governance at local level and that the IHSP serves as an issue-specific informant. The IHSP must therefore contribute to the realisation of a shared vision.

The (broad) shared vision titled *Valley of Opportunity and Innovation* is a declaration in the Stellenbosch Municipal Integrated Development Plan (2017–2022) of what it aims to achieve within the Stellenbosch municipal area. This vision is supported by the following five strategic focus areas, that is, 'how to get there':

1. Valley of possibility:
 - Involving three broad dimensions: provision of services, the internal working of the municipality, and efficient infrastructure and services.
2. Green and sustainable valley:
 - Involving three broad dimensions: ecology, economy and spatial elements.
3. Safe Valley:
 - Ensuring safety, law-abiding behaviour and cleanliness.
4. Dignified living:
 - Associated with access to shelter, sufficient choice in housing opportunity for different income groups and ethical administration of municipal housing.
5. Good governance and compliance:
 - Associated with appropriate policy- and decision-making structures, careful planning for the long and short term, synergy between the work of the political and administrative spheres of government, monitoring of processes and procedures, a skilled and customer-focused administration, regular performance management, and a sound financial basis.

In support of this shared vision and strategic focus areas, the following vision for urban growth and development over the next 20 years is confirmed in this study:

¹⁰⁰ Draft *Urban Development Strategy* completed by Rode in November 2017 as third project deliverable.

'Compact, inclusive, sustainable and transformed towns'

This vision is a slightly amended version of the spatial vision presented in the Shaping Stellenbosch project.¹⁰¹

As is evident from the previous chapters, government in general, and the Stellenbosch Municipality in particular, face numerous challenges in achieving this vision. However, as explained in **Part C**, the municipality is now in a position to adopt a specific growth-and-development path to effect change in the urban areas of Stellenbosch Municipality. The path is based on a positioning strategy that reflects the market's preference for a certain land-use in a specific location, and by implication, shaping public- and private-sector investment in concert with mutual long-term interests. *Importantly, the vision is supported by designating land-development areas where growth and investment is preferred.*

To facilitate the required change, the IHSP endorses the following interrelated concepts (or objectives) of the vision, which are also associated with the designated land-development areas:¹⁰²

Compact town: A high-quality, high-performance, dense, mixed-use, connected and transit-oriented urban environment supported by appropriate land-use-management policies and instruments.

Inclusive town: An urban environment where areas experiencing specific development pressure receive a high priority with respect to service delivery and to redress past development imbalances.

Sustainable town: An urban environment where natural ecosystems are restored and service delivery focuses on being viable, cost-effective and resource-efficient.

Transformed town: An urban environment where co-investment in 'ideal' land-uses at 'ideal' locations delivers optimum returns with respect to the local economy, society and the environment.

8 DEVELOPMENT PRINCIPLES

The Housing Act, 1997 (Act 107 of 1997) lays down general principles that apply to the development of housing by government. In addition, the IHSP is, as is the UDS, structured around the following five development principles as set out in the Spatial Planning and Land Use Management Act, 2013 (SPLUMA):

- a. Spatial justice
- b. Spatial sustainability
- c. Spatial resilience
- d. Efficiency
- e. Good administration

Thus, when considering any decision regarding the development or use of land, decision-takers should consider and weigh up these principles. However, SPLUMA does not translate the development principles into quantifiable outcomes — nor does any other act. There are also no guidelines to express how these development principles may be interpreted and applied.

¹⁰¹ *Stellenbosch Town Spatial Development Framework* (SPLUMA compliant; draft), May 2016 and *Stellenbosch Quo Vadis*, August 2014.

¹⁰² Based largely on descriptions of these concepts in the *Stellenbosch Town Spatial Development Framework* (SPLUMA compliant; draft), May 2016 and *Integrated Urban Development Framework*, 2016.

In the following section, we provide our understanding of each of the development principles. Note that these principles are not structured in any specific order of importance or prioritised against any specific outcome.

The principle of *spatial justice* must be achieved by redressing past spatial and other development imbalances, for example, by improving access, ownership and use of land. Spatial justice must prevail in decision-making, whereby, for example, a Municipal Planning Tribunal, considering an application, may not be impeded or restricted in the exercise of its discretion solely on the grounds that the value of nearby land or property is affected by the outcome of the application. This is an example of a statutory imperative that could be used to address spatial imbalances.

The development and use of land must be within the fiscal, institutional and administrative means of the Republic and it must be *spatially sustainable*, resulting in communities that are 'viable'. Sustainability of land development must be entrenched in the spatial planning and land-use management systems. This implies the following considerations:

- Protection of prime and unique agricultural land
- Consistency with environmental management instruments
- Promote and stimulate the effective and equitable functioning of land markets
- Consider the current and future costs to all parties for the provision of infrastructure and social services
- Promote land development in locations that are sustainable and limit urban sprawl

The principle of *efficiency* demands (a) the optimum use of resources and infrastructure and (b) procedural efficiency in decision-making. The latter refers to an efficient and streamlined process and adherence to timelines by all parties.

The principle of *spatial resilience* requires the elements of the system to be flexible enough to ensure sustainable livelihoods in communities most likely to suffer the impacts of economic and environmental shocks. Note that this principle is not unpacked in any specific detail like the other four and, hence, would be difficult to consider and weigh-up in decision-making.

The final development principle applicable to the application of the spatial-planning and land-use management system is the principle of *good administration*. In this regard, the application of the system must represent an integrated and transparent approach involving all spheres of government and the public.

9 CHANGE TOOLS

The following tools that could potentially drive change as part of a specific growth-and-development path were identified:

- Integrate urban planning, e.g. to facilitate co-investment by the public- and private-sector in 'ideal' land-uses at 'ideal' locations delivering optimum returns.
- Integrate transport modes, including its management.
- Promote, where practicable, greater socio-economic integration of human settlements.
- Steer appropriate land use and expected land development (in accordance with the spatial vision and interrelated concepts, but without gratuitously inhibiting private-sector development).
- Facilitate economic development, e.g. the elimination of infrastructural constraints.
- Efficient allocation of municipal resources.

These change tools can form the basis of effecting the vision for urban growth and development.

10 STRATEGY DEVELOPMENT

The section below includes the nodal positioning strategies that informed the development of the preferred 20-year growth-and-development path. This part of the work is addressed by node and by using a number of key directives.

10.1 STELLENBOSCH (TOWN)

Town hierarchy

- In a provincial study, the town of Stellenbosch is placed as having the third highest growth potential of all towns in the province (after Paarl and George, excluding the City of Cape Town).¹⁰³
- Previous reference to a long-term goal for the town placed emphasis on building a green economy and being innovative in finding new technologies in the energy, waste, water and sanitation sectors and in managing traffic and mobility.¹⁰⁴
- It is also stated that Stellenbosch (Town) 'could well become the gravitational centre of the knowledge revolution that is required if South Africa is to transcend its dependence on mature resource- and energy-intensive industries'.¹⁰⁵

Key strengths (as competitive and/or comparative advantages)

- University town
- High standard of living and access to facilities (social amenities within walkable distances)
- Predictable land market and positive investor sentiment
- Preferred location for company head offices
- Diversified economy
- Considerable human and social capital
- Efficient and stable municipal administration
- High levels of municipal services and infrastructure in most neighbourhoods
- Unique scenic and historic character and value
- Strong linkages with rural economy
- Regional presence in the Cape Winelands district
- Low vulnerability to climate impacts

Key constraints

- Segregation along socio-economic class lines
- The expected doubling of the number of households in 2011 by 2031
- High population densities (people/ha) in certain areas
- Too few housing options (affordability, shortages and backlogs)
- Infrastructure capacity backlogs and sustainability of water supply system
- Traffic congestion and lack of parking in central business and University campus areas
- High house prices (presumably because of inelastic supply of land)
- Time-consuming processes to unlock land for development
- High potential agricultural land in and around town
- High percentage of all households earning less than R3500 per month (as in 2011)
- Limited access to opportunities, especially for the youth
- Urban activities threatening local ecosystems
- Safety concerns

Positioning strategy

¹⁰³ Western Cape Government, *Growth Potential Study*, 2014.

¹⁰⁴ Loots, R., Sebitosi, B and Swilling, M., 2012. *Sustainable Stellenbosch – Opening Dialogues*, SUN Press, 2012, p. xi.

¹⁰⁵ *ibid.*, p. 8.

Stellenbosch (Town) to facilitate a services-oriented economy in the urban area.

Development strategy

Facilitate complementary and supplementary land uses, viz. residential, commercial and a low-key industrial component aligned to, and focused on, tertiary-sector economic activity.

Growth trajectory

The growth trajectory (the mathematical curve that development investment could follow) is impossible to forecast, but for purposes of estimating the future need for infrastructure, we opted for a *progressive growth trajectory*. This implies exponential growth over a period of time, where after a saturation point is reached tapering off significantly thereafter to flatten out over the latter period of the assessment period.

Opting for a *progressive growth trajectory*, we label Stellenbosch (Town) a first-tier priority-investment area.

Alignment strategy

Strengthening cluster development initiatives in the tertiary sector to forge agglomeration benefits and reduce production costs (that is, transaction costs) through complementary and supplementary land-use options (residential and commercial in particular), innovation and transfer of knowledge.

10.2 FRANSCHHOEK

Town hierarchy

- In a provincial study, the town of Franschhoek is placed as having the 28th highest growth potential of all towns in the province (excluding the City of Cape Town).¹⁰⁶

Key strengths (as competitive and/or comparative advantages)

- High standard of living and access to opportunities and facilities (social amenities within walkable distances)
- Predictable land market
- Preferred location as tourism destination (particularly day visitors);
- Efficient and stable municipal administration
- High levels of municipal services and infrastructure in most neighbourhoods
- Unique scenic and historic character
- Strong linkages with rural economy

Key constraints

- Non-diversified economy
- Segregation along socio-economic class lines (vast differences between Groendal/Langrug and Franschhoek)
- Very high population densities (people/ha) in Groendal/Langrug in comparison to the rest of the town
- Doubling of the number of households as in 2011 by 2031
- Too few housing options (affordability, shortages and backlogs)
- Infrastructure backlogs and sustainability of water-supply system
- Main road through town centre
- High house prices (presumably because of inelastic supply of land)
- Time-consuming processes to unlock land for development

¹⁰⁶ Western Cape Government, *Growth Potential Study*, 2014.

- High-potential agricultural land in and around town
- High percentage of all households earning less than R3500 per month (as in 2011)
- Limited access to opportunities, especially for the youth
- Urban activities threatening local ecosystems
- High vulnerability to climate impacts

Positioning strategy

Franschhoek is to further its services-orientated economy, driven by tourism in particular.

Development strategy

Facilitate the establishment of land uses complementary to the tertiary-sector-focused economy, viz. residential and commercial developments.

Growth trajectory

The growth trajectory (the mathematical curve that development investment could follow) is impossible to forecast, but for purposes of estimating the future need for infrastructure, we opted for a *constrained growth trajectory*. This implies starting from a very low base of development that remains so for some time. Thereafter, development increases steadily to reflect a linear growth pattern, but declines sharply after reaching a pinnacle. This could represent a period of low activity followed by a boom in the property development.

Opting for a *constrained growth trajectory*, we label Franschhoek a third-tier priority-investment area.

Alignment strategy

Strengthening cluster development initiatives in the tertiary sector to forge agglomeration benefits and reduce production costs (transaction costs) through complementary and supplementary land-use options (residential and commercial in particular) that aligns with Stellenbosch (Town) as a linked tourism destination, which in turn offer tourists more to see and do.

10.3 KLAPMUTS

Town hierarchy

- The town of Klapmuts is placed as having the 51st highest growth potential of all towns in the province (excluding the City of Cape Town).¹⁰⁷ With our present knowledge, this 2014 ranking may prove to be conservative.

Key strengths (as competitive or comparative advantages)¹⁰⁸

- It offers an opportunity to develop into a regional industrial node based on its location, its existing land-use mix and standard of transport infrastructure
- Employment proximity
- Developable land (including the possibility of a future Stellenbosch University satellite campus)
- Gateway to Stellenbosch and Franschhoek winelands
- Acceptable standard of living and access to facilities (social amenities within walkable distances)
- Efficient and stable municipal administration

¹⁰⁷ Western Cape Government, *Growth Potential Study*, 2014.

¹⁰⁸ Some of these key strengths were identified in the study, *Klapmuts Special Development Area* (Draft Report), June 2017.

- High levels of municipal services and infrastructure

Key constraints

- Functional area spans a municipal boundary
- The growth path will be influenced by sub-regional growth and development
- Currently, a stagnant local economy and weak local business-investment climate
- Lowly-skilled workforce, mainly working in agricultural sector
- Limited access to work, education and training opportunities
- Almost doubling of the number of households as in 2011 by 2031
- Few housing options (affordability, shortages and backlogs)
- Infrastructure backlogs and sustainability of water-supply system
- Time consuming processes to unlock land for development
- High percentage of all households earning less than R3500 per month (as in 2011)
- Limited access to opportunities for youth
- Urban activities threatening local ecosystems
- Very high vulnerability to climate impacts

Positioning strategy

Klapmuts to provide for secondary-sector-orientated offerings, driven mainly by manufacturing as subsector activity.

Development strategy

Facilitate complementary and supplementary land uses, viz. industrial and residential to focused secondary-sector economic activity. Prioritise development that aligns with this product.

Growth trajectory

The growth trajectory (the mathematical curve that development investment could follow) is impossible to forecast, but for purposes of estimating the future need for infrastructure, we opted for a *sustainable growth trajectory*. This indicates a level of development that is relatively constant for the foreseeable future where after a significant increase (spike) occurs, which is short-lived with a strong tapering-off trend.

Opting for a *sustainable growth trajectory*, we label Klapmuts as a second-tier priority-investment area.

Alignment strategy

Promote cluster-development initiatives in the secondary sector to forge agglomeration benefits and reduce production costs (transaction costs) through complementary and supplementary land-use options (residential and commercial in particular). Liaise with Drakenstein municipality.

10.4 OTHER SETTLEMENTS¹⁰⁹

Areas that are experiencing specific development pressure where incremental approaches to development, regulation and maintenance and upgrading of infrastructure will be considered to accommodate natural progression.

¹⁰⁹ 'Other' settlement areas include the settlement areas of Dwarsrivier, Wemmershoek, La Motte, Groot Drakenstein, Raithby, Vlottenburg, Koelenhof, Lynedoch and Muldersvlei. The settlement area of Jonkershoek is also included under this term in the Integrated Human Settlement Plan.

PART C: SCENARIO DEVELOPMENT

The key elements of an (urban) growth-and-development path are addressed in **Part C** and **Part D** of this report. These are the 'how much', the 'what type' and the 'when' (fully determined by the market, excluding housing for the indigent) and the 'where' (partially determined by the market). The 'how much', the 'what type' and the 'when' of *land development* are referred to as the 'growth-path' in this report, the 'where' refers to the preferred growth areas.

We calculated the demand forecasts in square metres in order to be similar to the measurements used in calculating development contributions (DCs). Residential allocations are converted to number of units to align with the DC classification.

Part C is copied from previous work contained in the UDS with the focus on residential land development.

Methodology (in brief):

Part A

- State the purpose of this study
- Consider legislative and policy context
- Report on the current urban residential scene

Part B

- Confirm and apply UDS statement of vision

Part C

- Confirm and apply UDS growth-and-development paths, i.e.
 - Three economic-growth scenarios
 - Forecast demand for residential land by 2036 and cumulative net (and gross) demand for residential land by scenario (municipality-wide)
 - Allocations of scenario-based growth in demand for residential land by type and by node
 - Application of the placemaker model to quantify the funds-flow outcome by scenario and by node (relevant to the provision of housing)

Part D

- Confirm and apply UDS guidelines to steer the implementation of growth-and-development paths within a node — e.g. *apply designated land-development area(s) and associated housing guidelines*
- Review and consolidate housing supply by government

11. FORECAST OF LAND TAKE-UP BY NODE AND LAND-USE

11.1 DEVELOPMENT OF THREE ECONOMIC-GROWTH SCENARIOS

We forecast the demand for developable land by typology as informant to setting growth-and-development paths.¹¹⁰ The demand for land is significantly influenced by growth in the national and local economies, and hence, we did this by constructing three economic-growth scenarios. The three scenarios are:

- The **Business-as-usual** scenario is a mechanistic line-of-best-fit extrapolation over a 20-year period (2016–2036) of historic demand in Stellenbosch Municipality (1996–2015). This scenario implies the historic growth rate will be maintained, even though the country's economy might decelerate. This scenario is quite likely in light of the popularity of the Western Cape in general and Stellenbosch in particular.
- The **Consensus** scenario is based on the opinions of a panel of economists whom Rode polls every six months (the last survey was in December 2016, but the 6-monthly update became available in August – too late for inclusion in our forecasts for this study. In effect, the panel's Consensus forecast represents a low-growth scenario, compared with the average post-WWII GDP growth (which was 3–3½% p.a.).
- The **Junk** scenario is in effect a very-low-growth macroeconomic scenario, constructed by Rode in December 2016. As the tag implies, it assumes a worsening political and economic environment over the forecast period.

¹¹⁰ Developable land means the land has a realistic potential of acquiring development rights. It includes 'brownfields' and 'greenfields' development.

In both the **Consensus** and **Junk** scenarios, the macroeconomic forecasts serve as inputs to our econometric property models. For instance, the models capture the historic relationship between the square metreage of buildings completed and macroeconomic variables such as *real* GDP and interest rates.

These scenario-based models we used to forecast demand for land over the forecast period 2016 to 2021. From 2022 onwards, we used the long-term trend in square metreage completed to extrapolate demand to the end of the forecast period, viz. 2036.

In most instances, it is acceptable to use the square metreage of a typology completed (supply) as a proxy for demand, as vacancies are generally so small that new supply can be assumed to equal growth in demand.

11.2 HISTORIC RESIDENTIAL DEMAND

The method we used to calculate historic residential demand is explained in **Table C1**.

Table C1 How historic municipality-wide growth in residential demand was calculated
Indigent houses <80 m ² : historic supply (2005/2006–2015/2016)
Indigent houses <80 m ² : conservative need estimate for 2016
Non-indigent houses <80 m ² (gap/affordable): the relationship between property values and household income (2016)
Non-indigent houses >80 m ² : m ² of buildings completed (1996–2015)
Flats/townhouses: m ² of buildings completed (1996–2015)

We estimated residential demand (municipality-wide) for four distinct housing typologies, viz. *indigent housing* (the lowest house-price class, including 'give-away' houses), *non-indigent houses <80 m²* (the gap/affordable house-price bands),¹¹¹ *non-indigent houses >80 m²* (middle to luxury house-price bands)¹¹² and *flats/townhouses* (associated with all price bands).

Housing for the indigent

The social need¹¹³ for *houses <80 m²* we calculated by using Census 2011 data (e.g. type of dwelling, overcrowding) and the provincial housing-'demand' database.¹¹⁴ This provided a conservative need estimate of **11 618** houses for 2016, which includes the housing backlog at the time. We also estimated the historic annual net take-up of *land* for the indigent (*houses <80 m²*) between 2005/2006 and 2015/2016.¹¹⁵

Houses <80 m² for the non-indigent

¹¹¹ House-price bands associated with household incomes between R3500 and R25 000 per month and property values between R160 000 and R580 000.

¹¹² House-price bands associated with household incomes more than R25 000 per month and property values more than R580 000.

¹¹³ Many sources erroneously refer to 'demand' when they mean 'social need'. 'Demand' is an economic concept that implies that the consumer has the financial wherewithal to afford that which he or she 'demands'.

¹¹⁴ The Stellenbosch municipality has put out on tender (advertised on 29 May 2018) the procurement of services for the development, maintenance and support of an online housing demand database system and mobile application system to be hosted within the municipality's datacentre.

¹¹⁵ We estimated the historic annual net land take-up by dividing the annual budget spent over this period by the cost of R155 000 per unit and by multiplying this number by 120 as the square metreage of a single residential erf.

We estimated the demand for houses $<80\text{ m}^2$ associated with the gap/affordable house-price band by considering the relationship between property values¹¹⁶ and household income.¹¹⁷ This was done by comparing the number of properties in the house-price classes (R160 000–R300 000 and R300 000–R580 000) with the number of households in the corresponding income brackets, i.e. between R3 501 and R25 000. This provided a 2016 unfulfilled demand of **15 042** houses.

Non-indigent houses $>80\text{ m}^2$

We used Stats SA data on buildings completed to estimate the municipality-wide historic demand for *houses* $>80\text{ m}^2$ and *flats/townhouses*. The analysis period of residential square metreage completed in the Stellenbosch municipal area was 1996–2015.

The *annual* average square metreage¹¹⁸ delivered to the market between 1996 and 2015 for the following typologies are:

- Houses $>80\text{ m}^2$: 35 000 m^2
- Flats/townhouses: 12 000 m^2

Note that the analysis period 1996–2015 covers an exceptional boom and an exceptional slow-down. Thus, one hopes the annual average is representative of typical take-up.

11.3 FORECAST OF RESIDENTIAL DEMAND BY SCENARIO

Table C2 is a summary of how we forecast demand for residential land uses up to 2036.

Table C2 Forecast method of residential demand until 2036			
	Business-as-usual	Consensus	Junk
Houses $<80\text{ m}^2$ for the indigent	Extrapolate historic supply (2005/2006-2015/2016)	Apply population growth rates to conservative need estimate (2016)	Apply population growth rates to conservative need estimate (2016)
Houses $<80\text{ m}^2$ for the non-indigent (gap/affordable)	Apply population growth rates to demand estimate for 2016	Apply population growth rates to demand estimate for 2016	Apply population growth rates to demand estimate for 2016
Houses $>80\text{ m}^2$ for the non-indigent	Extrapolate historic demand (1996-2015)	Use econometric modelling (2016-2021) and extrapolate	Use econometric modelling (2016-2021) and extrapolate
Flats/townhouses	Extrapolate historic demand (1996-2015)	Use econometric modelling (2016-2021) and extrapolate	Use econometric modelling (2016-2021) and extrapolate

Housing for the indigent

We estimated the future social need for houses, municipality-wide, in the 'give-away' bracket by using the conservative estimate of 11 618 units in 2016, and, thereafter, by applying population growth rates to this base figure.

The forecast we expressed in 5-year increments, resulting in an estimated unfulfilled need of 17 847 houses by 2036, assuming that no houses for the indigent will be built between 2016 and 2036. Put differently, in an ideal world, in order to wipe out the 2016 backlog of 11 618

¹¹⁶ Using the 2016 municipal valuation roll.

¹¹⁷ Household incomes for 2016 were determined by applying the growth in the Consumer Price Index (CPI) to the 2011 household income, i.e. the nominal household incomes of 2011 were adjusted to 2016 values.

¹¹⁸ 'Construction' areas, as defined by Sapoa (i.e. it includes non-rentable areas like lift wells and staircases). Put differently, it is the area of the building envelope times the number of storeys (where all the storeys are of the same size).

and to cater for the growing need, 17 847 units for the indigent need to be built between 2016 and 2036.

This need forecast applies to both the **Consensus** and **Junk** scenarios. Note that the estimated backlog of need in 2016 (and its associated required net land extent) is *significantly, but predictably, higher* than the total of 1891 houses actually provided by government over the 10-year period ended 2015/16 that we used in the **Business-as-usual** scenario.

In the latter scenario, we assumed, the insufficient new supply of housing for the indigent over the decade ended 2015/16 will persist. Thus, we fitted a linear regression line through the historic annual net land take-up for give-away houses <80 m². This long-term trend line was then used to estimate the likely delivery of houses <80 m² for the indigent for the period 2016 to 2036. This mechanistic forecast method assumes that, over the forecast period, the supply will continue to grow at the growth rate implied by the fitted linear trend line. The method estimates a cumulative addition to the inventory of 7805 houses (or an additional net land demand of 936 658 m²) by the year 2036.

Houses for the non-indigent <80 m²

For all three scenarios, we used a method similar to the way we extrapolated the need for housing for the indigent.

We estimate that in 2016 there was a deficit of houses in this category of 15 042. We extrapolated this base figure by applying population growth rates. In this way, we estimate a cumulative backlog of **23 106** houses by 2036, assuming no new supply is added over this period. However, in light of our low-path macroeconomic forecasts, it is unlikely that all of this latent demand of 23 106 units will actually be converted to effective demand.¹¹⁹

Houses for the non-indigent >80 m² and flats/townhouses

Under the **Business-as-usual** scenario, we fitted linear regression lines through the historic data for the square metreage of completed flats/townhouses and houses >80 m². We then used these long-term trend lines to extrapolate the demand for these property types for the period 2016 to 2036. This mechanistic forecast method assumes that over the forecast period demand will continue to grow at the constant growth rate implied by the fitted linear trend lines. Put differently, the method assumes growth in the demand for space is impervious to the economy.

For the **Consensus** and **Junk** scenarios, we constructed econometric models to capture the historic relationship between the square metreage of completed flats/townhouses and dwellings >80 m² on the one hand and on the other macroeconomic variables such as *real* GDP and interest rates. We used the models to forecast demand for these property types for the period 2016 to 2021. For the forecasts beyond 2021, we used the long-term trend in completed flats/townhouses and houses >80 m² to extrapolate these trends until the end of the forecast period.

Note that the new-demand forecast until 2021 (in terms of the macro-economic **Consensus** and **Junk** scenarios) for houses >80 m² and flats/townhouses is subject to the inherent assumption that historically there has been enough developable land available in the municipal area; in other words, we assume there was no land-supply constraint on take-up. If this were not the case, the model's forecast would be too low compared to the potential future demand.

11.4 DETERMINING THE NET AND GROSS TAKE-UP OF RESIDENTIAL LAND

The next step was to convert the forecast demand for built space (measured in square metres) into a prognosticated net demand for residential land specific to each scenario. We

¹¹⁹ Effective demand is demand that the consumer can actually afford.

calculated the net demand in both the **Consensus** and **Junk** scenarios based on achieving residential densities higher than the norm.¹²⁰ The **Business-as-usual** scenario is based on continued low-density sprawled growth.¹²¹

5-year forecast

In **Table C3**, we provide the **net demand for residential land**¹²² in the *municipal area* over a 5-year forecast period (2016 to 2021). Excluded from this table is gap/affordable houses and below and non-residential land. This forecast is based on the macroeconomic Consensus scenario.

Table C3				
Take-up forecast 2016-2021				
Consensus scenario				
Type	Annual (square metres)			Cumulative required <i>net</i> land extent 2016–2021 (m ²)
	Demand (bulk m ²)	Required footprint	Required net land extent	
Flats/townhouses	16 394	6 011	12 023	72 138
Houses (>80 m ²)	24 908	n/a	47 900	287 402

With respect to the Consensus scenario, we calculated the annual net demand for land extents for the various typologies as follows:

- Flats: Bulk ÷3 (three storeys) x 1,1 x 2 (assuming 50% coverage, which includes provision for parking).
- Houses >80 m²: Total footprint x 1,92 (ratio of average erf size [500 m²] to average house size [260 m²]).

Note that the above calculations of *future required* residential land extent assume the demand for and supply of such land is currently in equilibrium, i.e. there is no significant pent-up demand (demand that cannot be satisfied because of a shortage of developable land). However, note that 'equilibrium' would implicitly assume that a proportion of developable land is permanently vacant and available for development in order to prevent pent-up demand developing (for residential and non-residential land) – we can call this the iron inventory of vacant land. This concept is analogous to an iron inventory of a retail business (or any business that has to keep inventory), viz. a required minimum stock level in order to prevent the business running out of stock from time to time. What exactly this iron vacancy of developable land for a municipality is or should be we do not know.

Table C4 shows the required net land extent to accommodate the estimated need for houses in the gap/affordable-and-below house-price band in the *municipal area* in 2021. We considered the 2021 need estimates for houses <80 m² based on the 2016 estimates as base figure and applying population growth rates. We calculated the net land extent as follows:

- Houses <80 m²: Total net land extent required = number of units x 75 m² erven.

Table C4
Estimated growth in demand in municipal area
Gap/affordable housing and below
Consensus scenario
2016-2021

¹²⁰ We used an erf size of 75 m² for houses <80 m² and 500 m² for houses >80 m².

¹²¹ We used an erf size of 120 m² for houses <80 m² and 700 m² for houses >80 m².

¹²² Net demand excludes common areas like streets, public/private open space, etc.

Type	No. of new units required by 2021	Erf size (m ²)	Cumulative net land extent required by 2021 (m ²)
Houses for indigent (<80 m ²)	13 231	75	992 325
Houses for non-indigent (<80 m ²)	17 130	75	1 284 750
Total	30 361	-	2 277 075

Note that if the backlog of houses <80 m² is not reduced, the unsatisfied need/demand for land would be 2 277 075 m² (228 ha) by 2021. The figure is cumulative and assumes no new supply will be added between 2016 and 2021.

The cumulative net land extent required in 2021 for the residential property categories mentioned in **Tables C3** and **C4** is 2 636 615 m² (263 ha). The **gross land extent required** associated with residential development is 5 273 230 m² (527 ha). This land extent includes 'other' urban land uses (like streets, public open space, etc.) and is determined by doubling¹²³ the land extent required for the categories mentioned in **Table C2**.

20-year forecast

We also converted the forecast demand for residential space and units and non-residential space into a longer-term prognosticated net demand for land specific to each of the three scenarios (measured in square metres).

We provide in **Table C5** the **net demand for land** by typology in the *municipal area* based on the **Business-as-usual**, **Consensus** and **Junk-rating** scenarios. The forecast period is 20 years, i.e. 2016 to 2036. The *gross* demand for land in 2036 (including all urban land uses) we estimated by *doubling* the sum total of the residential and non-residential typologies listed in **Table C5**.

We differentiated between the net land extent required for indigent and for gap/affordable housing in the **Consensus** and **Junk** scenarios by adding 10% (used in the **Consensus** scenario) and subtracting 10% (used in the **Junk** scenario) from the respective 2036 demand estimates (as base figure).

Also, note that we had to determine the number of flats and townhouses separately because different development contributions apply. In this regard, we allocated a share of 86% of the total net land extent required for flats/townhouse in 2036 to flats based on their share of historic demand. The number of flats required was determined by dividing this figure by 78, which is the average size (m²) of flats completed between 1996 and 2015. The number of townhouses was determined by dividing the remaining share of the net land extent required in 2036 by 200, which is the average size (m²) of townhouses completed between 1996 and 2015.

