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Market viability assessment and socio-economic implications associated with the Brandwacht II residential development with specific reference to Stellenbosch Town

Consultative Document
This report consists of 64 pages

Report prepared for TV3 Architects and Town Planners

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Executive Summary

Nature and Scope of the project

Brandwacht II is conceived as a residential development of ±30 ha located in an area that forms part of the Brandwacht Farm, abutting the Brandwacht and Brandwacht-on River residential area to the north, a commercial node to the west and open areas to the south. The objective of the study is to consider the scope of the project, its impact and relevance based on three pillars that cover (1) the market from a demand and supply perspective, (2) the socio-economic impacts from an income and employment perspective, and (3) its fit for purpose.

The Brandwacht II development covers the following scope of land uses:

- 260 residential stands of between 350m² and 800m², with an average stand size of about 500m².
- Sizes of dwelling units assuming a 50% coverage are anticipated to range from between 170m² and 400m², with an average of about 250 m² per unit.
- Private open space of ±7 ha plus ±1,35 ha of the land a road reserve for the Eastern Link Road which splits the farm in half.

The Brandwacht II project caters for the middle to high-income segment of the market and is aimed at a portion of the income bracket for households that earn between R809 203 to R1.6 million per annum would also form part of the segment likely to take up the housing opportunity, with units ranging from R2.5 million and R4 million.

Brandwacht II offers a scope of housing that addresses various emerging trends related to demand for housing of which the key trends are lifestyle, proximity, availability of key infrastructure, access and transport. The proposed housing is intended to attract millennials and persons that work in Technopark, at the surrounding commercial enterprises and the surrounding area. The properties will be sold on an own-title basis and for the purposes of this analysis, are aligned in terms of the classification adopted by the Stellenbosch Municipality for the levying of development charges.

In order for the project to be fit for purpose, broad market and socio-economic criteria need to be considered. Brandwacht II should with some limited variance, fall within the demand forecasts for different housing units in Stellenbosch Town, must offer socio-economic benefits to locals and ensure that the Municipality is able to consider the project from both a financial, policy and planning context. This report adopts an economic perspective related to supply and demand, and the need to deliver benefit to the local economy and jobs to people. Stellenbosch Town includes central Stellenbosch, Jamestown, De Zalze, Onder-Papagaaiberg, Kyamandi, Cloetesville and Idas Valley.

Key outcomes

Stellenbosch housing trends

Higher priced houses have emerged as a trend in Stellenbosch Town over the period 2008 to 2017 and current supply is unable to meet the demand in the higher price segment. If this trend continues, average equilibrium prices and price points will increase and due to the lag in provision of supply or curtailing supply together with the inelasticity of supply, no integration of various housing typologies in development will be possible. The only way to reduce the average equilibrium price for houses is to permit development that underpins market demand for a range of housing typologies and implement

policies that make it attractive for developers and investors to provide in the need for different types of housing.

A total of 17 301 units form part of the estimated demand over the next 20 years, i.e. 9 277 houses smaller than 80 m², 2 793 houses larger than 80 m², 2402 flats and 2 829 townhouses. These figures represents the adjusted demand forecasts prepared by Rode and Associates for Stellenbosch Town.

Key salient outcomes from the analysis include the following:

- The current supply is unable to meet demand for all housing types in Stellenbosch Town;
- Sales trends in the Stellenbosch Municipal area suggest a demand for higher priced houses;
- Emerging trends suggest that average equilibrium prices[1] will increase and continue to increase in Stellenbosch Town due to the following:
    - Limited supply of new development (housing) stock;
    - Lag in the provision of supply caused by inelasticity[2], which suggests that supply is unable to meet demand in the short-term, resulting in price increases reaching new highs; and
    - Continuous and sustained price increases will curtail the opportunity to create and develop appropriate mixed-use residential projects that offer a range of affordability options.
- An estimated housing demand of 865 units per annum on average for next 20 years based on the adjusted Rode forecast:
    - 464 houses smaller than 80 m²
    - 140 houses larger than 80 m²
    - 120 flats
    - 141 townhouses
- It is possible to relate vehicle traffic and employment to future retail, commercial and industrial development in Stellenbosch Town over the next 20 years as follows:
    - 1 additional vehicle will **enter Stellenbosch Town** for every 52 m² of retail, office and industrial space developed;
    - 1 additional employee will originate from **outside Stellenbosch Town** for every 44 m² of Gross Lettable Area (GLA)[3] developed
    - 1 additional employee would **reside in Stellenbosch Town** for every 30 m² of GLA developed (given the percentage of persons that commute for employment purposes)
- A total of 8 830 people[4] working in Stellenbosch Town by 2036 would form part of the daily commuting workforce;
- Annual housing need per annum on average over the next 20 years <u>based only on commuters:</u>
    - 371 units for middle-income category

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[1] Average equilibrium price is the average price over a period where the demand for property and supply of property are in balance.

[2] Supply is price inelastic if a change in price causes a smaller percentage change in supply, i.e. the supply of a few properties results in a greater increase in the price due to demand exceeding supply.

[3] Gross lettable area (GLA) is the amount of floor space available to be rented in a commercial, retail or industrial property.

[4] The number of people commuting to work in Stellenbosch Town is based on the current daily commuting traffic of approximately 11527 people <u>less</u> students that emanate from outside of Stellenbosch town which is 25% of the total on the Stellenbosch campus <u>plus</u> an estimate of people that will live outside Stellenbosch and take up employment from the future development of retail, commercial and industrial properties over 20 years.

- 70 units for high-income category

- Demand for 388 dwelling units from commuters and persons that would reside in Stellenbosch due to future retail, commercial and industrial development based on a 50% take up of the need.
  - The average annual demand for houses smaller than 80 m², flats and small townhouses ranges from 194 to 241 units.
  - The demand for houses larger than 80 m² for the high-income group by 2036 ranges from 97 to 194 dwelling units on average per annum.

Development Pipeline for Stellenbosch Town

The pipeline of projects envisaged by developers for Stellenbosch Town has an envisaged rollout over the next 10 years. Although the pipeline does not necessary include all projects, indications are that approximately 9 100 units are envisaged to be supplied over the following 10 years. The table below provides an indication of the percentage contribution of the pipeline projects to the Rode adjusted forecast per housing type and the contribution of each housing type to the total number of units. **The results indicate that the Development pipeline would contribute 52,60% of the total units to the adjusted Rode demand forecast.**

Housing type	Amended Rode Demand forecast	Development Pipeline	Percentage of housing type	Percentage of total pipeline
Houses smaller than 80 m²	9 277	2 860	30,83%	31,43%
Houses larger than 80 m²	2 793	2 872	102,83%	31,56%
Flats	2 402	1 838	76,52%	20,20%
Townhouses	2829	1 530	54,08%	16,81%
Total units	**17 301**	**9 100**	52,60%	100,00%

The housing types envisaged for the Development Pipeline all fall within the adjusted Rode forecast, except for houses larger than 80 m² that exceeds the forecast by 2,83%. A breakdown of the envisaged supply suggests that 31,56% of housing units supplied over 10 years accrues to dwelling units larger than 80 m², which are more aligned with middle to high-income groups; 31,43% to affordable housing (lower to middle-income groups); 16,81% to townhouses (middle-income group) and 20,20% to flats.

The projects that form part of the pipeline, based on the progressive growth trajectory[5] (same growth trajectory used to demonstrate demand over 20 years), is envisaged to deliver 9 100 units over 10 years, which is 31,83% more than the forecast over the same period. By year 12 of the forecast period, the forecasted number of units will exceed the number of pipeline units by 1 158 or 12,72%. In other words, slightly more than a **one-year gap exists between the envisaged completion of development for the Pipeline projects and the projected demand for housing units in Stellenbosch Town after 10 years** (refer to Figure 21 of the Report).

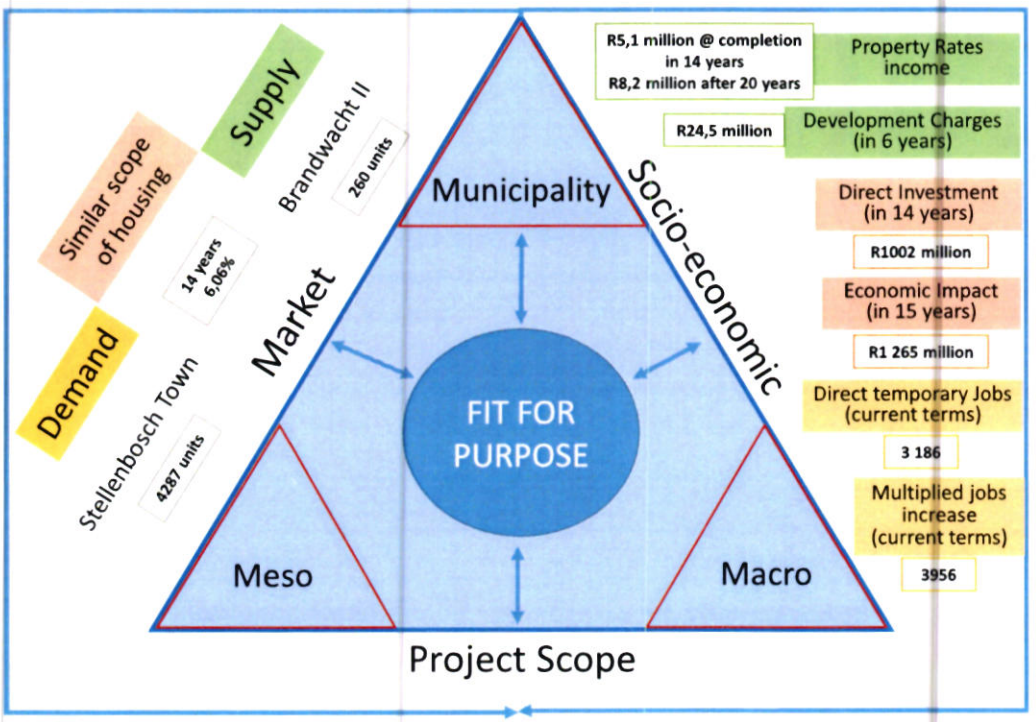
Brandwacht II: Fit for Purpose

Brandwacht II forms part of the pipeline of projects envisaged for Stellenbosch Town by developers over the next 10 years. The proposed development represents about 1,50% of the total number of housing units included in the adjusted Rode forecast by 2036, and 2,86% of the total number of housing units envisaged as part of the project pipeline envisaged by developers.

[5] Progressive growth implies exponential growth over slightly less than the first half of the 20-year forecast period, reaching saturation point after about 10 years and tapering off significantly thereafter to flatten out over the last five years of the forecast period (refer to Section 8.1).

The following figure[6] summarises the outcomes of the analysis and alignment with the premise of a fit for purpose, i.e. whether or not the development project is able to "tick the boxes" from a socio-economic perspective, i.e.

- The project needs to ensure that potential demand is met from a supply perspective;
- The housing types fit with the need and emerging trends and the housing development framework of the Stellenbosch Municipality;
- The project does not result in a fund flow deficit for the Municipality in terms of service infrastructure (which should be covered by DCs);
- The local economy benefits from the development in terms of direct capital expenditure and backward and forward linkages between sectors; and
- Jobs, even on a temporary basis, are created and devolved to locals that are able to work on the project.



In terms of demand and supply, the Brandwacht II development adds 260 units of stock to the demand for housing, which based on the housing typology envisaged for the project, represents 4,62% of the total number of 5 622 units or 6,06% after 14 years once the development is complete and occupied. The development represents a direct investment of R1002 million (in 14 years) that will generate estimated Development Charges of R24,5 million (in six years) and property rates of R8,2 million for Stellenbosch Municipality over 20 years. Over the duration of the construction period, 3 186 people would directly work on the project, while a further 770 jobs would accrue due to the indirect effects of developing Brandwacht II. All of these benefits are estimates based on the development of 260 dwelling units over the 8-year construction period.

[6] The **meso-level** represents the linkage between what is envisaged with the development and its contribution to the residential supply, hence the project has specific implications at a project level to satisfy demand and enhance supply. The **macro-level** represents the contribution of the development to the local economy in terms of direct investment in infrastructure and superstructure, while also having an indirect benefit to the local economy and businesses through multiplied demand for goods and services required to support the direct investment.

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1. INTRODUCTION

1.1 Introduction and objective

Brandwacht II is conceived as a residential development of ±30 ha located in an area that forms part of the Brandwacht Farm, abutting the Brandwacht and Brandwacht-on River residential area to the north, a commercial node to the west and open areas to the south. Brandwacht II is also in close proximity to the R44 between Stellenbosch Town and Somerset West.

The objective of the study is to consider the scope of the project, its impact and relevance based on three pillars that cover (1) the market from a demand and supply perspective, (2) the socio-economic impacts from an income and employment perspective, and (3) the fit for purpose.

Dr Jonathan Bloom of Multi-Purpose Business Solutions was appointed to prepare a market demand and supply assessment to align the supply of housing units envisaged by the Brandwacht II Development with the future demand for residential dwelling in Stellenbosch Town. For the purpose of this report, Stellenbosch Town includes central Stellenbosch, Jamestown, De Zalze, Onder-Papagaaiberg, Kyamandi, Cloetesville and Idas Valley. Although towns and settlements such as Klapmuts, Franschhoek, Koelenhof, Vlottenburg, Pniel and Kylemore fall within the Stellenbosch Municipal area, they are considered outside Stellenbosch Town.

1.2 Approach and basis for assessment

The premise for this assessment is based on understanding the fit of the project in the context of several stakeholders' inputs used to derive certain outputs and the core outcomes that reflect the scope of the project in terms of the market and socio-economic benefits. The approach is illustrated in Figure 1.

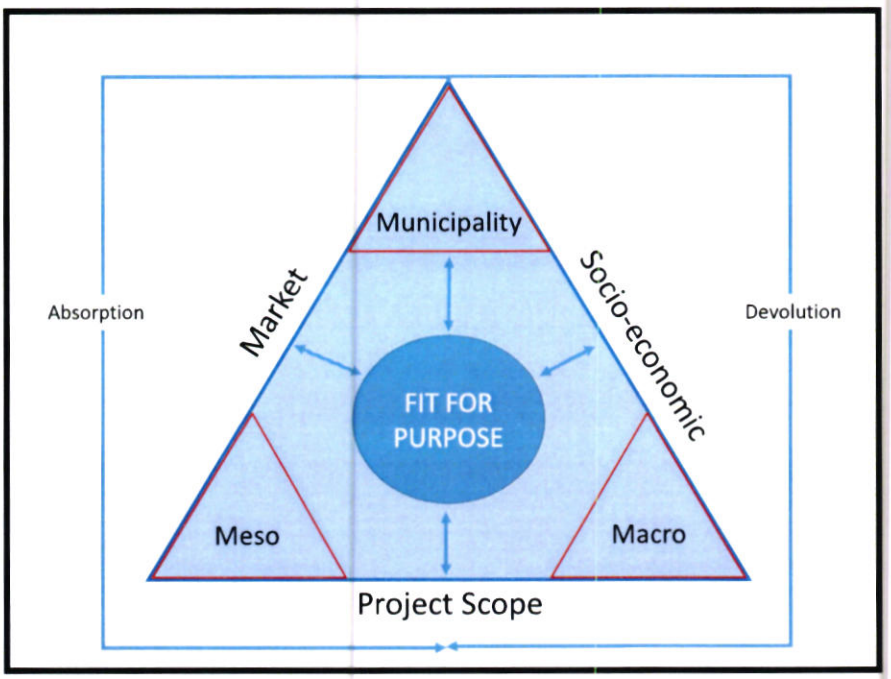

Figure 1: Understanding the fit for purpose of the Brandwacht II Development
Source: Multi-Purpose Business Solutions

The terms used to contextualise the fit for purpose principle illustrated in Figure 1, are discussed below.

- The **project scope** underpins the market represented by the interaction between demand and supply, together with the socio-economic implications that inform the fit of the project for the intended purpose.

- The **meso-level** represents the linkage between what is envisaged with the development and its contribution to the residential supply, hence the development has specific implications at a project level to satisfy demand and enhance supply.

- The **macro-level** represents the contribution of the development to the local economy in terms of direct investment in infrastructure and superstructure, while also having an indirect benefit to the local economy and businesses through multiplied demand for goods and services required to support the direct investment.

- The **Municipality** is the enabler and benefits in the form of an increase to the rates base. Development Contributions (DCs) are received from developers to fund external bulk service provision. The DCs for the purposes of understanding the linkages, equate to the need for external bulk services, although the infrastructure requirements would be unique to each project and require a project-specific assessment.

- In order to assess whether a development is **fit for purpose**, it must satisfy the need, i.e. demand, contribute to the socio-economic fabric of the municipal area by adding income to the economy and creating jobs, while also benefiting the Municipality, i.e. create a mutual symbiosis.

- **Absorption** is premised on the ability of the market to take up the supply provided by a project once completed. Notwithstanding, a need also exists to ensure acceptable levels of **devolution** of the socio-economic benefit that accrue from the project to the intended beneficiaries. This is a continuous and dynamic process and should be considered in the context of the overall supply of development linked to different land uses.

1.3 Nature and scope of the project

The Brandwacht II development covers the following scope of land uses:

- 260 residential stands of between 350m² and 800m², with an average stand size of about 500m2.
- Sizes of dwelling units assuming a 50% coverage are anticipated to range from between 170m² and 400m², with an average of about 250m² per unit.
- Private open space of ±7 ha plus ±1,35 ha of the land a road reserve for the Eastern Link Road which splits the farm in half.

The total land extent for the proposed development is ±30 ha with a total of 260 units. A provisional layout of the proposed Brandwacht II residential development is illustrated in Figure 2.