The estimated total cumulative gross land area required by scenario for development in the municipal area in 2036 is listed in **Table C5** (*including non-residential land*). To convert net to gross land area, we doubled the net land extents to accommodate the remaining urban land uses ('infrastructure areas' like streets, public open space, etc.) not mentioned in **Table C5**.

Tables C3 and C4 reflect the cumulative supply under the Consensus scenario that will be required to satisfy forecast demand by 2021, whereas **Table C5** show the forecast under the three scenarios until 2036.

¹²³ The factor of 2 was calculated by using the GIS "union" overlay method. It shows that 'other' urban land uses (like streets, public open space, etc.) cover about 49% of the built-up area within the urban edge of Franschhoek, 68% in Klapmuts and 65% in Stellenbosch (Town). In addition, the UN Habitat programme promotes the allocation of at least 50% of land to streets and public space at a neighbourhood scale.

Table C5
Demand/need forecast by scenario in the municipal area
by 2036

Type	Business-as-usual		Consensus		Junk	
	No. of units required	Cumulative net land extent required (m ²)	No. of units required	Cumulative net land extent required (m ²)	No. of units required	Cumulative net land extent required (m ²)
Indigent houses <80 m ²	7 805	936 658	19 631	1 472 341	16 062	1 204 643
Non-indigent houses <80 m ²	23 106	2 772 745	25 417	1 906 262	20 796	1 559 669
Non-indigent houses >80 m ²	3 057	2 139 739	2 018	1 009 128	1 117	558 739
Flats	2 886	261 739	3 220	292 031	2 370	214 964
Townhouses	183		204		150	
Retail	-	152 065	-	60 035	-	32 425
Industrial	-	314 838	-	122 902	-	76 198
Office	-	115 806	-	115 806	-	57 903
Sub-total (top-structure improvements)	-	6 693 590	-	4 978 506	-	3 704 541
Infrastructure area	-	6 693 590	-	4 978 506	-	3 704 541
Total gross land area required	-	13 387 180	-	9 957 012	-	7 409 081

There are notable differences in net land extent required (in m²) *by typology and by scenario*. The most notable is the land extent required to accommodate housing for the indigent and houses larger than 80 m². The net land extent required for housing for the indigent in the **Consensus** and **Junk** scenarios is significantly more than the extent required in the **Business-as-usual** scenario – even at higher residential densities. This is because demand in the **Consensus** and **Junk** scenarios is based on eradicating backlogs and addressing future need, whereas the land extent required in the other scenario is based on historic supply of housing for the indigent by government – a figure that is indicative of the past insufficient new supply of housing for the indigent by government.

The land extent required for houses larger than 80 m² in the **Business-as-usual** scenario is almost four times higher than the equivalent demand under the **Junk** scenario, and about double the demand in the **Consensus** scenario. These lower demand estimates is owing to higher densities and to economic variables not considered in the **Business-as-usual** scenario. Likewise, the **Consensus** and **Junk** scenarios depict much lower demand estimates for retail, industrial and office space than the **Business-as-usual** scenario.

11.5 ALLOCATING THE DEMAND FOR LAND TO NODES BY LAND-USE

Up to now, all calculations were done in respect of demand/need for all the urban areas *combined* – that is, in the municipality as a whole.¹²⁴ The next step is to allocate our forecasts to the various nodes with a view to where the Municipality should spend on

¹²⁴ We were forced to do our forecasts for the municipality as a whole because the Municipality does not compile statistics for the various nodes separately. This is a great pity, and could easily be rectified.

infrastructure and where extra developable land must be 'provided' for. The nodes are Stellenbosch (Town), Franschhoek, Klapmuts and 'Other' settlement areas.¹²⁵

Currently, there is some spare infrastructure capacity and a surplus of developable land within the urban edges of the nodes, but these we assume away — *for now*. Thus, the allocation formula discussed below, is based on a normalised¹²⁶ situation with respect to infrastructure and the stock of developable bulk, viz. we assume these are in equilibrium.

11.5.1 Allocation based on historic land take-up

We considered allocating the growth in demand for land to the various nodes based on their proportional historic land take-up (historic analysis period 2000–2015). **Table C6** shows the historic land take-up by node over the analysis period. We notice that Stellenbosch (Town) is dominant with 60% of the gross land take-up (all land-uses combined). The 10% share of Klapmuts is not insignificant. However, we decided against using this method as we expect the split of land-uses between the nodes will change in future and that such an apportionment would not reflect the market's preference for a certain land type in a specific location.

Town/settlement	Land take-up (ha)	Percentage share (rounded to 10)
Stellenbosch (Town)	271	60%
Franschhoek	82	20%
Klapmuts	56	10%
Other	72	10%
Total	481	100%

11.5.2 The hub-and-spoke approach

We use the hub-and-spoke approach to designate nodes for a focused economic activity (albeit with complementary and supplementary land uses) to emphasise a specific land-utilisation outcome (see **Figure C1**).

Being a type of economic agglomeration, clusters are formed by firms that conduct activities in the same field and in which innovation is an important force that fuels the competition and the firm's development (Porter, 1998; Krugman, 1991). Based on the role of different cluster members and the interaction between them, we focus on the hub-and-spoke cluster model as a preferred model for Stellenbosch. Applied to the Stellenbosch economy, the town of Stellenbosch can be considered as the hub with linkages that are formed along the logical connecting roads to Klapmuts and Franschhoek (as 'primary' nodes) as well as Vlottenburg and Koelenhof. These links can be termed "spokes".

¹²⁵ 'Other' settlement areas include the settlement areas of Dwarsrivier, Wemmershoek, La Motte, Groot Drakenstein, Raithby, Vlottenburg, Koelenhof, Lynedoch and Muldersvlei.

¹²⁶ Normalised because it ignores backlogs and surpluses in infrastructure provision and available stock of developable bulk.

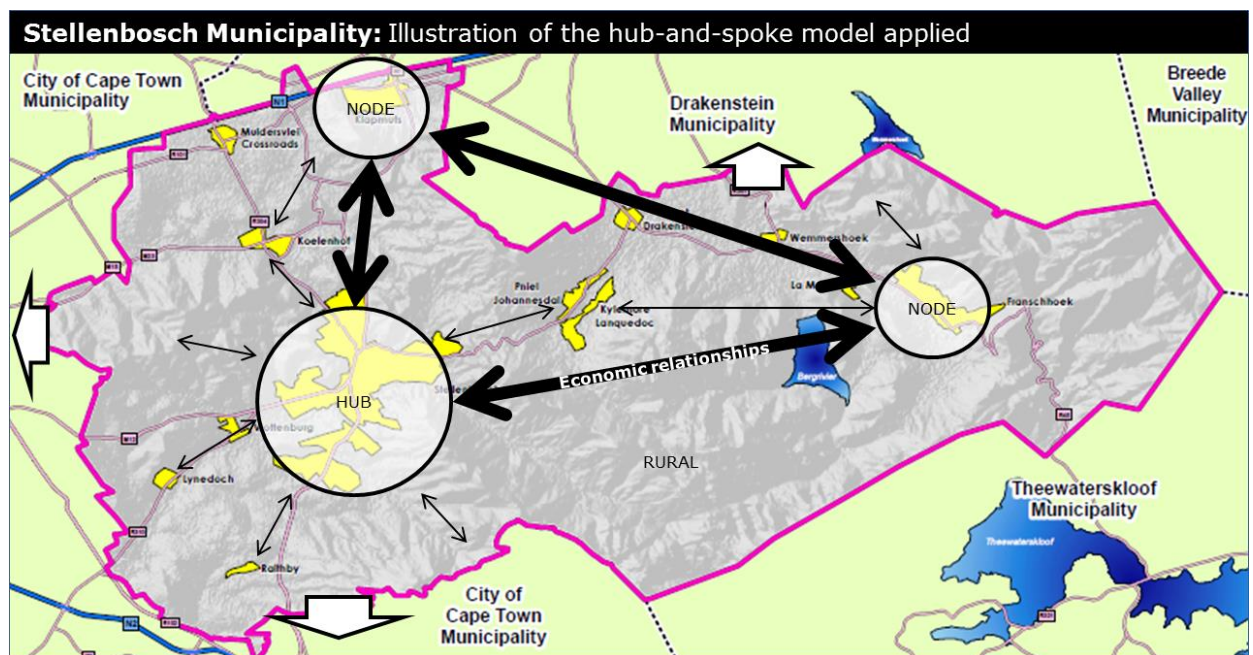


Figure C1: Hub-and-spoke model applied

We use the hub-and-spoke approach with the focus on disaggregating the Stellenbosch economy into geographic areas. Applying the hub-and-spoke model requires certain assumptions and context:

- The "hub" is defined as Stellenbosch (Town).
- "Nodes" are defined as *urban* areas within the larger Stellenbosch municipal area.
- "Rural area" is defined as the rest of the municipal area not included in the "hub" or specified "nodes", but is primarily agricultural area and associated with a "node" or "hub".
- The "nodes" and associated "rural areas" are primarily involved in primary-sector GVA, except the Franschoek "node", which also has tertiary activity and some secondary activity.
- The "hub" is primarily producing GVA in the secondary and tertiary sectors of the economy.

If the assumptions hold as applied, a significant improvement in GVA levels and, therefore, employment will occur in certain geographical areas.

11.5.3 Allocation by using the hub-and-spoke approach

In **Tables C9-C14** below, the allocation of the forecast demand for various land-uses to various nodes is based on currently available market signals; it is not a diktat but an attempt to help the Municipality with planning infrastructure, urban-edge demarcation and zoning decisions.

Table C7 sets out the method used to allocate the municipality-wide growth in demand for land by type and node for all three scenarios, i.e. to optimally reflect the market's preference for a certain land-use in a specific location — *based on historic trends*. This 'weighted' allocation by land use and by node, should sum to the total demand for land by scenario across the municipal area (see **Tables C5** and **C8**).

Table C7
Method of allocating cumulative growth in demand for land by node and typology

Hub-and-spoke method applied to all three growth scenarios

Type	Method
Houses <80 m ² for the indigent	Use the proportional ratio of the estimated housing need for the indigent (by 2031) in Stellenbosch (Town), Franschhoek and Klapmuts. ¹²⁷ <i>We do not allocate any demand for indigent houses to the 'Other' settlements.</i> ¹²⁸
Houses <80 m ² for the non-indigent	Use the proportional ratio of the number of households by household income in the applicable housing category, i.e. monthly income between R7 501 and R15 000 – split between Stellenbosch (Town), Franschhoek, Klapmuts and other settlements (combined) (based on Census 2011 data).
Houses >80 m ² for non-indigent	The proportional ratio of the number of households by household income in the applicable housing category (bondable and higher priced values), i.e. monthly income above R15 000. Split between Stellenbosch (Town), Franschhoek, Klapmuts and 'Other settlements' based on Census 2011 data. ¹²⁹
Flats/townhouses	Same as 'houses >80 m ² for non-indigent'
Retail	Same as 'houses >80 m ² for non-indigent'
Industrial	The proportional ratio of GVA contribution in the secondary sector by 'hub' and 'node', viz. Stellenbosch (Town), Franschhoek, Klapmuts and 'Other' (Source: Basic data extracted from Easydata.co.za and own calculations). ¹³⁰
Offices	The proportional ratio of GVA contribution in the tertiary sector by 'hub' and 'node', viz. Stellenbosch (Town), Franschhoek, Klapmuts and 'Other' (Source: Basic data extracted from Easydata.co.za and own calculations). ¹³¹

We allocate our forecasts by land-use based on the 'weighted' allocation described in **Table C7** and by using the hub-and-spoke approach. The focus is, as previously stated, where the Municipality should spend on infrastructure and where extra developable land must be 'provided' for. The allocation was done for Stellenbosch (Town), Franschhoek, Klapmuts and 'Other' settlement areas, and the allocation formula is, as before, based on a normalised situation with respect to infrastructure and the stock of developable land.

Table C8 shows the percentage allocation (weighting) by land type and by node (applicable to all three scenarios).

Table C8 Allocation (as percentages) by node and land-use of cumulative growth in demand for land (m²) by 2036 This nodal split is applied to all three growth scenarios in Tables C9-C14					
Type	Stellenbosch (Town)	Franschhoek	Klapmuts	Other settlement areas	TOTAL
Houses <80 m ² for the indigent	56%	35%	9%	-	100%
Houses <80 m ² for non-indigent	73%	9%	4%	14%	100%

¹²⁷ See **Table 77** in the *Socio-economic and Demographic Analysis Report*, February 2017, compiled by Rode.

¹²⁸ We acknowledge the possible need to provide houses for farm workers in some of the 'other settlements'.

¹²⁹ See **Table 23** in *Socio-economic and Demographic Analysis Report*, February 2017.

¹³⁰ We use 2015 data as actual data.

¹³¹ We use 2015 data as actual data.

Houses >80 m ² for non-indigent	85%	6%	1%	8%	100%
Flats/townhouses	85%	6%	1%	8%	100%
Retail	85%	6%	1%	8%	100%
Industrial	64%	7%	4%	25%	100%
Offices	67%	12%	3%	18%	100%

Tables C9, C10 and C11 show the allocation of the growth in demand for each land-use type to the respective nodes. Each of these tables shows a different scenario.

Table C9
Split by node and land-use
of cumulative growth in demand for land (m²) by 2036

Business-as-usual scenario

Type	Stellenbosch (Town)	Franschhoek	Klapmuts	Other settlement areas	TOTAL
Houses <80 m ² for the indigent	524 528	327 830	84 299	-	936 658
Houses <80 m ² for non-indigent	2 024 104	249 547	110 910	388 184	2 772 745
Houses >80 m ² for non-indigent	1 818 778	128 384	21 397	171 179	2 139 739
Flats/townhouses	222 478	15 704	2 617	20 939	261 739
Retail	129 255	9 124	1 521	12 165	152 065
Industrial	201 497	22 039	12 594	78 710	314 838
Office	77 590	13 897	3 474	20 845	115 806
Sub-total (of top-structure improvements)	4 998 230	766 525	236 812	692 022	6 693 590
Infrastructure area	4 998 230	766 525	236 812	692 022	6 693 590
Total gross land area required	9 996 460	1 533 051	473 624	1 384 045	13 387 180

Table C10
Split by node and land-use
of cumulative growth in demand for land (m²) by 2036

Consensus scenario

Type	Stellenbosch (Town)	Franschhoek	Klapmuts	Other settlement areas	TOTAL
Houses <80 m ² for the indigent	824 511	515 319	132 511	-	1 472 341
Houses <80 m ² for non-indigent	1 391 572	171 564	76 250	266 877	1 906 262
Houses >80 m ² for non-indigent	857 759	60 548	10 091	80 730	1 009 128
Flats/townhouses	248 226	17 522	2 920	23 362	292 031
Retail	51 030	3 602	600	4 803	60 035
Industrial	78 658	8 603	4 916	30 726	122 902

Offices	77 590	13 897	3 474	20 845	115 806
Sub-total (of top-structure improvements)	3 529 345	791 055	230 763	427 343	4 978 506
Infrastructure area	3 529 345	791 055	230 763	427 343	4 978 506
Total gross land area required	7 058 690	1 582 109	461 527	854 686	9 957 012

Table C11
Split by node and land-use
of cumulative growth in demand for land (m²) by 2036

Junk scenario					
Type	Stellenbosch (Town)	Franschhoek	Klapmuts	Other settlement areas	TOTAL
Houses <80 m ² for the indigent	674 600	421 625	108 418	-	1 204 643
Houses <80 m ² for non-indigent	1 138 559	140 370	62 387	218 354	1 559 669
Houses >80 m ² for non-indigent	474 928	33 524	5 587	44 699	558 739
Flats/townhouses	182 720	12 898	2 150	17 197	214 964
Retail	27 561	1 945	324	2 594	32 425
Industrial	48 767	5 334	3 048	19 050	76 198
Office	38 795	6 948	1 737	10 423	57 903
Sub-total (of top-structure improvements)	2 585 929	22 645	183 651	312 316	3 704 541
Infrastructure area	2 585 929	622 645	183 651	312 316	3 704 541
Total gross land area required	5 171 857	1 245 290	367 302	624 632	7 409 081

Tables C12, C13 and C14 show the allocation of the growth in demand for residential units to the respective nodes. Each of these tables shows a different scenario.

Table C12
Split by node and land-use
of cumulative growth in demand for residential units by 2036

Business-as-usual scenario					
Type	Stellenbosch (Town)	Franschhoek	Klapmuts	Other settlement areas	TOTAL
Houses <80 m ² for the indigent	4371	2732	702	0	7805
Houses <80 m ² for non-indigent	16868	2080	924	3235	23106
Houses >80 m ² for non-indigent	2598	183	31	245	3057
Flats	2453	173	29	231	2886
Townhouses	156	11	2	15	183
TOTAL	26446	5179	1688	3725	37038

Table C13
Split by node and land-use
of cumulative growth in demand for residential units by 2036

Consensus scenario					
Type	Stellenbosch (Town)	Franschhoek	Klapmuts	Other settlement areas	TOTAL
Houses <80 m ² for the indigent	10993	6871	1767	0	19631
Houses <80 m ² for non-indigent	18554	2288	1017	3558	25417
Houses >80 m ² for non-indigent	1716	121	20	161	2018
Flats	2737	193	32	258	3220
Townhouses	173	12	2	16	204
TOTAL	34174	9485	2838	3994	50490

Table C14
Split by node and land-use
of cumulative growth in demand for residential units by 2036

Junk scenario					
Type	Stellenbosch (Town)	Franschhoek	Klapmuts	Other settlement areas	TOTAL
Houses <80 m ² for the indigent	8995	5622	1446	0	16062
Houses <80 m ² for non-indigent	15181	1872	832	2911	20796
Houses >80 m ² for non-indigent	950	67	11	89	1117
Flats	2015	142	24	190	2370
Townhouses	128	9	2	12	150
TOTAL	24297	8099	4050	4050	40495

12. DETERMINING GROWTH-AND-DEVELOPMENT PATHS

12.1 READJUSTED ALLOCATION BASED ON NODAL POSITIONING STRATEGIES

In the previous section, we allocated the growth in demand for land by type to the designated nodes in order to reflect market preferences *based on historic trends*. We now re-adjust this allocation (still adopting the hub-and-spoke approach) to reflect an inter-nodal split of land uses *based on the positioning strategy* described in **Part B** of this report. This allocation is also based on a normalised situation with respect to infrastructure and the stock of developable land.

We used the same method as before to allocate the residential and retail land typologies, but amended the method and percentage allocations for the office and industrial typologies (see **Table C15**).

Table C15
Method of allocating cumulative growth in demand for land
by node and typology

Based on the positioning strategy

Hub-and-spoke method applied to all three growth scenarios

Type	Method
Houses <80 m ² for the indigent	Same method used based on historic trends
Houses <80 m ² for non-indigent	Same method used based on historic trends
Houses >80 m ² for non-indigent	Same method used based on historic trends
Flats/townhouses	Same method used based on historic trends
Retail buildings	Same method used based on historic trends
Industrial buildings	Increased the percentage allocation of the cumulative demand to Klapmuts to facilitate complementary and supplementary land uses to the focussed secondary sector economic activity
Office buildings	Increased the percentage allocation of the cumulative demand to Stellenbosch (Town) to facilitate complementary and supplementary land uses to the focussed tertiary sector economic activity

Table C16 shows the percentage allocation by typology and by node for the three economic-growth scenarios based on the positioning strategy, i.e. compared with **Table C8**, it reflects changes to the allocation of the office and industrial land uses.

Table C16
Allocation (as percentages) by node and land-use
of cumulative growth in demand for land (m²) by 2036

Based on the positioning strategy

This nodal split is applied to all three growth scenarios
in Tables C17-C19

Type	Stellenbosch (Town)	Franschhoek	Klapmuts	Other settlement areas	TOTAL
Houses <80 m ² for the indigent	56%	35%	9%	-	100%
Houses <80 m ² for non-indigent	73%	9%	4%	14%	100%
Houses >80 m ² for non-indigent	85%	6%	1%	8%	100%
Flats/townhouses	85%	6%	1%	8%	100%
Retail buildings	85%	6%	1%	8%	100%
Industrial buildings	20%	7%	60%	13%	100%
Office buildings	80%	12%	3%	5%	100%

Tables C17, C18 and C19 show the allocation of the growth in demand for each land-use type to the respective nodes based on the positioning strategy. Each of these tables shows a different scenario.

Table C17					
Split by node and land-use					
of cumulative growth in demand for land (m²) by 2036					
Based on positioning strategy					
Business-as-usual scenario					
Type	Stellenbosch (Town)	Franschhoek	Klapmuts	Other settlement areas	TOTAL
Houses <80 m ² for the indigent	524 528	327 830	84 299	-	936 658
Houses <80 m ² for non-indigent	2 024 104	249 547	110 910	388 184	2 772 745
Houses >80 m ² for non-indigent	1 818 778	128 384	21 397	171 179	2 139 739
Flats/townhouses	222 478	15 704	2 617	20 939	261 739
Retail buildings	129 255	9 124	1 521	12 165	152 065
Industrial buildings	62 968	22 039	188 903	40 929	314 838
Office buildings	92 645	13 897	3 474	5 790	115 806
Sub-total (of top-structure improvements)	4 874 756	766 525	413 122	639 187	6 693 590
Infrastructure area	4 874 756	766 525	413 122	639 187	6 693 590
Total gross land area required	9 749 512	1 533 051	826 243	1 278 374	13 387 180

Table C18					
Split by node and land-use					
of cumulative growth in demand for land (m²) by 2036					
Based on positioning strategy					
Consensus scenario					
Type	Stellenbosch (Town)	Franschhoek	Klapmuts	Other settlement areas	TOTAL
Houses <80 m ² for the indigent	824 511	515 319	132 511	-	1 472 341
Houses <80 m ² for non-indigent	1 391 572	171 564	76 250	266 877	1 906 262
Houses >80 m ² for non-indigent	857 759	60 548	10 091	80 730	1 009 128
Flats/townhouses	248 226	17 522	2 920	23 362	292 031
Retail buildings	51 030	3 602	600	4 803	60 035
Industrial buildings	24 580	8 603	73 741	15 977	122 902
Office buildings	92 645	13 897	3 474	5 790	115 806

Sub-total (of top-structure improvements)	3 490 323	791 055	299 589	397 540	4 978 506
Infrastructure area	3 490 323	791 055	299 589	397 540	4 978 506
Total gross land area required	6 980 645	1 582 109	599 177	795 080	9 957 012

Table C19
Split by node and land-use
of cumulative growth in demand for land (m²) by 2036

Based on positioning strategy

Junk scenario

Type	Stellenbosch (Town)	Franschhoek	Klapmuts	Other settlement areas	TOTAL
Houses <80 m ² for the indigent	674 600	421 625	108 418	-	1 204 643
Houses <80 m ² for non-indigent	1 138 559	140 370	62 387	218 354	1 559 669
Houses >80 m ² for non-indigent	474 928	33 524	5 587	44 699	558 739
Flats/townhouses	182 720	12 898	2 150	17 197	214 964
Retail	27 561	1 945	324	2 594	32 425
Industrial buildings	15 240	5 334	45 719	9 906	76 198
Office buildings	46 322	6 948	1 737	2 895	57 903
Sub-total (of top-structure improvements)	2 559 929	622 645	226 322	295 645	3 704 541
Infrastructure area	2 559 929	622 645	226 322	295 645	3 704 541
Total gross land area required	5 119 858	1 245 290	452 644	591 290	7 409 081

Note that the allocation of the growth in demand for residential units to the respective nodes remains the same as the previous allocation because we used the same method for allocating the residential land typologies (see **Tables C12, C13 and C14**).

12.2 PLACEMARKER MODEL

Steering the demand for land requires a quantified, holistic approach that includes spatial, social, financial, economic and environmental perspectives. In order to understand the implications of the scenario-based development paths (i.e. land-type allocation), the quantification of the funds-flow outcomes that results from each path, is required. *This is presented as the strategic investment framework.*

The following **variables** form the basis of the inputs for the model and are specific from a municipal-resource, private-sector-investment and social (jobs) perspective:

- Development contributions and bulk service requirements (capital spending)
- Operational income
- Operational expenses
- Direct investment (private sector)
- Employment
- Other factors (e.g. climate change, environmental constraints, etc.)

Through the model, the outcomes of these variables would offer a direct comparison of the funds-flow outcomes attained for the hub or a particular node. Thus, the intention with the model is to holistically understand the consequences of promoting a particular development path for a specific node or hub over the next 20 years.

Detailed explanations of some of the workings of the model contained in the UDS, such as objectives, principles and input required, are not repeated here.

12.2.1 Drivers of future growth

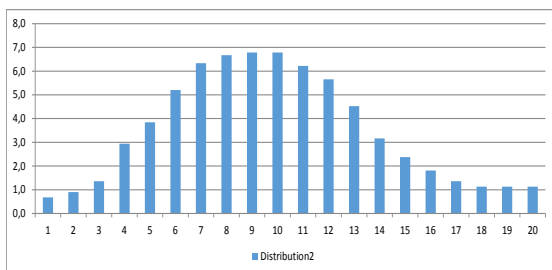
The model has several explicit drivers that influence future growth.

The first driver of the model is *capital expenditure (capex)* associated with the potential mix of land-uses for development in the hub or a node. The second driver of the model is the *selected growth trajectory* that depicts an envisaged growth path over the period of 20 years.

To this end, a mathematical curve (growth trajectory) is fitted to the expected future demand for land over the next 20 years. Capital expenditure and infrastructure spend mimics the rollout of the potential volume of development expressed in square metres in the future. Several curves representing a trajectory are illustrated below and applied to the capital and infrastructure capital spend calculated from the demand by land use for commercial space (GBA), or number of residential units. Note that these curves could represent the commencement of a phase in the current property and/or construction cycle and should, therefore, not be considered as having started from a zero base.

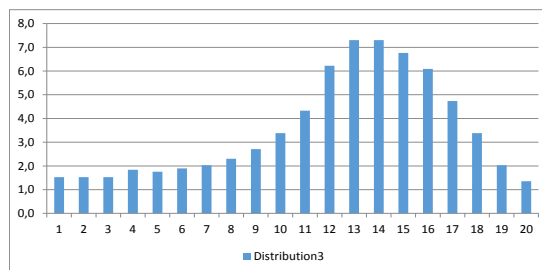
We list here the three trajectories we opted for as the expected growth trajectory for Stellenbosch (Town), Klapmuts and Franschhoek respectively.

Progressive trajectory (Distribution 1)



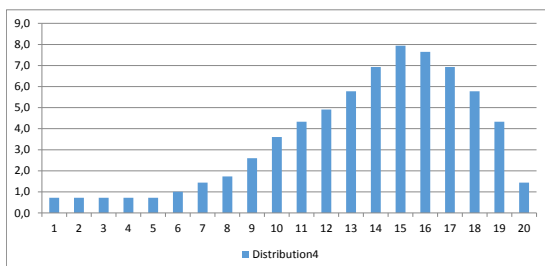
Progressive development implies exponential growth over a period of time, where after a saturation point is reached tapering off significantly thereafter to flatten out over the latter period of the assessment period.

Sustainable trajectory (Distribution 2)



The sustainable growth path indicates a level of development that is relatively constant for the foreseeable future where-after a significant increase (spike) occurs, which is short-lived with a strong tapering-off trend.

Constrained trajectory (Distribution 3)



Constrained development implies starting from a very low base of development that remains so for some time. Thereafter, development increases steadily to reflect a linear growth pattern, but

declines sharply after reaching a pinnacle. This could represent a period of low activity followed by a boom in the property development.

In order to apply a growth trajectory, the basis, as stated previously, is the aggregate demand for commercial uses (retail, industrial and offices) and the number of units associated with a typology of housing needs. In doing so, we accounted for legislative requirements (e.g. the urban edge), various constraints in terms of environmental sensitivity and limits on development, etc.

Funding and capacity constraints are a real and pertinent input for development within the hub or any other node. Allocation in the budget of the Municipality links to infrastructure provision in the context of a supply or infrastructure constraint due to available capacity. Planning and the availability of infrastructure capacity from any external source is beyond the control of the Municipality, but the supply of infrastructure and bulk services would rest with the private party if the Municipality's funding is constrained. Development charges (DCs) are therefore included to compensate for the requirements of the external bulk services.

All communities and social service needs are included. Various population thresholds calculated in an analysis by the CSIR,¹³² assist in determining – based on growth in the population – when future additional community facilities may be required. The number and costs associated with these facilities are included over the assessment period in five-year increments.

The Municipality also has waste management obligations as a basic service. Although these operating costs are considered for the purposes of assessment, they are normally recouped from households and businesses.

Rates income from property taxes is based on the cost to erect the buildings, which is used as a proxy for market value for municipal purposes¹³³. Maintenance of infrastructure, and community and social facilities are provided for in the operating cost. No replacement costs for infrastructure and community facilities are included over the assessment period.

The growth trajectory has three building blocks that are sequenced to unlock development of an area or location:¹³⁴

- External infrastructure and bulk services aligned with constraints
- Internal bulk services provision (site specific)
- Superstructure (construction of buildings in terms of land-use and zoning regulations, i.e. top structures)

The same curve is applied to the provision of both external and internal infrastructure, as well as superstructures. The curve can, however, be modified to reflect a slow or accelerated introduction of bulk services from a municipal perspective, independent of the trajectory associated with the introduction of internal services and top structures. External infrastructure is introduced first, and is assumed to take a year. During the second year, internal services are introduced on the site and construction of top structures commences in Year 3. The rollout follows the curve of the growth trajectory consistently, i.e. it is not phased and there is no step-up to reflect peaks or troughs of development (nor in demand for land) over time.

12.2.2 Model components: Outputs and outcomes

¹³² CSIR *Guidelines for the Provision of Social Facilities in South African Settlements*, August 2012.

¹³³ Note that building cost excludes market value of the land, whereas the Gross Value would include the value of the underlying land. It is not possible to obtain a market value for all the land included in the assessment and therefore the construction cost of the building is used as a proxy for the market value although it is a slight underestimation of market value for the purposes of applying municipal rates to the property.

¹³⁴ Planning processes are not considered in the model.

A synthesis of the model components provides a quantified bottom-line funds-flow figure that is derived from the capital expenditure (infrastructure and top structures) and operational income and costs for each year of the assessment period. This synthesis consists of applying the selected growth trajectory to determine the gross capital expenditure, the inclusion of external infrastructure, internal services, community and social infrastructure requirements (every five years based on population growth), waste management costs (recouped from households and businesses), property rates income, as well as an estimate of maintenance for infrastructure and community and social facilities.