The properties will be sold on an own-title basis and for the purposes of this analysis, are aligned in terms of the classification adopted by the Stellenbosch Municipality for the levying of development charges. In terms hereof, 182 units are referred to as Single Residential units smaller than 250 m² and 72 units as Medium-Density Residential units smaller than 250 m².

Figure 2: Site development plan for the Brandwacht II development in the context of the Brandwacht suburb, Brandwacht-on River, commercial buildings and adjacent farmland

Source: TV3 Architects and Town Planners, 2017

2. RESIDENTIAL MARKET TRENDS

The residential market refers to land uses associated with human habitation, including housing or dwelling units. Residential use can vary in typology, density, tenure, structure, layout and affordability. It should, however, be noted that "residential" does not include hotels or guesthouses, which are defined as "short-stay" accommodation.

Residential property in South Africa has experienced slow, but steady growth in recent years, reporting a rise in activity as well as ongoing demand for housing, especially in the Western Cape. Demand for residential property in the major metropolitan areas and specific geographical areas and nodes in close proximity, has outstripped supply and thus created a seller's market in cities like Johannesburg and Cape Town. A continuous lack of medium-income (affordable) housing options remains a key feature of the marketplace.

2.1 Housing demand and supply challenges for urban areas

The long-term home densification process is expected to continue as the long-term effective scarcity of urban land increases, semi-gration to the Western Cape continues, price increases in the Western Cape and especially the Winelands areas (including Stellenbosch) continue and increase in real terms. The key challenges emanating of this rising urban land scarcity and according to the FNB Property Barometer (2017), which are relevant to Stellenbosch Town in particular, include the following:

- Creating safe open public spaces to largely replace the private space and amenities that many used to have on their own properties;
- Improving the health of the household sector in the face of declining physical activity, partly as a result of less open space;
- Creating mass public transport systems to reduce the myriad of costs associated with transport congestion;
- Designing lifestyle developments that could be attractive to highly skilled labour, which can be attracted or repelled by lifestyle aspects, implying that urban design is key;
- A key driver is the competitive advantage of an area, which is reinforced by semi-migration trends, regional significance and the status of Stellenbosch Town as a key player in the Cape Winelands district;
- Zoning for densification in certain areas, notably along transport corridors, and preventing densification in other areas; and
- Improving key infrastructure and facilities such as water/sewage, schools and hospitals in existing areas to keep up with growing demand per area as densification occurs.

2.2 Housing design trends

The need for housing is also influenced by the nature and scope of properties and top structures. Consequently, demand needs to be aligned with factors such as economic growth, disposable income, debt levels and affordability criteria, which are essential for development in Stellenbosch Town. If past trends were replicated in the future, then according to the FNB Barometer (2017), the nature and scope of housing would reflect the following:

- Size of average full title stands is decreasing;

- Building size over the long-term appears to be decreasing, but not as rapidly as average stand size;
- Sectional title options will remain significant with a declining trend in full-title options;
- Luxuries will be reduced in order to address the long-term decline in home affordability;
- Percentage of homes built with swimming pools will drop dramatically in terms of water shortages and tariff increases;
- "Non-essentials" are being increasingly done away with in new buildings, such as a study and dining room;
- Declining fertility rates and a smaller average size of households have also contributed to the demand for smaller sized homes with fewer bedrooms; and
- Even the previously most popular 3-bedroom home category has seen some decline, with 2-bedroom homes apparently favoured over 3-bedroom homes.

2.3 Millennials housing market segment

Millennials (also called Generation Z-ers) make up one third of the global population. There is a debate about when Generation Z starts, but they were typically born in the 1990's or 2000's. As millennial consumers approach their peak earning years, a significant percentage is searching for their first home. This particular generation's needs and preferences are quickly becoming the driving force in the property market.
Millennials are tech-savvy and need to connect with people and products, which mean that they have to be engaged through technology, are more entrepreneurial and ambitious than previous generations, with many of them expecting to own a company. In order to understand the housing typology that this segment would demand, it is important to understand what millennial home buyers search for and prefer in their first home (Source: 5-things-millennials-want-in-a-new-home):

- **Homes that are 'ready to go'** - newer homes that are ready to move in, are convenient and have the "ready-to-go" factor address the needs of millennial home buyers;
- **Open layouts and multi-functional interiors** – fewer partitions and walls, eating meals at the kitchen table (not at the dining room) and a multi-media room or gaming room;
- **Energy efficiency and green living** – convenience and efficiency with smart homes delivering these aspects. Millennials identify themselves as environmentally-conscious, preferring a sustainable lifestyle with a low carbon footprint;
- **Technologically equipped homes** –a connected smart home that includes electronic access, keyless locks, interconnected doorbells, mobile-controlled security systems, voice-activated assistants, etc.; and
- Millennials' **buying and selling activity is more frequent** than other age groups, which is also having a noticeable impact on property values, particularly in areas that offer great short-term potential and fulfil a few key lifestyle needs. Demand for properties in areas where buyers can live, work, play, eat and shop - all practically within acceptable walking or driving distance of their homes are key (Source: rise-of-the-millennials-a-property-revolution/24370).

3. STELLENBOSCH HOUSING SUPPLY MARKET

Notwithstanding the economic downturns and political upheaval of the recent past, we have witnessed continuous growth in and around the City of Cape Town (the "CMA") and the Cape Winelands region. The rate of urbanisation and trends such as semi-gration have influenced the demographics in the target area and have contributed to an increase in inherent value of land on the perimeter of the CMA and in nearby towns such as Paarl, Stellenbosch and Franschhoek. In addition, ever-increasing traffic congestion and worsening public transport services are prompting a greater focus on mixed-use/live-work-play developments on the periphery of the CMA and in the growth nodes (such as Stellenbosch) in close proximity to the CMA.

3.1 Trends in housing sales in Stellenbosch

Stellenbosch Town is a unique case when analysing the trends in house and flat sales, which is illustrated in Figures 3 and 4 for the period 2008 to 2017. The more important take-out of the analysis is to understand the value ratio derived by Multi-Purpose Business Solutions as an indication of supply and demand reflected in the average selling price. A high ratio can be interpreted as properties that are being sold at higher average prices in relation to the number of units sold. This could imply a willingness to purchase higher-priced properties or a scarcity in certain market segments, i.e. a supply constraint.

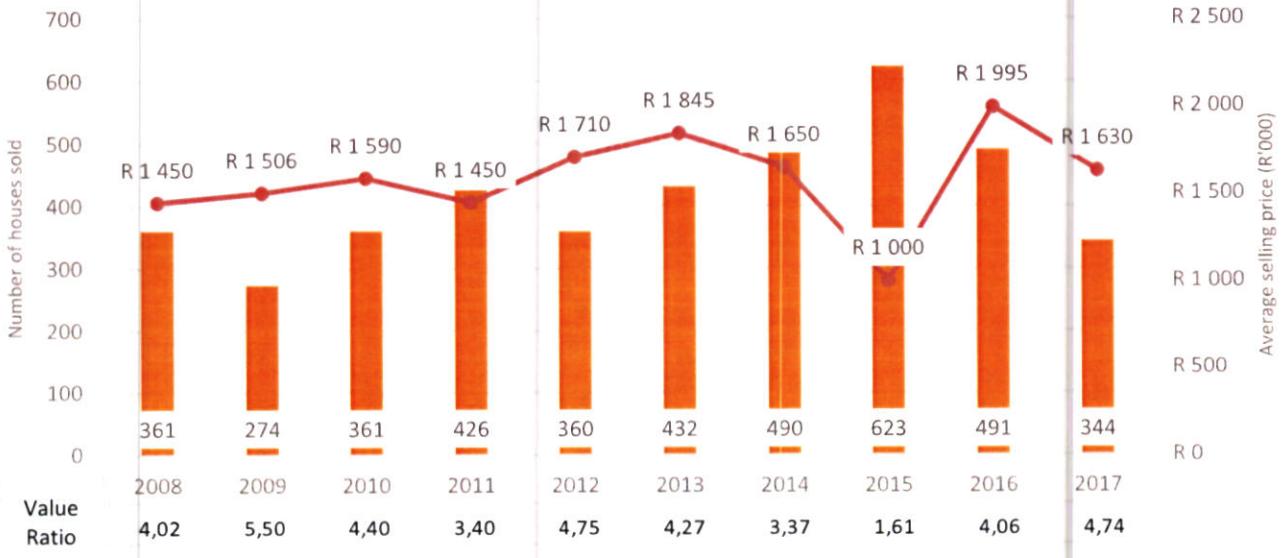

Figure 3: Number of housing units sold and the average annual price per unit for the period 2008 to 2017

Source: Prepared from data - Property24.com and own calculations

The value ratio suggests that from 2015 through 2017, higher-priced houses were acquired from the available supply of houses for sale. A similar trend occurred in 2012 and 2013, while 2015 apparently bucked the trend with a significant decrease (65%) in the average price of houses relative to 2014. The analysis over the period suggests that Stellenbosch experienced higher value ratios of above 4,0 over the past 10 years, except in 2011, 2014 and 2015. Demand for higher priced houses on average is evident and it appears that supply is unable to meet the demand in the higher price segment.

- Current supply unable to meet demand for all housing types
- Demand for higher priced houses

If the emerging trends illustrated in Figure 3 would continue, average equilibrium prices for houses will increase due to the following reasons:

- Limited supply of new development stock;
- Lag in provision of supply due to inelasticity; and
- No or limited integration of various housing typologies in developments.

The only way to reduce the average equilibrium price or price points for residential dwellings, is to permit development that underpins market demand for a range of housing typologies and implement policies that make it attractive for developers and investors to provide in the need for housing.

3.2 Trends in flat sales in Stellenbosch

The prices of flats have remained range bound from 2008 to 2013, as illustrated in Figure 4. Thereafter, the average price increased by 45,65% over the period 2013 to 2017, suggesting a tapering off in supply. Clearly, demand outstripped supply, hence a higher price equilibrium, which is also evident by a value ratio of 3,87 in 2017, the highest recorded figure over the period covered in the analysis.

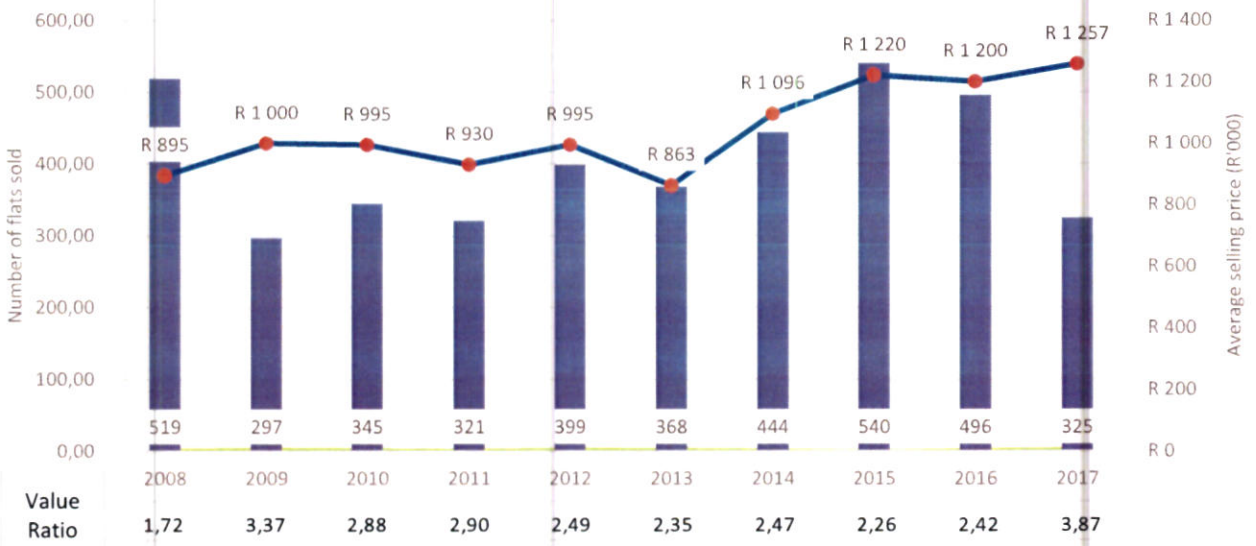

Figure 4: Number of flats sold and the average annual price per unit for the period 2008 to 2017
Source: Prepared from data - Property24.com

3.3 Residential housing market stock

The residential market within Stellenbosch Town is mainly driven by households attracted by the rural lifestyle of the area, which is known for its beauty and unique quality of life. Demand for residential development is most active in Stellenbosch Town. Various factors are driving this market, including quality of life and Stellenbosch University, which is attracting students from across South Africa (and foreign countries) to the area. The student accommodation market is driving investment opportunities such as buy-to-let, and this market has seen significant growth specifically in the Stellenbosch area. Figure 5 indicates sales in the Stellenbosch residential market over the past year.

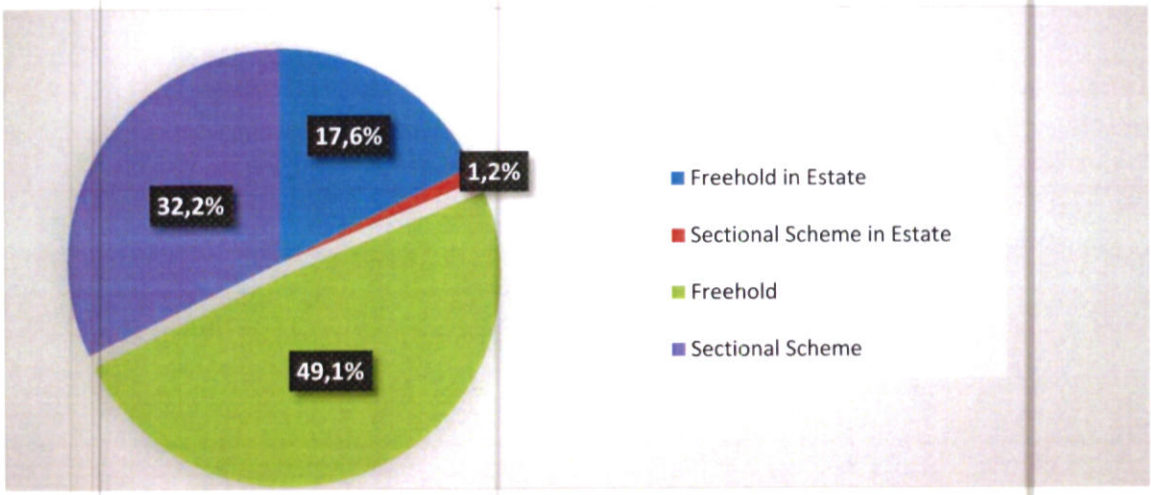

Figure 5: Stock of Stellenbosch residential units for different ownership options
Source: Lightstone data

The largest percentage of the current housing stock comprises of freehold properties (49.1%), followed by sectional scheme properties (32.2%) and freehold developments in estates (17.6%). The current residential sales market within the Stellenbosch area is mainly based on repeat sales, which indicates few new entrants into the market and a lag in or inelasticity of supply.

Estate agents in Stellenbosch indicate that residential property prices in Stellenbosch Town are increasing, and this is mainly attributed to the limited stock available to serve the high demand for residential units. Residents within the Western Cape (specifically Cape Town and Stellenbosch) as well as Gauteng purchase the majority of properties in Stellenbosch Town. Estate agents also further indicated that properties are mainly purchased as a primary residence, but there is also a growing trend to purchase investment properties (specifically focussed on the student accommodation market).

3.4 Residential housing supply

The supply analysis entails research into the existing and the future planned residential units within the Stellenbosch area and specifically for Stellenbosch Town. The existing supply and possible future additions are indicative of the effective supply of residential units in the market.

Based on Census 2011 data and **building plans completed** between 2012 and 2015, it is estimated that the current supply of residential units in the Stellenbosch Municipal area is 34 500 units. These residential units are distributed according to income categories as illustrated in Figure 6.

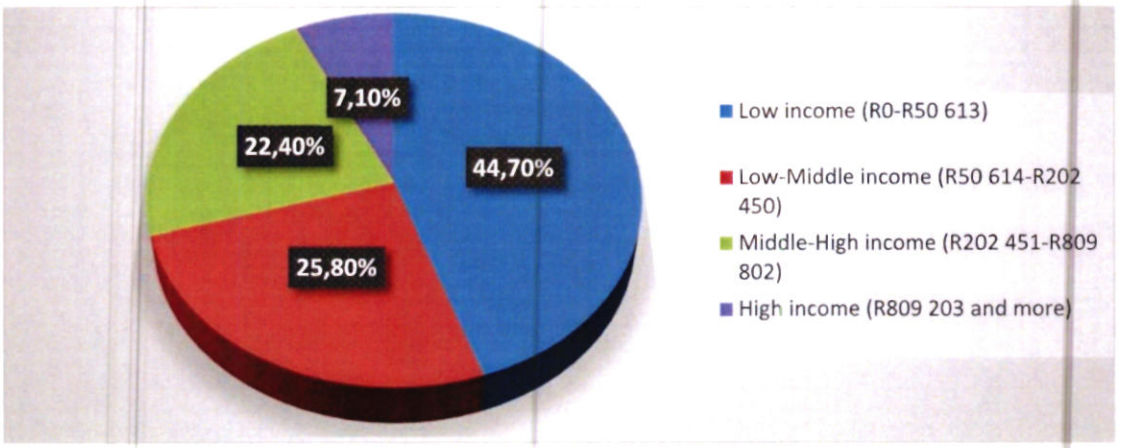

Figure 6: Supply of residential dwelling units based on household income categories
Source: Statistics South Africa and own calculations

Figure 7 illustrates the distribution of residential nodes throughout Stellenbosch Town (residential nodes are indicated with yellow, orange and pink areas).