As mentioned, the funds-flow bottom-line figure is adjusted for the following to reflect a value deficit or surplus:

- Economic impact (indirect impact)
- Employment impact (based on a current minimum wage escalated by 6% per annum),
- Climate change (probability of occurrence applied)
- Social indicators (not included other than employment)

13. PLACEMARKER MODEL APPLIED

To derive funds-flow output, we adjust the magnitudes of the variables mentioned in **Part C**, that align with the selected growth trajectory. In order to compare the outputs of different economic-growth scenarios, we adopted the following approach:

- Separate placemaker models were developed for each of three nodes (i.e. Stellenbosch (Town), Klapmuts and Franschhoek).
- The growth trajectory for each node was predetermined in terms of a positioning strategy.
- The Business-as-usual, Consensus and Junk economic-growth scenarios reflect the expected growth in demand for land coupled to the allocation of this demand to the various nodes.
- The growth trajectories stated in (b) are applied to the economic-growth scenarios.
- The outputs from the application of the trajectories to the different scenarios.

The following section includes a synopsis of the results from the application of the placemaker model *for each of the selected nodes (including the hub)*. For purposes of comparison, the *present value* (PV) of the value surplus/deficit figure should be the base figure from which further analysis of the development paths could be considered.

13.1 STELLENBOSCH (TOWN)¹³⁵

Considering a 20-year assessment period, the **Business-as-usual** scenario generates a value surplus/deficit in current terms of R54 421 million, which is 11,1% higher than the **Consensus** scenario. The **Consensus** scenario generates the highest development contributions, viz. R2,4 billion in nominal terms over 20 years. Rates income is also 36,1% higher for the **Business-as-usual** scenario when compared to the **Consensus** scenario. The **Business-as-usual** scenario generates 10,7% more jobs than the **Consensus** scenario, while this scenario generates 45,4% more job opportunities than the **Junk** scenario. Note that these jobs are construction job opportunities and not sustainable job opportunities generated through operations of any uses of land for commercial purposes.

Table C20 Synopsis of key outputs from the application of the development paths by scenario

¹³⁵ See **Annexure 2**.

A 20-year assessment for Stellenbosch (Town)			
Item	Scenario (R'million)		
	Business-as-usual	Consensus	Junk
Direct Investment ¹³⁶	14 351	12 352	8 260
Development contributions	1 971	2 338	1 827
Revenue from property rates ¹³⁷	84	62	39
Net fund flow (surplus/deficit) ¹³⁸	15 645	13 982	9 950
Value surplus/deficit	54 421	48 983	34 005
Multiplied increase in GVA (direct and indirect)	56 481	51 108	35 616
Employment (actual figures)			
With multipliers effects	372 091	336 235	231 305
Without multiplier effects	264 220	238 817	164 311
PV of surplus¹³⁹	19 234	17 420	12 266

13.2 FRANSCHHOEK¹⁴⁰

Considering a 20-year assessment period, the **Consensus** scenario generates a value surplus/deficit in current terms (present value or PV for short) of R2 524 million, which is 27,3% higher than the **Business-as-usual** scenario. The **Consensus** scenario generates the highest development contributions, viz. R584 million in nominal terms over 20 years. Rates income is also 6,6% higher for the **Consensus** scenario when compared to the **Business-as-usual** scenario but this is off a low base. The **Consensus** scenario also generates 32,8% more jobs than the **Business-as-usual**, while the **Business-as-usual** generates 0,6% more job opportunities than the Junk scenario. Note that these jobs are construction job opportunities and not sustainable job opportunities generated through operations of the commercial uses.

Table C21
Synopsis of key outputs from the application of the development paths by scenario

A 20-year assessment for Franschhoek

Item	Scenario (R'million)		
	Business-as-usual	Consensus	Junk
Direct Investment ¹⁴¹	1 876	2 335	1 736
Development contributions	343	584	470
Revenue from property rates ¹⁴²	9	10	7

¹³⁶ The direct investment represents the investment in top structures by the private party (excludes internal services). The period of the investment is 20 years with the first two years for the introduction of external and internal bulk services.

¹³⁷ The market value of properties equates for the purposes of calculating the rates income to the construction cost (see footnote 98).

¹³⁸ Net funds flow represents all direct investment, community and social service facilities, as well as operating income and expenditure for the Municipality.

¹³⁹ 10% discount rate applied to calculate the present value (PV) (in order to standardise, for comparative purposes, cash flows that occur at different times in the future).

¹⁴⁰ See **Annexure 3**.

¹⁴¹ The direct investment represents the investment in top structures by the private party (excludes internal services). The period of the investment is 20 years with the first two years for the introduction of external and internal bulk services.

¹⁴² The market value of properties equates for the purposes of calculating the rates income to the construction cost (see footnote 98).

Net fund flow (surplus/deficit) ¹⁴³	1 983	2 524	1 939
Value surplus/deficit	6 621	8 692	6 610
Multiplied increase in GVA (direct and indirect)	7 000	9 231	7 032
Employment (actual figures)			
With multipliers effects	43 950	58 394	44 234
Without multiplier effects	30 337	40 402	30 613
PV of surplus¹⁴⁴	1 712	2 247	1 722

13.3 KLAPMUTS¹⁴⁵

Considering a 20-year period of assessment, the **Business-as-usual** scenario generates a value surplus/deficit in current (PV) terms of R7 140 million, which is 52,1% higher than the Consensus scenario. The **Business-as-usual** scenario generates the highest development contributions, viz. R222 million in nominal terms over 20 years. Rates income is also significantly higher for the **Business-as-usual** scenario when compared to the Consensus scenario but this is off a low base. The **Business-as-usual** scenario also generates 53,7% more jobs than the **Consensus**, while the **Consensus** generates 41,3% more job opportunities than the **Junk** scenario. As mentioned, these jobs are construction job opportunities and not sustainable job opportunities generated through operations of the commercial uses.

Table C22
Synopsis of key outputs from the application of the development paths by scenario

A 20-year assessment for Klapmutz

Item	Scenario (R-million)		
	Business-as-usual	Consensus	Junk
Direct Investment ¹⁴⁶	2 075	1 257	873
Development contributions	227	222	171
Revenue from property rates ¹⁴⁷	16	7	5
Net fund flow (surplus/deficit) ¹⁴⁸	2 005	1 357	1 005
Value surplus/deficit	7140	4 693	2 265
Multiplied increase in GVA (direct and indirect)	7 535	4 938	3 538
Employment (actual figures)			
With multipliers effects	48 212	31 341	22 181
Without multiplier effects	33 774	21 969	15 551
PV of surplus¹⁴⁹	2 006	1 370	987

¹⁴³ Net funds flow represents all direct investment, community and social service facilities, as well as operating income and expenditure for the Municipality.

¹⁴⁴ 10% discount rate applied to calculate the present value (PV) (in order to standardise, for comparative purposes, cash flows that occur at different times in the future).

¹⁴⁵ See **Annexure 4**.

¹⁴⁶ The direct investment represents the investment in top structures by the private party (excludes internal services). The period of the investment is 20 years with the first two years for the introduction of external and internal bulk services.

¹⁴⁷ The market value of properties equates for the purposes of calculating the rates income to the construction cost (see footnote 98).

¹⁴⁸ Net funds flow represents all direct investment, community and social service facilities, as well as operating income and expenditure for the Municipality.

¹⁴⁹ 10% discount rate applied to calculate the present value (PV) (in order to standardise, for comparative purposes, cash flows that occur at different times in the future).

13.4 INVESTMENT FRAMEWORK: MUNICIPAL PERSPECTIVE¹⁵⁰

In the following section, we address three dimensions of funds-flow that are of importance for the Stellenbosch Municipality:

- Direct investment in superstructure (top structures)
- Development contributions (2017) (which, for the purposes of interpretation, equate to the external service capital expenditure of the Municipality)
- Gross building area (m²) or bulk that equates to the GBA

The tables below include information for the three scenarios (Business-as-usual, Consensus and Junk) on an annual and cumulative basis over the period 2017 to 2038. Note that the additional two years is based on the premise that the first two years are reserved for the introduction of bulk services by the Municipality and internal infrastructure by the private party.

*The findings below are the figure calculated for the rollout of potential residential development by scenario for all three nodes (combined).*¹⁵¹ The figure calculated for the rollout of potential *non-residential* land development is presented in the UDS and not repeated here.

Note that in the tables the rand values are indicated in R'million and the gross building area (GBA) in 0'000 m². The tables are sub-divided into 5-year increments to assist with planning.

13.4.1 Business-as-usual scenario

Table C23 includes the figure calculated for the rollout of potential *residential* development in accordance with the **Business-as-usual** scenario and the relevant growth trajectories for each of the nodes.

R' million	Residential - BAU – Stellenbosch (Town), Klapmuts, Franschhoek			Cumulative year-on-year		
Year	Super-structure	Development Contributions	GBA m ² ('000)	Super-structure	Development Contributions	GBA m ² ('000)
2017	0	22	0	0	22	0
2018	0	27	0	0	49	0
2019	158	39	57	158	88	57
2020	198	78	72	356	166	128
2021	279	100	101	635	265	229
2022	564	134	206	1199	399	435
2023	723	164	265	1922	563	701
2024	973	174	357	2895	737	1058
2025	1186	181	436	4082	918	1494
2026	1257	186	463	5338	1104	1957
2027	1303	177	480	6642	1282	2437
2028	1337	169	493	7979	1450	2930

¹⁵⁰ See **Annexure 1**.

¹⁵¹ The residential land use includes gap/affordable and housing for the indigent, housing for the non-indigent, townhouses, and flats.

2029	1266	146	466	9245	1597	3396
2030	1205	118	441	10450	1715	3837
2031	1039	103	379	11489	1818	4216
2032	826	87	302	12315	1905	4517
2033	703	71	259	13018	1975	4776
2034	587	58	217	13605	2033	4993
2035	471	50	175	14076	2083	5168
2036	385	36	144	14461	2119	5312
2037	332	0	125	14793	2119	5437
2038	254	0	93	15047	2119	5531

Over **five years**, it is estimated, based on the growth trajectories for each of the nodes, that investment in top structures could be R635 million, while the R265 million in Development Charges (DCs) is payable by the private party.¹⁵² The latter equates, for the purposes of planning, to the bulk infrastructure that the Municipality would provide to enable the scope of development envisaged by an investment of R635 million. In addition, over five years 229 000 m² of bulk or gross building area is envisaged.

Over the 20 years, including a further two years to make provision for actual 20 years of private- sector capital expenditure, a total capital investment in top structures of R15 047 million (or R15 billion) is achieved. Development contributions over this period are R2 119 million and the capital investment represents 5 531 000 m² of bulk or gross building area.

Alignment of growth and development path with municipal infrastructure provision: Business-as-usual scenario (including residential, commercial and industrial)

The Municipality allocates funds for capital spending in terms of its Medium-term Expenditure Framework (MTEF). These funds, which are of a capital nature, are also allocated for bulk service infrastructure. For the following three financial years, the Municipality has allocated the amounts stated below (ex MTEF):

R331 million (2017/2018)

R249 million (2018/2019)

R184 million (2019/2020)

For the purposes of planning, bulk infrastructure requirements as budgeted by the Municipality aligns with the development contributions (DCs) paid by developers. The crucial metric to consider, is the capital available for bulk infrastructure in a particular year. This metric we determined as follows:

Deduct from the balance of the municipal bulk infrastructure budget in year "t-1" (previous year), the DCs payable in year "t" (current year) and add the municipal bulk services budgeted spend in year "t" (current year). The equation is as follows:

$$\text{Net capital availability} = \text{capital}_{(t-1)} - \text{development contributions}_{(t)} + \text{capital budget allocation}_{(t)}$$

The 2017/2018 financial year available funds for bulk services is R420 million and includes an amount of R331 million budgeted by the Municipality plus an initial DC contribution of R89 million. For the 2018/2019 financial year, R108 million (DC contribution envisaged for the 2018/2019) is deducted from the R420 million and R249 million (municipal infrastructure budget for the year) is added to provide a net available figure for external bulk infrastructure of R561 million in 2018/2019. The same calculation is then rolled forward to future years. Thus it is possible to also equate the net bulk service requirement to the envisaged direct investment by the developers, which in the case of 2018/2019 represents R204 million and 64 000 m² of GBA.

¹⁵² For the purpose of interpretation, the service capital expenditure of the Municipality to provide indigent housing is included in the development contribution.

The analysis demonstrates that, given the accelerated increase in development, by 2022/2023 the net capital available for bulk service infrastructure is a deficit of R154 million. This implies that R668 million of DCs are required to cover the bulk service requirement, but the Municipality would have insufficient funds, including the previous year's surplus, to introduce bulk services, except if the developer advances at least a R154 million of the DCs, which would then result in a breakeven position with regard to the expenditure requirement for bulk service provision to accommodate development of R2 333 million and 765 000 m² of GBA (see **Table C24**).

Table C24						
Municipal infrastructure provision (R' million)¹⁵³						
Business-as-usual scenario						
Annual allocation over MTEF period (3-year budget) and forecast to 2022/2023		Municipal budget	Business-as-usual: DCs	Capital available (net effect)	Capital expenditure	GBA m ² ('000)
2017/2018	331	331	89	420	0	0
2018/2019	249	249	108	560	204	64
2019/2020	184	184	201	544	454	144
Total	764					
2020/2021	255	255	318	480	797	256
2021/2022	255	255	476	259	1 473	479
2022/2023	255	255	668	-154	2 333	765

13.4.2 Consensus scenario

Table C25 includes the figure calculated for the rollout of potential *residential* development in accordance with the **Consensus** scenario and the relevant growth trajectories for each of the nodes.

Table C25						
Consensus -- Residential:						
Stellenbosch (Town), Klipmuts and Franschoek						
R' million	Residential - Consensus - Stellenbosch (Town), Klipmuts, Franschoek			Cumulative year-on-year		
Year	Super-structure	Dev. Contributions	GBA m ² (0'000)	Super-structure	Dev. Contributions	GBA m ² (0'000)
2017	0	31	0	0	31	0
2018	0	38	0	0	69	0
2019	157	52	45	157	121	45
2020	194	103	56	351	224	101
2021	269	131	77	621	354	178
2022	536	176	153	1157	531	331
2023	685	215	196	1842	746	527
2024	921	229	264	2764	975	791
2025	1125	241	323	3889	1216	1114
2026	1194	250	343	5083	1466	1456
2027	1246	241	359	6329	1707	1815

¹⁵³ Infrastructure estimate for Stellenbosch municipality for next seven (7) years = R2 000 000 000.

2028	1288	232	372	7618	1939	2188
2029	1231	207	356	8849	2146	2544
2030	1182	173	342	10031	2319	2885
2031	1038	155	301	11069	2475	3186
2032	850	134	249	11918	2608	3435
2033	744	110	221	12662	2718	3656
2034	631	90	189	13294	2809	3845
2035	514	75	155	13808	2884	4000
2036	421	50	127	14229	2935	4128
2037	355	0	107	14584	2935	4235
2038	253	0	74	14837	2935	4309

Over **five years**, it is estimated, based on the growth trajectories for each of the nodes, that investment in top structures could be R621 million, while the R354 million in DCs is payable by the private party. The latter equates, for the purposes of planning, to the bulk infrastructure that the Municipality would provide to enable the scope of development envisaged by an investment of R635 million. In addition, over five years, 178 000 m² of bulk or GBA is envisaged.

Over the 20 years, including a further two years to make provision for actual 20 years of private- sector capital expenditure, a total capital investment in top structures of R14 837 million (or R15 billion) is achieved. Development contributions over this period are R2 935 million and the capital investment represents 4 309 000 m² of bulk or GBA.

Alignment of growth and development path with municipal infrastructure provision: Consensus scenario

Note that we do not repeat here the information and explanation provided in the previous section (under the Business-as-usual scenario) about the municipal budgeting process and how we calculated the capital available for bulk infrastructure in a particular year.

The 2018/2019 available funds for bulk services is R439 million (R331 million + R108 million) – R131 million + R249 million = R557 million. The same calculation is then rolled forward to future years. It is then possible to also equate the net bulk service requirement to the envisaged direct investment by the developers which in the case of 2018/2019 represents R171 million and 49 000 m² of GBA.

The analysis demonstrates that, given the accelerated increase in development, by 2022/2023 the net capital available for bulk-service infrastructure is a deficit of R484 million. This implies that R799 million of DCs are required to cover the bulk service requirement, but the Municipality would have insufficient funds, even together with the previous year's surplus, to introduce bulk services, except if the developer advances at least a R484 million of the DCs, which would then result in a breakeven position with regard to the expenditure requirement for bulk-service provision to accommodate development of R1 983 million and 561 000 m² of GBA (see **Table C26**).

Table C26					
Municipal infrastructure provision (R' million)¹⁵⁴					
Consensus scenario					
Annual allocation over MTEF period (3-year budget) and forecast to 2022/2023	Municipal budget	Consensus: DCs	Capital available (net effect)	Capital expenditure	GBA m ² ('000)

¹⁵⁴ Infrastructure estimate for Stellenbosch municipality for next seven (7) years = R2 000 000 000.

2017/2018	331	331	108	439	0	0
2018/2019	249	249	131	557	171	49
2019/2020	184	184	241	500	382	108
Total	764					
2020/2021	255	255	381	374	673	191
2021/2022	255	255	569	60	1 249	353
2022/2023	255	255	799	-484	1 983	561

13.4.3 Junk

Table C27 includes the figure calculated for the rollout of potential *residential* development in accordance with the **Junk** scenario and the relevant growth trajectories for each of the nodes.

Table C27						
Junk -- Residential:						
Stellenbosch (Town), Klapmuts and Franschhoek						
R'million	Residential - Junk – Stellenbosch (Town), Klapmuts, Franschhoek			Cumulative year-on-year		
Year	Super-structure	Development Contributions	GBA m ² ('000)	Super-structure	Development Contributions	GBA m ² ('000)
2017	0	25	0	0	25	0
2018	0	30	0	0	55	0
2019	110	42	34	110	97	34
2020	135	82	42	245	179	76
2021	187	104	58	432	283	134
2022	369	141	115	801	424	249
2023	471	172	146	1272	596	396
2024	633	183	197	1904	779	593
2025	772	192	241	2677	971	834
2026	821	200	256	3497	1172	1090
2027	859	193	269	4356	1365	1359
2028	890	186	279	5245	1551	1639
2029	853	166	268	6099	1716	1907
2030	822	139	258	6921	1856	2165
2031	727	125	228	7648	1981	2394
2032	601	108	191	8249	2089	2584
2033	530	89	170	8779	2178	2754
2034	453	73	146	9231	2251	2900
2035	370	61	120	9601	2311	3020
2036	303	40	99	9904	2352	3119
2037	254	0	83	10158	2352	3202
2038	177	0	56	10335	2352	3258

Over **five years**, it is estimated, based on the growth trajectories for each of the nodes, that investment in top structures could be R432 million, while the R283 million in Development Charges (DCs) is payable by the private party. The latter equates for the purposes of planning to the bulk infrastructure that the Municipality would provide to enable the scope of development envisaged by an investment of R432 million. In addition, over five years 134 000 m² of bulk or GBA is envisaged.

Over the 20 years, including a further two years to make provision for actual 20 years of private sector capital expenditure, a total capital investment in top structures of R10 335 million (or R10,3 billion) is achieved. Development contributions over this period are R2 352 million and the capital investment represents 3 258 000 m² of bulk or GBA.

Alignment of growth and development path with municipal infrastructure provision: Junk scenario

Note that we do not repeat here the information and explanation provided in a previous section (under the Business-as-usual scenario) about the municipal budgeting process and how we calculated the capital available for bulk infrastructure in a particular year.

The 2018/2019 available funds for bulk services is R416 million (R331 million + R85 million) – R102 million + R249 million = R562 million. The same calculation is then rolled forward to future years. It is then possible to also equate the net bulk service requirement to the envisaged direct investment by the developers, which in the case of 2018/2019 represents R117 million and 36 000 m² of GBA.

The analysis demonstrates that, given the accelerated increase in development, by 2022/2023 the net capital available for bulk service infrastructure is a deficit of R46 million. This implies that R625 million of DCs are required to cover the bulk service requirement, but the Municipality would have insufficient funds, even together with the previous year’s surplus, to introduce bulk services, except if the developer advances at least a R46 million of the DCs, which would then result in a breakeven position with regard to the expenditure requirement for bulk service provision to accommodate development representing R1 339 million and 414 000 m² of GBA (see **Table C28**).

Table C28						
Municipal infrastructure provision (R' million)¹⁵⁵						
Junk scenario						
Annual allocation over MTEF period (3-year budget) and forecast to 2022/2023	Municipal budget	Junk: DCs	Capital available (net effect)	Capital expenditure	GBA m ² ('000)	
2017/2018	331	85	416	0	0	
2018/2019	249	102	562	117	36	
2019/2020	184	189	557	261	81	
Total	764					
2020/2021	255	298	514	458	142	
2021/2022	255	445	324	846	261	
2022/2023	255	625	-46	1 339	414	

¹⁵⁵ Infrastructure estimate for Stellenbosch municipality for next seven (7) years = R2 000 000 000.

PART D: MANAGEMENT POLICY FRAMEWORK

Methodology (in brief):

Part A

- State the purpose of this study
- Consider legislative and policy context
- Report on the current urban residential scene

Part B

- Confirm and apply UDS statement of vision

Part C

- Confirm and apply UDS growth-and-development paths, i.e.
 - Three economic-growth scenarios
 - Forecast demand for residential land by 2036 and cumulative net (and gross) demand for residential land by scenario (municipality-wide)
 - Allocations of scenario-based growth in demand for residential land by type and by node
 - Application of the placemaker model to quantify the funds-flow outcome by scenario and by node (relevant to the provision of housing)

Part D

- Confirm and apply UDS guidelines to steer the implementation of growth-and-development paths within a node — e.g. apply designated land-development area(s) and associated housing guidelines
- Review and consolidate housing supply by government

The intent of the *Integrated Human Settlement Plan* is also to confirm and apply the UDS guidelines to steer decision-making on the implementation of the development paths *within a node*, i.e. to help the Municipality with, for example, planning infrastructure and providing housing for the indigent. This approach would make the Municipality's shared vision and associated strategic focus areas more attainable as well as measurable.

Part D includes previous work contained in the UDS with few additions and one additional section (viz. **§23**) in which we review and consolidate housing supply by government.

First, we provide a summary of the main findings of key local (and relevant) studies, followed by proposed land development guidelines which we then apply by node *at the appropriate planning level*. The last section details how the UDS investment rationale impacts on government-driven housing supply.

14. THEME-RELATED STUDIES¹⁵⁶

We next discuss the findings of some theme-related studies we considered *to designate priority land-development areas and formulating associated policy guidelines — to also guide housing supply by government*.

- Stellenbosch Municipal Spatial Development Framework, 2017¹⁵⁷
- Stellenbosch Town Spatial Development Framework, 2016
- Stellenbosch Water Master Plan, 2011
- Sustainable Transit-oriented Development Study: Adam Tas Corridor, 2017¹⁵⁸
- Northern Extension Draft Feasibility Report, January 2016
- Klapmuts Special Development Area (Draft Report), 2017
- Stellenbosch 2017 Housing Strategy
- Emergency Housing Assistance Policy (draft)
- Draft Informal Settlement Upgrading Policy and Strategy, March 2015
- Rental Housing Strategy and Plan, March 2016

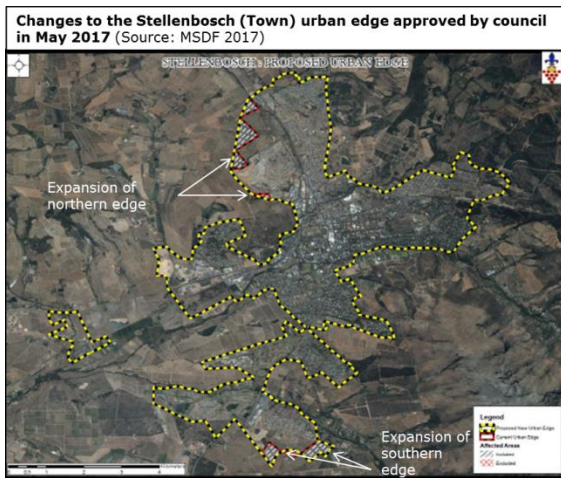
14.1 STELLENBOSCH MUNICIPAL SPATIAL DEVELOPMENT FRAMEWORK, MAY 2017

¹⁵⁶ Most of these studies were assessed in the *Status Quo Report* as policy directives. We now consider the latest version of each study made available to the writers of this report.

¹⁵⁷ Approved by Council in May 2017.

¹⁵⁸ Stellenbosch Municipality, *Transit-oriented Development: A concept for the town of Stellenbosch*, June 2017.

The *Stellenbosch Municipal Spatial Development Framework*, approved by Council in May 2017, is, except for four changes to the Stellenbosch (Town) urban edge, similar to the MSDF that was approved by Council in February 2013. The four changes to the Stellenbosch (Town) urban edge were in the northern and southern segments of the urban edge (see **Map D1**).



Map D1: Approved changes to the Stellenbosch (Town) urban edge in May 2017

The initial idea, which was not adopted, was for the MSDF approved by Council in May 2017 to have included substantial changes to the previous MSDF (see **Table D1** for some of the proposed changes related to residential land development).

Table D1
Proposed (but not approved) changes to previous MSDF

1	Significant densification of existing neighbourhoods located in the proximity of major transport infrastructure and Stellenbosch University
2	Establishment of an urban restructuring zone along the Helshoogte/Banhoek Road corridor for the development of high-density residential accommodation, together with relevant non-residential facilities
3	Identification of the Dennesig area bounded by Adam Tas Road/R44, Merriman Avenue, Bird Street and Molteno Road as a primary densification and development intensification area for the establishment of blocks of flats according to a predetermined pattern on clustered erven with heights of up to 6 storeys, subject to certain performance criteria mixed with non-residential facilities
4	The identification of Jonkershoek as a potential development node for the establishment of economic opportunities and limited residential accommodation, with only the basic provision of non-residential facilities to prevent future expansion of the residential area
5	Prioritising the development of the Koelenhof, Vlottenburg and Klapmuts nodes to ensure effective integrated human settlement development linked to major transport infrastructure
6	Creating new development areas to accommodate appropriate development for the northwards extension of Stellenbosch (Town)
7	Designation of heritage conservation areas and places
8	Accommodating the growth and development planning of the University of Stellenbosch

Source: MIDP 2017-2022 (May 2017)

The approved MSDF includes spatial proposals for each town/settlement based on the seven strategic perspectives and associated principles that were 'brought forward' from the MSDF approved in 2013. These proposals were also part of the 'Shaping Stellenbosch' initiative completed in 2014.¹⁵⁹

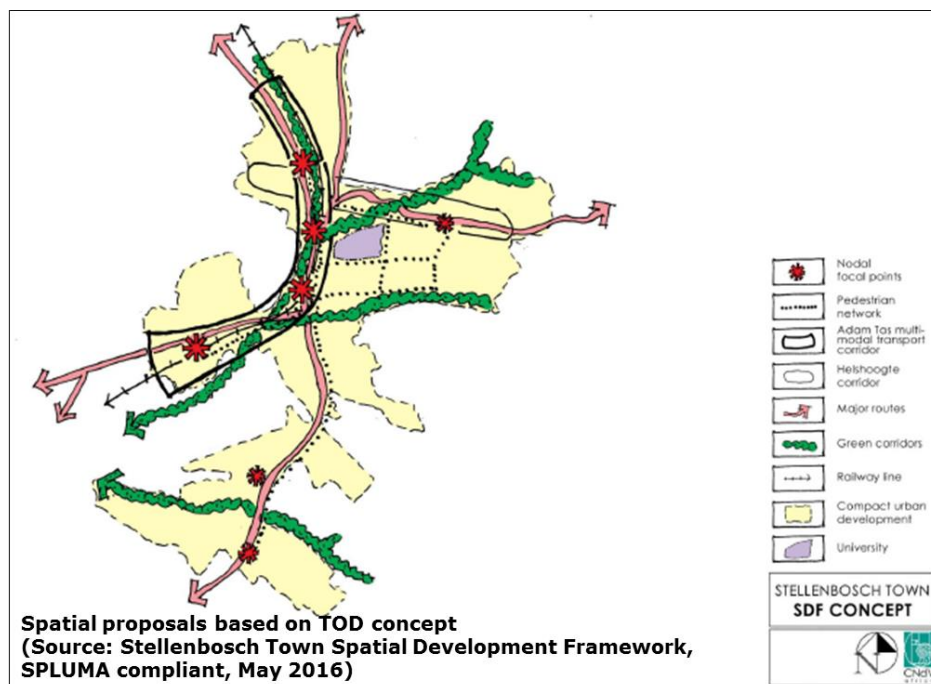
In the interests of brevity, we only mention the key spatial structuring element of 'interconnected nodes' as described in the current MSDF. This concept is based on a system

¹⁵⁹ Both these studies are discussed in detail in the *Status Quo Report* completed by Rode in May 2017.

of inter-connected, nodal, tightly constrained, dense, mixed-use settlements around primary station precincts — as a system that recognizes the primary and overarching TOD approach.¹⁶⁰ The 'implementation' of this notion was prioritised through municipal support for development in Koelenhof, Vlottenburg and Klapmuts to 'ensure effective integrated human settlement development linked to major transport infrastructure'.

14.2 STELLENBOSCH TOWN SPATIAL DEVELOPMENT FRAMEWORK, MAY 2016

This study includes, amongst others, reference to two development concepts, viz. the transit-oriented development (TOD) approach and 'green economic growth' as spatial structuring elements in the town of Stellenbosch. Although the TOD concept is described (and mapped) as central to redefining the future spatial development of Stellenbosch (Town) (see **Map D2**), this concept is not considered at any length in the MSDF approved in May 2017; there is also no reference to the concept of 'green economic growth'.



Map D2: Nodal focal points based on TOD approach in Stellenbosch (Town)

14.3 STELLENBOSCH WATER MASTER PLAN, DECEMBER 2011

The focus of the *Stellenbosch Water Master Plan* was to consider the link between providing infrastructure and future developments. **Table D2** includes the key findings of the plan.

Table D2
Key finding(s) of Stellenbosch Water Master Plan, 2011

Stellenbosch (Town)

- *Anticipated land use:* Single residential; flats; group housing; affordable housing; densification (res); business/commercial; industrial; other; informal upgraded; informal relocated
- *Area (ha):* 1 305
- *Density:* Single residential = between 13 and 25 du/ha; flats = 60 du/ha; group housing = between 35 and 50 du/ha; densification (res) = between 3 and 56 du/ha; Mixed = 25 du/ha; affordable housing = 40 du/ha; informal upgraded = 40 du/ha;
- *Number of units:* 26 649
- *Coverage (m² floor area):* Industrial = 55 700 m²; business/commercial = 99 000 m²
- *Time-related phasing:* up to 20 years

¹⁶⁰ Note that the connectedness is based on rail and road links.