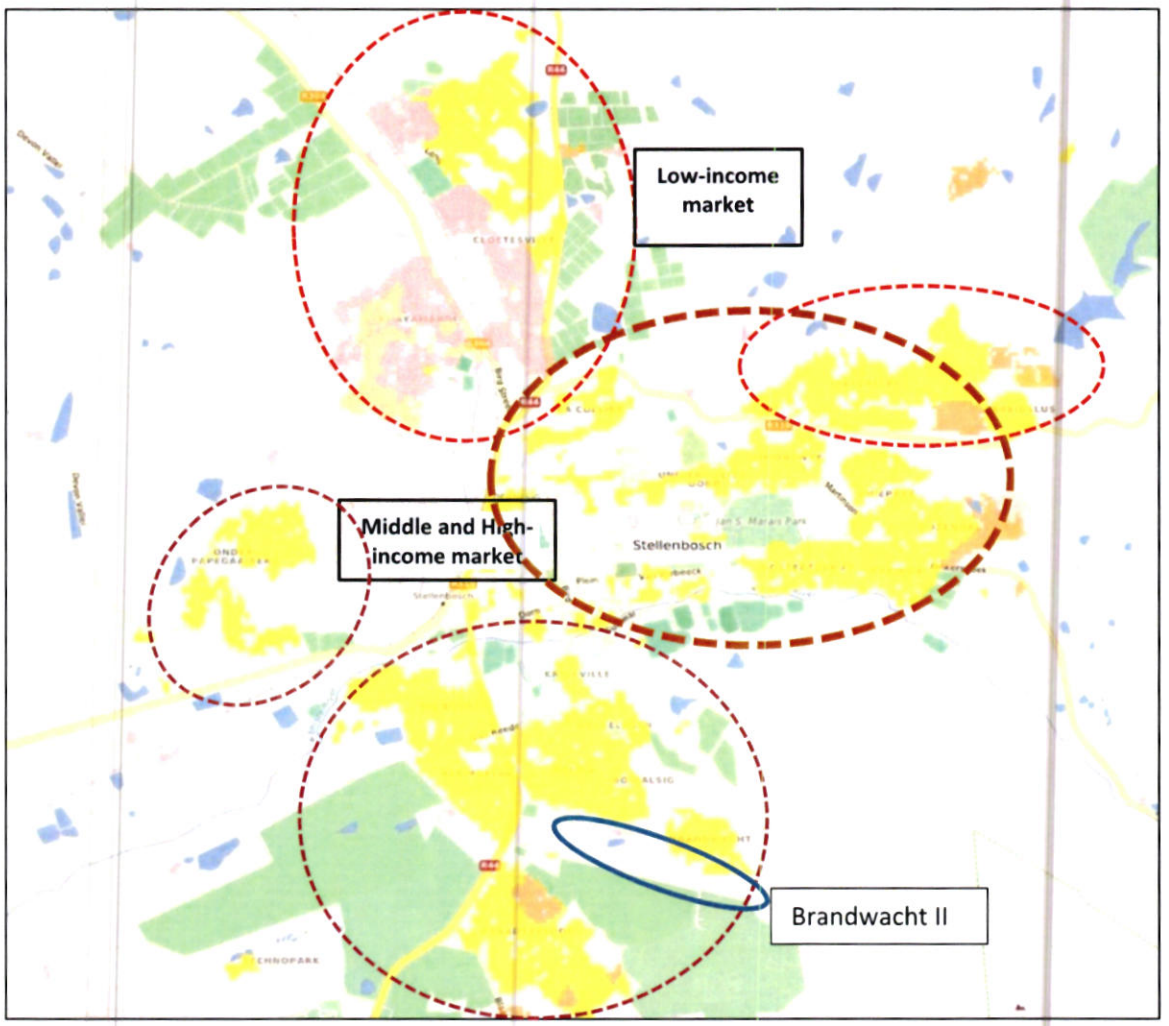

Figure 7: Distribution of residential nodes within Stellenbosch Town with an indication of the location for the Brandwacht II development
Source: Mapable Database: Land Cover, 2016

3.4.1 Approved plans for residential development

Figure 8 illustrates the building plans passed by the Stellenbosch Municipality for the Municipal area. In the absence of specific nodal data for different towns within the Stellenbosch Municipal area, a need exists to apportion a part of building plans passed to Stellenbosch Town. The approach adopted is based on the proportional historic land take-up over the period 2000–2015 for different towns within the Stellenbosch Municipal area. For the purposes of the analysis, this mechanistic method assumes that historic land take-up will be maintained. Over the stated period, Stellenbosch Town accounted for 60% of the total take-up of land for residential purposes. The percentage is applied to building plans approved for the municipal area and assumes an alignment between the historic take-up of land and building plans passed for the different housing typologies.

The average number of square metres passed by the Stellenbosch Municipality per annum over the period 2007 to 2016 for dwellings units smaller than 80 m², dwelling units larger than 80 m², flats and townhouses was 5 345 m², 44 432 m², 9 342 m² and 1 540 m², respectively. The classification is based on standards of reporting by Municipalities as required by Statistics South Africa. Large standard deviations for housing types suggest that significant fluctuations occur from year to year. This is also evident in Figure 8.

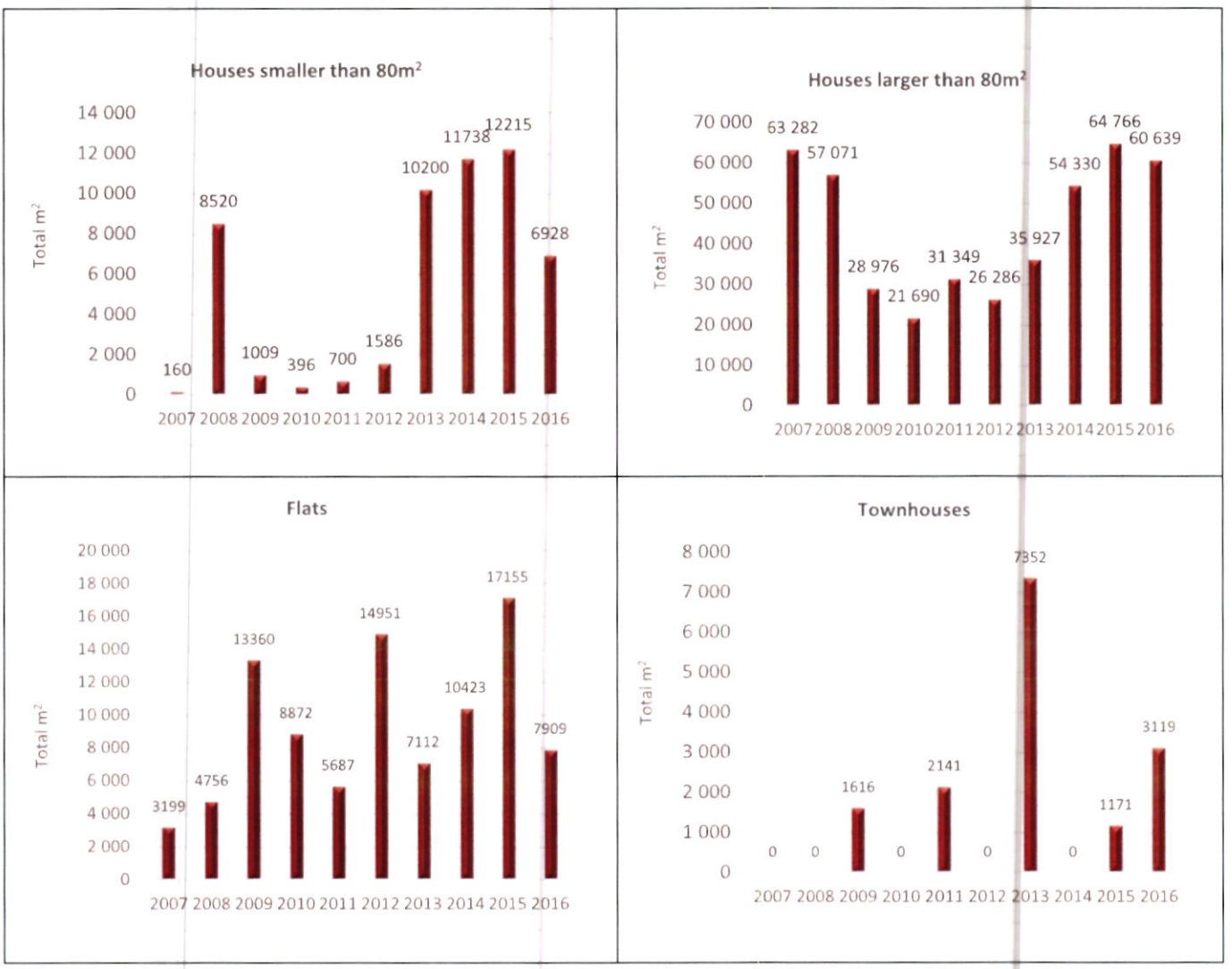

Figure 8: Building plans approved by the Stellenbosch Municipality per housing type per annum for the period 2007 to 2016

Source: Statistics South Africa

The square meterage of building plans approved for different housing types on an annual basis from 2007 to 2016 for Stellenbosch Town is indicated in Table 1. These figures were used to generate the information illustrated in Table 2.

Table 1: Estimated square meterage of building plans passed for different housing types on annual basis from 2007 to 2016 for Stellenbosch Town

<80m2	Building plans approved			>80m2	Building plans approved		
Year	Total m^2	Annual %	% Total	Year	Annual m^2	Annual %	% Total
2007	96	0,34%	0,24%	2007	37969	16,49%	94,96%
2008	5112	18,31%	12,11%	2008	34243	14,87%	81,13%
2009	605	2,17%	2,24%	2009	17386	7,55%	64,45%
2010	238	0,85%	1,28%	2010	13014	5,65%	70,06%
2011	420	1,50%	1,76%	2011	18809	8,17%	78,61%
2012	952	3,41%	3,70%	2012	15772	6,85%	61,38%
2013	6120	21,92%	16,83%	2013	21556	9,36%	59,29%
2014	7043	25,23%	15,35%	2014	32598	14,16%	71,03%
2015	7329	26,26%	12,82%	2015	38860	16,88%	67,96%
2016	4157	14,89%	8,81%	2016	36383	15,80%	77,15%
Total	27914	100,00%	8,81%	Total	230 206	100,00%	72,67%
Flats	**Building plans approved**			**Townhouses**	**Building plans approved**		
Year	Total m^2	Annual %	% Total	Year	Total m^2	Annual %	% Total
2007	1919	3,74%	4,80%	2007	0	0,00%	0,00%
2008	2854	5,56%	6,76%	2008	0	0,00%	0,00%
2009	8016	15,62%	29,71%	2009	970	13,16%	3,59%
2010	5323	10,37%	28,66%	2010	0	0,00%	0,00%
2011	3412	6,65%	14,26%	2011	1285	17,43%	5,37%
2012	8971	17,48%	34,91%	2012	0	0,00%	0,00%
2013	4267	8,32%	11,74%	2013	4411	59,87%	12,13%
2014	6254	12,19%	13,63%	2014	0	0,00%	0,00%
2015	10293	20,06%	18,00%	2015	703	9,54%	1,23%
2016	4745	9,25%	10,06%	2016	1871	25,40%	3,97%
Total	51309	100,00%	16,20%	Total	7368	100,00%	2,33%

Source: Statistics South Africa and own calculations

Table 2 indicates the average number of dwelling units per housing type per annum for an assumed house size, and aligns with the analyses and metrics applied throughout this assessment. The building plans passed for Stellenbosch Town indicate that, assuming that these plans translated into completed buildings, the annual average supply from 2007 to 2016 included 40 units of 80 m^2, 103 of 260 m^2, 123 flats of 40 m^2 and 7 townhouses of 130 m^2.

Table 2: Number of dwelling units per annum based on average m^2 per housing type for Stellenbosch Town from 2007 to 2016

Type of units	Applied dwelling sizes (m^2)	Average number of dwelling units p.a.
Smaller than 80 m^2	80	40
Larger than 80 m^2	260	103
Flats	40	123
Townhouses	130	7

3.5 Development "Pipeline"

A need also exists to factor residential projects into the equation that are in the planning stages or in different phases of the process from conceptualisation to pre-approval (prior to plans being passed by the Municipality). This data should be considered in the broader context of the analysis, do not necessary include all envisaged residential projects, are merely estimates of known projects, but do offer some indication of future supply based on a need perceived by developers.

Our research suggests that based on the housing typology adopted throughout this assessment, the envisaged supply for dwelling units covers an estimated period of 10 years with a split based on three, five and ten-year occupation periods. Figure 9 indicates an estimate of the number of units per housing type based on the three envisaged occupation timeframes.

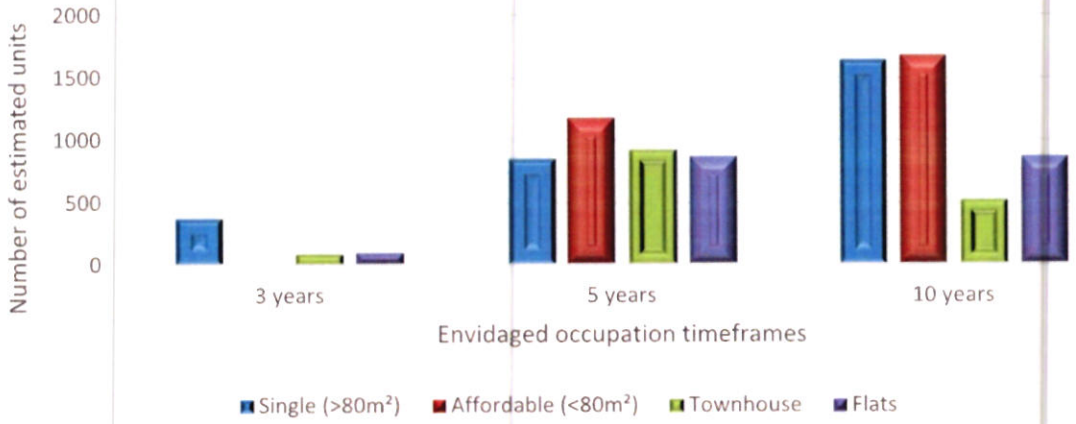

Figure 9: Envisaged supply of different housing types for three occupation timeframes
Note: These estimates of the projects pipeline include the Brandwacht II project being assessed as part of this report. The categories of dwelling units are based on the residential classification used by Statistics South Africa to ensure the necessary alignment
Source: Various

9 100 new units envisaged for next 10 years as part of a Developer Pipeline

The envisaged supply of all housing types suggest that from 2018, occupation of 569 units (6,25%) is envisaged over the first three years; 3 820 (41,98%) for occupancy over the first five years; and 4 711 (51,77%) for occupancy over the first 10 years. The total number of units envisaged to be supplied over the following 10 years is approximately 9 100. A breakdown of the envisaged supply is indicated in Table 3, which suggests that 31,56% of housing units supplied over 10 years accrues to dwelling units larger than 80 m², which are more aligned with middle to high-income groups; 31,43% to affordable housing (lower to middle-income groups);16,81% to townhouses (middle-income group); and 20,20% to flats.

Table 3: Percentage contribution to potential supply for three occupation periods

Occupation period	Single (>80m²)	Affordable (<80m²)	Townhouse	Flats
3 years	13,20%	0,00%	5,88%	5,44%
5 years	29,63%	41,26%	60,13%	47,28%
10 years	57,17%	58,74%	33,99%	47,28%
Total	**100,00%**	**100,00%**	**100,00%**	**100,00%**
Percentage per housing type	31,56%	31,43%	16,81%	20,20%

4. NEED AND DEMAND FOR HOUSING IN STELLENBOSCH TOWN

In order to estimate the need and subsequent demand for housing in Stellenbosch Town, an understanding of two terms are required. The ***need*** for housing from an economic perspective refers to a want or is simply something that people desire to have, which they may (or may not) be able to obtain. ***Demand*** is an ***economic*** principle that describes a consumer's desire and willingness to pay a price for a dwelling unit and is able to do so, i.e. affordability, which is the conversion of "latent" demand (or the need) into effective demand.

The analysis focuses on two inputs required to understand and assess potential demand for housing in Stellenbosch Town, namely a forecast over 20 years of land take-up translated into demand by Rode and Associates ("Rode"), and commuter traffic entering Stellenbosch from different directions on a daily basis (the "cordon counts"). The latter would be used to understand whether the demand forecasts by Rode as adjusted could accommodate the potential need and subsequent demand from persons commuting to Stellenbosch on a daily basis.

4.1 Demand for residential accommodation in Stellenbosch Town

The focus of the Rode forecasts for the purposes of this report, is the land take-up associated with houses larger than 80 m² and flats/townhouses as defined by Statistics South Africa. Several scenarios were developed by Rode to reflect different outcomes of possible future land take-up to address the housing demand for Stellenbosch Town over 20 years until 2036.

A linear regression equation is fitted to historic data of the square meterage of completed flats/townhouses and houses larger than 80 m² to reflect a Business-as-Usual scenario[7]. A long-term trend line is used to extrapolate the demand for these property types for 20 years until 2036. This mechanistic method of trend extrapolation assumes that over the forecast period, demand will continue to grow at the constant growth rate implied by the fitted linear trend line. Alternatively, the method assumes growth in the demand for space (and ultimately dwelling units) is not influenced by economic factors.

Econometric models were developed to reflect the historic relationship between the square meterage of completed flats/townhouses and dwellings larger than 80 m², and macro-economic variables such as real GDP and interest rates for the Consensus[8] and Junk[9] scenarios. The models were then used to forecast demand for these property types for the period 2016 to 2021. For the forecasts beyond 2021, a long-term trend of completed flats/townhouses and houses larger than 80 m² is used to extrapolate the 5-year forecast until the end of the forecast period (2036).

Note that the demand forecast until 2021 (in terms of the macro-economic Consensus and Junk scenarios) used by Rode for houses larger than 80 m² and flats/townhouses, is subject to the inherent assumption that there has historically been sufficient developable land available in the municipal area. In other words, one therefore assumes that there was no land-supply constraints for development. If this was not the case, the forecast would be underestimated compared to the potential future demand.

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[7] 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.

[8] The **Consensus** scenario is based on the opinions of a panel of economists whom Rode polls every six months. In effect, their forecasts represent a low-growth scenario, compared with the average post-WWII GDP growth (which was three to three and half percent per annum).

[9] The **Junk** scenario is in effect a very-low-growth macroeconomic scenario, constructed by Rode. As the tag implies, it assumes a worsening political and economic environment over the period of the production of the demand forecasts.

4.1.1 20-Year forecast in demand for housing

The FNB Property Barometer categorises houses in one of three categories: "Small-Sized Segment that include homes from 20 m² to 80 m², the "Medium-Sized Segment", which include homes from 80 m² to 230 m², and the "Large-Sized Segment" that include homes from 230 m² to 800 m² (http://www.wylie.co.za/wp-content/uploads/fnb-property-barometer_jul_2015_house-price-trends-by-home-size.pdf). Town houses would most likely be classified as part of the Medium-sized segment in terms of the FNB classification. Statistics South Africa defines townhouses as multiple, medium-density dwelling units including cluster housing, group housing, simplexes, duplexes, triplexes and other similar dwelling units that are usually grouped together, with one level of each unit on ground level (http://www.statssa.gov.za/publications/P50411/P50411September2017.pdf).

The house-size trends emerging from the FNB Property Barometer also suggest that a move to smaller houses is gaining momentum, which is reflected in the building statistics of houses completed in the Western Cape. Stellenbosch could be considered an outlier in terms of the split between townhouses and flats, but it is not beyond the realms of possibility that such a trend could emerge in Stellenbosch for new developments based on market need and affordability.

Table 4 provides an indication of the number of units required per housing type as determined by Rode for the three scenarios in the **Stellenbosch Municipal area** by 2036. In order to determine a separate figure for flats and townhouses, a share of 86% of the total net land extent required for flats/townhouse in 2036 is allocated to flats based on its historic share of demand. Rode determined the number of flats required by dividing the forecast of land for flats 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 in the Stellenbosch Municipal area. The future demand for townhouses is likely not to reflect the figures determined by Rode, which is based on historic take-up from 1996 to 2015. Townhouses could also be classified as houses of approximately 80 m² in size and therefore could be categorised in the housing typology category of units smaller than or equal to 80 m².

Table 4: Combined demand for residential units by 2036 per housing type and by scenario for the Stellenbosch Municipal area

Type of housing	Business-as-Usual	Consensus	Junk
Houses smaller than 80 m²	23 106	25 417	20 796
Houses larger than 80 m²	3 057	2 018	1 117
Flats	2 886	3 220	2 370
Townhouses	183	204	150
Total units	**29 232**	**30 859**	**24 433**

Source: Rode and Associates (2017)

Note that the above calculations of future required land extent assume the demand for and supply of land are currently in equilibrium, i.e. there is no significant pent-up demand (demand that cannot be satisfied because of a shortage of developable land[10]). 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, which is referred to by Rode as iron vacancy. This concept is analogous to an iron inventory of a retail business (or any business that has to keep inventory), i.e. 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, is unknown.

[10] Developable land means land that has a realistic potential of acquiring development rights

Based on the historic take-up from 1996 to 2015 for Stellenbosch Town as stated previously, it represented 60% of the take-up of all land developed across the Stellenbosch Municipal area. The figures in Table 5 reflect the number of units based on a positioning strategy determined by Rode and Associates for development in urban areas of Stellenbosch by 2036, with specific reference in this study to **Stellenbosch Town**.

Table 5: Scenario outcomes of demand for residential units by 2036 per scenario for Stellenbosch Town

Type of dwelling unit	Business-as-usual	Consensus	Junk	Average of scenarios
Houses smaller than 80 m^2	16 868	18 554	15 181	16 868
Houses larger than 80 m^2	2 598	1 716	950	1 755
Flats	2 453	2 737	2 015	2 401
Townhouses	156	173	128	152
Total units	**26 446**	**34 174**	**24 297**	**28 305**

Source: Rode and Associates (2017)

4.1.2 Alignment of affordability and the housing typology

Effective demand is created by the ability to pay for the dwelling, which in turns refers to affordability. An analysis was prepared to understand the alignment between loan repayments and price of dwelling units and the type of house. Affordability is based on 30% of a household's annual income, an interest rate of 10.5% and instalments payable over a period of 20 years. Table 6 provides an overview of the outcome of the analysis.

Table 6: Affordability analysis of bond repayment coupled to approximate unit price and the type of dwelling unit

Annual household income categories	Monthly bond repayments	Approximate cost per unit	Proposed type of residential
Low-income (R0 – R50 613)	R0 – R998	R0 – R100 000	Subsidised/ Social Housing (BNG)
Low to middle-income (R50 614 – R202 450)	R1 997 – R4 992	R200 000 – R500 000	GAP Housing
Middle to high-income (R202 451 – R809 802)	R5 990 – R19 968	R600 000 – R2 million	Middle-income – Apartments and small townhouses
R809 203 – R1.6 million	R24 959 – R39 935	R2.5 million – R4 million	Luxury duplex/single residential
R1.6 million – R3.2 million	R44 927 – R79 870	R4.5 million – R8 million	Luxury high-end single residential
R3.2 million and above	R84 862 and more	R8.5 million and above	

Note: The household income categories emphasised in the above table are aligned with the type of housing envisaged for the proposed Brandwacht II project.

Based on the above affordability analysis, it is evident that the residential market consists of the following categories:

- Low and low- to-middle-income aimed at the BNG and GAP housing markets;
- Middle to high-income group – this market caters for young families, private student accommodation, households employed in blue-collar jobs (i.e. teachers, police officers, municipal workers, etc.); and
- Higher-income luxury market.

As indicated above, the **middle to high-income market** is specifically aimed at the following income brackets:

- R202 451 – R809 802 per annum income (units between R600 000 and R2 million)
- R809 203 – R1.6 million per annum income (units between R2.5 million and R4 million)
- R1.6 – R3.2 million per annum income (units between R4.5 and R8 million)
- R3.2 million and above per annum income (units R8.5 million and above)

The nature and scope of the Brandwacht II development is most likely aligned to the first category and a portion of the second category of households based on income levels.

4.1.3 Adjustment of Rode demand forecasts

Accurate forecasts of demand related to the housing typology over the next 20 years are impossible. Given the context provided above and based on emerging market trends, an adjustment is made to the demand forecasts for different housing types prepared by Rode in order to reflect a higher need for town houses and larger homes. Although the market will dictate demand and developers will react accordingly, the tendency to provide for smaller erf sizes and smaller houses in medium to high-density developments is gaining momentum. In order to reflect the principles stated above, the following adjustments are made to the baseline allocation of demand for different types of dwelling units determined by Rode.

- Current size and consequently the number of townhouses as per the Rode forecast, are adjusted down from a dwelling size of 200 m^2 to reflect a size of 130 m^2, which implies that the base number determined by Rode, increases by a factor of 1,5384.
- Twenty percent (20%) of the houses smaller than 80 m^2 as determined by Rode are re-allocated to townhouses. This figure is divided by a factor of 1,625 to reflect the need to increase the size of the house to 130 m^2, which implies less units of 80 m^2 or smaller are available.
- Twenty-five percent (25%) of houses smaller than 80 m^2 in the affordable category are allocated to the category of houses larger than 80 m^2. Note that Rode used a house size of 260 m^2 to reflect the size of a house in the category above 80 m^2. The re-allocation of houses from the smaller than 80 m^2 category required a downwards adjustment of the number of units re-allocated to the above 80 m^2 category; a factor of 3,25 was therefore applied.

Our analysis of emerging trends suggests that the 20% and 25% re-allocations stated above is not unrealistic in terms of the envisaged market supply dynamics, project ideas, conceptualisation and developer risk and returns.

The re-weighting per scenario is indicated in Table 7 for the housing types based on the baseline forecasts prepared by Rode. In terms of the categorisation adopted by Rode, the combination of affordable houses smaller than 80 m^2, flats and townhouses when compared to houses larger than 80 m^2, represented a split of 91% to 9%. The adjusted allocation reflects a split of 84% to 16% for the stated two respective categories.

Table 7: Percentage allocation adopted by the Rode forecast per housing type for each scenario versus the adjusted percentages based on the reallocation of units

	Business-as-Usual scenario		Consensus scenario		Junk scenario		Consolidated adjustment
Housing type	Rode	Adjusted	Rode	Adjusted	Rode	Adjusted	
Houses smaller than 80m^2	76%	51%	80%	54%	83%	56%	**54%**
Houses larger than 80m^2	12%	20%	7%	15%	5%	13%	**16%**
Flats	11%	13%	12%	14%	11%	14%	**14%**
Townhouses	1%	16%	1%	16%	1%	17%	**16%**

Source: Rode and Associates (2017) and own calculations

Table 8 indicates the result of the adjustments for **Stellenbosch Town** made to the baseline allocation of dwelling units by Rode in the forecast to 2036. The percentage allocation was recalculated to include affordable houses of smaller than 80 m^2, houses larger than 80 m^2, flats and townhouses. The findings suggest that 464 houses smaller than 80 m^2, 140 larger than 80 m^2, 120 flats and 141 townhouses, or a total of 865 dwelling units per annum on average, are required to serve the demand for dwelling units. Also note that due to reallocation and adjustments, the total number of units required by 2036 are 17 301 as opposed to the 28 305 stated in the Rode forecast.

Housing demand per annum on average:

- 464 houses <80 m^2
- 140 houses >80 m^2
- 120 flats
- 141 townhouses

Table 8: Adjusted demand for housing types in Stellenbosch Town with an annual average of the scenarios over a period of 20 years

Type of house	Business-as-Usual scenario	Consensus scenario	Junk scenario	Average of scenarios	Average per annum over 20 years
Houses smaller than 80 m^2	9 277	10 205	8 349	9 277	464
Houses larger than 80 m^2	3 636	2 857	1 884	2 793	140
Flats	2 453	2 737	2 015	2 402	120
Townhouses	2 835	3 121	2 532	2 829	141
TOTAL	**18 201**	**18 920**	**14 780**	**17 301**	**865**

Source: Rode and Associates (2017) and own calculations

The greatest demand is for houses smaller than 80 m^2, which represents 53,6% of the total annual demand. Similar numbers of town houses and houses larger than 80 m^2 are required on an annual basis, while 120 flats per annum on average are required to cater specifically for the student and young working adult market.

One in every two dwelling units demanded is part of the affordable category (houses smaller than 80 m^2

5. ALIGNING COMMUTER TRAFFIC AND DEMAND FOR HOUSING

5.1 Linkage between commuting employees and housing demand

Housing demand is traditionally based on population growth and is influenced by factors such as income levels, access to finance and market conditions. A requirement also exists to align the housing need with employment generated by existing and new development opportunities, as the current demand for employment cannot be met from internal supply, i.e. many people live elsewhere and commute to their place of employment in Stellenbosch Town. This results in various other issues, such as the exacerbation of an already congested road and parking network, increase in property prices and negative effect on household lifestyles.

A large number of people commute daily to Stellenbosch Town for work, with many of these commuters that cannot afford to purchase a dwelling unit in Stellenbosch. Figure 10 illustrates current and new employment in the commercial, retail and industrial sectors in relation to persons that live and work in Stellenbosch Town and those that commute on a daily basis together with the potential need for housing.

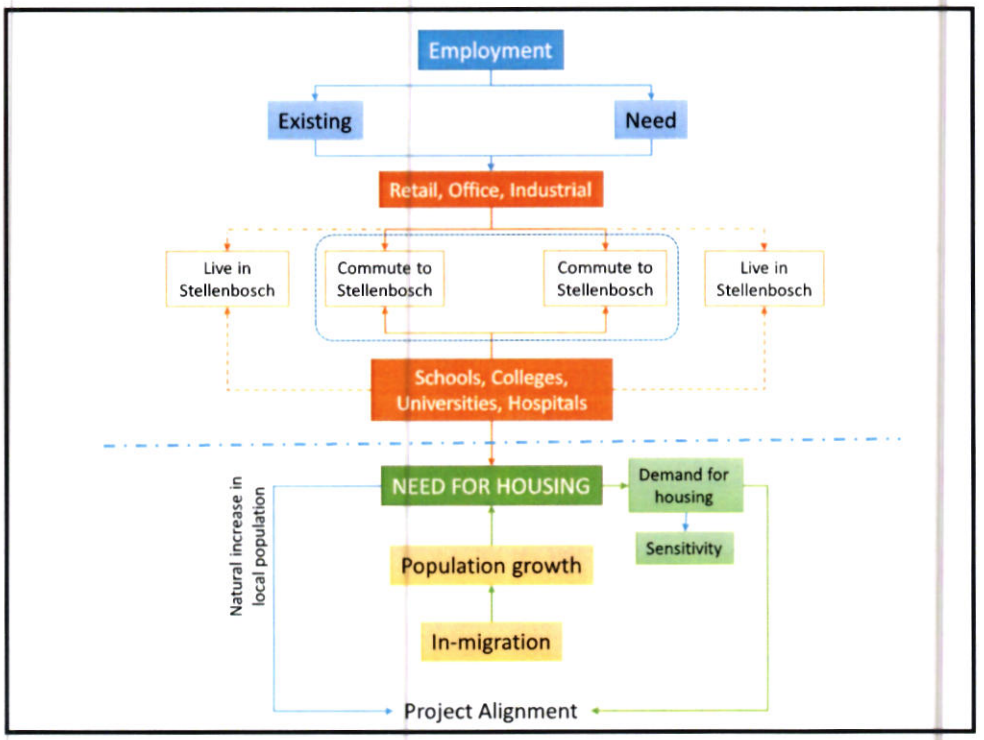


Figure 10: Contextualisation of employment by commuters travelling to Stellenbosch and the need for housing

Source: Multi-Purpose Business Solutions

The approach adopted to ascertain the potential demand for housing is based on an understanding of the existing supply and future demand for retail, commercial and industrial space. A need therefore exists to determine the number of people that work in the businesses and institutions operating in Stellenbosch Town. The approach adopted is based on a determination of the total GLA occupied by businesses in the retail, office and industrial sectors, and applying employee densities to obtain an estimate of the number of people being employed within Stellenbosch Town.

Stellenbosch Town has various JSE-listed entities, other large unlisted businesses, a large education sector comprising primary, secondary and tertiary institutions, hospitals and other public and government institutions. These entities include among others, Stellenbosch University, Capitec, MediClinic, Remgro, Parmalat, Distell, Boland College, Stellenbosch Municipality, Stellenbosch and MediClinic hospitals, etc.

After characterising the employment population of Stellenbosch, it is necessary to determine what percentage of employees that work at these and other firms, are domiciled in Stellenbosch Town versus those that commute on a daily basis from the surrounding towns or the CMA.

The maximum need for housing is derived from estimates of the existing number of employees commuting daily to Stellenbosch Town and the "potential" number of new employment opportunities that any new retail, commercial and industrial development would generate. We assume that displacement and substitution is likely to occur, but when applied to persons that commute to Stellenbosch Town, the impact is zero as the vacant position is filled by another person who either originates from within Stellenbosch Town or forms part of the commuter work force. This is obviously not possible to determine without primary research.

5.2 Need and demand assessment of commuters

Cordon traffic entering Stellenbosch from various access routes determined by Royal Haskoning DHV for the Stellenbosch TOD study (2016), was considered as a point of departure. The cordon counts of vehicles were translated into a figure representing the number of persons entering Stellenbosch during the daily commute by using the Hatch-Goba (2015) study, which drew on information from a study prepared by Jeffares and Green in 2010.

It was apparent from the Hatch-Goba survey (2015) among the larger employers in Stellenbosch (i.e. Distell, MediClinic, Remgro, Parmalat, Denel and Stellenbosch Municipality) that 80% of the workforce use a car for travelling to work, while 20% of employees make use of a lift club on a regular or irregular basis (p. 23). Jeffares and Green (2010) determined that occupancy per vehicle ranged between 1,1 and 2,6 for high- and low-income groups, respectively. We adopted a vehicle occupancy ratio ranging from 1,1 to 2,6 based on the distance travelled and the origin of the vehicles entering Stellenbosch Town. In other words, longer travelling distances would assume greater vehicle occupancy levels.

- 14 409 commuters entering Stellenbosch in morning peak traffic
- 11 527 commuters working in Stellenbosch

These ratios were applied to determine the number of individuals entering Stellenbosch Town in the morning peak from 7:00 to 9:30, which is estimated at 14 409. It may also be argued that the peak starts at 6:30, which results in an undercount of traffic entering Stellenbosch.

Jeffares and Green (2010) determined that 20% of the vehicles could be considered as through-traffic (Hatch-Goba, 2015, p. 11). The adjusted number of people commuting to and working in Stellenbosch Town is therefore 11 527. Once the number of persons commuting was determined, the Hatch-Goba 2015 study relying on the Jeffares and Green estimates, determined that 40% of the Stellenbosch work force resides in neighbouring towns from where they commute every day, while 25% of Stellenbosch University students commute from neighbouring towns. The cordon counts, through-flow, vehicle occupancy and employees residing outside Stellenbosch Town form the basis for the baseline establishment of the need for dwellings units.