Franschhoek

- *Anticipated land use*: Single residential; affordable housing; informal upgraded
- *Area (ha)*: 238
- *Density*: Single residential = between 8 and 58 du/ha; affordable housing = 40 du/ha; informal upgrading: 104 du/ha
- *Number of units*: 7 324
- *Coverage (m² floor area)*: 0
- *Time-related phasing*: up to 20 years

Klapmuts

- *Anticipated land use*: Single residential; affordable housing; business/commercial; industrial; mixed
- *Area (ha)*: 843
- *Density*: Single residential = between 5 and 38 du/ha; affordable housing = 51 du/ha; mixed = between 11 and 17 du/ha
- *Number of units*: 7 570
- *Coverage (m² floor area)*: Industrial = 36 100 m²; business/commercial = 86 100 m²
- *Time-related phasing*: up to 20 years

Dwarsrivier

- *Anticipated land use*: Single residential; affordable housing; business/commercial; industrial; other; retirement village
- *Area (ha)*: 354
- *Density*: Single residential = between 1 and 25 du/ha; affordable housing = 40 du/ha; retirement village = 15 du/ha
- *Number of units*: 7 006
- *Coverage (m² floor area)*: Business/commercial = 9 000 m²
- *Time-related phasing*: up to 20 years

14.4 SUSTAINABLE TRANSIT-ORIENTED DEVELOPMENT STUDY: ADAM TAS CORRIDOR

Table D3 includes a key finding of a study to investigate the role, function and character of the Adam Tas Corridor as a potential TOD catalyst for change in the way Stellenbosch (Town) works.

Table D3
Key finding of STOD study (Adam Tas Corridor)

Urban development potential¹⁶¹

- 400 000 m² GBA equalling 3 500 housing units plus 100 000 m² GBA commercial/ educational and health
- We calculated the gross demand for residential land (flats) to be about 14 ha¹⁶²
- We calculated the gross demand for non-residential land (offices) to be about 58 ha¹⁶³

The study recommends that a more detailed analysis be conducted to get a more accurate estimation of the economic benefits and cost of using the Adam Tas Corridor as a key spatial and economic restructuring intervention in Stellenbosch (Town). It proposes for the municipality to take the lead role in development by using certain municipal landholdings as catalyst for development (i.e. the Van Der Stel Sports grounds and parcels of land north of Merriman Avenue). This lead role also includes the following two steps (summarised):

1. Include and prioritise the implementation of the STOD concept in the Adam Tas Corridor in municipal planning
2. Initiate more detailed precinct planning for the study area¹⁶⁴

14.5 NORTHERN EXTENSION DRAFT FEASIBILITY REPORT, JANUARY 2016

¹⁶¹ Provided by Mr T Vermeulen via e-mail dated 12 September 2017.

¹⁶² We used the same method to calculate the net and gross land demand for potential development in the STOD (Adam Tas Corridor) study area as was used previously in this study (see **Part C, §12**).

¹⁶³ We used the same method to calculate the net and gross land demand for potential development in the STOD (Adam Tas Corridor) study area as was used previously in this study (see **Part C, §12**).

¹⁶⁴ Note that both these aspects are addressed in the draft UDS report.

The aim of the study was to conduct a due diligence assessment to establish whether it is suitable for the expansion of a mixed-use development to the north of Kayamandi. The key focus of the proposed development would be to provide different housing typologies (including flats) in the 'BNG, Lower-Gap, Gap and Upper-Gap' segments.

The study concluded that the planned residential¹⁶⁵ and non-residential land uses, to be provided within 87,6 ha,¹⁶⁶ would constitute a relatively 'expensive low-cost housing development'. However, it would be possible for the Municipality to recover a significant portion of the high land values and infrastructure-cost shortfall from the sale of non-residential land uses as well as from the increase in future rates and taxes. It was stated that the financial feasibility of the development should be considered in the context of the municipality's statutory obligation to provide housing and should not only consider monetary implications.

14.6 KLAPMUTS SPECIAL DEVELOPMENT AREA (DRAFT REPORT), JUNE 2017

The aim of the feasibility study was, first, to investigate the development of an innovation hub that would serve the region and that attracts unique commercial and high-technology (clean) industrial development that could in future qualify for the establishment of a Special Economic Zone (SEZ). Second, the purpose was to develop a road map for the development and growth of Klapmuts, based on a vision that should inspire and motivate all role players towards an agreed-upon future.

The study proposes a specific investment and development package for the Klapmuts area that comprises the following elements:

- Sustainable neighbourhood design in terms of movement, activity and open space
- Development programmes for business and community interventions
- A maintenance programme
- The promotion of a collaborative and collective investment approach

The investment approach is contextualised in 14 identified development opportunities as depicted in **Map D3**. The study states that, by taking the illustrated vision, the economic value assessment and land capability into account, it is clear that the existing urban edge needs to be revised and a "right sizing" concept is required.¹⁶⁷

¹⁶⁵ The residential component constitutes a total of 5 200 opportunities at a gross density of 57 du/ha.

¹⁶⁶ This gross land extent of the development proposal was confirmed by Mr D Lombaard at a meeting on 15.9.2017.

¹⁶⁷ Note that this UDS report includes demarcated Consolidation Zones to accommodate possible changes to the urban edge in Klapmuts (see **§14.3**).



Map D3: Klapmuts development opportunities

14.7 STELLENBOSCH 2017 HOUSING STRATEGY¹⁶⁸

A housing strategy (known as *Stellenbosch 2017 Housing Strategy*) was prepared and addressed the following issues of housing delivery: (a) strategic objectives, principles and mechanisms (b) spatial configuration (c) resources and institutional arrangements and (d) implementation. Below, we list, in brief, some aspects mentioned in the document:

- The housing need (for the indigent)¹⁶⁹ in 2008 was estimated to be 15 210 units (made up of 6 210 informal structures and 9 000 households living in overcrowded formal units). Our comment: We determined that a total of (only) 1891 houses were actually provided in the municipal area by government over the 10-year period ended 2015/16.
- An undetermined shortage of housing in rural areas.
- An estimated need of 20 546 units (made up of 9 791 housing units for the indigent and 10 755 non-indigent housing units). Our comment: We estimated the social need for houses, municipality-wide, in the 'give-away' bracket to have been 11 618 units in 2016.
- Delivery of houses preferred in compact, socially-mixed, integrated and sustainable neighbourhoods linked to priority spatial structuring areas such as corridors and nodes – and not in spatially segregated enclaves (which was the norm at the time).
- Delivery of houses through public- and private-sector co-investment.

The document includes funding mechanisms and a financial model (i.e. resource mobilization) to guide public- and private-sector investment over a 10-year period. Our comment: In order to develop business models for housing delivery, an understanding of the drivers and levers as well as what benefit would accrue from the implementation of these business models or combination of business models (utilisation of a hybrid approach), is key. In understanding what inputs are required to consider and develop various business models for housing delivery, we mention the following relevant inputs:

- a) Housing programmes of government, specifically the UISP and IRDP programmes
- b) The role of the private sector to achieve co-investment solutions and outcomes coupled with these housing programmes

¹⁶⁸ *Stellenbosch 2017 Housing Strategy, Final proposal*, undated.

¹⁶⁹ We assume this figure represents the social need for housing and not effective demand.

- c) Levers to achieve co-integration that relate to the use of, among others, the following mechanisms:
- Development charges (“mixing and matching”)
 - Incentives (zoning, development rights, bulk, etc.)
 - Land swops (win-win outcome).

14.8 EMERGENCY HOUSING ASSISTANCE POLICY (DRAFT)

The aim of this policy is to steer municipal decision-making in assisting persons who are destitute, in desperate need and crisis situations, i.e. assistance in the form of basic municipal engineering services and/or shelter. Note that an eviction order first had to be obtained from a competent court, before such persons will be assisted.

The policy document includes guidelines with regard to the funding and categories/ types of assistance.

14.9 DRAFT INFORMAL SETTLEMENT UPGRADING POLICY AND STRATEGY, MARCH 2015

An *Informal Settlement Upgrading Strategy* was prepared by the Stellenbosch Municipality. In the report, the number of structures in all existing informal settlements was estimated to be 7499 with a total of 3762 opportunities to be provided in certain of the settlements in the coming years. This intervention can be broken down as follows:

- 1499 in Langrug (Franschhoek)
- 1060 in Klapmuts (Erf 342)
- 570 in Jamestown (Farm 527)
- 440 in Idas Valley
- 193 in Kayamandi

The document also includes a step-by-step process to implement informal settlement upgrading and a synthesis of key legislative and policy directives. In general, the Upgrading of Informal Settlements Programme (UISP) is one of three core programmes implemented in the Western Cape. In the document, the UISP (as an incremental housing programme) is described as follows:

- Contributes towards achievement of the UN Millennium Goal to improve the lives of 100 million slum dwellers by 2020
- In the event that in situ upgrading is not feasible or desirable, communities can be resettled using the Emergency Housing Programme
- Resettlement assistance is provided
- An inclusive area- or community-wide planning approach is followed
- Community participation is funded
- Provides for emergency interventions by providing basic sanitation and water services as a first step
- Permanent services follow
- A choice of housing-tenure options (including rental and options to buy) is available in the last phase.

14.10 RENTAL HOUSING STRATEGY AND PLAN, MARCH 2016

In March 2016, the Stellenbosch Municipality approved the demarcation of Restructuring Zones and a Draft Affordable Rental Housing Strategy.

The following paragraphs were included in the minutes of the 39th meeting of the council of Stellenbosch Municipality:

"The strategy deals with all aspects of the affordable rental housing spectrum, with a focus on government-assisted affordable rental housing under the following broad headings:

- Confirmation of real demand,
- Supply factors:
 - Demarcated social housing Restructuring Zone (RZ),
 - Identified draft schedule of available land and buildings with potential, within RZ's – final projects pipeline to be determined by the municipality and approved by Council after proper motivation to Council on a project by project basis,
 - Available financing for National Rental Housing Programmes,
 - Institutional readiness and organizational capacity to implement the strategy and plan – internal policies, staffing, and external delivery partner contractual arrangements, including overarching smart partner agreement framework, and project-specific performance agreements to be approved by Council on a later date,
- Strategic framework and action plan – programme of activities.

In addition to the strategic intent of the rental programme as outlined above, the implementation of the rental housing programme must be premised on the following main principles:

- a. Development and management of rental stock by external delivery agents/partners must contribute significantly to local and especially black economic development and empowerment. Adherence to this principle will be regulated through specific requirements in the written partnership and project performance agreements between the municipality and its chosen partners, to be approved by Council at a later date, and
- b. Re-development of any existing properties must not result in homelessness or displacement to backyards, informal settlements or any other form of inferior accommodation for existing residents. Any re-location necessitated by regularization of tenancy must make full use of all instruments available including fully or partly subsidized ownership or rental housing options, and indigent support policies and instruments."

15 SPATIAL GUIDELINES

15.1 HIERARCHY OF NODES

We used the hub-and-spoke approach to designate nodes for a focused economic activity to emphasise a specific land-utilisation outcome. This effectively creates a *hierarchy of nodes for growth and investment* (see **Table D4**). In addition, the choice of growth trajectory (or funding path) aligned to a specific development path prioritises municipal spending by node.

In *Stellenbosch (Town)*, the strategy is to facilitate services-orientated offerings, driven by tertiary-sector development activity. The focus must be on facilitating complementary and supplementary land uses, viz. residential, commercial and a low-key industrial component aligned to, and focused on, tertiary-sector economic activity. Development can be incentivised to, *inter alia*, accelerate and facilitate private-sector investment (considering mix, timing and extent).

Opting for a *progressive growth trajectory*, we label Stellenbosch (Town) a first-tier priority-investment area.

Franschhoek is also well placed to provide services-orientated offerings in the tertiary sector, but with specific focus on tourism. The complementary and supplementary land uses are residential and commercial. Opting for a *constrained growth trajectory*, we label Franschhoek a third-tier priority-investment area.

In *Klapmuts*, the strategy is to provide for secondary-sector-orientated offerings driven by mainly manufacturing as subsector activity, with industrial and residential as complementary

and supplementary land uses. Opting for a *sustainable growth trajectory*, we label Klapmuts as a second-tier priority-investment area.

The 'other' settlement areas¹⁷⁰ are areas where incremental approaches to development, regulation and maintenance and upgrading of infrastructure will be considered to accommodate natural progression. These settlements are considered as the lowest priority for public-sector infrastructure spend.

Table D4
Investment rationale by node

Node	Priority public-sector infrastructure spend <i>by node</i>
Stellenbosch (Town)	First-tier
Klapmuts	Second-tier
Franschhoek	Third-tier
'Other settlements'	Lowest priority

15.2 LAND-DEVELOPMENT AREAS

We designate land-development areas (LDAs) with associated policies to guide the implementation of development paths *within a node*. In doing so, we state where growth and investment is preferred for future urban intensification/expansion. We do not allocate the 20-year demand for land by LDA. Rather, we use the cumulative gross land extent required by scenario, by node and by land type and the sum total of available developable land in LDAs, to determine the surplus/shortage of developable land (*as a conservative estimate*) inside the proposed urban edge by 2036.

We also identified growth-and-development criteria to guide the use and development of land specific to each designated land-development area. In this way, we ensure consistency in planning and decision-making.

15.2.1 Transformation Zone

Areas that should be designated for utilisation

These are areas where coordinated public- and private-sector investment is prioritised (first-tier) for urban intensification and/or expansion (see **Table D5**). Development may be incentivised.¹⁷¹ These areas *must* include a Restructuring Zone¹⁷² for the provision of social housing together with the implementation of the *Integrated Residential Development Programme* in the Droë Dyke/Libertas Transformation Zone.

Land-utilisation outcome

A high-quality, high-performance, dense, mixed-use, connected and transit-oriented urban environment in support of achieving the spatial vision.

Actions arising out of this policy statement

- Focus on high-density transit-oriented developments.
- Focus on coordinated public- and private-sector intervention (i.e. areas of co-investment).
- The local authority must prepare detailed precinct plans (considering applicable growth-and-development criteria). Note that the work to be done in facilitating the desired land-

¹⁷⁰ 'Other' settlement areas include the settlement areas of Dwarsrivier, Wemmershoek, La Motte, Groot Drakenstein, Raithby, Vlotenburg, Koelenhof, Lynedoch and Muldersvlei. The settlement area of Jonkershoek is also included under this term in the Integrated Human Settlement Plan.

¹⁷¹ Incentives can include density bonuses (conditional rezoning to allow more height and more bulk), payment of development charges (see Section 40(7)(b) of SPLUMA), etc.

¹⁷² The subsidised rental accommodation in this zone requires institutionalised management.

utilization outcomes in the two Transformation Zones, would allow for a *planning scope and scale* to consider most of the change tools at town level.¹⁷³

- Consider overlay zone(s).
- Prepare appropriate implementation and incentive plan(s) and/or integrated business model(s) (considering, *inter alia*, land acquisition/release; revenue enhancement mechanisms; implementation vehicle/agent).
- Land-development applications should quantitatively and qualitatively consider the applicable growth-and-development criteria.
- Track, monitor and report on change over time.

Growth-and-development criteria:

- Demand for residential and non-residential land
- Ownership, value and tradability of land (focus on the use of municipal- and state-owned properties)
- Housing typology (including inclusionary-housing options)
- Investor sentiment (i.e. market signals and location preferences)
- Economic opportunities
- Densities¹⁷⁴
- Accessibility and mobility (i.e. for all modes of transport; transport infrastructure)
- Land capacity (developable land)
- Land-use value/diversity/mix ('highest and best' use; co-locate compatible land uses)
- Urban edge options (considering, for example, the desirability of having an iron inventory in the three nodes)
- Infrastructure (optimise the use of existing infrastructure; invest in environmentally-friendly technologies and green infrastructure)
- Environmental sensitivities
- Climate change response options
- Integration ('on-site' and with rest of town and region)
- Architecture and urban design guidelines
- Implementation strategy (including new financial and institutional models)

15.2.2 Consolidation Zone (CZ)

Areas that should be designated for utilisation

These are areas that are experiencing specific development pressure, where incremental approaches to development, regulation and maintenance and upgrading of infrastructure will be considered to redress past development imbalances and to accommodate natural progression. These are mostly marginalised residential neighbourhoods characterised by the following:

- High percentages of households earning between R0 and R3500 per month (as in 2011)
- High rates of unemployment
- Very low concentration of formal jobs (i.e. job-housing mismatch)¹⁷⁵
- Relatively low median property values
- Relatively low levels of social infrastructure
- High population densities
- Reliance on minibus taxis as transport mode (or walking)
- Limited land-use diversity

Some of the areas are located in rural settings, with surrounding land of very high heritage, environmental and agriculture significance. *Thus, the intent should not be to use peripheral*

¹⁷³ A Precinct Plan must be prepared in terms of Section 21(l)(i) of SPLUMA and approved, when completed, as part of (the annual review of) the MIDP.

¹⁷⁴ Proposed densities must be higher than the norm – see *Stellenbosch Water Master Plan*, December 2011.

¹⁷⁵ The job-housing mismatch is not so stark in more affluent neighbourhoods owing to the use of private vehicles, closeness of formal jobs and in particular, offices in relation to the homes of decision-makers.

land for urban expansion but rather to create inclusive and sustainable settlements/ neighbourhoods.

Second-tier priority for public-sector infrastructure spend, if within Stellenbosch (Town) (see **Table D5**). First-tier priority for spending in Klapmuts (if inside urban edge), Franschoek and the other settlements (see **Table D5**). *Note that this priority of spending is linked to the hierarchy of nodes (see **Table D4**).* These areas are outside a Transformation Zone and can include a Restructuring Zone for the provision of social housing if assigned to Stellenbosch (Town), Klappmuts or Franschoek; and can be located inside and outside the urban edge (if outside, then adjacent to).

Land-utilisation outcome

Dignified living, working and teaching areas by 'redefining' the structure, function and purpose of the area. This outcome would facilitate a changed urban environment (with specific reference to a more 'inclusive and sustainable town') in support of achieving the spatial vision.

Actions arising out of this policy statement:

- Prepare appropriate development guidelines (to address, for example, the use of vacant land, urban agriculture and land acquisition/release) and implementation plan(s) at neighbourhood and even site-specific level
- Consider designated areas for overlay zone(s) after the completion of studies to identify the extent and boundaries based on appropriate criteria
- Obtain buy-in from all relevant stakeholders (including affected community/ies) to proposed interventions
- Land-development applications should quantitatively and qualitatively consider the applicable growth-and-development criteria (see below)
- Track, monitor and report on changes over time

Growth-and-development criteria:

- Stellenbosch University Master Plan (if applicable).
- Prioritised (community) needs identified in the Stellenbosch Municipal Integrated Development Plan (using the P-Index).
- The same criteria considered for a Transformation Zone.¹⁷⁶

15.2.3 Inclusion Zone (IZ)

Areas that should be designated for utilisation

Areas outside the current urban edge with vested rights (historically approved) to use land *for an extended urban function (at scale and location)*. These areas are not a high priority for *public-sector infrastructure spend*, except where there is a need for municipal services/ infrastructure in terms of the vested right(s). These areas can be part of a Consolidation Zone.

Land-utilisation outcome

Area(s) should be included within an urban edge based on vested rights, viz. existing urban land used as extended urban function with approved land-use rights in terms of LUPO/LUPA. These are area(s) where infrastructure must be provided and maintained to set norms and standards for each service.

Evaluation criteria:

- Existing urban land use (e.g. education facility)
- Vested 'communal living' rights (e.g. 'bosdorpe')
- Approved residential land-use rights in terms of LUPO/LUPA

15.2.4 Urban areas outside designated zones

¹⁷⁶ Residential densities in certain Consolidation Zones should be carefully managed to obtain desired land-utilization outcomes, e.g. increasing densities or de-densification.

Areas that should be designated for utilisation

Areas outside the three designated zones but inside the urban edge. They are not a high priority for *public-sector infrastructure spend*, except for maintenance of infrastructure (see **Table D5**). Consider densification¹⁷⁷ in accordance with infrastructure capacity.

Land-utilisation outcome

Area(s) where infrastructure is maintained to set norms and standards for each service.

Table D5				
Investment rationale <i>within node</i>				
Priority public-sector infrastructure spend by land-development area linked to a nodal hierarchy				
Node	Priority public-sector infrastructure spend <i>within node</i>			
	First-tier	Second-tier	Third-tier	Lowest
Stellenbosch (Town)	Transformation Zone	Consolidation Zone	Inclusion Zone	Urban areas outside designated zones
Klapmuts	Consolidation Zone (if inside urban edge)	Inclusion Zone	-	-
Franschhoek	Consolidation Zone	Inclusion Zone	Urban areas outside designated zones	-
'Other settlements'	Consolidation Zone	Inclusion Zone (if applicable)	-	-

15.3 URBAN EDGE¹⁷⁸

An Urban Edge must not be used to enforce spatial containment but rather as a management tool to *facilitate and monitor preferred urban growth and development*. It is important that monitoring is done in quantifiable terms and that facilitation should be sensitive to urban change.

The proposed changes to the various urban edges are based on the following principles:

- Apply the designated land-development areas to steer the implementation of the preferred development path(s) within a node. For example, to include the more or less 500 ha of land designated as the Droë Dyke/Libertas Transformation Zone in the Stellenbosch (Town) urban edge.
- Incorporate designated Inclusion Zones within an urban edge.
- The use and development of land must optimise the use of existing resources and infrastructure.
- Implement, as part of the annual review of the municipal Integrated Development Plan, a one-year review cycle of the urban-edge delineation. This means that areas outside the urban edge and *designated (or to be designated) as Consolidation Zones* can be considered for inclusion during the annual review process.¹⁷⁹ However, the proposal to include these areas must be *motivated qualitatively and quantitatively by the applicant in terms of the relevant growth-and-development criteria and land-utilization outcomes*.

¹⁷⁷ Proposed densities according to *Stellenbosch Water Master Plan*, December 2011. Densification can include second dwellings.

¹⁷⁸ A demarcated line that represents the outer limit of the urban expansion with urban development not allowed beyond this limit.

¹⁷⁹ To be considered at a pre-application meeting and taken forward into the annual review process.

In §22, we discuss the *implications* of implementing the preferred development path for the various nodes, as well as the urban edge.

15.4 DENSITIES

15.4.1 Current densities achieved

The MSDF, approved in May 2017, sets as target a gross dwelling density of approximately 15 dwelling units per hectare in small settlements and approximately 25 du/ha in large towns. **Table D6** includes the current gross dwelling densities in Stellenbosch (Town), Franschhoek and Klapmuts, measured in three-year increments between 2006 and 2015. The dwelling densities increased in all three towns but are still significantly lower than the targeted densities.

Table D6				
Dwelling densities (gross) by selected node				
(dwelling units per hectare)¹⁸⁰				
Town	2006	2009	2012	2015
Stellenbosch (Town)	4,99	5,27	5,33	8,17
Franschhoek	5,95	6,53	7,22	10,22
Klapmuts	6,75	7,12	7,36	9,94
Source: Input provided by Aurecon				

Table D7 includes the population densities for Stellenbosch (Town) and Franschhoek by using data from the two previous national surveys and the estimated population figure in 2016.¹⁸¹

Table D7				
Population densities by selected node				
(persons per hectare)				
Town	2001	2011	2016	
Stellenbosch (Town)	21,1	29,7	34,1	
Franschhoek	17,8	31,1	36,8	
Source: Input provided by Aurecon				

In **Part A**, we mentioned the increase in (urban) population densities between 2011 and 2016 and the expected increase of about 25% (to 4100 persons per km²) in 2031. This expected increase in the number of urban residents will mainly be absorbed in the three larger towns. We calculated that 91% of the people living in the *urban areas* of the municipality in 2031 will reside in Stellenbosch (Town), Klapmuts or Franschhoek.

Historically, increased population densities in Stellenbosch (Town) and Franschhoek occurred only in certain neighbourhoods. Normally, town planners applaud increasing densities, but in these neighbourhoods, it was overdone in view of the sub-standard quality of services and urban environment. For example, in Kayamandi there was an alarming increase of persons per hectare to 174 in 2011 from an already very high density of 100 in 2001 but only a small increase in the dwelling density (9,2 dwellings per hectare in 2006 to 9,7 in 2016).¹⁸²

Other neighbourhoods in Stellenbosch (Town) which also experienced increased population densities over the same period were Cloeteville (an alarming increase), Idas Valley and Jamestown. Part of the explanation for this trend is that there has not been *an increase in*

¹⁸⁰ We used the 2006 and 2012 Eskom Spot Building Counts.

¹⁸¹ The urban edge in the MSDF approved in May 2017, was used as geographic measuring unit.

¹⁸² We used data from the 2001 and 2011 national surveys and the 2006 and 2012 Eskom Spot Building Counts.

the number of (recorded) dwelling units. These neighbourhoods we designate as Consolidation Zones (i.e. areas that are experiencing specific development pressures).

In Franschhoek, the population density in Groendal/Langrug was alarmingly high in 2011 (viz. 94 persons per hectare) with, in comparison, a very low density of about 6 persons per hectare in the rest of the town. Troublingly, the residential density in Groendal/Langrug increased only slightly from 9,18 dwellings per hectare in 2006 to 10,23 in 2016.¹⁸³ Groendal/Langrug is designated as a Consolidation Zone.

15.4.2 Densities used in calculating growth in demand for land (municipality-wide)

We considered varying dwelling densities when we converted the forecast demand for built space into a prognosticated (municipality-wide) net demand for land specific to each scenario.

We calculated the net demand in both the **Consensus** and **Junk** scenarios based on achieving dwelling densities higher than the norm (general average).¹⁸⁴ The **Business-as-usual** scenario is based on continued low-density sprawled growth,¹⁸⁵ and as such can be regarded as the upper end of the expected demand for land. **Table D8** includes the gross dwelling densities used by scenario, the proposed densities in the *Stellenbosch Water Master Plan* as well as the densities prescribed as 'use parameters' in the draft Integrated Zoning Scheme.

Table D8
Gross dwelling densities used (municipality-wide)¹⁸⁶

Type	UDS scenario			Stellenbosch Water Master Plan ¹⁸⁷	Integrated Zoning Scheme (Draft)
	Business-as-usual	Consensus	Junk		
Houses <80 m ² for the indigent and non-indigent	40 du/ha	65 du/ha	65 du/ha	40 du/ha ¹⁸⁸	-
Non-indigent houses >80 m ²	7 du/ha	10 du/ha	10 du/ha	25 du/ha ¹⁸⁹ ; 13 du/ha ¹⁹⁰ ; 8 du/ha ¹⁹¹	-
Flats	60 du/ha	60 du/ha	60 du/ha	60 du/ha	50 du/ha ¹⁹²
Townhouses	25 du/ha	25 du/ha	25 du/ha	35 du/ha ¹⁹³ ; 50 du/ha ¹⁹⁴	25 du/ha ^{195, 196} ; 50 du/ha ¹⁹⁷

The growth-and-development path assumes achieving dwelling densities higher than the norm (current averages). In this regard, we propose that the specified densities in the

¹⁸³ Using the 2006 and 2012 Eskom Spot Building Counts.

¹⁸⁴ We used an erf size of 75 m² for houses <80 m² and 500 m² for houses >80 m².

¹⁸⁵ We used an erf size of 120 m² for houses <80 m² and 700 m² for houses >80 m².

¹⁸⁶ Approximate density.

¹⁸⁷ Source: **Fig. SW 4.1a** in *Stellenbosch Water Master Plan*.

¹⁸⁸ Listed as 'Affordable housing' and 'informal upgraded'.

¹⁸⁹ Listed as 'Single Residential 500'; meaning an erf size of 500 m².

¹⁹⁰ Listed as 'Single Residential 1000'; meaning an erf size of 1 000 m².

¹⁹¹ Listed as 'Single Residential 1500' in **Fig SW 4.1c** (Franschhoek) and **Fig.SW 4.1b** (Dwarsrivier); meaning an erf size of 1 500 m².

¹⁹² Densities applicable to flats in Multi-Unit Residential Zone.

¹⁹³ Listed as 'Group housing 30 to 40'.

¹⁹⁴ Listed as 'Group housing 40 to 60'.

¹⁹⁵ Densities applicable to group housing in Conventional Residential Zone (CR).

¹⁹⁶ Densities applicable to group housing in Less Formal Residential Zone.

¹⁹⁷ Densities applicable to group housing and retirement villages in Multi-Unit Residential Zone.

Stellenbosch Water Master Plan be used as benchmark, with the intent to achieve higher densities for all land use types in all towns/settlements. Note that we propose a count of 'dwelling units' in certain Consolidation Zones to confirm the dwelling densities provided in this report and to inform decision-making to effect land-utilization outcomes.¹⁹⁸

The above, is based on the use of average densities (by land use type) as policy objective (or targets). We would, however, by 'adding' two high-density nodes in Stellenbosch (Town) as Transformation Zones, consider densification as 'strategic intensification to create a hierarchical network of high-density nodes interconnected with affordable and efficient mass transit, in which case average densification becomes an emergent outcome, not a policy objective'.¹⁹⁹ In this regard, we emphasise that the work to be done in facilitating the desired land-utilization outcomes in the two Transformation Zones, would allow for a *planning scope and scale* to consider densification at precinct level (including the CBD as part of creating transport links).

In **§23**, we discuss the *implications* of implementing the preferred development path for the various nodes, as well as densities.

15.5 SOCIAL AMENITIES

The provision of social amenities in the municipal area is adequate but under pressure. This pressure is owing to a growing population rather than accessibility, i.e. key social amenities are located within reasonable walking distances from users in Stellenbosch (Town), Franschhoek and Klappmuts.

Note that the provision of social-service needs is included in the placemaker modelling. Various population thresholds calculated in an analysis by the CSIR,²⁰⁰ assist in determining – based on growth in the population – when future additional community facilities may be required. The number and costs associated with these facilities are included over the assessment period in five-year increments.

16 LAND GOVERNANCE GUIDELINES

16.1 HIGHEST-AND-BEST USE

Land is a finite resource and the way it is used is a potential driver of spatial transformation, particularly the use of well-located publicly-owned land. However, the housing-finance models used by government, result in marginal (and cheaper) land (owned by government, often on the periphery of urban areas) being used for subsidy housing.

In an ideal world, the poor should live in housing that is close to amenities and job opportunities, as these would reduce their long-term life-cycle costs of occupation – e.g. travelling and time costs. However, quite often land close to economic activity is also the most expensive, unless it is of slum-like quality, as in so many North American and Indian inner cities. There is, therefore, a trade-off between the upfront cost of land and life-cycle costs to the residents in far-off locations. One way to resolve this issue (without deliberately creating slums in the country's CBDs or inner cities) is the introduction of highly subsidized high-speed public transport from the peripheral low-cost housing schemes to work

¹⁹⁸ A count similar to the recent municipal count of shacks in three informal settlements.

¹⁹⁹ Swilling, M. ca. 2016. "Resource requirements of future urbanization", unpublished paper delivered at International Resource Panel (IRP) conference, convened by UNEP. Video accessed on 24 October 2017 at: <https://www.youtube.com/watch?v=X-jM7t-MFcc>. Eventually to be published as an IRP report and will be cited as: Swilling, M., Hajer, M. et al. Forthcoming. *The Weight of Cities: Resource Requirements of Future Urbanization*. A report for the International Resource Panel. Paris: United Nations Environment Program (UNEP). Collaborating Institutes: Utrecht University, CSIRO, Urban Morphology Institute, UCSB, UMN.

²⁰⁰ CSIR *Guidelines for the Provision of Social Facilities in South African Settlements*, August 2012.

opportunities. Note that with the above remarks, we do not imply that Stellenbosch (Town) is a city (with the transportation problems of a city), nor that its CBD should be turned into a slum!

In a practical sense, state intervention can provide access to well-located land for the urban poor²⁰¹ – but at a cost to either the landowner, the state (all spheres) or the developer (or a combination of these parties). It seems to us, it is unfair²⁰² to expect a private owner or developer to carry these costs, which leaves the spheres of state to foot the bill.

Developers of residential schemes naturally want to develop land to its highest-and-best use,²⁰³ which during boom times more often than not does not include Affordable Housing,²⁰⁴ as the profit margins are tighter in this segment. Expensive land is developable land that is well located by reason of (a) geography (for instance, attractive views or high-value farm land), (b) accessibility to amenities and jobs (maybe close to an *attractive* CBD like Stellenbosch (Town)), and (c) adjacent to high-income areas. However, all three these criteria need not apply.

Competition for land may also result in land banking, which in effect means the medium- to long-term sterilization of land with the potential for development (see previous comment on the need for an iron inventory (buffer stock) of raw developable land).

Notably, even marginal land in and around Stellenbosch (Town) is expensive to use for Affordable Housing and would require substantial subsidisation. A recent study²⁰⁵ concluded that, when considering peripheral municipal-owned land north of Kayamandi for housing, the 'land cost per opportunity' of R56 266 is significantly higher than the indicative cost of serviced erven of R35 000 for a subsidy erf.

16.2 MUNICIPAL-OWNED LAND

The Stellenbosch Municipality owns 4 219,4 hectares of urban and rural land spread out in fragments across the entire municipal area.²⁰⁶ The management function of the land portfolio is performed in accordance with the Municipal Financial Management Act, 2003 (Act 56 of 2003) *but not as part of any plan or programme*. For example, the deliverables and potential returns of the portfolio have not been quantitatively or qualitatively assessed or analysed. Neither is the portfolio or segments thereof being managed with any consideration of market forces.

Only a handful of transactions of municipal-owned land have occurred or have been considered since 2000. The municipality prefers long-term lease agreements as contractual arrangements with third parties rather than selling outright. Barring three, all municipal lease agreements (64 in total) were concluded in the 1990s. The municipality is now considering negotiating with certain leaseholders for the inclusion of an 'empowerment' stake or to do a buy-out. We note that about 200 hectares of municipal-owned (agricultural) land have been lying fallow since 2007 owing to a lack of consensus in decision-making, which results in a loss of revenue to the municipality. Arguably, this is one of the reasons why house prices are so high in Stellenbosch (Town) (the supply side is artificially constrained).

²⁰¹ Households earning less than R3500 per month.

²⁰² Thus, it may not pass muster of the Constitution.

²⁰³ The most probable use of a property that is physically possible, appropriately justified, legally permissible, financially feasible and which results in the highest value of the property being valued. (Source: International Valuation Standards Council, 2011). The Afrikaans term – *mees renderende gebruik* – is more descriptive.

²⁰⁴ See definition under Glossary of Terms.

²⁰⁵ *Northern Extension Draft Feasibility Report*, January 2016.

²⁰⁶ Equivalent to 2473 land parcels (see *Stellenbosch Land Audit: Phase 1*, December 2017).

Of particular concern in the context of using state-owned land for urban expansion in the Droë Dyke/Libertas Transformation Zone, is the very cumbersome nature of acquiring state-owned land.

16.3 STATE-OWNED LAND

We do not provide detailed information about state-owned land in the municipal area, simply because accurate information is not available. This was the finding of a recent study to incorporate ownership data of state-owned land into a spatial geodatabase.²⁰⁷ For example, the study shows an alarming number of spatial discrepancies between the GISCOE geodatabase and the latest versions of the state-land audit shapefiles for the Western Cape.

16.4 GUIDELINES FOR THE GOVERNANCE OF MUNICIPAL- AND STATE-OWNED (URBAN) LAND

We propose the following guidelines in governing municipal- and state-owned (urban) land in the context of the preferred growth-and-development path:

- Ensure adequate resources (human and capital) to manage the municipal property portfolio.
- Finalise and approve the commissioned land-audit, and then determine site-specific development potential or highest-and-best use (for brownfields and greenfields development) in the preferred growth areas.
- The Municipality must immediately start with steps to acquire state-owned land in the Droë Dyke/Libertas Transformation Zone for urban development.
- Prioritise the drafting and implementation of a land-release and -acquisition programme to, *inter alia*, guide the use of municipal-owned land for the public good; in doing so, consider the following: UDS growth trajectories, benchmarks, target yields, release options, acquisition/ release timeframes, risk and change management, and market conditions.
- Establish a well-defined and user-friendly document/management information system (including datasets) that allows tracking, warning and reporting of performance and progress over time, i.e. to facilitate more informed decision-making.²⁰⁸

17 TRANSPORT AND MOBILITY GUIDELINES

Better and coordinated transport and land-use planning would lead to, *inter alia*, a reduction of travel and transport needs. To this end, the concepts of interconnected nodes and transit-oriented development have been promoted in spatial plans. The goal was to achieve land-use/transport integration as a qualitative outcome.

Current responses by private enterprise and households are, however, not in line with this goal. For example, and as mentioned, recent developments in Koelenhof and Klapmuts are still mono-functional residential developments with the private car as preferred transport mode between productive activities, i.e. forced commuting.²⁰⁹ When considering land-use management, small gains have been forthcoming as some goals of the TOD approach were achieved (e.g. higher densities and a mix of housing types), but, crucially, the 'transport link' is missing. In this report, we address, amongst other issues, this 'link' through the growth-

²⁰⁷ Stellenbosch Land Audit: Phase 1, December 2017.

²⁰⁸ As mentioned, we were forced to do our forecasts for the municipality as a whole because the Municipality does not compile statistics for the various nodes separately. This is a great pity, and could easily be rectified.

²⁰⁹ There is a very low concentration of formal jobs in Koelenhof and that middle to high-income earners prefer to use private transport. The average monthly income of residents leasing property in Nootgedacht Village is more than R50 000 (Source: information provided in April 2017 by Ms C Brand, sales consultant in Nootgedacht Village).

and-development criteria for the use and development of land in the designated land development areas (in particular, for Stellenbosch (Town)). The work to be done in facilitating the desired land-utilization outcomes in Transformation Zones, would allow for a *planning scope and scale* to consider the issue of land-use/transport integration at town level. Note that such work must address the 3Ds of transit, i.e. density, diversity and design²¹⁰ (see box below) and be guided by the findings and proposals in numerous transport-related studies.²¹¹

Considering these studies and those being drafted,²¹² the identified change tool of integrating transport modes, including its management, must be the focus of transport planning. In addition, the growth-and-development path set out in this report is a key planning directive to effect change — as a quantified (in land extent and type, cost and rollout) and spatially-designated path. For example, it would be an imperative to redo the modelling of scenarios in the Western Bypass study based on the changed land-use data.

The American academic and author, Robert Cervero, describes the basic requirements for sustainable transit (formalised public transport) as density, diversity and design (the 3Ds of transit). He shows that *density* alone is not adequate, as can be seen in the following example:

- Creating five times the residential and office **density** in any neighbourhood and the CBD would simply result in a spike in peak trips, while still requiring no travel between peaks. This would require substantially more buses during the peaks, and these buses would remain underutilised for the remainder of the day.
- Creating **diversity** could mean adding the same level of employment and offices (density) in both areas, to achieve an equal number of trips between these zones. This would still only result in peak utilisation of buses, but half the fleet is required as trips are shared between two directions of travel. Income would also double, since buses no longer return empty on the return leg of a trip.
- **Design** refers to the requirement to create the spaces between land parcels and the transport system to be conducive for walking and cycling. If done effectively, this would reduce the need to drive and park at bus stops, as it facilitates walking and cycling. Importantly, it would create the environment where people would become inclined to walk and cycle between all activities in an area, rather than by car.

The essence of any densification strategy must therefore be to ensure that an increasing number of short trips can be made by walking and cycling, while an increasing number of longer trips can be made by transit, rather than car.

18 INFRASTRUCTURE GUIDELINES

The level of municipal infrastructure does indicate insufficient capacity to meet future demand for especially water, sewerage and solid waste disposal. However, sufficient infrastructure capacity is available for the expected development in the Droë Dyke/Libertas precinct, except for the need to construct a R35 million water reservoir.²¹³ In this regard, funding and capacity constraints are a real and pertinent input for development within the towns/settlements.²¹⁴

²¹⁰ Cervero, R., Kockelman, K 1997. *Travel demand and the 3 Ds: Density, Diversity and Design*, Elsevier Science Ltd, 1997.

²¹¹ The intra- and inter-municipal or regional transport dynamics (e.g. the rail network and freight routes) must be addressed in the ongoing processes to draft the MSDF and certain transport-related studies.

²¹² For example, the research on improving access and mobility in Stellenbosch (Town) as part of the Provincial Sustainable Transport Programme.

²¹³ Comment made by Mr D Lombaard at a meeting held on 17 August 2017.

²¹⁴ Considered in the *Stellenbosch Water Master Plan*, December 2011.

Allocation in the budget of the Municipality links to infrastructure provision in the context of a supply or constraint due to available capacity. Planning and the availability of infrastructure capacity from any external source is beyond the control of the Municipality, but the supply of infrastructure and bulk services would rest with the private party if the Municipality's funding is constrained. Development charges (DCs) are therefore included to compensate for the requirements of the external bulk services. These contributions were dealt with in the placemaker modelling calculations.

The Municipality will have to address capacity constraints at the current operating cell of the landfill in Devon Valley. No alternative landfill option has been secured to date. This includes using planned and/or existing sites in Wellington, Cape Town or a regional site, and waste-to-energy alternatives. In addition, infrastructure and methods to maximise the reduction of waste such as a Material Recovery Facility (chipping of garden waste and the crushing of builders' rubble, which is done on a limited scale) or treating organic waste, need to be implemented at scale. These diversion technologies will greatly reduce the waste stream, but will not eliminate the need for landfill capacity. In this regard, the Municipality will have to transport waste that cannot be recovered, to another landfill site. A two-year window period exists for the Municipality to establish the required infrastructure to transfer and transport such waste.

The debate around the possible use of the area between the old and current cells of the landfill has recently been 'reopened'. Two major overhead electrical lines cross this area and, if rerouted, additional capacity will be created. If successful in rerouting the Eskom lines, a licence amendment must be applied for to include this area into the landfill footprint. This option will no doubt provide valuable airspace at the landfill by linking the two mounds of waste, but it will not provide Stellenbosch with a long-term disposal solution. A high-level calculation indicates that some 1,2 million m³ of capacity could be provided by filling this area and providing a medium-term solution, given that maximum diversion is achieved.

19 CLIMATE CHANGE GUIDELINES

In **Part A**, we addressed climate vulnerability of the urban areas in the Stellenbosch municipal area. The use and development of land are key determinants of such vulnerability. In this regard, the municipality must respond to climate change by adopting and implementing specific adaptation options, i.e. avoid vulnerability to climate-change impacts or adjust the urban environment to minimise vulnerability.²¹⁵

The avoidance-driven strategy entails the choice of location for different land uses as the adaptive mechanism. It entails (a) choosing locations where the effects of climate change will be minimal and (b) distributing land-use in such a way as to avoid climate change vulnerability. This approach also relies on the capacity of ecological infrastructure to absorb the negative impacts of climate change and prevent development from compromising this capacity.

The choice of location for the minimisation of impact should focus on criteria such as economic development, connectivity, attractiveness, etc. rather than climate change. The primary adaptive mechanism in this case is optimisation of designs to lower sensitivity to climate change impacts. This can be done at varying scales through urban design and building design.

The following response options are proposed in the context of this study:

Avoidance

²¹⁵ Roggema, R. (2009). *Adaptation to climate change. A spatial challenge.* Dordrecht, New York: Springer.

- Map vulnerable areas (flood lines, etc.) and do not allow development in areas with high vulnerability.
- Implement land-use planning and zoning mechanisms to avoid building and development of infrastructure in hazard-prone areas.
- Relocate existing development outside of areas with high vulnerability and high risk.
- Maintain and update drainage systems.
- Ensure proper urban planning to reduce incidence of unplanned settlements/growth.

Minimisation

- Implement building regulations to ensure efficiency in all new buildings – monitor, enforce and encourage best practice.
- Strengthen building code requirements to address possible impacts on building and infrastructure development projects.
- Ensure densification through zoning regulations.
- Consider permeable pavements, green roofs and rain tanks to increase on-site retention of storm water.

20 HOUSING GUIDELINES

We already mentioned that the SPLUMA legislation introduced a ‘far-reaching’ planning approach for the development of (residential) land. It is now required to consider the entire spectrum of housing across different socio-economic categories (and gradients)²¹⁶ when estimating demand and planning densities and location. However, the Act does not translate this approach into quantifiable outcomes, i.e. it does not provide any spatial targets and/or indicators — nor do any other act or the Housing Code.

The next two sections include a summary of the estimated housing demand (*across different socio-economic categories and gradients*) and strategic guidelines for land development.

20.1 FORECAST DEMAND FOR RESIDENTIAL UNITS (SUMMARISED)

We estimated housing affordability (see **Part A**), housing backlog as well as the future need for housing across all socio-economic categories and gradients (see **Part C**). In the next few paragraphs we summarise the relevant findings.

In order to wipe out the 2016 municipality-wide backlog of 11 618 *housing units for the indigent* and to cater for the growing need, 17 847 units need to be built between 2016 and 2036. Note that the government provided a total of 1891 subsidised opportunities over the 10-year period ended 2015/16.²¹⁷ Assuming that this deficit of new supply of housing for the indigent will persist, we estimate a cumulative addition to the inventory of only 7805 houses by the year 2036 — leaving a significant backlog or social need for housing associated with the lowest house-price class (the ‘give-away’ (RDP) bracket).

One answer to the ‘insufficient’ new supply of housing for the indigent would be that the housing development programmes still consider – after years of nearly 6% p.a. consumer inflation – household income levels of R0 to R3500 to be adequate to cater for indigent households’ housing.²¹⁸ As a result, through inflation, fewer and fewer households would have qualified. This is a policy decision at a national level, and the logic behind it is probably to encourage self-help on serviced sites, as the fiscus clearly cannot afford to give away houses to all those who cannot afford their own house. The implication of this is that the municipality should proactively provide site-and-service sites for the ever-growing need for shelter for the indigent. If not, unplanned invasions, driven by desperation, will occur, which will later create upgrading or relocation headaches.

²¹⁶ Own insertion.

²¹⁷ We estimated the historic supply of housing for the indigent by dividing the annual budget spent over the 10-year period by the cost of R155 000 per unit.

²¹⁸ This does not include social housing.

The social housing programme is characterised by the same dilemma of household income levels not keeping track with inflationary increases. However, the national government recently adjusted the household income thresholds applicable to this programme. The lower qualifying household income limit for the primary social housing market was raised from R3500 to R5500 per month and the upper limit from R7500 to R15 000 per month.²¹⁹ On the supply side, this would allow for greater responsiveness from Social Housing Institutions as the ability of tenants²²⁰ to pay rent would increase.

The recent supply of new houses for the indigent occurred mainly in Klapmuts. This is reflected in the number of transfers in 2014 and 2015 in the lowest price range (R0–R160 000), viz. 445, which constitutes 65% of all transfers in Klapmuts over the last 11 years. These transfers (together with similar transfers in Kayamandi) have significantly changed the profile of specifically full-title residential transfers in the municipal area.

In the municipal area, there has been a steep, far-above-inflation increase in house values between 2012 and 2016 (calculations based on the respective municipal valuation rolls). The value increase of full-title and sectional-title properties in the *urban areas* was a combined 47%, which equals an annual compound growth of 10% over this period. The implication is that not enough new stock had been produced on the supply side, i.e. the steep rise in values is the result of a disequilibrium between demand and supply. This is true for all areas except Klapmuts. In Klapmuts, the percentage of properties in the lowest house-price band is higher than the percentage of households in the lowest income category, implying there is sufficient housing stock in this band. In contrast, as in most urban areas, only a small percentage of households in the municipal area were able to move to a higher income bracket, with the effect that the housing affordability gap remains, and in some areas, even widened.²²¹

What are the future needs for non-indigent housing?

We estimate that there will be a cumulative new demand for more than 20 000 *gap/affordable houses* in the municipal area by 2036.²²² In the price class above R580 000,²²³ we estimate that by 2036, there will be a cumulative new demand for about 3000 stand-alone houses and a cumulative new demand of between 2500 and 3500 for flats/ townhouses, depending on the growth scenario used.

20.2 HOUSING MARKET SEGMENTATION

The main purpose of analysing (the segmentation of) the housing market, is to propose a rational list of housing sub-markets that take cognisance of the income, tenure and qualification dimensions to these sub-markets. These core dimensions relate to (a) affordability for different housing products (income), (b) the suitability to serve a particular household's need (tenure preference) and (c) the household's ability to access state-housing assistance.

We used the segmentation matrix developed by the WCG to categorise different housing options (tenure and rental) for different household income categories.²²⁴ **Table A3**

²¹⁹ <https://www.businesslive.co.za/bd/national/2017-11-30-plans-to-make-housing-accessible-to-the-missing-middle-gain-pace/>, viewed on 17.01.2018.

²²⁰ Tenants would be the so-called 'missing middle', i.e. South Africans who earn too much to qualify for subsidised housing and too little to get approved to buy a house on their own.

²²¹ It is well known that the incomes of the very-low-income segment are rising slower than the incomes of the high-income earners. This is an international phenomenon.

²²² Houses in the price bands associated with property values between R160 000 and R580 000.

²²³ Note that the method used to determine the cumulative new demand for the Business-as-usual scenario, assumes growth in demand is impervious to the economy and would be similar to historic demand. The other two scenarios are based on assumed macro-economic growth that is lower than the historic average growth of the SA economy and, as a result, produced lower demand estimates.

²²⁴ Western Cape Government, *A Human Settlement Demand Study in the Western Cape, Housing Market Segment Report, Final*, 2015.

categorises different housing options (ownership and rental) for different household income categories in the context of this study.²²⁵

Segment	Stellenbosch municipal area		Stellenbosch urban areas		Franschhoek		Klapmuts		Stellenbosch (Town)	
	Own	Rent	Own	Rent	Own	Rent	Own	Rent	Own	Rent
CRU	-	2919	-	2064	-	552	-	154	-	1306
Social housing	-	1821	-	1100	-	156	-	63	-	812
Normal rental	-	2992	-	1871	-	103	-	19	-	324
Subsidy	5662	-	4027	-	942	-	382	-	2401	-
Supply and credit gap	2413	-	1357	-	246	-	125	-	821	-
Credit gap	415	-	229	-	22	-	18	-	154	-
FLISP	882	-	487	-	46	-	38	-	327	-
Bondable	5137	-	3770	-	248	-	35	-	2738	-
Non qualifiers	14724	6682	12879	5575	1653	859	780	310	8931	4093
TOTAL	29 233	14 414	22 749	10 610	3 157	1 670	1 378	546	15 327	6 535
% of total by area	67%	33%	68%	32%	65%	35%	72%	28%	70%	30%

Source: *Socio-economic and Demographic Analysis Report* completed by Rode in February 2017 and *Status Quo Report* by Rode, May 2017

Note that the figures for the urban areas of Franschhoek, Klapmuts and Stellenbosch (Town) are reflected in both the urban area and municipal area figures, while the Stellenbosch urban areas are reflected in the municipal area figures.

Considering the total number of rental options (CRU and Social Housing) in the lowest household income bracket (monthly earnings less than R3500) in the three towns, the segment in Stellenbosch (Town) of about 70%, is significantly more than in Klapmuts and Franschhoek at 7% and 23%, respectively. The ownership option of subsidised housing in the same income bracket, measures almost the same proportions as the rental option, i.e. Stellenbosch (Town) 65%, 10% in Klapmuts and 25% in Franschhoek.

The housing market (irrespective of the sub-market and geographic unit analysed) can be apportioned (ownership and rental) as a ratio of about 65:35.

20.3 HOUSING STRATEGY

20.3.1 Social housing

Social Housing is subsidised rental accommodation in identified areas that is provided by Social Housing Institutions (SHIs), the Social Housing Regulatory Authority (SHRA), and the provincial Department of Human Settlements in conjunction with local municipalities. SHIs are entities formed to undertake the development of social housing projects, to own, facilitate and manage the properties, and to collect rentals and repay any loans secured to develop the units. The beneficiaries or potential tenants are low- and middle-income households earning between R5500 and R15 000 per month. All social housing projects must form part of a Restructuring Zone as a demarcated area.

There are mainly four funding streams for the application of this programme in the Western Cape:

²²⁵ The methodology used is explained in the *Socio-economic and Demographic Analysis Report* completed by Rode in February 2017.

- Institutional subsidy (source: Western Cape Government)
- Restructuring Capital Grant (source: National Government and SHRA)
- Local authorities (in the form of contributing land)
- Loan finance and equity (mainly from the private sector)

The Social Housing sector in South Africa is experiencing a rapid decline in delivery, and SHRA faces problems relating to its custodianship of the social housing sector, the regulation of social housing institutions, and the management of the investment of the Restructuring Capital Grant (RCG) subsidies.²²⁶ Additional problems identified are:

- Over time there had been a marked increase in the average per-unit cost.²²⁷
- Changes occurred in the proportionate allocation of each major source of finance.
- The Social Housing financing model is inherently complex for SHIs and the public sector to navigate.

We propose that a Transformation Zone must include a Restructuring Zone, while a Consolidation Zone, if located in Stellenbosch (Town), Klapmuts or Franschhoek, can include a Restructuring Zone.²²⁸ This would imply a re-evaluation of the approved Restructuring Zone in Stellenbosch (Town).

20.3.2 Informal settlements

About 17% of all households in the municipal area are living in an informal shack.²²⁹ Note that recent counts of shacks in three informal settlements, viz. Enkanini, Zone O and Langrug, established an increase in numbers since 2011 equivalent to a 5% annual growth rate. In other words, the combined number of shacks in informal settlements in the municipal area, increased from 6895 (in 2011) to 8800 in 2016 (see **Map D4** for the location of informal settlements in the municipal area).

The upgrading of informal settlements must receive a high priority. The Upgrading of Informal Settlements Programme must be implemented in the oldest informal settlements first, and must start by de-densifying the target area. The next step would be to complete in-situ upgrading by using the various housing options available to qualifying beneficiaries. The preferred product is a serviced site as part of a phased development approach. It is argued that a top structure should not be part of this programme in order to differentiate between the products of this programme and the Integrated Residential Development Programme (IRDP). However, top structures are provided under the UISP to 'most deserving' individuals, but then by relocating these people to other housing projects. In this regard, the de-densification of Enkanini and Langrug must be prioritised to provide alternative housing elsewhere for those that can afford such housing²³⁰ and a certificate of 'ownership' to residents remaining in the area. Note that the Enkanini settlement is located on municipal-owned land that was regarded by the community as *better located* than municipal-owned land to the north of Kayamandi.

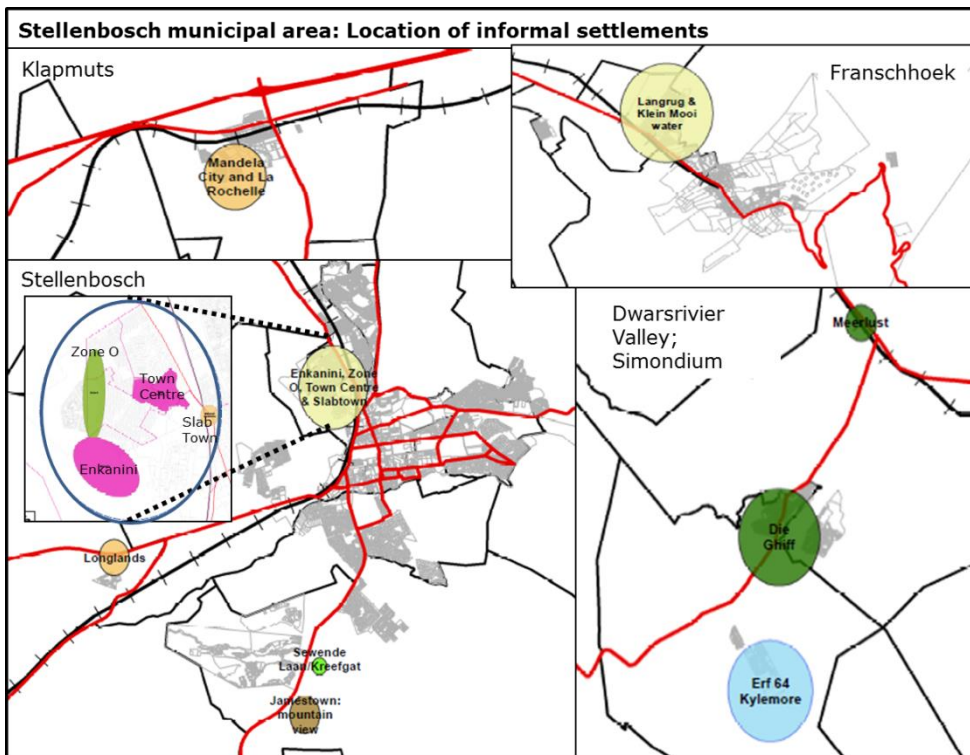
²²⁶ Department of Human Settlements, *Impact and Implementation Evaluation of the Social Housing Programme, Evaluation Report (second draft – V2.0)*, June 2015.

²²⁷ It is estimated that the current cost per unit is about R400 000 (source: WCG, 2016).

²²⁸ The land extent and location of a Restructuring Zone in a Transformation Zone must be determined as part of preparing a local precinct plan. A special study would be required to determine the land extent and location of a Restructuring Zone in a Consolidation Zone, e.g. Idas Valley.

²²⁹ Calculated by using Census 2011 data.

²³⁰ For example, affordable rental accommodation.



Map D4: Location of informal settlements in the Stellenbosch municipal area

20.3.3 Inclusionary housing

SPLUMA specifies the requirement to identify designated areas where a national or provincial inclusionary housing policy may be applicable. By design, inclusionary programmes link the production of low-spec housing to market-related housing production.

The Transformation Zones *and well-located land outside these zones* are designated as areas where, in larger developments, developers should be encouraged through moral suasion to offer a gradient of residential price classes, provided there is demonstrable demand for such price categories.

A programme to enforce inclusionary housing is risky as nobody knows what the unintended consequences will be. To residential developers, the biggest risk is that their sales tempo in new developments would be retarded to the extent that the development becomes unviable. From the developers' point of view, the obvious part solution to this problem is to keep the price gradient between the various price classes within a development shallow. For example, mix low-spec units with houses that do not cost more than, say, R500 000. However, the downside to such a reaction by the private sector would be (a) that the profit margins on low-priced houses are wafer thin and (b) that no more houses or residential units of more than R1 million would be constructed. Using economic theory and common sense, this would lead to spiralling house prices in these categories. In the USA, such policies have contributed very little to additional low-spec housing stock.²³¹ Thus, given the risk outlined above, a municipality should approach such a programme with the utmost sensitivity and care.

The following measures (in addition to the growth-and-development criteria as specified in a Transformation Zone) must be considered in the delivery of inclusionary housing opportunities:²³²

²³¹ Sturtevant, Lisa A. (2016). *Separating fact from fiction to design effective inclusionary housing programs*. Center for Housing Policy.

²³² Some of these measures have been cited from the Spatial Development Framework 2040, City of Johannesburg Metropolitan Municipality with permission received from Mr Herman Pienaar (official at the City Council) at a meeting held on 29 June 2017.

- Inclusionary housing *must* be addressed in Precinct Plans (providing detailed development guidelines) and land-development applications by price, type, extent, design, layout, location, and tradability.
- Provision of such housing opportunities can be on-site or off-site; if off-site, then on well-located land.
- Development incentives for on-site and off-site provision/supply can include density bonuses in addition to allowable dwelling densities.
- Ensure that the development of inclusionary units occur concurrently with the market-related units.²³³

20.3.4 Backyarders

We estimate that 5,6% (or 2 439 units) of all dwellings in the municipal area are informal shacks in backyards.^{234,235} About 77% of the households living in these shacks have a monthly income of less than R3500 (2011 rands). Flats in backyards are also used for accommodation.

It is clear that a large proportion of the people residing in, for example, Kayamandi and Cloeteville, make use of backyard dwellings. Of particular concern is also the possibility of **overcrowding** because many households living in these areas consist of five or more persons per household. In Franschhoek, shacks in backyards constitute about 11% of all dwellings in the town.²³⁶

Backyard-living must be acknowledged as a legitimate form of housing, provided it does not compromise safety and health standards. Also, not to be ignored, is the extra income that home owners earn in this manner.

20.3.5 Employer-assisted housing

Employer-assisted housing has been used in the municipal area as a housing delivery option to accommodate, mainly, farm workers and forestry workers in rural settlements. We propose that all rural settlements with vested 'living' rights (historically approved) be designated as Inclusion Zones.²³⁷

The form of assistance varies, but the most common form is the provision of (on-site) rental accommodation by the employer to the employee. In recent years, this option has also been used to provide housing in Stellenbosch (Town) owing to the job-housing mismatch and inadequate housing stock in all price bands.