Stellenbosch University students were deducted from the baseline as they could not realistically be considered as potential purchasers of dwellings in Stellenbosch Town. A ratio of 40%, as indicated above, was applied to the remaining part of the workforce entering Stellenbosch Town on a daily basis. This implies a figure of 6 527 that could be considered as part of the potential take-up of dwellings in the future. We assumed that the number of commuters would increase by 1,52% per annum, which is

derived from the estimated annual growth in retail, commercial and industrial development envisaged for Stellenbosch Town as determined by Rode for the following 20 years.

However, it is unrealistic to assume that 8 830 people working in Stellenbosch Town by 2036 forming part of the daily commuting workforce that reside elsewhere, would be able to afford to purchase a dwelling and/or even be willing to or want to live in Stellenbosch Town. Although affordability can be determined based on categories of income, no personal or household income data are available from commuters, neither any indication of whether or not they would exercise a choice to live in Stellenbosch Town. Choice could be influenced by financial, general economic conditions, family structures and other decisions.

8 830 people working in Stellenbosch Town by 2036 would form part of the daily commuting workforce

A factor that further affects the need for housing and ultimately demand is in-migration, which could be due to the following:

- People move to Stellenbosch Town in response to a need for additional staff by existing commercial or public/government institutions;
- People move to Stellenbosch Town, but work elsewhere in the Winelands District or in the CMA;
- Normal population progression of people that were raised in Stellenbosch, accepted employment and remained here, creating further demand.

These categories of persons/households also form part of the potential need, which as indicated, translates over time into demand for housing. The limitations of the analysis thus far relate to the following:

- No data on the household income levels of persons commuting to Stellenbosch Town are available;
- No data on preferences to reside in Stellenbosch could be considered;
- Population projections can offer an indication of the population growth, which then address the categories of persons highlighted above, but current data are estimates and subject to a large margin of error.

It is not the purpose of this report to assess whether or not development can occur, which is affected (among others) by the Municipality's financial ability to provide infrastructure, planning policies and market conditions, but how the potential need could translate into effective demand. Consequently, it is required to align the demand forecasts by Rode as adjusted, with the potential demand suggested by commuter traffic.

For the purposes of further assessing the potential demand from commuter traffic, the demand, which represents the take-up of residential units and commercial opportunities as determined by Rode and Associates for input into the Draft Stellenbosch Urban Development Strategy (UDS) (2017), is used as a base. The percentage contributions of different housing types determined by Rode are amended and applied to the dwelling need by commuters (see Section 4.1.3).

5.3 Aligning the Rode demand forecast and potential commuter need for dwelling units

Rode forecasted demand for housing based on different housing types that included houses smaller than 80 m^2 (affordable), houses larger than 80 m^2, flats and townhouses. The percentage split between the housing types was applied to the housing need in order to estimate an effective demand from persons commuting to Stellenbosch. Table 9 indicates an example of the split for 100% of commuters (8 830) that could express a need for dwellings in Stellenbosch Town based on the adjustment of the Rode demand forecasts for middle-income and high-income groups. The average need for dwelling units per annum based on the commuter need is 371 (for the middle-income category) and 70 (for the high-income category) over the next 20 years. The Rode adjusted forecasts suggest demand for 725 and 140 units for the middle-income and high-income groups, respectively. From a break-even perspective, the average annual demand determined by Rode as adjusted covers the estimated need of the middle-income commuting group (taken as 100%) by 1,95 times and the high-income need by 1,98 times.

Annual housing need:

- 371 units for middle-income category
- 70 units for high-income category
- Coverage 1,95 to 1,98

Table 9: Break-even analysis for alignment of Rode demand forecasts and need from 100% of persons commuting to Stellenbosch

	BAU Scenario	Consensus Scenario	Junk Scenario	Average Need p.a.	Break-even percentage	Break even	Adjusted Rode Forecast	Demand average p.a.	Difference
Middle Income – Apart. & small									
Houses smaller than 80m², flats & townhous	7067	7498	7706	371	195,43%	725	14508	725	0
High income									
Houses larger than 80m²	1764	1334	1126	70	198,34%	140	2793	140	0

Source: Multi-Purpose Business Solutions

A sensitivity analysis was applied to determine a more realistic demand of the commuter need for dwellings in Stellenbosch Town. The figures in Table 10 indicate the estimated percentage of the need that could be converted to effective demand, which assumes that commuters can afford to purchase a dwelling and would choose to stay in Stellenbosch. A 50% take-up (or demand for dwellings) indicates a requirement for 186 units in the middle-income and 35 units in the high-income category per annum on average over the next 20 years.

Annual average housing demand with 50% take-up:

- 186 units for middle-income category
- 35 units for high-income category

Table 10: Sensitivity analysis of potential demand derived from the need for different types of dwelling units by commuters

Sensitivity analysis	Rode adjusted	Commuter demand for dwellings			
(Demand per annum)	avg. p.a.	100%	75%	50%	25%
Middle Income – Apart. & small					
Houses smaller than 80m², flats & townhous	725	371	278	186	93
High income					
Houses larger than 80m²	140	70	53	35	18

Figure 11 is an illustration of different demand levels derived from the commuter need. It is clear that irrespective of the commuter need, the Rode adjusted forecasts would still be able to absorb any demand that would be realised from commuters acquiring dwelling units of the different housing types in Stellenbosch Town.

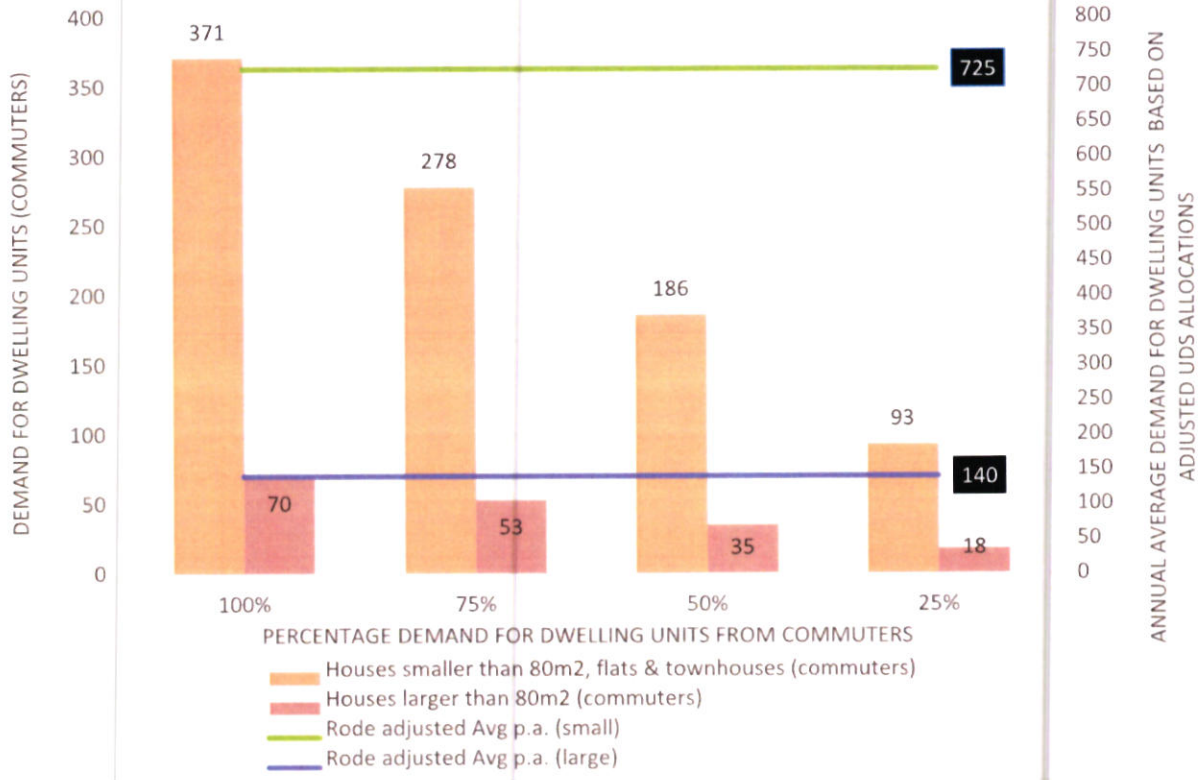


Figure 11: Alignment of potential need for different housing types based on commuters with the Rode demand forecasts for dwelling units

An application of the sensitivity analysis indicates that even with the adjustment of demand for housing types adopted by Rode, the adjusted demand forecasts would be sufficient to cover the need that may emanate from commuters. The findings are indicated in Table 11.

Table 11: Coverage ratios of commuter housing need for different dwelling types (categories)

Housing category	Coverage of possible commuter demand by adjusted Rode forecasts			
	100%	75%	50%	25%
Houses smaller than 80m^2, flats & townhouses	2,0	2,6	3,9	7,8
Houses larger than 80m^2	2,0	2,6	4,0	7,9

The take-out of the analysis of the potential commuter need for dwelling units, suggests that the demand projections determined by Rode as adjusted is sufficient to cover a 100% of the need that may arise from commuters. This effectively implies that any demand for dwelling units derived from the commuter need, is absorbed in the projections for all types of housing considered in this analysis.

6. DEMAND FOR DWELLING UNITS ARISING FROM COMMERCIAL DEVELOPMENT

The analysis considered in the previous sections was based on the current workforce commuting to Stellenbosch on a daily basis. It is assumed that businesses in Stellenbosch Town are operating at near full employment capacity and that no substantial vacancies exist. It is further assumed that additional capacity is available from persons residing in Stellenbosch Town for the nature and scope of jobs required by existing firms operating in Stellenbosch Town. Consequently, development of any additional retail, commercial and industrial activity, especially in the office and retail space, as well as development of special purposes properties (e.g. schools) would require employees that originate from outside Stellenbosch Town.

It is also accepted that the substitution effect would occur among existing businesses and people moving to other new opportunities in Stellenbosch Town due to retail, commercial and industrial development will be replaced by new persons and therefore create new demand. Hence, for the purposes of the next part of the analysis, it is assumed that no additional employment is available to be met from internal (Stellenbosch Town) supply.

The additional need for dwelling units arising from future retail, commercial and industrial development is based on the following principles:

a. The forecast of demand for retail, industrial and office space in Stellenbosch Town over the next 20 years prepared by Rode, forms the basis of the calculation to determine the potential need for dwelling units;

b. Typical employment densities expressed as a full-time equivalent job per m^2 are used to determine the potential number of employees that would be required:

   - Industrial: 47 m^2
   - Office: 16 m^2
   - Retail: 15 m^2

c. Densities are applied to the Gross Lettable Area (GLA) to determine the number of employees; and

d. The same factors and ratios applied to the cordon counts are used to determine the number of employees that would originate from outside Stellenbosch.

6.1 Impact of retail, commercial and industrial development

Our analysis suggests an average of 509 employees per annum is required for new retail, office and industrial development in Stellenbosch Town over a period of 20 years, of which 203 persons would originate from outside Stellenbosch and 306 would acquire housing in Stellenbosch Town, thus creating further demand. The 40% applied to the workforce originating from neighbouring towns could be higher depending on the nature and scope of skill levels required and the assumption that more than two-thirds of the economic activity in Stellenbosch Town is generated by businesses operating in the tertiary sector of the economy. The same percentages adopted for the assessment of the housing need from commuters are applied to the need for housing due to future development. This is required in order to achieve the necessary alignment between demand for housing from commuters and demand that arises from future commercial, retail and industrial development.

An additional 175 vehicles per annum on average would enter Stellenbosch Town due to the rollout of retail, commercial and industrial development over 20 years. We assumed a worst-case scenario with one occupant per vehicle, i.e. 175 extra persons are factored into the 8830 calculated in Section 5.2.

The previous analysis was based on number of vehicles and vehicle occupancy, while the analysis in this section uses a different approach based on employment densities. The application of the employment densities suggests that 203 persons would work in Stellenbosch Town, but originate from elsewhere. A difference of 28 persons occurs due to the different approaches.

Table 12 indicates that the average demand per annum based on the Rode forecast for retail, office and industrial space in Stellenbosch Town over the next 20 years ranges from 51 to 203 dwelling units for take-up percentages ranging from 25% to 100% for those persons that commute to Stellenbosch. A further 77 to 306 persons could take up residence in Stellenbosch based on the application of the sensitivities.

Table 12: Sensitivity analysis of the potential need for dwelling units arising from non-residential development

Sensitivity analysis for number of units based on annual average (commercial, retail & industrial development)				
	100%	**75%**	**50%**	**25%**
Middle to High Income Houses smaller than 80m^2, flats & townhouses (commuters)	171	128	86	43
High income Houses larger than 80m^2 (commuters)	32	24	16	8
Total	203	153	102	51
Middle to High Income (residing in Stellenbosch Town) Houses smaller than 80m^2, flats & townhouses (residents)	257	193	129	64
High income (residing in Stellenbosch Town) Houses larger than 80m^2 (residents)	49	37	24	12
Total	306	230	153	77

A need also exists to include an additional 306 persons arising from future retail, commercial and industrial development that would reside in Stellenbosch Town, using the upper figure of the commuters as the base. In terms of understanding the total demand, an additional 334 persons are added to the potential need for dwelling units to prevent double counting, i.e. not all 509 persons representing the employment requirement for Stellenbosch Town due to future retail, commercial and industrial development.

Figure 12 is an illustration of different demand levels derived from the commuter need. It is clear that irrespective of the commuter need, the Rode forecasts would still be able to absorb any demand for dwelling units for the different housing types that would be realised from non-residential development in Stellenbosch Town.

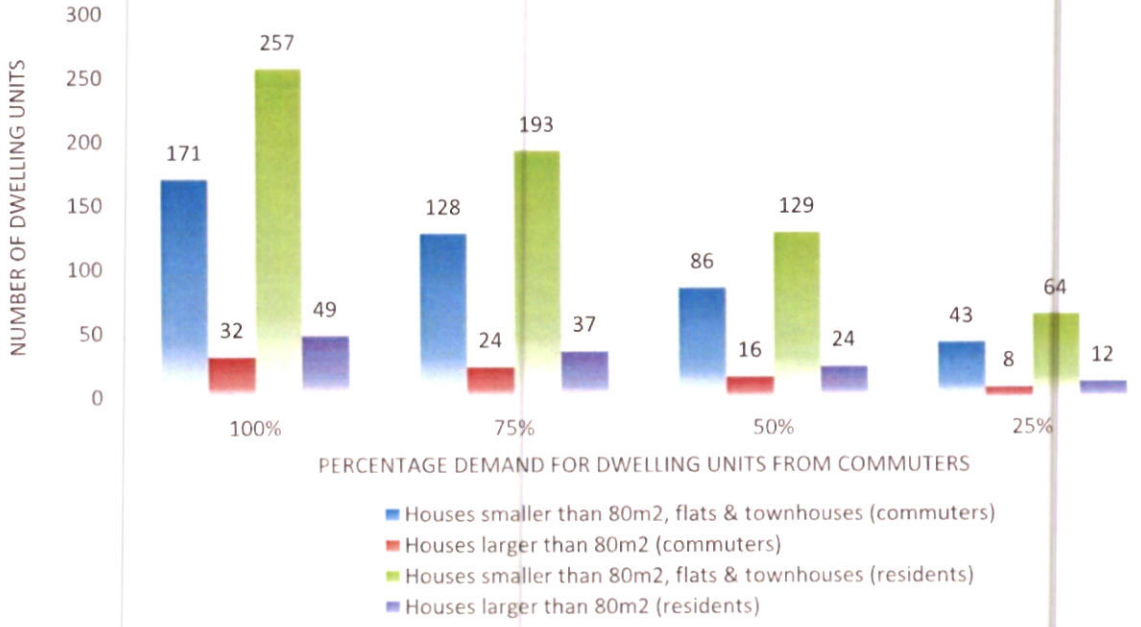


Figure 12: Alignment of potential need for different housing types from commuters and Stellenbosch Town residents with the Rode forecasts for dwelling units arising from non-residential development

6.2 Metrics for analysis of future commercial development

It is useful to understand the figures derived from the analysis in the context of the relationship between two variables, i.e. vehicle traffic and commercial development. We determined that the addition of 52 m² of retail, office and industrial space would result in one additional vehicle entering Stellenbosch Town daily for work. Furthermore, one additional employee will originate from outside Stellenbosch Town for every 44 m² of GLA developed in Stellenbosch Town. Assuming the remainder of the need that arises from future commercial development arises from persons that want to reside in Stellenbosch Town, one additional employee originates from within Stellenbosch Town for every 30 m² of GLA developed. These ratios are derived from figures calculated from the assumptions applied in the analysis.

- 1 additional vehicle will enter Stellenbosch Town for every 52 m² of GLA developed
- 1 additional employee will originate from outside Stellenbosch Town for every 44 m² of GLA developed
- 1 additional employee would/could reside in Stellenbosch Town for every 30m² of GLA developed

7. CONSOLIDATED DEMAND FOR DWELLING UNITS

The potential demand for dwelling units related to current commuters is added to the demand that could be generated from additional commuters entering Stellenbosch Town as well as persons that would/could reside in Stellenbosch Town due to future commercial, retail and industrial development. Table 13 indicates the consolidated demand for dwelling units from current and additional commuters with the latter representing an increase in commuters due to commercial, retail and industrial development over time. An average annual need for dwelling units from commuters ranges from 195 to 775, with 50% that could represent effective demand for 326 houses smaller than 80 m², flats and small town houses and 62 houses larger than 80 m². The findings indicate that the adjusted demand forecasts by Rode, which did not consider the possible need for housing arising from future retail, commercial and industrial development, are able to cover 100% of the need. The different demand levels derived from the combined commuter need is also illustrated in Figure 13.