20.3.6 Incremental densification

Incremental densification can occur as 'infill' development in established neighbourhoods outside the three designated zones.²³⁸ As mentioned, achieving higher densities in the STOD (Adam Tas Corridor) Transformation Zone is a priority, and (incremental) densification inside a Consolidation Zone should be carefully managed to obtain the desired land-utilization outcomes.

The subdivision of land must be in accordance with the zoning scheme by-law. Of particular importance is the application of the subdivision overlay zone.

²³³ This measure applies to both on-site and off-site provision/supply.

²³⁴ Calculated by using Census 2011 data.

²³⁵ Defined as 'shelter' in the draft Integrated Zoning Scheme.

²³⁶ Calculated by using Census 2011 data.

²³⁷ Note that these settlements are all outside the UDS study area, i.e. the implementation of the proposed designation as Inclusion Zones needs to be confirmed as part of the Rural Area Plan or MSDF 2018.

²³⁸ In accordance with the draft zoning scheme by-law.

20.3.7 Farmworker housing

It is reported that 'illegal farm evictions are on the rise in the Western Cape, especially in the Ceres, Somerset West and Worcester areas.²³⁹ We have already discussed two housing options to accommodate farm workers, i.e. emergency housing (for evicted farm workers) and employer-assisted housing. The former refers to assistance by Government in the form of basic municipal engineering services and/or shelter after a competent court issued an eviction order. Local government must plan and budget for such an eventuality and can be ordered by a court to provide emergency housing.²⁴⁰

The Stellenbosch municipality (in person Mr Robyn) acknowledge inadequate responses from all stakeholders to the challenge of providing (emergency) housing.²⁴¹ Timeous notification of evictions and designated areas would enable a better municipal response.

In this study, we propose the implementation of an Emergency Housing Programme in Consolidation Zones in accordance with (a) the need of the beneficiaries and residents, as well as (b) the structure, (c) function, and (d) purpose of the specific area.²⁴²

20.3.8 Student housing

Studentification is defined as the process where the original residents in the vicinity of tertiary institutions are gradually displaced due to an in-migration of students causing spatial dysfunctionality where, eventually, only the needs of a student subculture are catered for.²⁴³

We already mentioned that studentification is reshaping almost every residential neighbourhood in Stellenbosch (Town) and, in particular, those close to campus. This process is shaped by responses from private enterprise, households (i.e. local residents), students and local government (e.g. through land use management). Note that the new Stellenbosch zoning scheme by-law (October 2016) allows student accommodation (off-campus) in most residential-related zoning categories (as primary and consent use) under the definition of 'boarding house'.

In 2016, the number of students on the Stellenbosch campus comprised about 28% of the estimated population in Stellenbosch (Town). This is more or less the same proportion as in 2011, i.e. minimal change in the ratio of students to population. However, the small change in the number of students does not reflect other factors pertaining to these students, for example changes in *accommodation requirements*, spending patterns and modes, times and distance of travel.

It is student accommodation requirements that lead to studentification as a result of pent-up demand, i.e. demand that cannot be satisfied because of a shortage of accommodation on campus. It is recommended that the Municipality (together with the Stellenbosch University) closely monitor this process at neighbourhood and town level to track changes in socio-spatial relations.

20.3.9 Strategic guidelines

- Provide adequate, affordable, accessible, resource-efficient, safe, resilient, well-connected and well-located housing, with special attention to the proximity factor and the

²³⁹ <https://www.iol.co.za/news/south-africa/spike-in-illegal-evictions-at-western-cape-farms-10300536>, viewed on 26 May 2018.

²⁴⁰ Western Cape High Court, Case No: 9443/14, 30 August 2017.

²⁴¹ Comment made by Mr Robyn at a meeting on 12 February 2018.

²⁴² The identification and planning of (new) emergency housing sites must be part the annual review of the MIDP.

²⁴³ Donaldson, R., Benn J., Campbell, M. and de Jager, A, 2014, *Reshaping urban space through studentification in two South African urban centres*, 2014.

strengthening of the spatial relationship with the rest of the urban fabric and the surrounding functional areas.²⁴⁴

- Residential (and associated non-residential) land development must be guided by the 'statement of vision' as set out in **Part B** of this report and based on the specifications of the applicable land-development area.
- The following strategic guidelines are proposed to steer government-driven land development:
 - Prioritise the implementation of housing delivery programmes in accordance with the proposed investment framework, hierarchy of nodes and designated land-development areas.
 - Prioritise the implementation of the *Integrated Residential Development Programme* in the Droë Dyke/Libertas Transformation Zone and in the following Consolidation Zones (in order of priority): Kayamandi, Jamestown, Idas Valley, Cloetesville and Klapmuts.
 - Prioritise the implementation of the *Social Housing Programme* in the following Transformation Zones: Droë Dyke/Libertas and STOD (Adam Tas Corridor) and Consolidation Zones: Kayamandi, Jamestown, Idas Valley (more specifically, on erf 3363), Cloetesville, Klapmuts and Franschoek.
 - Prioritise the upgrading of informal settlements.
 - Implement an Emergency Housing Programme in Consolidation Zones in accordance with (a) the need of the beneficiaries and residents, as well as (b) the structure, (c) function, and (d) purpose of the specific area.²⁴⁵
 - Provide and maintain municipal services and infrastructure in Inclusion Zones to set norms and standards for each service.
 - Conduct due diligence assessments and/or feasibility studies of proposed government-driven land developments.
- The following strategic guidelines are proposed to steer private-sector-driven land development in the urban areas:
 - Encourage developers to offer a gradient of residential price classes in larger developments in Transformation Zones and on well-located land outside these zones. This can include on-site or off-site inclusionary housing opportunities.
 - Prioritise high-density, mixed-use and transit-oriented development in Transformation Zones.
 - Create co-investment opportunities based on appropriate implementation and incentive plans and/or integrated business models.
 - Land-development applications should quantitatively and qualitatively consider the applicable growth-and-development criteria by land-development area.

In terms of these guidelines, the Transformation Zones are targeted to accommodate the bulk of new residential supply (to be built between 2016 and 2036) in the municipal area — the commissioning of a precinct-planning exercise to plan future urban intensification/expansion in these areas must follow the UDS study.

21 MSDF (SPATIAL) GUIDELINES APPLIED (MUNICIPALITY-WIDE)

Table D9 references how we addressed the spatial guidelines identified as part of previous planning processes in a municipality-wide context.

Table D9 Application of MSDF spatial guidelines (municipality-wide)

²⁴⁴ United Nations, New Urban Agenda, January 2017 (*Resolution adopted by the General Assembly on 23 December 2016*).

²⁴⁵ The identification and planning of (new) emergency housing sites must be part the annual review of the MIDP.

Some of the proposed changes to 2013 MSDF (but not approved in 2017)		Proposed outcomes in UDS
1	Significant densification of existing neighbourhoods located in the proximity of major transport infrastructure and Stellenbosch University	Addressed as part of designated LDAs
2	Establishment of an urban restructuring zone along the Helshoogte/Banhoek Road corridor for the development of high-density residential accommodation, together with relevant non-residential facilities	Addressed as part of designated LDAs
3	Identification of the Dennesig area bounded by Adam Tas Road/R44, Merriman Avenue, Bird Street and Molteno Road as a primary densification and development intensification area for the establishment of blocks of flats according to a predetermined pattern on clustered erven with heights of up to 6 storeys, subject to certain performance criteria mixed with non-residential facilities	Addressed as part of designated LDAs
4	The identification of Jonkershoek as a potential development node for the establishment of economic opportunities and limited residential accommodation with only the basic provision of non-residential facilities to prevent future expansion of the residential area	Addressed through the Op-die-Bult housing project
5	Prioritising the development of the Koelenhof, Vlottenburg and Klapmuts nodes to ensure effective integrated human settlement development linked to major transport infrastructure	Addressed as part of designated LDAs linked to hierarchy of nodes
6	Creating new development areas to accommodate appropriate development for the northwards extension of Stellenbosch (Town)	'Northern Extension' addressed as part of designated LDAs and urban edge demarcation
7	Designation of heritage conservation areas and places	To be addressed in work done by heritage specialist
8	Accommodating the growth and development planning of the University of Stellenbosch	Addressed as part of designated LDAs

22 LAND DEVELOPMENT GUIDELINES APPLIED BY SELECTED NODE

The following section includes the application of the proposed land development guidelines by node (*i.e. at the appropriate planning level*).

22.1 STELLENBOSCH (TOWN)

The *Status Quo Report* includes a detailed settlement-area assessment of Stellenbosch (Town).²⁴⁶ The settlement-area assessment includes findings about, amongst others, the following organising elements of 'living' in the town:

- Population size and number of household
- Population densities
- Share of the population by grouping (and, by implication, racial segregation)
- Household income
- Ownership and housing affordability
- Property market analysis
- Provision of social amenities
- Provision and capacity of infrastructure
- Urban densities and footprint
- Environmental sensitivities (including the use of resources, e.g. agricultural land) as illustrated on a composite environmental map

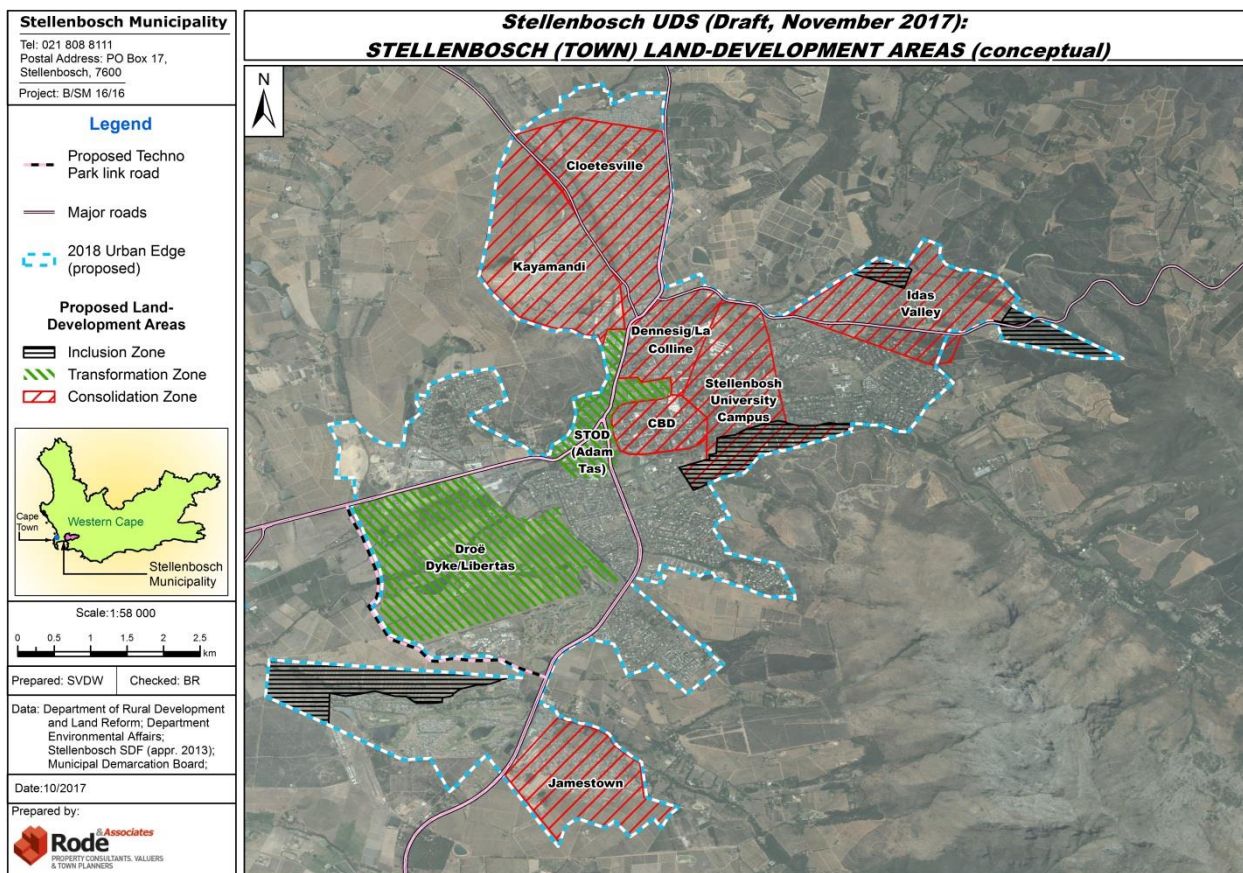
The *Status Quo Report* also includes the listing of all the prioritised community-identified needs.

²⁴⁶ See pages 191–201 in *Status Quo Report* by Rode, May 2017.

22.1.1 Land-development areas

We have categorised Stellenbosch (Town) in this report as the first-tier priority investment node in the municipal area. This investment rationale is reflected in the designation of all *types of land-development areas* in the town, i.e. priority investment in preferred growth areas. **Map D5** includes the designated land-development areas within the town of Stellenbosch, which are the following:

- Transformation Zones: Droë Dyke/Libertas and STOD (Adam Tas Corridor).
- Consolidation Zones: Kayamandi, Cloeteville, Idas Valley, Jamestown, Dennesig/La Colline, Stellenbosch University Campus area and the CBD.
- Inclusion Zones: Erf 4 (De Zalze); campus area south of the Eerste River; Portion 2 of Farm 490 (Stellenbosch Mountain Retreat); Portion 7 of Farm 490; and Portions 6 and 4 and Remainder of Farm 167.



Map D5: Stellenbosch (Town): Land-development areas (conceptual)

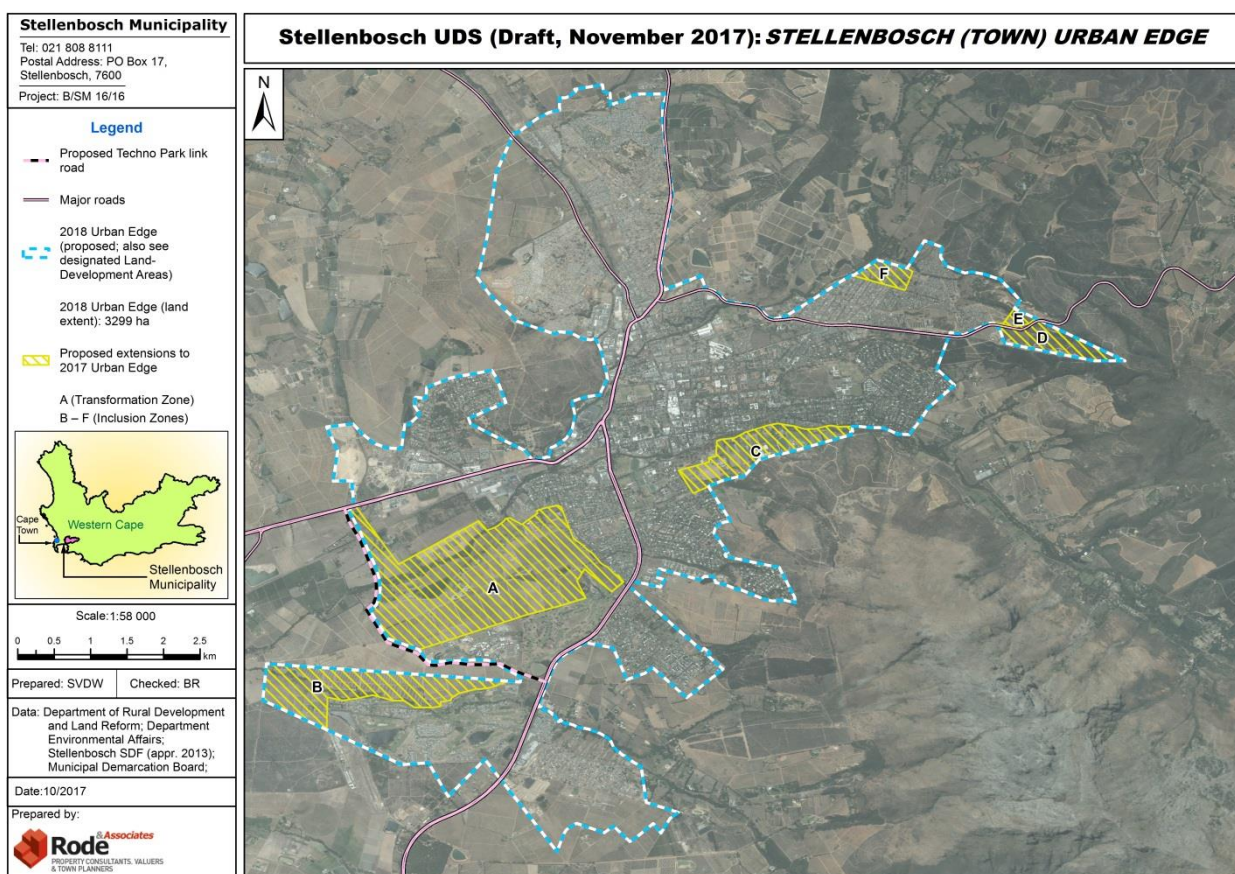
22.1.2 Urban edge

The proposed changes to the Stellenbosch (Town) urban edge are based on the principles mentioned in **§15.3**. **Map D6** and **Table D10** list these proposed changes, which includes the following extensions:

- Transformation Zone marked as 'A' on **Map D6**: Droë Dyke/Libertas - The designated land outside the current urban edge is included with the alignment of the proposed Technopark Link Road as allowable limit of urban development
- Inclusion Zone marked as 'B' on **Map D6**: Erf 4 (De Zalze)
- Inclusion Zone marked as 'C' on **Map D6**: Campus area south of the Eerste River
- Inclusion Zone marked as 'D' on **Map D6**: Portion 2 of Farm 490 (Stellenbosch Mountain Retreat)
- Inclusion Zone marked as 'E' on **Map D6**: Portion 7 of Farm 490

- Inclusion Zone marked as 'F' on **Map D6**: Portions 6 and 4 and Remainder of Farm 167

Table D10				
Changes to urban edge: Stellenbosch (Town)²⁴⁷				
Town	Inclusion	Exclusion	'Urban' land extent (ha)	
			Current	Proposed
Stellenbosch (Town)	Five (5) areas designated as Inclusion Zones ; One (1) area designated as Transformation Zone	-	2 666	3 299



Map D6: Stellenbosch (Town) urban edge

22.1.3 Land available for development

Table D11 includes the 20-year demand for land in Stellenbosch (Town) and the developable land available (*as a conservative estimate*) inside the proposed urban edge.

Table D11			
Land surplus/shortage (ha) by scenario within proposed urban edge by 2036			
Stellenbosch (Town)			
	Business- as-usual	Consensus	Junk
Land Development Area	Developable land available by LDA		
Transformation Zone: Droë Dyke/Libertas	300	300	300

²⁴⁷ Reference to 'area' can include one or more cadastral units.

Transformation Zone: STOD (Adam Tas Corridor) ²⁴⁸	72	72	72
Consolidation Zone: Kayamandi ²⁴⁹	86	86	86
Consolidation Zone: Jamestown	60	60	60
Consolidation Zone: Idas Valley	20	20	20
Remaining area within current urban edge ²⁵⁰	100	70	50
Sum total of available developable land in LDAs	638	608	588
Cumulative gross land extent required by scenario²⁵¹	975	698	512
Gross land extent (surplus/shortage)	-337	-90	76

The **Business-as-usual** and **Consensus** scenarios show that by 2036, there is likely to be a shortage of developable land at the specified densities. Note that the sum of the developable land in the two transformation zones is more than double the available land in the other zones. The development strategy is to facilitate complementary and supplementary land uses, viz. residential, commercial and a low-key industrial component aligned to, and focused on, tertiary-sector economic activity (i.e. expected land take-up by the market).

We propose the implementation of the IRDP, Social Housing, UISP and emergency housing programmes in Stellenbosch (Town). The implementation of these programmes will provide much needed housing opportunities and *increase dwelling and population densities*.

In the next two sections, we provide the high-level analysis used to designate the two Transformation Zones. *This work must be followed by the proposed precinct-planning exercise to ensure the desired land-utilisation outcomes.*

22.1.4 Transformation Zone: STOD (Adam Tas Corridor)

The Sustainable Transit Orientated Development (STOD) approach to spatial planning was first introduced in the MSDF 2013 and stemmed from work done by the Integrated Infrastructure Committee (IIC). It also features prominently in two subsequent planning reports.²⁵² This approach was advocated to radically redefine the future spatial development of Stellenbosch (Town) around a set of high-density development nodes built around integrated public transport services, e.g. a formalised taxi service.

Taking this spatial concept forward, seven nodal focus points were identified in the planning reports: four along the Adam Tas Corridor, two next to the R44 on the southern side of Stellenbosch and one next to the Helshoogte Road near Idas Valley (see **Map D2**). Of these seven, the municipality has pursued the Stellenbosch Station option as preferred 'start' to implementing the approach. The proposed implementation model focused on development opportunities framed as 'urban acupuncture' points to catalyse wider infrastructure-led development and regeneration in line with the STOD vision and are do-able over the short- to medium-term. As a result, a study was commissioned to investigate the role, function and character of the Adam Tas Corridor as a potential catalyst for change in the way the town works.²⁵³

²⁴⁸ Source: E-mail correspondence received from Mr T Vermeulen (Royal HaskoningDHV) on 12 September 2017; We assume that developable land is available within the STOD study area to accommodate the estimated 'urban development potential'.

²⁴⁹ Source: *Northern Extension, Draft Feasibility Report*, January 2016 and confirmed at a meeting with Mr D Lombaard on 15.9.2017.

²⁵⁰ Assuming that about 10% of the gross demand for land can be accommodated as 'infill' development, except for industrial; includes backyard and second dwellings.

²⁵¹ Using the following densities: Business-as-usual scenario (Houses <80 m² for the indigent and non-indigent = 40 du/ha; Houses >80 m² for non-indigent = 7 du/ha; Flats = 60 du/ha; Townhouses = 25 du/ha); Consensus and Junk scenarios (Houses <80 m² for the indigent and non-indigent = 65 du/ha; Houses >80 m² for non-indigent = 10 du/ha; Flats = 60 du/ha; Townhouses = 25 du/ha).

²⁵² *Stellenbosch Town Spatial Development Framework* (SPLUMA compliant; draft), May 2016 and the *Stellenbosch Quo Vadis Report*, August 2014.

²⁵³ *Sustainable Transit Orientated Development Study: Adam Tas Corridor*, June 2017.

As mentioned, the findings of the STOD study are to obtain a more accurate estimation of the economic benefits and cost of using the Adam Tas Corridor as a key spatial- and economic-restructuring intervention in the town. It proposes for the municipality to take the lead role in developing its municipal landholdings (i.e. the Van Der Stel Sports grounds and parcels of land north of Merriman Ave) as catalyst for development. However, this role is further defined in the following two steps (summarised):

1. Include and prioritise in municipal planning the implementation of the STOD concept in the Adam Tas Corridor
2. Initiate more detailed precinct planning for the study area

Note that this area has been identified as a Transformation Zone, i.e. as a preferred growth area and the subject of a detailed precinct-planning exercise.

We caution that, from studying the literature,²⁵⁴ it is clear that public-transport ridership does not drive property-development decisions around transit nodes. Transit interchanges are merely an amenity that local residents and businesses require, not a driver of market demand and value. Developers regard the transit node as a bonus, not an incentive. There is consensus that, while TOD could give impetus to a node, market forces ultimately drive the successful development of an area. The TOD literature states categorically (and unsurprisingly) that profitability is the critical criterion and driver of a successful TOD.

We also caution that the creation of a civic precinct, e.g. to place new municipal offices on the Van Der Stel Sportsgrounds, would not by itself, provide the impetus for market-related land intensification.²⁵⁵ For example, the notion that the focus of public investment in a civic precinct will create opportunities for private-sector investment has not materialised in Wynberg CBD in Cape Town (even with Wynberg CBD being a key transit node).²⁵⁶

Furthermore, TOD has been found not to be successful in stagnating areas already in distress and in industrial dominant (blue-collar) areas and neighbourhoods that lack pre-existing strong property market demand, economic and population growth trends and urban consolidation (e.g. urban densification is happening anyway for reasons unrelated to transport).

22.1.5 Transformation Zone: Droë Dyke/Libertas

22.1.5.1 Study area ('the site')

The site, mostly greenfields, lies between Technopark and the Stellenbosch Golf Course to the south, Die Boord to the east, Main Road 310 to the north and the proposed new Technopark Link Road to the west.

22.1.5.2 Site-specific development rationale

We use the growth-and-development criteria applicable to a Transformation Zone to briefly outline the reasons for designating the site as a Transformation Zone. This is done in the order in which the criteria is presented in **§15.2**. We consider available information at 'town level' and emphasise that a precinct-planning exercise must follow.

²⁵⁴ For the literature review, the writer of this report is greatly indebted to Johan Gericke who generously allowed him to cite heavily from his unpublished paper titled Critical criteria for successful TDAs, dated 27.11.2014. Note that Transit Oriented Development (US) is also known as TDA = Transport Development Area (British).

²⁵⁵ There is mention of locating new municipal offices on the Van Der Stel Sportsgrounds (also see

§15.5)

²⁵⁶ Own research.

- *Demand for residential and non-residential land*: Urban expansion to accommodate new demand for land (in line with the concept of 'opening up of new bio-regionally appropriate areas for urban expansion' stated in the 'Shaping Stellenbosch' initiative).
- *Ownership, value and tradability of land (focus on the use of municipal- and state-owned properties)*: properties include private- and public-owned land. Municipality to start immediately with steps to acquire state-owned land.
- *Housing typology (including inclusionary-housing options)*: Affordable rental housing to be provided in Restructuring Zone; implement the *Integrated Residential Development Programme*; opportunity to create socio-economic integration by offering a gradient of residential price classes.
- *Investor sentiment (i.e. market signals and location preferences)*: Positive investor sentiment, i.e. seen by the market as 'ideal' location to invest in 'ideal' land-use (of which the approved SawMill development and proposed Fleurbaai/Libertas development are testament); opportunity to shape *public- and private-sector co-investment* in concert with mutual long-term interests.
- *Economic opportunities*: Stellenbosch University expressed interest in using part of Fleurbaai/Libertas development for higher-education functions;²⁵⁷ opportunity to facilitate complementary and supplementary land uses, viz. residential, commercial and a light industrial component. See **Part C** for the economic and employment benefits derived from public- and private-sector investment in infrastructure and top structures.
- *Densities*: Opportunity to achieve high dwelling and population densities *within the precinct*.
- *Accessibility and mobility (i.e. for all modes of transport; transport infrastructure)*.
- *Land capacity (developable land)*: The site constitutes almost 50% of the identified developable land in and around Stellenbosch (Town).
- *Land-use value/diversity/mix ('highest and best' use; co-locate compatible land uses)*: To be considered as part of precinct-planning exercise.
- *Urban-edge options (considering, for example, the iron inventory by node)*: The designated land outside the current urban edge to be included with the alignment of the proposed Technopark Link Road as allowable limit of urban development; implement and monitor iron inventory of developable land to prevent pent-up demand and excessive house-price premiums developing.
- *Infrastructure (optimise the use of existing infrastructure; invest in environmentally-friendly technologies and green infrastructure)*: Sufficient infrastructure capacity is available except for the need to construct a R35 million water reservoir.²⁵⁸
- *Heritage and environmental sensitivities*: High and moderate heritage significance;²⁵⁹ on-site biodiversity and ecological support areas not identified as 'developable land'.
- *Climate-change response options*: Westward expansion of Stellenbosch (Town) favoured in terms of vulnerability to climate change; opportunity for municipality to adopt and implement specific adaptation options.
- *Integration ('on-site' and with rest of town and region)*: The precinct is well-located in the context of connectivity with key land-uses in Stellenbosch (Town) and Cape Town functional region; on-site and off-site land-use/transport integration to be considered as part of the precinct planning.
- *Architecture and urban design guidelines*: To be considered as part of precinct planning.
- *Implementation strategy (including new financial and institutional models)*: To be considered as part of precinct planning.

As mentioned, the work to be done in facilitating the desired land-utilization outcomes in the two Transformation Zones, would allow for a *planning scope and scale* to consider most of the change tools at town level.

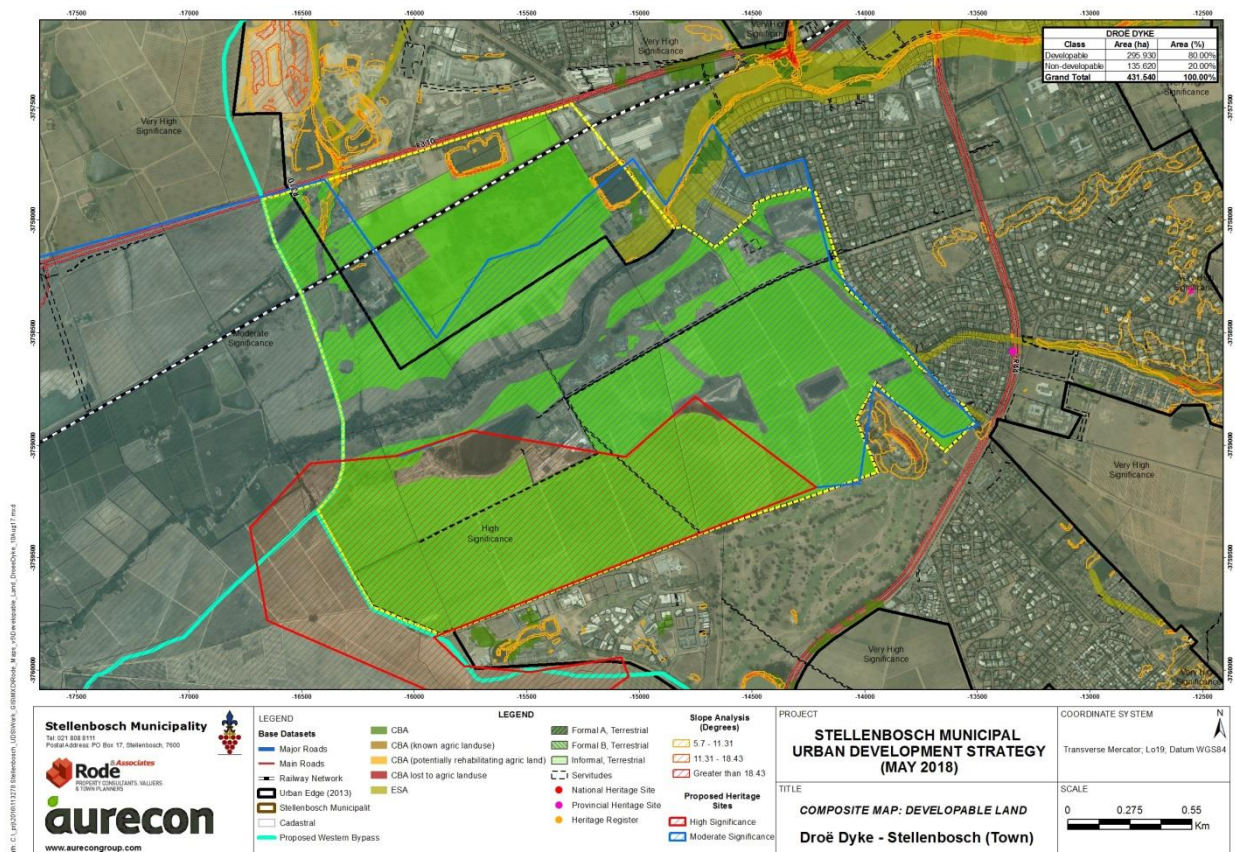
22.1.5.3 Site-specific land capacity

²⁵⁷ Unsigned letter dated 15 December 2016 from Stellenbosch University to Dr W Roux CEO, Fleurbaai (Pty) Ltd (Source: Stellenbosch Municipality)

²⁵⁸ Comment made by Mr D Lombaard at a meeting held on 17 August 2017.

²⁵⁹ Note that 'high significance' is in the bottom section of the specific ranking scale.

It is estimated (*as a conservative estimate*) that about 300 hectares of developable land is available on-site (see **Map D7**).



Map D7: Droë Dyke/Libertas Transformation Zone: Developable land (approximate)

22.1.5.4 Site-specific link between land-use and transport planning

The site lies in close proximity to and with easy access to all high-order land uses in Stellenbosch (Town). The Cape Town functional region is also easily accessible from the site via the existing road network. The development of an on-site transit-node with a railway station on the line that passes through the site, can add to this accessibility. The existing and planned road network also has the potential to accommodate (semi) dedicated right of way for public transport to the north, west and south of the site. The site, therefore, lends itself to achieving land use/transport integration, more so than any other location around Stellenbosch (Town).

Land use/transport integration must be a key focus area of precinct planning. In this regard, the following travel characteristics must be considered, viz. (a) where do trips start and end, and (b) what transport modes are used and why? Local trips could be maximised by developing residential units (trip producers or trip origins) for the full spectrum of people who would access the other on-site land uses (trip attractors or destinations). This includes social facilities such as schools, primary health care and places of worship, daily retail needs and basic leisure, such as open spaces. The Stellenbosch Municipality can also play a lead role by locating 'new' municipal offices in this Transformation Zone. The land-use mix should ensure minimal distances between various land uses, given other constraints. Adequate densities should be achieved to provide the thresholds required to make commercial and social facilities viable (as well as public transport).

Some activities that might not be available on the site are within comfortable walking and cycling (NMT) distance. For example, the office park (Technopark), hospital, industrial area, convenience retail (e.g. the SawMill precinct) and Stellenbosch University facilities 'off-the-main-campus'.

The essence of any densification strategy must be to ensure that an increasing number of short trips can be made by walking and cycling, while an increasing number of longer trips can be made by transit, rather than by car. The aim should be to accommodate as many trips as possible firstly by NMT, then by means of public or shared transport services. Shared services include ride sharing, Uber and related means of better utilising motorised vehicles. With the possibility of a new railway station in the vicinity of the SawMill Precinct, internal transport services should be designed in a radial manner to integrate access between the station and most land uses on the site. In addition, road-based public transport services should be designed to connect the site with major off-site trip generating zones, such as the town's CBD, the University's main campus and even surrounding districts of Cape Town and Somerset West.

Many of the possible on-site land uses would attract persons not living on the site. NMT infrastructure should be provided to also encourage on-site walking and cycling by these people. Ideally, the trips leaving from and arriving at the site by a particular mode should be balanced to optimise the utilisation of public transport capacity. For instance, if a full train arrives from the north and 200 persons disembark at the site, another 200 persons should board to replace their seats in the southbound direction.

22.2 FRANSCHHOEK

The *Status Quo Report* includes a detailed settlement-area assessment of Franschhoek.²⁶⁰ The settlement-area assessment includes findings about, amongst others, the following organising elements of 'living' in the town:

- Population size and number of household
- Population densities
- Share of the population by grouping (and, by implication, racial segregation)
- Household income
- Ownership and housing affordability
- Property market analysis
- Provision of social amenities
- Provision and capacity of infrastructure
- Urban densities and footprint
- Environmental sensitivities (including the use of resources, e.g. agricultural land) as illustrated on a composite environmental map

The *Status Quo Report* also includes the listing of all the prioritised community-identified needs and 2017/2018 budget allocations.

22.2.1 Land-development areas and urban edge

We have categorised Franschhoek in this report as a third-tier priority investment node in the municipal area. Note that, within Franschhoek, the Groendal/Langrug area has the highest priority for *public-sector infrastructure spend*. **Map D8** includes the designated land-development areas within Franschhoek, which are the following:

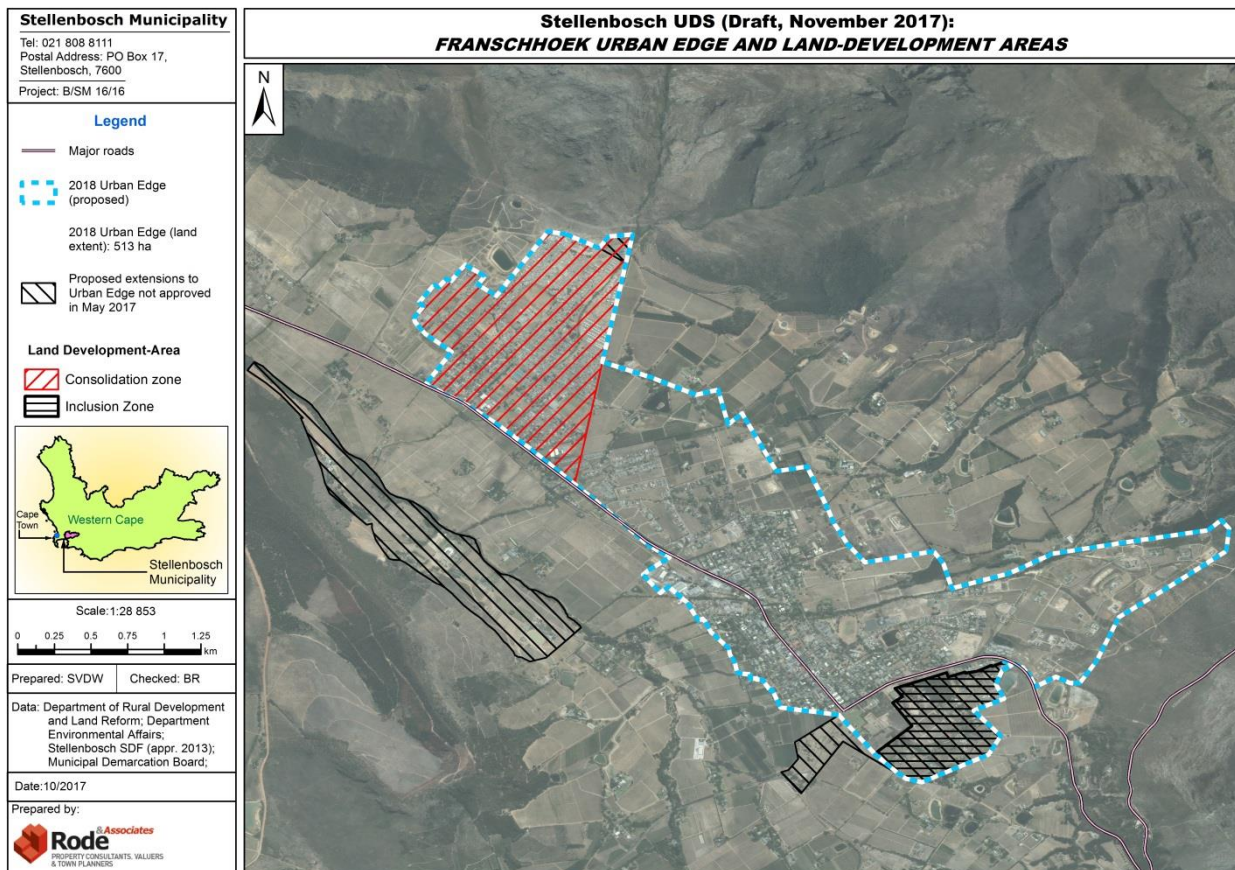
- Consolidation Zone: Groendal/Langrug
- Inclusion Zones: Farm 3227 (Dalubuhle Primary School) and erven south and east of Huguenot Monument.

The proposed changes to the Franschhoek urban edge are based on the principles mentioned in **§15.3. Map D8** and **Table D12** list these proposed changes, which includes the mentioned two Inclusion Zones as extensions.

²⁶⁰ See pages 202–211 in *Status Quo Report* by Rode, May 2017.

Table D12
Changes to urban edge: Franschhoek²⁶¹

Town	Inclusion	Exclusion	'Urban' land extent (ha)	
			Current	Proposed
Franschhoek	Two (2) areas designated as Inclusion Zones	-	474	513



Map D8: Franschhoek: Urban edge and land-development areas (conceptual)

22.2.2 Land available for development

Table D13 includes the 20-year demand for land in Franschhoek and the developable land available (*as a conservative estimate*) in the town and inside the current urban edge.

Table D13
Land surplus/shortage (ha) by scenario in Franschhoek by 2036

	Business-as-usual	Consensus	Junk
Sum total of available developable land	131	131	131
Cumulative gross land extent required by scenario ²⁶²	153	158	125
Gross land extent (surplus/shortage)	-22	-27	6

²⁶¹ Reference to 'area' can include one or more cadastral units.

²⁶² Using the following densities: Business-as-usual scenario (houses <80 m² for the indigent and non-indigent = 40 du/ha; houses >80 m² for non-indigent = 7 du/ha; flats = 60 du/ha; townhouses = 25 du/ha); Consensus and Junk scenarios (houses <80 m² for the indigent and non-indigent = 65 du/ha; Houses >80 m² for non-indigent = 10 du/ha; flats = 60 du/ha; townhouses = 25 du/ha).

The **Business-as-usual** and **Consensus** scenarios show that by 2036, there is likely to be a shortage of developable land at the specified densities. The development strategy is to facilitate the establishment of land uses complementary to the tertiary-sector-focused economy, viz. residential and commercial developments (i.e. expected land take-up by the market).

We propose the implementation of the Social Housing, UISP and emergency housing programmes in Franschhoek. The implementation of these programmes will provide much needed housing opportunities and *increase dwelling and population densities*.

22.2.3 Proposed planning intervention

We propose that any land-development application in Franschhoek, be considered as if within a Consolidation Zone.

22.3 KLAPMUTS

This section must be read together with the proposals in the Klapmuts Special Development Area (Draft Report).

The *Status Quo Report* includes a detailed settlement-area assessment of Klapmuts.²⁶³ The settlement-area assessment includes findings about, amongst others, the following organising elements of 'living' in the town:

- Population size and number of household
- Population densities
- Share of the population by grouping (and, by implication, racial segregation)
- Household income
- Ownership and housing affordability
- Property market analysis
- Provision of social amenities
- Provision and capacity of infrastructure
- Urban densities and footprint
- Environmental sensitivities (including the use of resources, e.g. agricultural land) as illustrated on a composite environmental map

The *Status Quo Report* also includes the listing of all the prioritised community-identified needs and 2017/2018 budget allocations.

22.3.1 Land-development areas and urban edge

We have categorised Klapmuts in this report as a second-tier priority investment node in the municipal area. **Map D21** includes the designated land-development areas at Klapmuts, which are the following:

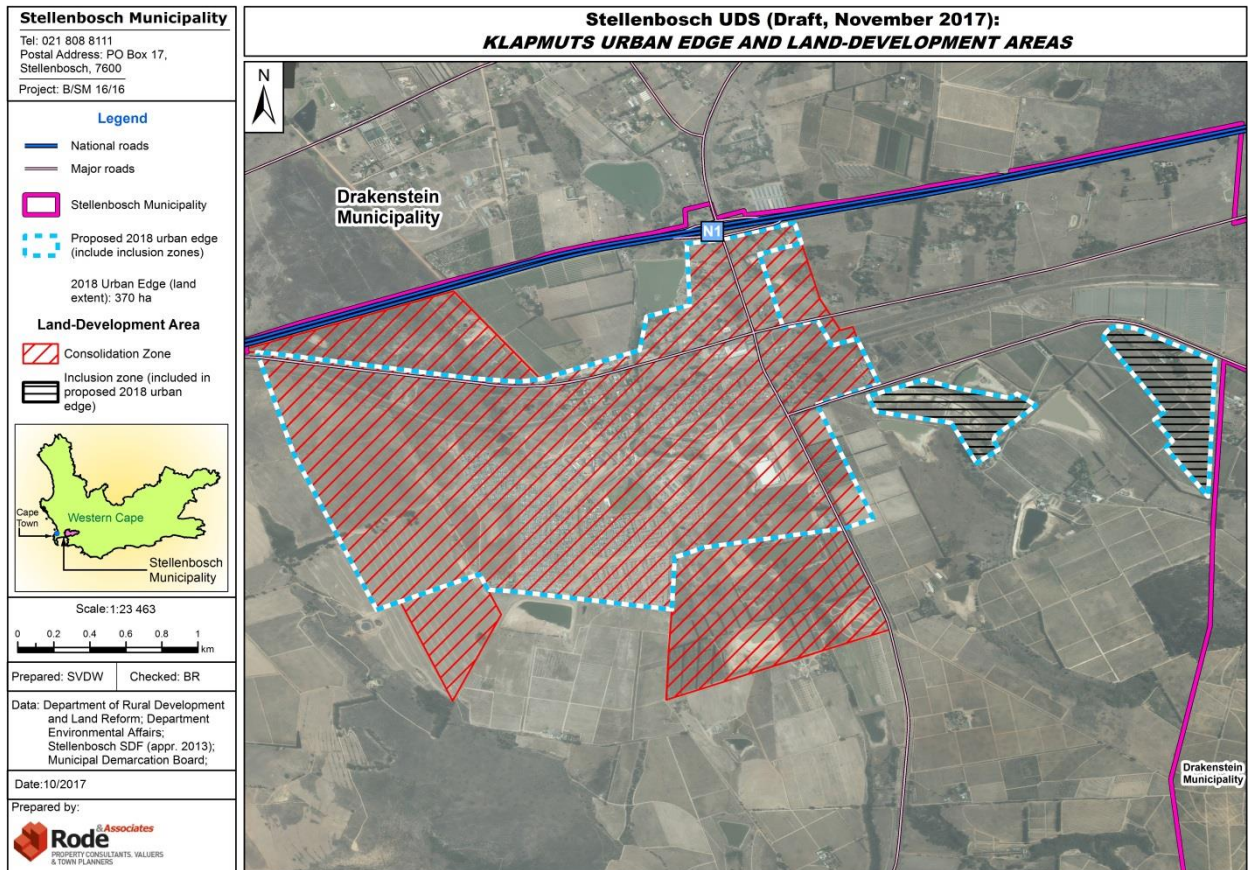
- Consolidation Zone (inside the urban edge): Entire urban area
- Consolidation Zone (outside the urban edge): 4 designated areas, viz. Farm 736, Portion 5 of Farm 742, Portion 2 of Farm 742 and Erf 768.
- Inclusion Zone: Two separate portions of Portion 41 of Farm 748.

Note that the designated Consolidation Zone within the urban edge has the highest priority for *public-sector infrastructure spend*. The proposed changes to the Klapmuts urban edge are based on the principles mentioned in **§15.3. Map D9** and **Table D14** list these proposed changes, which includes the Inclusion Zone as extension.

²⁶³ See pages 212–221 in *Status Quo Report* by Rode, May 2017.

Table D14
Changes to urban edge: Klappmuts²⁶⁴

Town	Inclusion	Exclusion	'Urban' land extent (ha)	
			Current	Proposed
Klappmuts	Two (2) areas designated as Inclusion Zone	-	333	370



Map D9: Klappmuts: Urban edge and land-development areas (conceptual)

22.3.2 Land available for development

Table D15 includes the 20-year demand for land in Klappmuts and the developable land available (*as a conservative estimate*) inside the current urban edge.

Table D15
Land surplus/shortage (ha) by scenario in Klappmuts by 2036

	Business-as-usual	Consensus	Junk
Sum total of available developable land	146	146	146
Cumulative gross land extent required by scenario ²⁶⁵	83	60	45
Gross land extent (surplus/shortage)	63	86	101

²⁶⁴ Reference to 'area' can include one or more cadastral units.

²⁶⁵ Using the following densities: Business-as-usual scenario (houses <80 m² for the indigent and non-indigent = 40 du/ha; houses >80 m² for non-indigent = 7 du/ha; flats = 60 du/ha; townhouses = 25 du/ha); Consensus and Junk scenarios (houses <80 m² for the indigent and non-indigent = 65 du/ha; houses >80 m² for non-indigent = 10 du/ha; flats = 60 du/ha; townhouses = 25 du/ha).

Table D15 shows that by 2036, there is likely to be a surplus of developable land when considering all three scenarios at the specified densities. The development strategy is to facilitate complementary and supplementary land uses, viz. industrial and residential to focused secondary-sector economic activity.

We propose the implementation of the IRDP, Social, UISP and emergency housing programmes in Klapmuts. The implementation of these programmes will provide much needed housing opportunities and *increase dwelling and population densities*.

22.3.3 Proposed planning intervention

Distance-wise, Klapmuts is actually slightly closer to Paarl (13,9 km, measured to the corner of Lady Grey and Main St) than to Stellenbosch town (16,6 km, measured to 84 Bird St). On top of that, Klapmuts straddles the border of the two municipalities. Thus, we propose that the Municipality, in collaboration with Drakenstein municipality, commission the *drafting of a long-term development strategy for Klapmuts and surrounds*. In this regard, we recommend an approach and methodology similar to the drafting of this report.

22.4 'OTHER SETTLEMENTS'

The term 'other settlements' includes the settlement areas of Dwarsrivier, Wemmershoek, La Motte, Groot Drakenstein, Raithby, Vlottenburg, Koelenhof, Lynedoch and Muldersvlei. The settlement area of Jonkershoek is also included under this term in the Integrated Human Settlement Plan.

These settlements are recognised as areas that are experiencing specific development pressure where incremental approaches to development, regulation and maintenance and upgrading of infrastructure must be considered to accommodate natural progression. In this regard, we designate the entire area within the respective urban edges of all the settlements, except Muldersvlei, Koelenhof, Vlottenburg and Raithby, as Consolidation Zones. *Note that the priority of spending within the Consolidation Zones is linked to the hierarchy of nodes (see Table D4).*

The *Status Quo Report* includes detailed settlement-area assessments with findings about, amongst others, the following organising elements of 'living' in these settlements:

- Population size and number of household
- Population densities
- Share of the population by grouping (and, by implication, racial segregation)
- Household income
- Ownership and housing affordability
- Property market analysis
- Provision of social amenities
- Provision and capacity of infrastructure
- Urban densities and footprint
- Environmental sensitivities (including the use of resources, e.g. agricultural land) as illustrated on a composite environmental map

The *Status Quo Report* also includes the listing of all the prioritised community-identified needs and 2017/2018 budget allocations for each settlement.

In the next sections, we discuss certain aspects of historic land development in these settlements in the context of the growth-and-development paths created in **Part C** of this report.

22.4.1 Land take-up

Table D16 lists the total take-up of land within the respective urban edges of the settlements between 2000 and 2015. This combined figure shows a lower demand for land, over this period, than in Stellenbosch (Town) and Franschhoek. Although the combined figure is higher than the corresponding figure for Klapmuts (viz. 56 ha), the land take-up in Klapmuts is not insignificant as we regard the town’s growth potential as high with a *sustainable growth trajectory* for secondary-sector economic activities.

Table D16 Historic gross land take-up by settlement 2000-2015		
Settlement	Land take-up (ha) (rounded to 1)	Percentage share (rounded to 1)
Groot Drakenstein	1	1
Dwarsrivier	28	39
La Motte	12	17
Lynedoch	3	4
Muldersvlei	9	13
Raithby	3	4
Vlottenburg	5	7
Wemmershoek	5	7
Koelenhof	6	8
Total	72	100

Source: *Status Quo Report* by Rode, May 2017 (input provided by Aurecon)

It is notable that, except for non-residential development in Muldersvlei — almost 40% of all land take-up — the remaining land development was residential (with associated facilities and infrastructure). For example, Nooitgedacht Village constitutes the entire 6 hectare take-up in Koelenhof over the analysis period.

22.4.2 Allocation based on positioning strategy

Table **D17** shows the allocation of the growth in demand for each land-use type (land extent and residential units) to the ‘other settlements’ by scenario and based on the applied positioning strategy.

Table D17 Allocation of cumulative growth in demand for land by 2036 to ‘other settlements’ By scenario and based on positioning strategy						
Type	Business-as-usual		Consensus		Junk	
	Land m ²	Units	Land m ²	Units	Land m ²	Units
Houses <80 m ² for the indigent	-	-	-	-	-	-
Houses <80 m ² for non-indigent	388 184	3235	266 877	3558	218 354	2911
Houses >80 m ² for non-indigent	171 179	245	80 730	161	44 699	89
Flats	20 939	231	23 362	258	17 197	190
Townhouses		15		16		12
Retail buildings	12 165	-	4 803	-	2 594	-
Industrial buildings	40 929	-	15 977	-	9 906	-

Office buildings	5 790	-	5 790	-	2 895	-
Sub-total (of top-structure improvements)	639 187	-	397 540	-	295 645	-
Infrastructure area	639 187	-	397 540	-	295 645	-
Total gross land area required (m²)	1 278 374		795 080		591 290	

The above allocation does not include the provision of houses for the indigent in any of the settlements.

22.4.3 Land available for development

Table D18 includes the 20-year demand for land in the settlements and the developable land available (*combined, and as a conservative estimate*) inside the respective urban edges.

Table D18			
Land surplus/shortage (ha) by scenario in 'other settlements' by 2036			
	Business-as-usual	Consensus	Junk
Sum total of available developable land	453	453	453
Cumulative gross land extent required by scenario ²⁶⁶	128	80	59
Gross land extent (surplus/shortage)	325	373	394

Table D13: Land available for development: 'other settlements'

Needless to point out that by 2036, there is likely to be a significant surplus of developable land (as a combined figure) available to accommodate new demand. As mentioned, most of these settlements are located in rural settings, with surrounding land of very high heritage, environmental and agriculture significance. *Thus, the intent should be to use developable land within the respective urban edges to create inclusive and sustainable settlements/ neighbourhoods.* Note the key considerations of climate change adaptation and infrastructure capacity (with associated priority of spending), in achieving the land-utilization outcome per settlement.

The MSDF 2017 proposed a (future) dwelling unit density of 25 du/ha in these settlements; a figure with which we concur given the rural settings, character and sense of place.

22.4.4 Urban edges

Table D19 includes the proposed changes to the respective urban edges of the settlements. These are based on the principles mentioned in **§15.3**. The changes to extend the urban edge, are exclusively to include areas with historically approved land-use rights *for an extended urban function (at scale and location)*.

Table D19	
Proposed urban edge changes in the 'other settlements'²⁶⁷	
	'Urban' land extent (ha)

²⁶⁶ Using the following densities: Business-as-usual scenario (houses <80 m² for the non-indigent = 40 du/ha; houses >80 m² for non-indigent = 7 du/ha; flats = 60 du/ha; townhouses = 25 du/ha); Consensus and Junk scenarios (houses <80 m² for the non-indigent = 65 du/ha; houses >80 m² for non-indigent = 10 du/ha; flats = 60 du/ha; townhouses = 25 du/ha). Figures rounded.

²⁶⁷ Reference to 'area' can include one or more cadastral units.

Town	Inclusion	Exclusion	Current	Proposed
Groot Drakenstein	Two (2) areas designated as Inclusion Zones	-	96	126
Dwarsrivier	One (1) area designated as Inclusion Zone	-	296	310
Raithby	One (1) area designated as Inclusion Zone	-	44	56
Vlottenburg	One (1) area designated as Inclusion Zone	-	76	150
Koelenhof	One (1) area designated as Inclusion Zone	-	178	267
La Motte ²⁶⁸	-	Two environmentally sensitive areas	67	51
Wemmershoek	-	One environmentally sensitive area	64	47
Lynedoch	-	Area surrounding proposed urban edge	75	12
Muldersvlei	-	No urban edge demarcated	103	0
Jonkershoek	Settlement area designated as Inclusion and Consolidation Zone			

23 GOVERNMENT-DRIVEN HOUSING SUPPLY

This section details how the UDS investment rationale impacts on government-driven housing supply in the municipal area. We summarise the municipal housing pipelines approved by Council since 2016 and propose a new pipeline.

The use of the wording 'Droë Dyke' in this section refers to the site description and development rationale described in **§22.1.5**.

23.1 Housing pipeline 2016

A housing pipeline was approved by Council on 15 June 2016 and submitted to the provincial Department of Human Settlements in a letter dated 28 July 2016. The pipeline covered a 10-year planning horizon but the identified projects was not conceptualised as part of an Integrated Human Settlement Plan, i.e. aligned to strategic goals for human settlement development.²⁶⁹

The *housing 'backlog'* in the provincial Housing Demand Database was stated as 21 098 units with an expected annual increase of 1% to 22 671 units in 2024. The planned delivery of houses by 2023/2024 was set at approximately 8361 sites and 3847 units in five different towns/settlements (see **Table D20**). More than half of these opportunities were to be provided in Stellenbosch (Town) with the bulk, i.e. more than 80% of the total number, to be

²⁶⁸ Note that we designated Maasdorp (Portion 28 of Farm 1041 and Portion 27 of Farm 1041) as an Inclusion Zone.

²⁶⁹ Meeting with Messrs T Mfeya (Director), D Lombaard (Director), L Vanstavel, P Smit, K Mculu and L Kemp on 6 October 2016.

provided in the latter years. The housing typologies included opportunities to buy or rent in the 'give-away' bracket and lower house-price classes. Based on own calculations, and if the cost to provide a serviced site and a housing unit (top structure on an already serviced site) is considered to be R59 000 (including the installation of electricity) and R125 000 (including the cost for a geotech report),²⁷⁰ respectively, the sum total of the planned delivery until 2023/2024 amounts to about R974 million.

Table D21 includes the provincially-allocated medium-term housing budget for the Stellenbosch municipal area until 2019/2020.²⁷¹ The allocated amount to eleven projects (including the provincially-driven De Novo project) is R116,8 million. Considering that these funds also include 'pre-construction' funding,²⁷² the number of units that can be provided is limited.

²⁷⁰ As explained by Mr Vanstavel at the meeting held on 12 February 2018.

²⁷¹ Information provided by Mr L Welgemoed (WCG) on 16 November 2016 with reference to a meeting with representatives from the Stellenbosch Municipality on 14 November 2016.

²⁷² The funding includes tasks such as pre-feasibility studies and obtaining the required development rights.

Table D20: Housing pipeline 2016 – Funds requested by Stellenbosch Municipality: 28 July 2016																			
No	Start	Project name	Town	Erf / Farm no.	Land-owner	Size (ha)	Housing prog.	Housing type	No. of units	No. of sites	TOTAL	Budget cycle							
												2015 /16	2016 /17	2017 /18	2018 /19	2019 /20	2020 /21	Longer	
1	Current	Watergang: Kayamandi	Stellenbosch	-	-	-	UISP	-	-	295	295	X	X						
2	Current	Watergang: Kayamandi	Stellenbosch	-	-	-	IRDP	-	193	-	193	X	X						
3	Current	Jamestown	Stellenbosch	-	-	-	IRDP	-	162	42	162	X	X			X			
4	Current	Longlands: Vlottenburg	Vlottenburg	-	-	-	IRDP	-	144	-	144		X	X	X	X			
5	2018/19	Town Centre Kayamandi	Stellenbosch	-	-	-	UISP / Inst.	-	700	-	700				X	X	X	X	
6	Current	Zone O: Kayamandi	Stellenbosch	-	-	-	UISP	-	-	541	541		X	X	X	X	X		
7	2018/19	Langrug: Franschhoek	Franschhoek	-	-	-	UISP	-	-	1200	1200			X		X	X	X	
8	Current	Phase 4: Klapmuts	Klapmuts	-	-	-	IRDP	-	-	219	219		X	X	X				
9	2019/20	Kylemore	Kylemore	-	-	-	IRDP	-	-	-	171					X			
10	2019/20	Meerlust: Stellenbosch	Stellenbosch	-	-	-	IRDP	-	-	-	200					X	X		
11	Current	Enkanini: Kayamandi	Stellenbosch	-	-	-	UISP	-	-	1300	1300		X			X	X	X	
12	Current	Idas Valley	Stellenbosch	E13300	-	-	IRDP / FLISP	-	-	240	240		X	X					
13	2018/19	La Motte: Old Forest Station	Franschhoek	-	-	-	IRDP / FLISP	-	-	-	430				X	X	X		
14	2020/21	Lanquedoc	Lanquedoc	-	-	-	IRDP / FLISP	-	600	700	1300						X	X	
15	-	Jamestown (phase 2)	Stellenbosch	-	-	-	IRDP / FLISP	-	-	-	133						X		
16	-	Jonkershoek		-	-	-	IRDP	-	-	-	-								
17	2017/18	Idas Valley (Lindida)	Stellenbosch	-	-	-	IRDP / FLISP	-	-	220	220			X					
18		La Motte	Franschhoek	E2			IRDP				70								
19	2020/21	Infill dev: Idas Valley	Stellenbosch	P3/F1075	Stel Mun	6	IRDP / FLISP	Subsidy	126	-	126						X		
20	After 2020/21	Greenfield: Jamestown	Stellenbosch	Re/F527	Stel Mun	27,6	FLISP / IRDP / UISP	'Gap' housing / Subsidy	-	288	288					X		X	
21	After 2020/21	Greenfield: Klapmuts	Klapmuts	Re/P2/F744	Private	10,3	-IRDP / FLISP		100	350	350								X
22	After 2020/21	Greenfield: Kylemore	Kylemore	P4/F153 Re/P1/153	Private	29,4	IRDP / FLISP		170	-	170								X
23	2019/20	Infill dev: Cloetesville	Stellenbosch	E7001	Stel Mun	5,8	IRDP / FLISP		200	-	200					X			
24	After 2020/21	Greenfield: Droëdyke	Stellenbosch	-	Private / Gov	64,1 / 128,2	UISP		-	-	4000								X
25	-	Nietvoorbij: Stellenbosch	Stellenbosch	-	Gov.	30,26	-		-	700	-								
26	After 2020/21	Northern Ext: Stellenbosch	Stellenbosch	-	Private / Stel Mun	270	IRDP / FLISP		-	6000	-	6000							X
27	2018/19	Restructuring Zone	Stellenbosch	-	Private / Stel Mun	-	SH / CRU	-	100	-	100				X				
28	De Novo	This project is not included in the Stellenbosch Municipality's Housing Pipeline. It is, however, part of the provincial funding allocation.																	