Combined commuters need between 195 to 775 dwelling units of different housing types on average per annum

Table 13: Combined housing need for existing and growth in commuters (due to retail, commercial and industrial development) compared to the adjusted Rode forecast for different levels of need

Sensitivity analysis (annual average demand)	Rode				
(Commuters and future commercial development)	forecast	100%	75%	50%	25%
Middle Income					
Houses smaller than 80m², flats & townhouses	725	652	489	326	163
High income					
Houses larger than 80m²	140	123	93	62	31
TOTAL	865	775	582	388	195

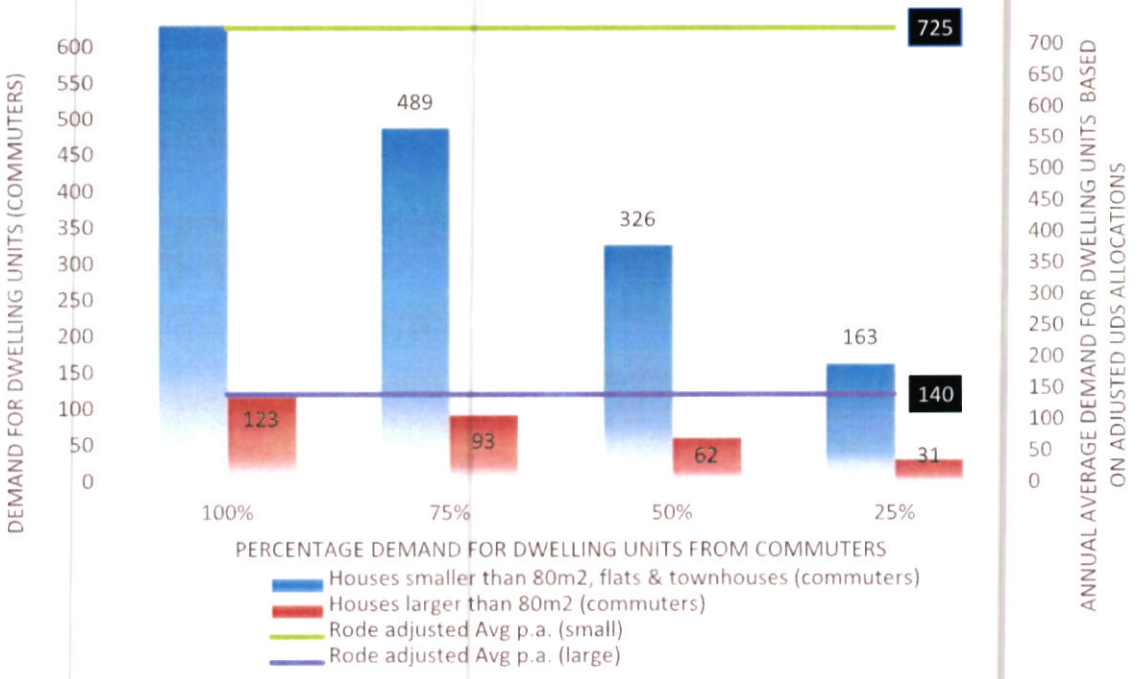


Figure 13: Alignment of the combined potential need by commuters for dwelling units of different housing types with the Rode forecasts for dwelling units

7.1 Sensitivity analysis related to adjustment of the housing type mix

As stated previously, houses smaller than 80 m², flats & small townhouses originally represented 91,88% of the housing mix determined by Rode, while houses larger than 80 m² represented 8,12%. This split was adjusted down to 84,06% for houses smaller than 80 m², flats & small townhouses and increased to 15,94% for houses larger than 80 m². These are the percentages applied in the analysis below. Various splits are applied to understand different allocation options; although these are for illustrative purposes, it offers an indication of different market scenarios for the two housing categories.

The analysis below is based on the allocations indicated in Table 14 for different percentages of the need for housing types. Proportional splits are used to demonstrate the adjusted output of the two housing mixes ranging from a 50%:50% (or equal) ratio to a ratio of 75%:25%.

Table 14: Combinations of different percentages representing the split between housing categories

Houses <80m2, flats & small townhouses	50%	55%	60%	65%	70%	75%
Houses >80m2	50%	45%	40%	35%	30%	25%

The findings of the sensitivity analysis presented in Table 15 based on the above proportional allocations suggest that the number of dwelling units required on an annual basis for the **50% scenario** (represented by a total demand of 388 dwelling units) ranges from 194 to 241 units for houses smaller than 80 m², flats and small townhouses. The demand for houses larger than 80 m² for the high-income group by 2036 ranges from 97 to 194 dwelling units on average per annum. This aligns with the forecast period adopted in the Rode forecasts.

50% of the need by 2036 would require on average per annum:

- 194 to 241 units smaller than 80 m²
- 97 to 194 units larger than 80 m²

The 75% scenario (represented by 582 dwelling units), indicates demand that ranges from 291 to 346 units for houses smaller than 80 m², flats and small townhouses. Demand for houses larger than 80 m² for the high-income group by 2036, ranges from 145 to 291 dwelling units on average per annum by 2036.

Table 15: Sensitivity analysis for different allocations between housing types based on different levels of need from current and future commuters

Adjusted split	Housing type		Sensitvity analysis					
84,06%	Houses <80m2, flats & small townhouses		50%	55%	60%	65%	70%	75%
15,94%	Houses >80m2		50%	45%	40%	35%	30%	25%
Total need arising from commuters		100%						
Adjusted annual housing demand		775						
Middle Income – Apart. & small townhouses								
Houses smaller than 80m^2, flats & townhouses			388	426	465	504	543	581
High income								
Houses larger than 80m^2			388	349	310	271	233	194
Adjusted split	**Housing type**		Sensitvity analysis					
84,06%	Houses <80m2, flats & small townhouses		50%	55%	60%	65%	70%	75%
15,94%	Houses >80m2		50%	45%	40%	35%	30%	25%
Total need arising from commuters		75%						
Adjusted annual housing demand		582						
Middle Income – Apart. & small townhouses								
Houses smaller than 80m^2, flats & townhouses			291	320	349	378	407	436
High income								
Houses larger than 80m^2			291	262	233	204	174	145
Adjusted split	**Housing type**		Sensitvity analysis					
84,06%	Houses <80m2, flats & small townhouses		50%	55%	60%	65%	70%	75%
15,94%	Houses >80m2		50%	45%	40%	35%	30%	25%
Total need arising from commuters		50%						
Adjusted annual housing demand		388						
Middle Income – Apart. & small townhouses								
Houses smaller than 80m^2, flats & townhouses			194	213	233	252	272	291
High income								
Houses larger than 80m^2			194	175	155	136	116	97
Adjusted split	**Housing type**		Sensitvity analysis					
84,06%	Houses <80m2, flats & small townhouses		50%	55%	60%	65%	70%	75%
15,94%	Houses >80m2		50%	45%	40%	35%	30%	25%
Total need arising from commuters		25%						
Adjusted annual housing demand		195						
Middle Income – Apart. & small townhouses								
Houses smaller than 80m^2, flats & townhouses			97	107	117	126	136	146
High income								
Houses larger than 80m^2			97	88	78	68	58	49

Figures 14 and 15 illustrate the outcomes of the different percentage allocations to the two housing categories (houses smaller than 80 m^2, flats and small townhouses, and houses larger than 80 m^2) based on the adjusted allocation stated above. The colours in Figures 15 and 16 correspond, which enables a direct comparison of the two housing categories starting at an equal allocation (50%) for both housing categories.

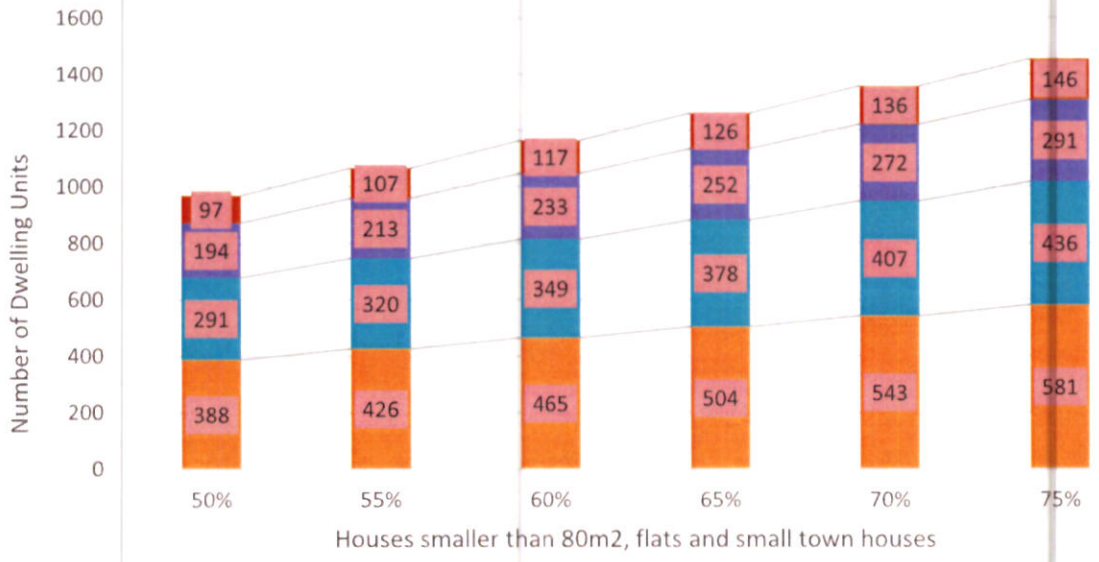


Figure 14: Illustration of different outcomes for an increasing percentage allocation to houses smaller than 80 m², flats and town houses

Figure 15: Illustration of different outcomes for an increasing percentage allocation to houses larger than 80 m²

7.2 Synopsis of key findings

The assumptions, adjustments, findings and discussion in the previous sections suggest that the demand for units determined by the Rode forecasts as adjusted would absorb a 100% of the potential need accruing from current and future commuting traffic and from future demand for additional retail, commercial and industrial development space.

A more realistic take-up of 50% of the total need could be considered as effective demand, and results in a coverage ratio of 2,23 units for all housing types considered in the analysis (i.e. houses smaller than 80 m², flats & townhouses and houses larger than 80 m²). This implies that the need for every unit is covered 2,23 times by the demand projection in the Rode forecasts as adjusted. The coverage ratio for houses smaller than 80 m², flats & townhouses and houses larger than 80 m² is 2,22 and 2,27, respectively. The coverage ratios do not include other categories of demand outlined in Section 5.2.

*The **surplus** in terms of the forecast arises from the difference between the demand determined by the Rode forecasts as adjusted and the estimates emanating from the existing commuter traffic and additional commuter traffic derived from new commercial, retail and industrial development.* In terms hereof, a 100% take up of the need for housing arising from the combined commuter traffic, suggests a total surplus of 90 units for both housing categories, with 74 units for houses smaller than 80 m², flats & townhouses, and 16 units for houses larger than 80 m² on average per annum.

A take-up of 50% of the need by all commuters, which is assumed to be half of the total potential need and represents the effective demand for the purposes of this analysis, indicates that the surplus for houses smaller than 80 m², flats and townhouses and houses larger than 80 m², is 477 units on average per annum. The surplus at the 50% take-up of the housing need is 399 for units smaller than 80 m², flats and townhouses and 78 units for houses larger than 80 m² on average per annum.

Surplus for all housing types houses per annum on average by 2036:

- 477 units in total
- 399 for units smaller than 80 m², flats and townhouses
- 78 units for houses larger than 80 m²

A need exists to contextualise the proposed project in terms of demand by considering the possible take-up of dwelling units and the fit thereof with the growth paths envisaged in the Development Strategy prepared for the urban areas of Stellenbosch, including Stellenbosch Town, as well as estimates of the timeframe for the completion of the proposed Brandwacht II project.

8. DEVELOPMENT OF AND IN STELLENBOSCH TOWN

In order to place the Brandwacht II development project in the context of the future development and growth of Stellenbosch Town, a requirement exists to consider the strategic positioning, development strategy and growth trajectory envisaged in the Urban Development Strategy prepared by Rode and Associates for the urban areas of Stellenbosch, including Stellenbosch Town. The application of these strategic principles permits the estimation of certain benefits that would accrue to the Stellenbosch economy and the Stellenbosch Municipality due to a development project.

8.1 Strategic positioning, development strategy and growth trajectory for Stellenbosch Town

Stellenbosch Town is positioned to provide service-orientated activity driven by and aligned with tertiary sector development. In terms of the development strategy over the next 20 years, Stellenbosch Town should facilitate complementary and supplementary land uses, i.e. residential, commercial and a low-key industrial component aligned to and focused on tertiary sector economic activity. Development can be incentivised to, among others, accelerate and facilitate private sector investment (considering mix, timing and extent) and to provide skills development and upskilling opportunities for locals.

The development landscape in and around Stellenbosch Town over the past 10 years has been characterised by low levels of development (except for the Brandwacht-on-River residential development), with mostly brownfields projects (demolition of houses for construction of flats or other commercial uses) and limited greenfields development, together with the risks of supply and demand and the impact of increasing equilibrium price points. Rode envisaged a progressive growth trajectory for Stellenbosch Town over the next 20 years. Progressive growth implies exponential growth over slightly less than the first half of the 20-year forecast period, reaching saturation point after about 10 years and tapering off significantly thereafter to flatten out over the last five years of the forecast period. Figure 16 illustrates the growth trajectory for a progressive development path for Stellenbosch Town over 20 years.

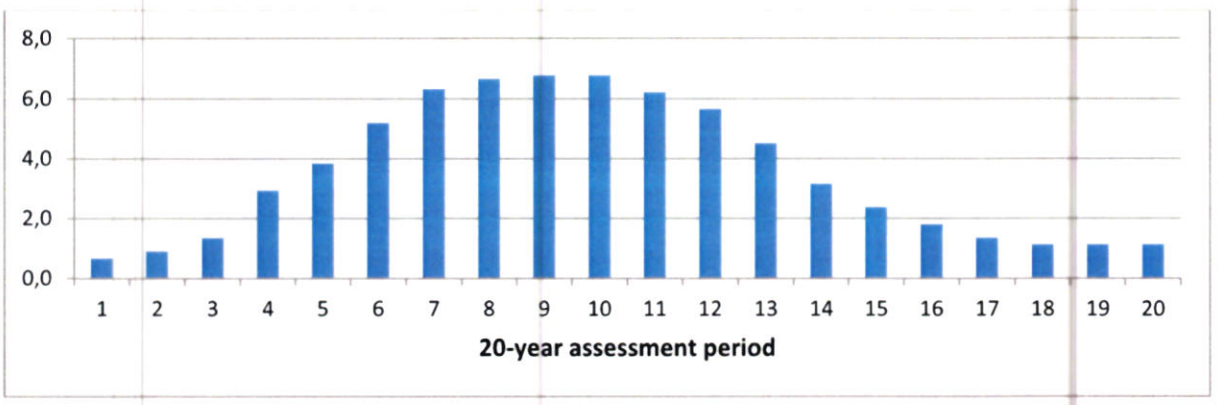


Figure 16: Growth trajectory for Stellenbosch Town over 20 years

Table 16 provides a summary of the housing typology with amended demand forecasts by 2036 (refer to Table 8). The figures stated in Table 16 are annualised based on the application of the adopted growth trajectory for Stellenbosch Town. The envisaged annual take-up of dwelling units based on the housing typology and application of the growth trajectory is illustrated on an annual and cumulative basis in Figure 17 and 18, respectively.

Table 16: Summary of the adjusted demand based on the Rode forecast for different housing types

Housing type	Amended Rode demand forecast
Houses smaller than 80 m² (affordable)	9 277
Houses larger than 80 m²	2 793
Flats	2 402
Townhouses	2 829
Total units	**17 301**

Source: Rode and Associates and own calculations

As indicated below, the units are allocated per year based on an application of the progressive growth trend for Stellenbosch Town adopted as part of the Draft Stellenbosch Municipality's Urban Development Strategy (2017). A peak is reached in about 11 to 12 years, but it should be noted that market conditions, supply and demand dynamics will impact the actual outcome of this growth trajectory, as will municipal funding to provide bulk and infrastructure services. Note that the first two years of the forecast period are used for the introduction of bulk and internal services as part of the roll-out of a development project. The timeframe is variable depending on the nature and scope of the project.