Table D21: Housing pipeline 2016 – Funds allocated by WCG: 14 November 2016

No	Project name	Town	No. of units	No. of sites	TOTAL	Budget cycle (number of opportunities)											
						2016/17			2017/2018			2018/2019			2019/2020		
						sites	units	Funding ('000)	sites	units	Funding ('000)	sites	units	Funding ('000)	sites	units	Funding ('000)
1	Watergang: Kayamandi	Stellenbosch	-	295	295	258		7610									
2	Watergang: Kayamandi	Stellenbosch	193	-	193*			10230							100	12000	
3	Jamestown	Stellenbosch	162	42	162			9793									
4	Longlands: Vlottenburg	Vlottenburg	144	-	144												
5	Town Centre Regeneration Kayamandi	Stellenbosch	700	-	700			1385				250		12500		100	12000
6	Zone O: Kayamandi	Stellenbosch	-	541	541			1390	200	100	22000	100	100	17000			
7	Langrug: Franschoek	Franschoek	-	1200	1200*												
8	Phase 4: Klapmuts	Klapmuts	-	219	219*												
9	Kylemore	Kylemore	-		171												
10	Meerlust: Stellenbosch	Stellenbosch	-	-	200			200									
11	Enkanini: Kayamandi	Stellenbosch	-	1300	1300			1300									
12	Idas Valley	Stellenbosch	-	240	240*												
13	La Motte: Old Forest Station	Franschoek	-	-	430			442			2600						
14	Lanquedoc	Lanquedoc	-	-	700												
15	Jamestown (phase 2)	Stellenbosch	-	-	133												
16	Jonkershoek		-	-	-												
17	Idas Valley (Lindida)	Stellenbosch	-	220	220*			400									
18	La Motte	Franschoek			70												
19	Infill dev: Idas Valley	Stellenbosch	126	-	126												
20	Greenfield: Jamestown	Stellenbosch	-	288	288*												
21	Greenfield: Klapmuts	Klapmuts	100	350	350						350						
22	Greenfield: Kylemore	Kylemore	170	-	170												
23	Infill dev: Cloetesville	Stellenbosch	200	-	200												
24	Greenfield: Droëdyke	Stellenbosch	-	-	4000												
25	Nietvoorbij: Stellenbosch	Stellenbosch	700	-													
26	Northern Ext: Stellenbosch	Stellenbosch	6000	-	6000												
27	Restructuring Zone	Stellenbosch	100	-	100												
28	De Novo	-	-	-	3000			1600			2000			2000			
						34350				26950				31500			24000

* An Informal Settlement Upgrading Strategy, dated April 2015 was prepared for the Stellenbosch Municipality. In the report it was stated that the following opportunities will be funded: 1499 in Langrug (Franschoek), 1060 in Klapmuts (Erf 342), 570 in Jamestown (Farm 527), 440 in Idas Valley and 193 in Kayamandi. However, please note the actual funding allocations as itemised in the most recent information received from WCG.

23.2 Housing pipeline 2017

In 2017, the municipality prepared another housing pipeline that estimated a housing backlog of 18 298 applications.²⁷³ This housing pipeline listed a large number of housing projects and referenced work done since June 2016. In the next section we briefly describe the prioritised projects as well as those projects rolled over from 2016 (see **Tables D22** and **D23**).

Table D22 Projects in 2017 housing pipeline (annual review 2017–2020) ²⁷⁴		
Rollover projects	Prioritised projects	Projects with lower priority
Idas Vallley: <ul style="list-style-type: none"> Erf 11300 Erf 9445 (Lindida) 	Northern Extension	Nietvoorbij
Kayamandi: <ul style="list-style-type: none"> Housing project (187) Temporary housing units Town Centre 	Jamestown (Portion 4 of Farm 527 and Portion of Remainder of Farm 527)	Droë Dyke
	Vlottenburg Nodal Development	De Novo ²⁷⁵
	Stellenbosch Transit-oriented Development (STOD)	
	Botmaskop Work Yard (Beltana; Erf 3363)	
	Upgrading of informal settlements	
	'Bosdorpe' – Op-die-Bult (Jonkershoek), La Motte, Maasdorp, Meerlust	

Prioritised projects

23.2.1 Northern Extension

The proposed western-bypass, limited infill-opportunities in low-income areas, and available vacant municipal-owned land are regarded as the catalysts behind the intention to provide almost 5 200 opportunities on an 86 ha land extent earmarked for mixed-use development (but overwhelmingly residential) (also see **§14.5**).

The proposed multi-faceted development would be packaged as one land development application with all land-owners to pro-rata contribute to cost and share in yields, i.e. a coordinated public- and private-sector intervention; an arrangement that is difficult and time consuming to finalise. Thus, the commencement of the project remains uncertain.

Bulk infrastructure capacity will be required, not least, a new waste water system and water reservoir.

23.2.2 Jamestown (Portion 4 of Farm 527 and Portion of Remainder of Farm 527)²⁷⁶

²⁷³ The writers of this report are unsure of what this 'backlog' represents.

²⁷⁴ Project names are those used in the housing pipeline.

²⁷⁵ Implementation of this project has been put on hold until the land is transferred from the Department of Transport and Public Works to the provincial department.

²⁷⁶ Portion 4 of Farm 527 has been deregistered as erven and the Remainder of Portion 7 of Farm 527 (570 housing opportunities; 14.91 ha; designated as Phases 2 and 3).

The proposed Jamestown development constitutes 570 and 850 housing opportunities respectively, on two properties which encircle almost the entire southern side of the neighbourhood. Commencement and completion of the project on Remainder of Portion 7 of Farm 527, is short- to medium-term but an informal settlement on a piece of the land earmarked for formal housing, presents upgrading or relocation headaches. These timelines are subject to bulk-service availability and road access. Development rights has not yet been obtained for the Remainder of Farm 527 (850 housing opportunities; 84.24 ha). Portions of this area are subject to lease agreements.

The intention is to package the Jamestown development proposal as an inclusionary housing and incentivised turnkey project, e.g. rebates on development contributions, but with land cost as possible off-set to be contributed by the end-user.

23.2.3 Vlottenburg nodal development

The development in Vlottenburg comprises the following three distinct settlement areas:

- Digteby low-cost housing: 20 units; completed but not transferred
- Ash-farm low-cost housing (Digteby phase 2): planned high-density residential development
- Longlands low-cost housing: 144 planned low-cost housing opportunities

There is an impasse in development owing to uncertainty about road access. The cost to provide bulk infrastructure amounts to approximately R50 million.

23.2.4 STOD (Adam Tas Corridor)

See **§14.4**.

23.2.5 Botmaskop Work Yard (Beltana)

Residential development (and in particular, social housing) is proposed on about 40 ha of municipal-owned land opposite Idas Valley and next to and on the southern side of the Helshoogte Road. This proposed development is subject to a due diligence assessment and/or feasibility study.

23.2.6 Upgrading of informal settlements

The following projects are completed and/or considered under this programme:

- Franschhoek: Langrug Enhanced Services (1200 services)
- Stellenbosch: Kayamandi Watergang (295 services)
- Stellenbosch: Kayamandi Zone O (±711 services)
- Stellenbosch: Kayamandi Enkanini (Pilot project) and Enkanini Enhanced Services
- Klapmuts: Phase 4 (298 services & units)

23.2.7 'Bosdorp'

Op-die-Bult (Jonkershoek)

The Stellenbosch Municipality initiated a process to consider township establishment on (currently) state-owned land in a designated mixed-use precinct. It is envisaged that this process may take 2 – 3 years to be concluded.

La Motte

A residential development of 1000 units on serviced sites is the subject of a land development application and a land transfer (i.e. from the national Department of Transport and Public Works to Stellenbosch Municipality).

Maasdorp

The Maasdorp settlement is located on Portions 27 and 28 of Farm 1041, and is the subject of township establishment coupled to the transfer of land from national government to the Stellenbosch Municipality.

Meerlust

Meerlust consists of 33 households residing in forestry houses on state-owned land and is the subject of the transfer of land and houses.

Rollover projects

a) Idas Valley

The land development applications for the following two Idas Valley projects were approved at the Municipal Tribunal meeting held on 3 November 2017.

- Erf 11330:
 - 1 general residential opportunity (60 units in a 3-storey block of flats)
 - 203 single residential opportunities (subsidised and gap/affordable housing)
 - 30 freestanding single storey units; 47 m² dwelling size
 - 10 freestanding single storey units; 35 m² dwelling size
 - 8 semi-detached single storey units; 40 m² dwelling size
 - 66 semi-detached double storey units; 45 m² dwelling size
 - 84 semi-detached double storey units; 44 m² dwelling size
 - 5 freestanding single storey units; 40 m² dwelling size
- Erf 9445 (Lindida):
 - 166 single residential opportunities (subsidised and gap/affordable housing)
 - 92 semi-detached single storey units
 - 54 semi-detached double storey units
 - 20 freestanding single storey units

b) Kayamandi

The following projects in Kayamandi are to be supported by Council in accordance with provincial approval, available funds and bulk infrastructure.

- Housing project (187): 20 houses will be built and completed in the 2017/18 financial year
- Temporary housing units: the provision of temporary units in order to decant and upgrade Zone O will be financed in 2017/2018
- Town Centre: The relevant study which is solution driven will be concluded in the first quarter of the 2017/18 financial year

**Table D23
Housing pipeline 2017 (annual review 2017–2020)**

Project name	Type	No. of sites	No. of units	No. of sites	No. of units	No. of sites	No. of units	Longer term
Stellenbosch (Town)								
*Idas Valley (166 services) (Lindida)	IRDP / FLISP	166			166			
Idas Valley (263 services) (Erf 13300)	IRDP			263	89		174	
*Jamestown Farm 527 (Phases 2)	IRDP			100		165		
Jamestown (265 services/ 265 units)								
Jamestown (156 services/ 156 units)								
Jamestown (Re of Farm 527)								x
*Kayamandi Watergang (295 services)	UISP		300					
*Kayamandi Watergang (187 units)	IRDP		20					
*Kayamandi Zone O (±711 services)	UISP			100		100		
*Kayamandi Enkanini Enhanced Services								x
*Kayamandi Enkanini (Pilot project)	UISP						Provision of services	x
*Kayamandi Town Centre Regeneration (700 units)								
^Botmaskop	IRDP/ SH							x
^Van der Stel Sports complex precinct	IRDP							x
Rectification of existing units in Smartie Town					106			
^Cloetesville (erf 7001)	IRDP/ FLISP							
Jonkershoek (150 services/ 150 units)								x
Northern Extension								x
Droë Dyke (4000 services/ 4000 units)								x
Nietvoorbij								x
Klapmuts								
*Phase 4 (298 services & units)	UISP	100		100				
Re of Farm 744, Weltevreden								x
Franschhoek								
*Langrug Enhanced Services (1200 services)	UISP							
*La Motte Old Forest Station (430 services & 430 units)	IRDP/ FLISP/ 'gap'					50		
^Erf 2, La Motte (±70 services)	IRDP							
Meerlust (200 services/ 200 units)								x
Vlottenburg								
*Longlands (144 Services and units)	IRDP			50		94		
Kylemore/ Pniel/ Lanquedoc/ Johannesburg								
*Kylemore (171 services & 171 units)	IRDP					100		
Kylemore (P4 and Re of P 1 of Farm 153)								x
Lanquedoc (700 services/ 700 units)	IRDP							x
TOTAL		266	320	613	361	509	174	

*donates projects supported by Council in accordance with provincial approval, available funds and bulk infrastructure

^donates projects for in-principle support by Council to commence with pre-feasibility studies

We next list the four recommendations in the 2017 housing pipeline presented to Council for consideration:

- Council to support the identified projects (13 in total) in accordance with provincial approval, available funds and bulk infrastructure (see **Table 23**)
- Council to support (in-principle) the commencement with pre-feasibility studies for identified 4 projects (see **Table 23**)

- Reports have to be submitted to Council for consideration after completion of the pre-feasibility studies of the identified projects
- The housing pipeline be reviewed on an annual basis to align the project readiness with the DORA allocation

23.3 Housing pipeline 2018 (based on provincial government funding allocations)²⁷⁷

Table D24 (presented as the 2018 housing pipeline) includes the *provincially funded* (2018/2019–2020/2021) and unfunded projects brought forward from the 2017 pipeline. We also provide a UDS ranking²⁷⁸ for each project and comment on the (spatial) alignment of the WCG funded projects with the preferred 20-year growth-and-development path, *i.e. the investment rationale linked to preferred growth areas.*

Table D24													
Housing pipeline 2018 based on provincial funding allocations²⁷⁹													
(2018/2019 – 2020/2021)													
Project name	2017 status	UDS ranking (by LDA by node and by funding/ rollover status)	Type	No. of sites/ units		Funding R '000		No. of sites/ units		Funding R '000		Is funded projects spatially aligned with UDS growth-and-development path (yes/ no)	
				2018/2019	2019/2020	2020/2021	2018/2019	2019/2020	2020/2021				
Stellenbosch (Town)													
*Idas Valley (166 services) (Lindida)	Rollover	High priority	IRDP / FLISP	265			15 900	100		13 000	100	13 000	Yes
Idas Valley (263 services) (Erf 13300)	Rollover	High priority	IRDP										
*Jamestown Farm 527 (Phases 2)	Priority	High priority	IRDP				600	133		7 980	100	13 000	Yes
Jamestown (265 services/ 265 units)	Priority	Medium priority											
Jamestown (156 services/ 156 units)	Priority	Medium priority											
Jamestown (Re of Farm 527)	Priority	Medium priority											
*Kayamandi Watergang (295 services)	Rollover	High priority	UISP				860						Yes
*Kayamandi Watergang (187 units)	Rollover	High priority	IRDP										
*Kayamandi Zone O (±711 services)	Rollover	High priority	UISP				5 000	100		6 000	100	6 000	Yes
*Kayamandi Enkanini Enhanced Services	Rollover	High priority	EHP				1 000						Yes
*Kayamandi Enkanini (Pilot project)	Rollover	High priority	UISP				2 400			1 500			Yes
*Kayamandi Town Centre Regeneration (700 units)	Rollover	High priority								1 800	100	6 000	Yes

²⁷⁷ Housing pipeline approved by Council in March 2018.

²⁷⁸ UDS ranking is by land-development area (LDA) by node and the funding/ rollover status of the project. We did not rank the projects outside any designated land-development area, viz. Nietvoorbij and De Novo. The rankings were as follows: (a) high priority: Transformation Zones in Stellenbosch (Town) and Consolidation Zones in Stellenbosch (Town) and Klapmuts that include 'funded/ rollover' projects; (b) medium priority: Consolidation Zones in Stellenbosch (Town) and Franschoek; (c) low priority: Consolidation Zones in other settlements.

²⁷⁹ Western Cape Government housing allocations, 30 January 2018.

^Botmaskop	Priority	Medium priority	IRDP / SH								
^Van der Stel Sports complex precinct	Priority	High priority	IRDP								
Rectification of existing units in Smartie Town	Priority	Medium priority									
^Cloetesville (erf 7001)	Priority	High priority	IRDP / FLISP		250		650	50	3 000	Yes	
Northern Extension	Priority	High priority	IRDP		2 000					Yes	
Droë Dyke (4000 services/ 4000 units)	Low priority	High priority									
Nietvoorbij	Low priority	Not ranked									
Klappmuts											
*Phase 4 (298 services & units)	Priority	High priority	UISP / EHP	298	13 500					Yes	
P2 of Farm 744, Weltevreden (350)		High priority	IRDP				350			Yes	
ISSP Klappmuts La Rochelle (80 sites)		High priority	UISP		140	80	4 800			Yes	
Franschhoek											
*Langrug Enhanced Services (1200 services)	Priority	Medium priority	UISP								
'Other settlements': La Motte											
*La Motte Old Forest Station (430 services & 430 units)	Priority	Low priority	IRDP / FLISP / 'gap'				3 200			No	
^Erf 2, La Motte (±70 services)	Priority	Low priority	IRDP								
'Other settlements': Groot Drakenstein											
Meerlust (200 services/ 200 units)	Priority	Low priority	IRDP		600					No	
'Other settlements': Jonkershoek											
Jonkershoek (150 services/ 150 units)	Priority	Low priority									
'Other settlements': Vlottenburg											
*Longlands (144 services and units)	Priority	Low priority	IRDP	144	144					No	
'Other settlements': Dwarsrivier - Kylemore/ Pniel/ Lanquedoc/ Johannesdal											
*Kylemore (171 services & 171 units)	-	Low priority	IRDP								
Kylemore (P4 and Re of P 1 of Farm 153)	-	Low priority									
Lanquedoc (700 services/ 700 units)	-	Low priority	IRDP								
WCG project											
De Novo		Not ranked	IRDP		1 400					No	
TOTAL				707	48 094	413	39 280	450	41 000		

*donates projects supported by Council in accordance with provincial approval, available funds and bulk infrastructure.

^donates projects for in-principle support by Council to commence with pre-feasibility studies.

23.4 Proposed housing pipeline

This section details how the UDS investment rationale impacts on government-driven housing supply and includes a proposed housing pipeline (see **Table D25**). We have already mentioned that the preferred 20-year growth-and-development path set out in the UDS necessitates a reassessment of government-driven housing supply, with specific reference to the municipality's housing pipeline. **Table D25** includes application of the UDS guidelines to the delivery of *government-driven housing* in the Stellenbosch municipal area.²⁸⁰ We applied

²⁸⁰ See strategic guidelines in **§20.2.9**.

the guidelines by using the same ranking as was used in **Table D24**. The following three categories were then used to describe the assessment outcome:

- Continue with housing project
- (Reprioritise and) conduct due diligence assessments and/or feasibility studies
- Reconsider (housing supply) in the context of the UDS growth-and-development path.

Table D25						
Proposed housing pipeline (2018/2019 – 2020/2021)						
(based on preferred 20-year UDS growth-and-development path)						
Project name	2017 status	UDS ranking (by LDA by node and by funding/rollover status)	Type	No. of sites/units	Sum of funding R '000	Confirmation and application of the preferred 20-year UDS growth-and-development path
Stellenbosch (Town)²⁸¹						
Idas Valley (166 services) (Lindida)	Rollover	High priority	IRDP / FLISP	465	41 900	Continue with housing project
Idas Valley (263 services) (Erf 13300)	Rollover	High priority	IRDP			
Jamestown Farm 527 (Phases 2)	Priority	High priority	IRDP	233	21 580	Conduct due diligence assessments and/or feasibility studies
Jamestown (265 services/ 265 units)	Priority	Medium priority				Conduct due diligence assessments and/or feasibility studies; consider relocation/upgrading of informal settlement, bulk infrastructure availability, road access, land use rights, etc.
Jamestown (156 services/ 156 units)						
Jamestown (Re of Farm 527)						
Kayamandi Watergang (295 services)	Rollover	High priority	UISP		860	Continue with housing project
Kayamandi Watergang (187 units)	Rollover	High priority	IRDP			Conduct due diligence assessments and/or feasibility studies
Kayamandi Zone O (±711 services)	Rollover	High priority	UISP	200	18 000	Continue with housing project
Kayamandi Enkanini Enhanced Services	Rollover	High priority	EHP		1 000	Continue with housing project
Kayamandi Enkanini (Pilot project)	Rollover	High priority	UISP		3 900	Continue with housing project
Kayamandi Town Centre Regeneration (700 units)	Rollover	High priority		100	7 800	Continue with housing project
Botmaskop	Priority	Medium priority	IRDP/SH			Reprioritise and conduct due diligence assessments and/or feasibility studies
Van der Stel Sports complex precinct	Priority	High priority	IRDP/SH			Reprioritise and conduct due diligence assessments and/or feasibility studies (precinct plan)
Rectification of existing units in Smartie Town	Priority	Medium priority				Conduct due diligence assessments and/or feasibility studies
Cloetesville (erf 7001)	Priority	High priority	IRDP/FLISP	50	3 900	Conduct due diligence assessments and/or feasibility studies
Northern Extension	Priority	High priority	IRDP		2 000	Continue with housing project
Droë Dyke (4000 services/ 4000 units)	Low priority	High priority	IRDP/SH			Reprioritise and conduct due diligence assessments and/or feasibility studies (precinct plan); Commence immediately with steps to acquire state-owned land in the Droë Dyke/Libertas Transformation Zone for urban development
Nietvoorbij	Low priority	Not ranked				Reconsider in the context of the UDS growth-and-development path

²⁸¹ Stellenbosch (Town): First-tier priority public-sector infrastructure spend by node.

Klapmuts ²⁸²						
Phase 4 (298 services & units)	Priority	High priority	UISP EHP	298	13 500 4300	Continue with housing project
P2 of Farm 744, Weltevreden (350)	-	High priority	IRDP		350	Conduct due diligence assessments and/or feasibility studies
ISSP Klapmuts La Rochelle (80 sites)		High priority	UISP	80	4 940	Continue with housing project
Franschhoek ²⁸³						
Langrug Enhanced Services (1200 services)	Priority	Medium priority	UISP			Reprioritise and conduct due diligence assessments and/or feasibility studies
'Other settlements': La Motte ²⁸⁴						
La Motte Old Forest Station (430 services & 430 units)	Priority	Low priority	IRDP/ FLISP/ 'gap'		3 200	Reprioritise housing supply in the context of the UDS growth-and-development path
Erf 2, La Motte (±70 services)	Priority	Low priority	IRDP			
'Other settlements': Groot Drakenstein ²⁸⁵						
Meerlust (200 services/ 200 units)	Priority	Low priority	IRDP		600	Continue with transfer of land and houses; Reprioritise housing supply in the context of the UDS growth-and-development path
'Other settlements': Jonkershoek						
Jonkershoek (150 services/ 150 units)	Priority	Low priority				Conduct due diligence assessments and/or feasibility studies
'Other settlements': Vlottenburg ²⁸⁶						
Longlands (144 services and units)	Priority	Low priority	IRDP	144	144	Reprioritise housing supply in the context of the UDS growth-and-development path; but consider specific development pressure for low-cost housing as co-investment opportunity
'Other settlements': Dwarsrivier - Kylemore/ Pniel/ Lanquedoc/ Johannesburg ²⁸⁷						
Kylemore (171 services & 171 units)	-	Low priority	IRDP			Reprioritise in the context of the UDS growth-and-development path
Kylemore (P4 and Re of P 1 of Farm 153)	-	Low priority				Reprioritise in the context of the UDS growth-and-development path
Lanquedoc (700 services/ 700 units)	-	Low priority	IRDP			Reprioritise in the context of the UDS growth-and-development path
'Other settlements': Koelenhof						
No project identified						Consider specific development pressure for housing (in the lower price classes) as co-investment opportunity
WCG project						
De Novo		Not ranked	IRDP		1 400	Reprioritise in the context of the UDS growth-and-development path
TOTAL				1 570	129 374	

We proposed that the Municipality continues with the Stellenbosch (Town) projects listed in **Table D25**, except the Nietvoorbij project (see **Map D11**). The following two projects should receive a *high priority* in public-sector infrastructure spend: (a) Droë Dyke and (b) Van der Stel Sports complex precinct – both transit-oriented developments. The footprint of both projects is within a Transformation Zone with the land utilisation outcome a high-quality, high-performance, dense, mixed-use, connected and transit-oriented urban environment (see **§15.2.1**). Implement the *Integrated Residential Development Programme* in the Droë Dyke/Libertas Transformation Zone and the *Social Housing Programme* in demarcated Restructuring Zones in both Transformation Zones.

The implementation of the *Integrated Residential Development Programme*, *Upgrading of Informal Settlement Programme* and *Social Housing Programme* should (also) receive a high

²⁸² Klapmuts: Second-tier priority public-sector infrastructure spend by node.

²⁸³ Franschhoek: Third-tier priority public-sector infrastructure spend by node.

²⁸⁴ 'Other settlements': Lowest priority public-sector infrastructure spend by node.

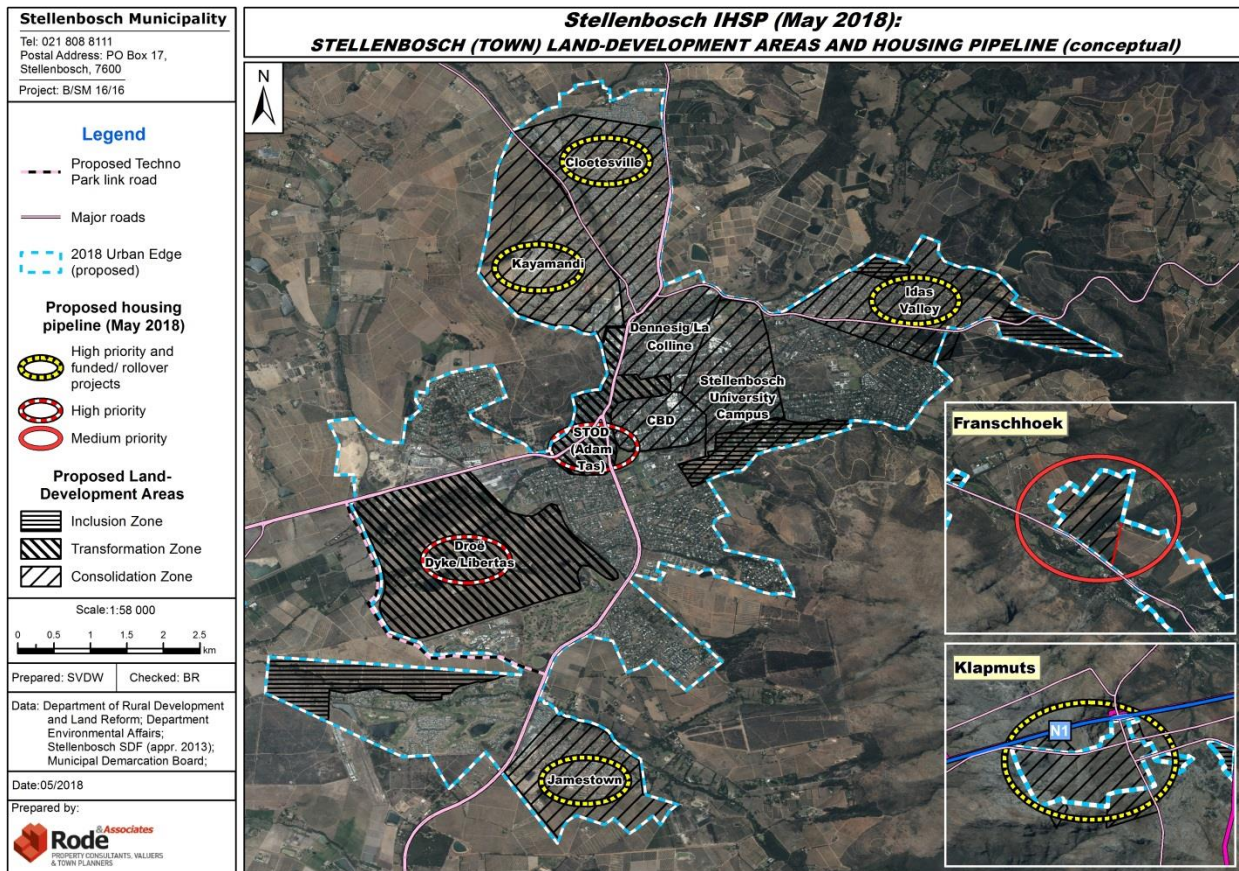
²⁸⁵ 'Other settlements': Lowest priority public-sector infrastructure spend by node.

²⁸⁶ 'Other settlements': Lowest priority public-sector infrastructure spend by node.

²⁸⁷ 'Other settlements': Lowest priority public-sector infrastructure spend by node.

priority in the following Consolidation Zones (in order of priority): Kayamandi, Jamestown, Idas Valley and Cloeteville. In addition, the implementation of the Emergency Housing Programme in these Consolidation Zones should be in accordance with (a) the need of the beneficiaries and residents, as well as (b) the structure, (c) function, and (d) purpose of the specific area. Considering the multi-year provincial allocation described in **Table 24**, the funds allocated to the projects in Stellenbosch (Town) amount to about 78% of the total allocation – confirming the UDS investment rationale (by node).

We propose a high priority for the implementation of the UISP in Klapmuts and a medium priority in Franschhoek (see **Map D11**). About 18% of the multi-year provincial allocation has been allocated to implementing the programme in Klapmuts, but no funds have been allocated for Franschhoek.



Map D11: Stellenbosch IHSP (May 2018): Land-development areas and housing pipeline by node (conceptual)

The cumulative growth in demand for indigent housing was allocated to Stellenbosch (Town), Klapmuts and Franschhoek. *We do not allocate any demand for indigent houses to the 'other settlements'*.²⁸⁸ We propose that the planned delivery of housing to these settlements be reprioritised in the context of the UDS growth-and-development path. However, we acknowledge that some of these settlements are experiencing specific development pressure, where incremental approaches to development, regulation and

²⁸⁸ We acknowledge the possible need to provide houses for farm workers in some of the 'other settlements'.

maintenance and upgrading of infrastructure can be considered to redress past development imbalances and to accommodate natural progression.

Tables C23, C25 and C27 include the figures calculated for the rollout of potential residential development (including housing for the indigent) by scenario for all three nodes (see **Annexure 1**). We do not include in this study a breakdown of the funds-flow of government-driven housing supply over the next 20 years. In **Tables 24, 26 and 28** we provide the alignment of the growth-and-development path (by scenario) with municipal infrastructure provision, i.e. capital expenditure over MTEF period (3-year budget) and forecast to 2022/2023 (also see **Annexure 1**).

24 MUNICIPAL HOUSING ACCREDITATION

The Stellenbosch municipality recently submitted an application for accreditation to the Western Cape Government. The Municipality, as a well-capacitated municipality, applied to be accredited or delegated to perform the housing function (at Level 2 grade) on behalf of the provincial government.

This study, if approved by Council, will serve as a key component of the decision on accreditation.

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— **The end** —