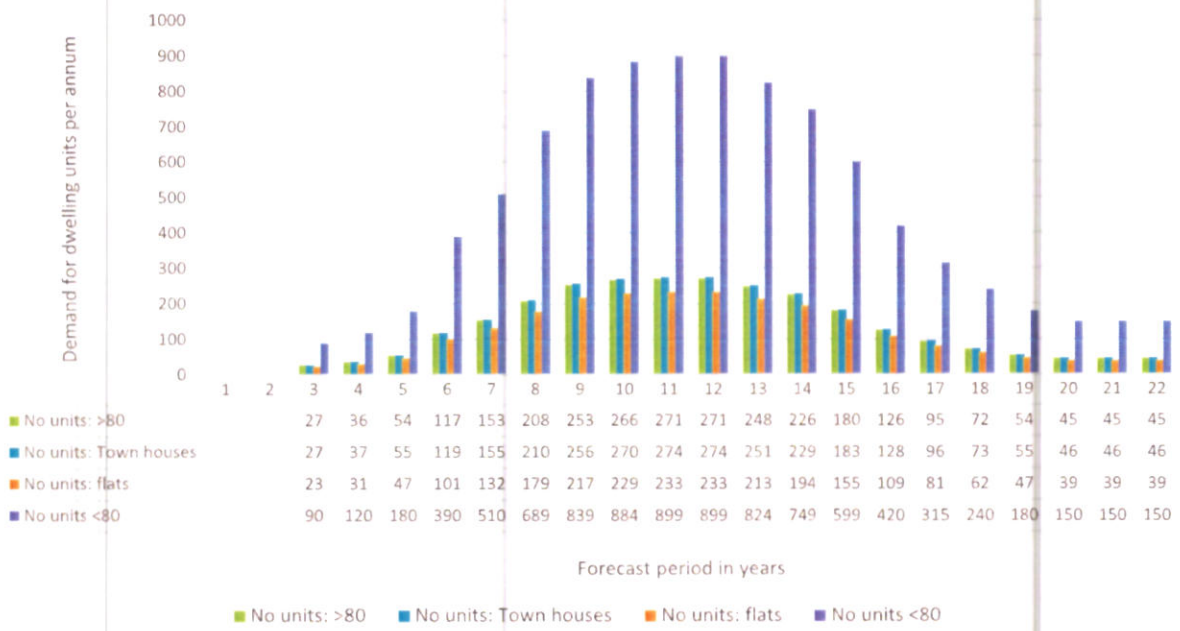


Figure 17: Forecast of the annual dwelling units per housing type for a period of 20 years based on adjusted demand forecasts

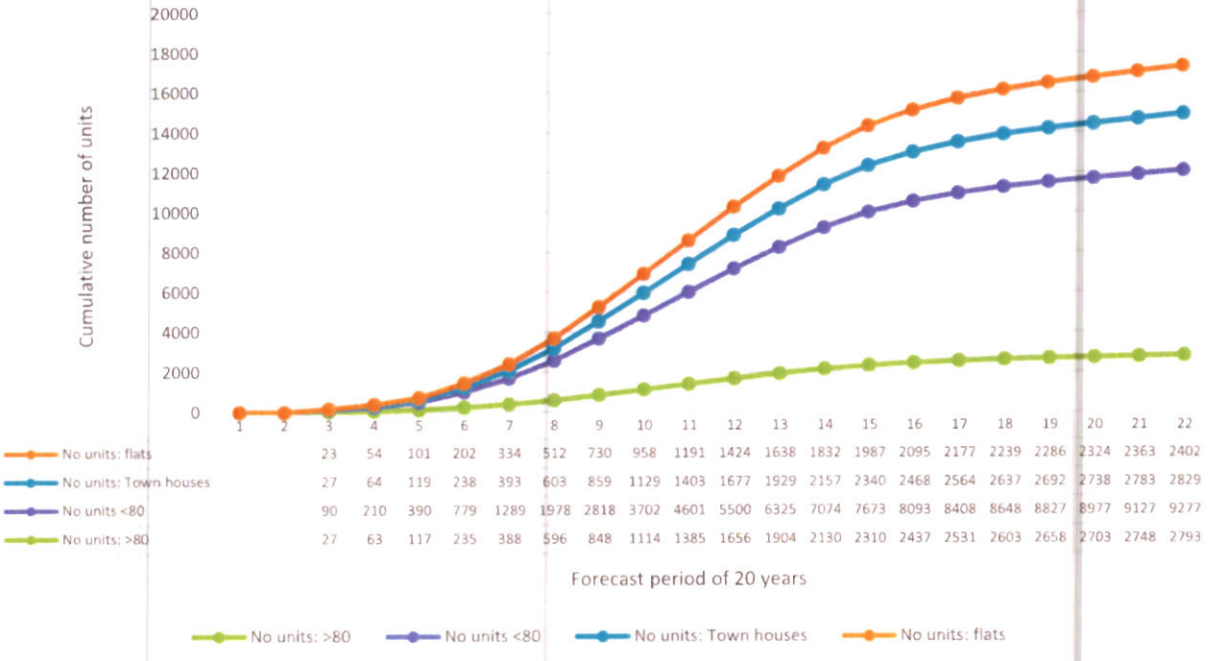


Figure 18: Cumulative take-up of dwelling units per property type over 20 years

8.2 Benefits to Stellenbosch economy and Stellenbosch Municipality

8.2.1 Economic and labour contribution

Estimating the impact of a project or development assists role-players to understand the potential **benefits for the economy** and stakeholders. The assessment of the economic impact of a project generates an estimate of the economic consequences associated with development of a project on the Stellenbosch economy and is used to assess the direct and indirect contributions of construction spend and operational revenues (final demand) on the economy through the application of multipliers.

The assessment of the **employment contribution** is at best very risky. The results are driven largely by the assumptions, which entail the following:

- The structure and composition of the Western Cape and Stellenbosch economy will remain unchanged. This assumption is necessary to enable the use of multiplier analyses.
- No political and other administrative changes will take place on a national or provincial level.
- Salaries and wages are fixed in real terms. Household income will adjust purely by the constant wage multiplied by the increase in employment.
- The supply of skilled labour will be a limiting factor in the construction process.

Demand for labour (employment) is in economic terms considered as a derived demand; a forecast for labour demand can therefore be derived from the planned increase in capital and operational spending. The basic assumption focuses on the relationship between growth in real spending and growth in labour demand. If growth in labour demand equals the growth in real spending, labour productivity will stay constant. If labour productivity increases, the demand for labour will grow at a slower rate than real spending.

The assessment offers an indication of direct and indirect contributions to the Stellenbosch economy and the labour impact based on the annual change over the period envisaged for development using 2015 as a base.

8.2.2 Municipal development charges (DCs) and property rates

Infrastructure provision to enable the development of a project such as Brandwacht II is generally the responsibility of the relevant sphere of government, which is Stellenbosch Municipality in this case. In order to recoup all or a major part of the costs related to the introduction of infrastructure for a project (development opportunity), the government introduces Development Charges (DCs) payable by the developer based on the nature and scope of the external services and infrastructure required for the envisaged project.

The Stellenbosch Municipality will also benefit from levying property rates based on the market value of the scope of components comprising the development. The latter is a continuous funds inflow for the Municipality. Over and above the levying of rates, other service charges are obtained together with the sale of electricity and water, which further enhances the revenue base of the Municipality.

The focus of this assessment is an estimation of the DCs and property rate accruing to the Municipality over the duration of the development period envisaged for a new project.

9. ALIGNMENT OF DEVELOPMENT PIPELINE WITH RODE ADJUSTED FORECASTS AND SOCIO-ECONOMIC IMPLICATIONS

9.1 Alignment with housing typology of adjusted Rode forecasts

The scope of the "Development Pipeline" for Stellenbosch Town as illustrated and discussed in Section 3.5 is placed in context of the adjusted forecasts of demand for housing based on the stated typology adopted by Rode. Also refer to the nature of the housing typology described in Section 4.1.

Table 17 provides a comparison of the housing typology (with amended demand forecasts by 2036) and the scope of dwelling units associated with the Development Pipeline. This is a snapshot and not directly comparable from a timing perspective as the forecasts related to a planning term of 20 years for Stellenbosch Town, whilst the Pipeline timeframes of about 10 years are based on an envisaged occupancy over a shorter timeframe, hence the two timeframes do not coincide.

It should be noted that the Development Pipeline indicates the developers' intention related to different housing types. The numbers are aligned with the housing typology adopted throughout this analysis.

Table 17: Comparison of the adjusted demand forecast of Rode and the scope of the Development Pipeline for Stellenbosch Town

Housing type	Amended Rode Demand forecast	Development Pipeline
Houses smaller than 80 m^2 (affordable)	9 277	2 860
Houses larger than 80 m^2	2 793	2 872
Flats	2 402	1 838
Townhouses	2 829	1 530
Total units	**17 301**	**9 100**

Source: Rode and Associates and own calculations

9.2 Application of growth trajectory to Development Pipeline over 20 years

The figures stated in Table 17 are annualised based on the application of the adopted growth trajectory for Stellenbosch Town. The envisaged annual take-up of dwelling units based on the housing typology and application of the growth trajectory is illustrated in Figure 19 on an annual basis over a period of 20 years.

As indicated above, the units are allocated per year based on an application of the progressive growth path for Stellenbosch Town adopted as part of the Draft Stellenbosch Municipality's Urban Development Strategy (2017). A peak is reached in about 11 to 12 years, but market conditions, supply and demand dynamics will impact the actual outcome of this growth trajectory, as will municipal funding to provide bulk and infrastructure services. Note that the first two years of the forecast period are used for the introduction of bulk and internal services as part of the rollout of a development project. The timeframe is variable depending on the nature and scope of the project.

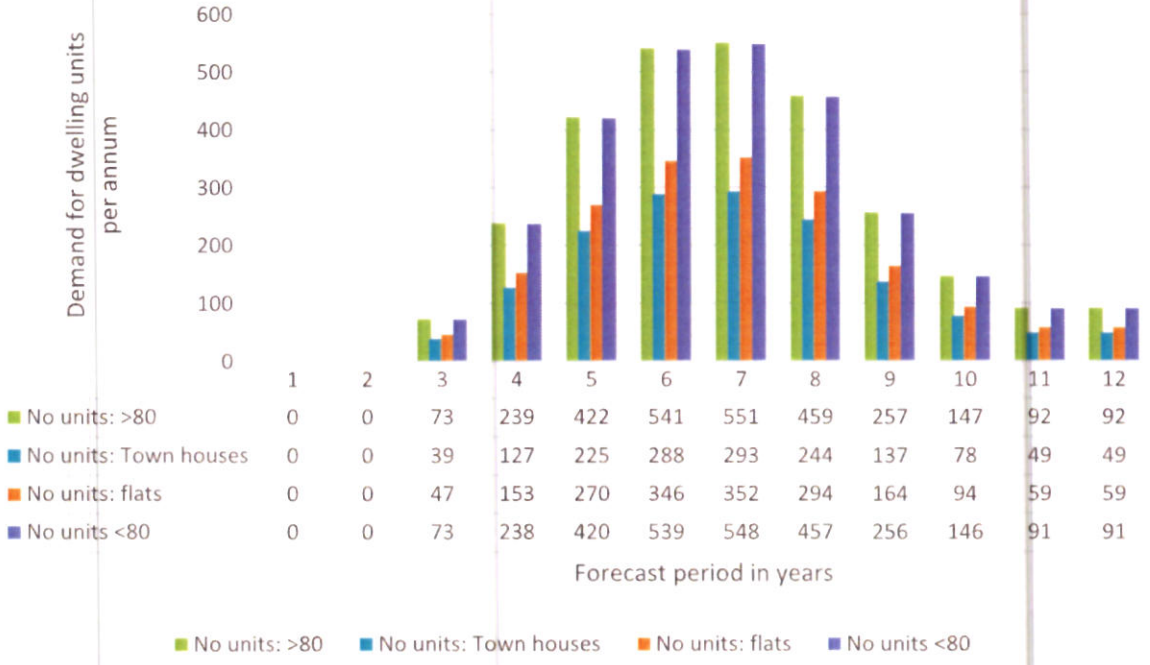


Figure 19: Forecast of the annual units per housing type for the Development Pipeline over a period of 20 years

Figure 20 illustrates the cumulative take-up of units per housing type for the Pipeline over a period of 10 years. The growth trajectory adopted for Stellenbosch Town is applied to the Development Pipeline over its duration based on the assumptions below.

Figure 20: Cumulative take-up of dwelling units per property type for the Pipeline over the forecast period of 20 years

9.2.1 Assumptions applied for the application of the Development Pipeline

To realistically understand the Development Pipeline in the context of the adjustment to the housing unit forecasts prepared by Rode, several assumptions are applied to create the alignment with specific reference to the take-up, construction and occupation of dwelling units. The assumptions are as follows:

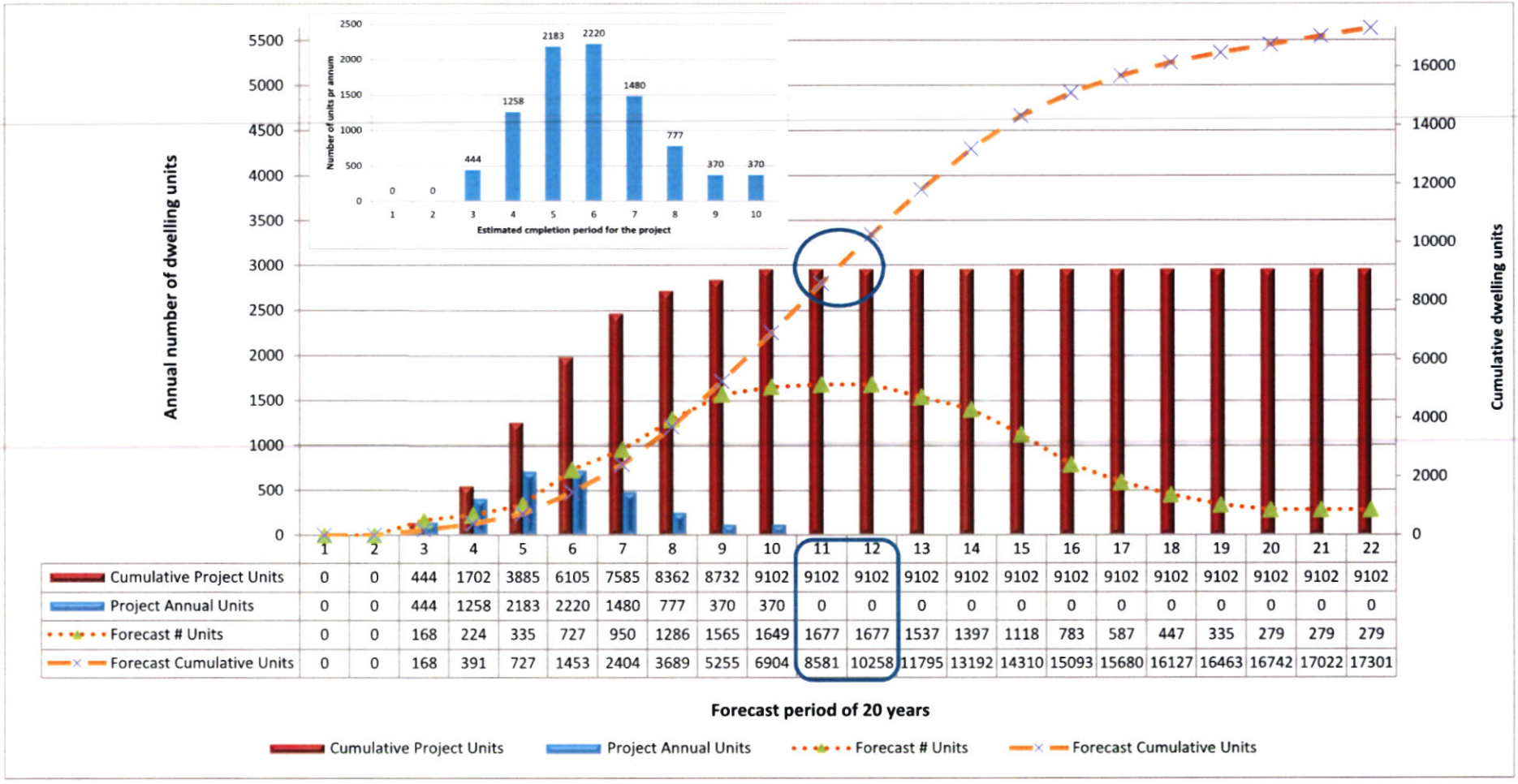
- Duration of the project culminating in the construction and occupancy of all dwelling units and other components in accordance with the following:
    - Year 1 – external services
    - Year 2 – internal services
    - Year 3 – selling and construction commences
- Sell-out of the project (number of years for the completion of construction and occupancy of all units);
- Phasing of the project with the introduction of components at different stages over the duration of the project;
- Costs of construction (reflect the current per m^2 costs for different dwelling types);
- Inflation projections;
- Building cost escalations assumed to be 6% per annum, which is an average of in-contract building costs forecast by Medium-Term Forecasting Associated (2017)
- Development charges applied by the Stellenbosch Municipality based on 2017; and
- Property rates applied based on the Stellenbosch Rates Policy and 2017 factors.

9.2.2 Alignment of annual demand forecasts and Pipeline occupancy projections

Figure 21 indicates the outcome from an application of the growth trajectory and reflects the annual and cumulative take-up of dwelling units over the envisaged duration for the completion of the entire pipeline over a period of 10 years, i.e. all dwelling units are constructed with occupation. In addition, this is aligned with the demand forecasts prepared by Rode as adjusted, applying the same progressive growth trajectory displaying annual number of units and cumulative number of units over the 20-year period.

An analysis of the data illustrated in Figure 21, focuses on the 10-year duration envisaged for the Development Pipeline with a comparison of the first 10 years envisaged in the urban development planning for Stellenbosch Town. Note that to ensure the validity of the analysis, it is necessary to compare the same scope (type) of housing envisaged as part of the Development Pipeline and that included in the demand forecasts for said houses prepared by Rode and Associates as adjusted.

Demand for housing in the urban area of Stellenbosch Town (applying the principle stated above) is estimated at 6 904 units by year 10 for the same type of housing as envisaged for the Development Pipeline. The projects that form part of the pipeline, based on the same growth trajectory, is envisaged to deliver 9 100 units over 10 years, which is 31,83% more than the forecast over the same period. By year 12 of the forecast period, the forecasted number of units will exceed the number of Pipeline units by 1 158 or 12,72%. In other words, slightly more than a one-year gap exists between the envisaged completion of development for the Pipeline projects and the projected demand for housing units in Stellenbosch Town.



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Cumulative Project Units	0	0	444	1702	3885	6105	7585	8362	8732	9102	9102	9102	9102	9102	9102	9102	9102	9102	9102	9102	9102	9102
Project Annual Units	0	0	444	1258	2183	2220	1480	777	370	370	0	0	0	0	0	0	0	0	0	0	0	0
Forecast # Units	0	0	168	224	335	727	950	1286	1565	1649	1677	1677	1537	1397	1118	783	587	447	335	279	279	279
Forecast Cumulative Units	0	0	168	391	727	1453	2404	3689	5255	6904	8581	10258	11795	13192	14310	15093	15680	16127	16463	16742	17022	17301

Figure 21: Annual and cumulative demand forecasts and the estimated occupancy timeframe envisaged for the Development Pipeline

9.3 Benefits to Stellenbosch economy and Stellenbosch Municipality

9.3.1 Development Charges (DCs)

DCs that would accrue to the Stellenbosch Municipality are based on the nature and scope of the Pipeline projects. The DCs are illustrated on an annual basis, but in practice, DCs normally accrue to a Municipality based on the commencement of a project phase. We also assume that the Municipality (and not the developer) will introduce the required bulk services, which in turn has implications for the Municipality's funds flow, budgeting and any negotiations associated with the introduction of bulk services by the developer.

Given the anticipated period for the rollout of the Pipeline projects, it is illustrated that DCs would accrue to the Municipality in five-year intervals over the 10-year rollout. This is uncertain and is dependent on the commencement of a Pipeline project. The DCs are reflected on an annual basis with an indication of the two five-year periods related to the rollout of the Pipeline as illustrated in Figure 22.

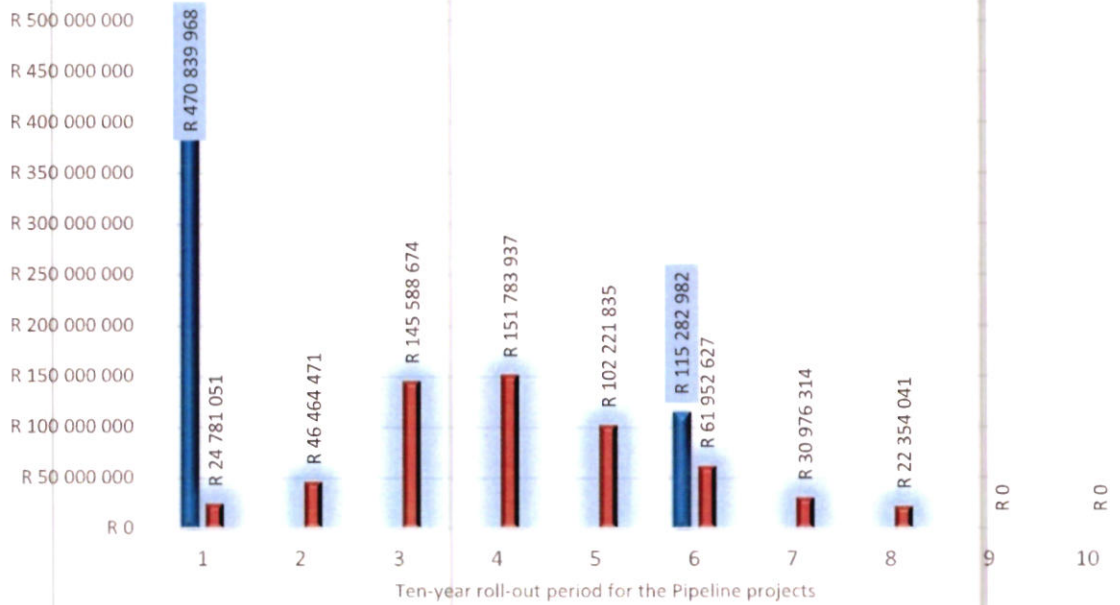


Figure 22: Annual and cumulative DCs over the development period of the Pipeline projects

Based on the current development charges levied by the Municipality (in 2017 terms), it is estimated that R561,1 million would be due and payable for the provision of external bulk and service requirements of the Pipeline projects.

9.3.2 Total capital expenditure

The capital expenditure of and associated with the Pipeline projects refers to three components: the introduction or provision of bulk (external) services (subject to capacity constraints) by the Municipality, introduction of internal services by the developer and the construction of the dwelling units and other components. Figure 23 indicates the combined annual and cumulative capital expenditure for the three components over the envisaged rollout of the Pipeline projects.

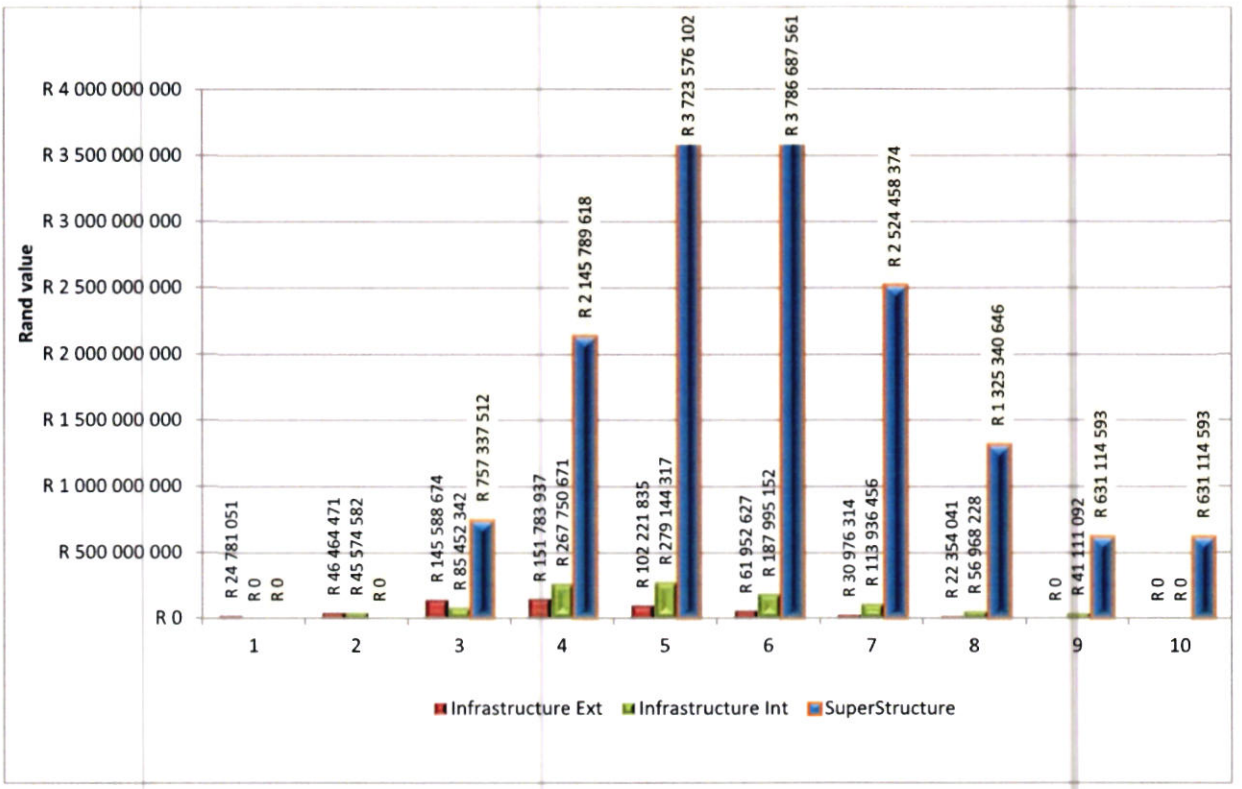


Figure 23: Annual envisaged capital expenditure for the timeframe envisaged for the completion of construction

The Development pipeline has a 10-year rollout plan. The introduction of services is envisaged over the period and it is therefore assumed that the services would follow the same growth trajectory assumed for the take-up of units within the Pipeline projects. Internal services are introduced a year later and follow the same trajectory. Once external and internal services are complete, construction commences after the sales of erven during the preceding years. It is not possible to anticipate which projects in the pipeline would be commenced first or what housing types would be introduced as part of a mixed-use residential development. Notwithstanding, a period of 10 years is assumed for the completion of the projects.

Note that the construction period mimics the progressive growth trajectory for planning development in Stellenbosch Town over a period of 20 years. Based on the growth trajectory for Stellenbosch Town, the total investment in infrastructure (external and internal) and superstructure over the duration of the project, is estimated at R17 189 million (in current terms). The spending on top structures amounts to R15 525 million over the 10 years, translating to R1 552 million per annum on average.

9.3.3 Property rates

The Municipality will levy property rates on the sale of a land portion and on the improved value. We have assumed for the purpose of this assessment, that property rates will apply to the completed dwelling unit or commercial component (if applicable) based on the envisaged duration of the project and the application of the growth trajectory. We determined the cumulative rates income after 10 years and thereafter applied an escalation of 8% for the remaining period of the forecast period, even though it is not possible to estimate the values of the properties going forward or estimate the increase in the rates factor applied by the Stellenbosch Municipality for budgetary purposes. Also note that the rates are considered in current terms (2017). Figure 24 illustrates the rates accruing to the Municipality on an annual and cumulative basis for the duration of the Development Pipeline once units are complete, by applying the progressive growth trajectory and the stated escalation.

Once the Development Pipeline is complete, a rates income of R132,7 million would accrue to the Municipality. Over a period of 20 years, applying the escalation of 8%, the rates income would increase to R286,5 million. Note that no increase in the value of the properties is assumed and only the escalation on the rates factor is taken into account.

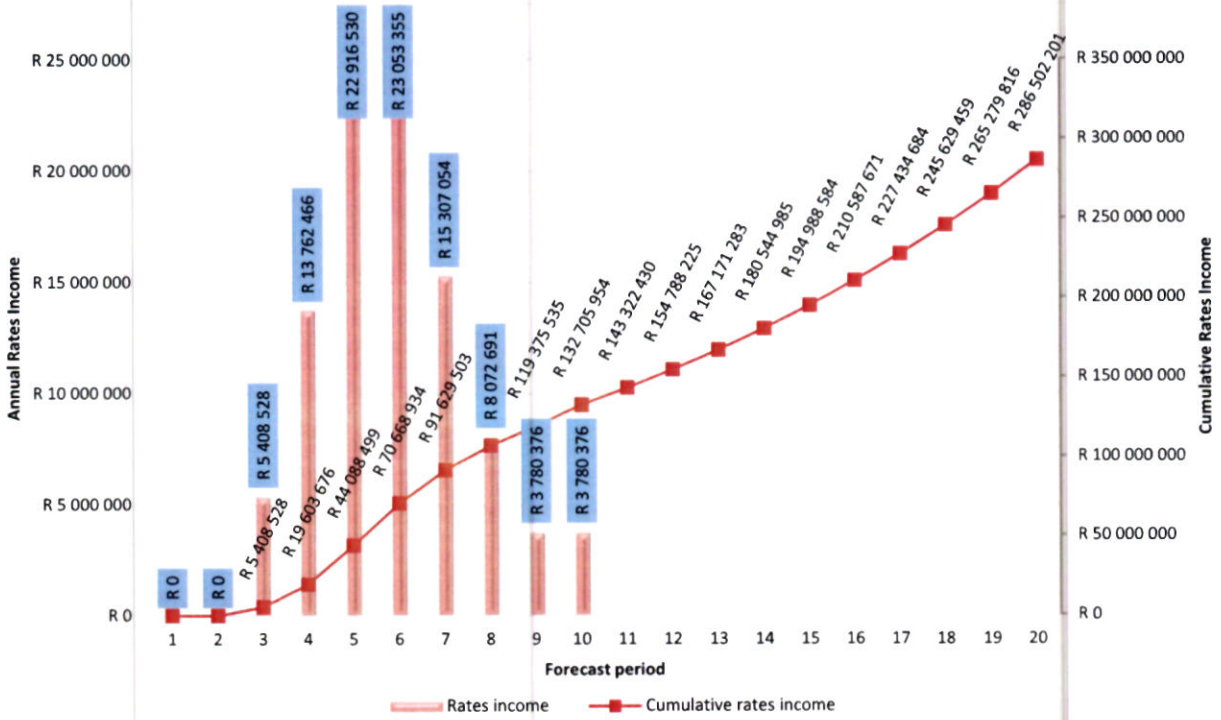


Figure 24: Property rates accruing to the Municipality on an annual and cumulative basis for the timeframe of completion and escalations up to 20 years

9.3.4 Economic impact

The economic impact is reflected by a direct investment into the bulk and external services, internal and site-specific services and the construction of top structures (housing units). The economic impact is realised through the multiplying effect of those funds through the Stellenbosch economy. Figure 25 illustrates the direct and indirect economic impact based on the estimate of the total capital expenditure over the envisaged duration of the Pipeline projects and reflects the effect over three-year revolving periods, hence the fact that the impact of the Pipeline projects extends beyond the 10 years into years 11 and 12. The impact does not abruptly end after 10 years, but tapers off, whereafter the economy achieves additional benefit from the occupation of the dwellings by residents and their ongoing spend.

Figure 25 indicates that the projects associated with the Development Pipeline would generate an economic benefit for the secondary sector of the Stellenbosch and regional economies of R17 405 million. The direct investment to achieve that impact, is R17 189 million over 10 years in nominal terms. Other areas of the Cape Winelands and the Cape Metropolitan Area as well as the Western Cape and other parts of South Africa would also benefit from direct and indirect purchases during the construction period. Consequently, the direct investment impact considers the inter-regional effects and backward and forward linkages that exist between the Stellenbosch economy, Cape Town Metropolitan Area, rest of the Western Cape and South Africa, and captures the full effect of regional and provincial trade.

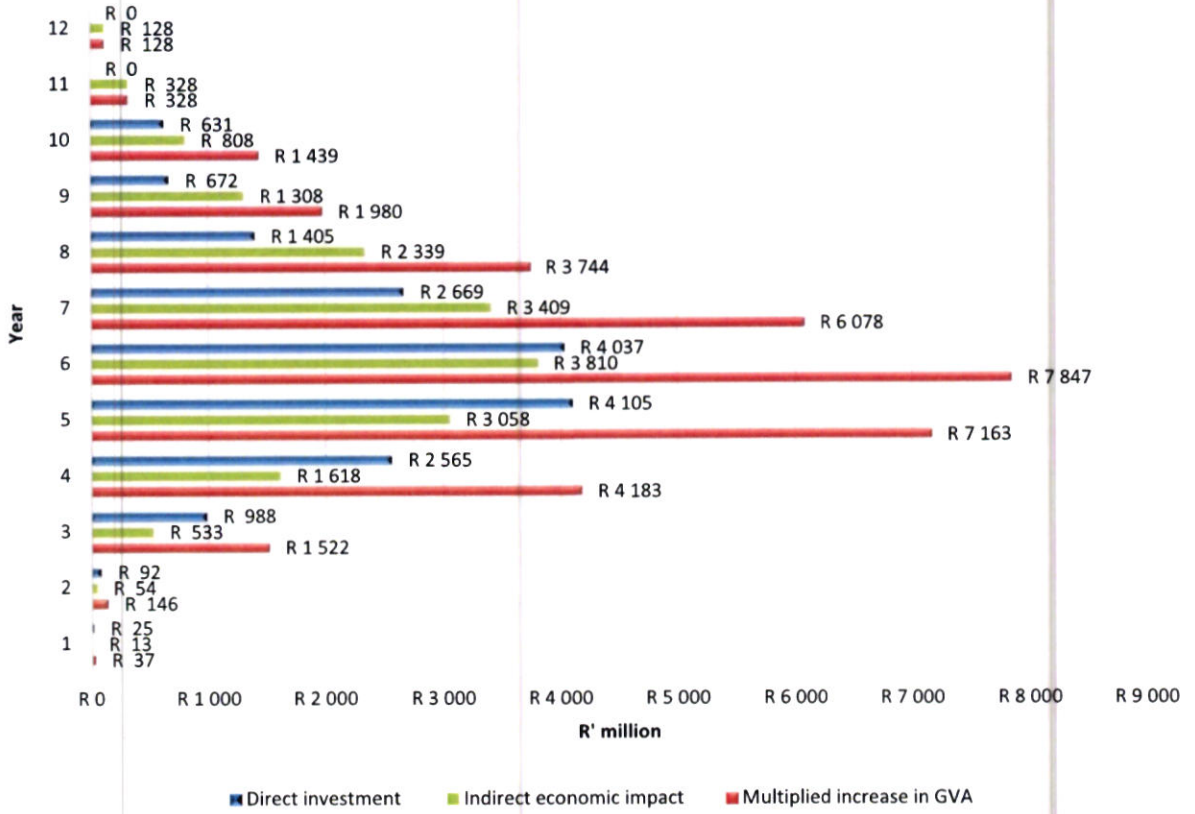


Figure 25: Direct and indirect impact of the Pipeline projects on the Stellenbosch economy over the duration of the construction period

9.3.5 Employment impact

Employment generated over the construction period of the Pipeline projects based on the applied growth trajectory, is premised on a ratio of Gross Value Added (GVA) per employee. Figure 26 illustrates the employment created per annum based on the extrapolation of the GVA per employee trend for the Stellenbosch economy. This is reflected in the change per annum (defined as the difference between the multiplied increase in employment on an annual basis in the secondary sector of the economy and employment in Stellenbosch Municipal area in 2015 as the base employment number.

Figure 26 illustrates that in year 1, which is the commencement of the introduction of bulk and external infrastructure, 1 630 temporary jobs are created based on the estimated capital expenditure. The latter would continue at various stages of the rollout of Pipeline projects and the employment is factored into applicable years based on the rollout assumptions. Once construction of top structures commences, more jobs are added, but it should also be noted that these employment opportunities would only exist if there was a strain on the labour market and no unemployment exists. It is therefore realistic to assume that the opportunities could be halved as persons move from one project to the next over the 10-year period.

Many temporary job opportunities would be added by the Pipeline projects to the existing employment of the Stellenbosch Municipal area, with direct and indirect jobs totalling 18 661 in year 6. As is evident in year 11 and 12, some jobs will endure for a further two years once construction is complete, before indirect opportunities would taper off.

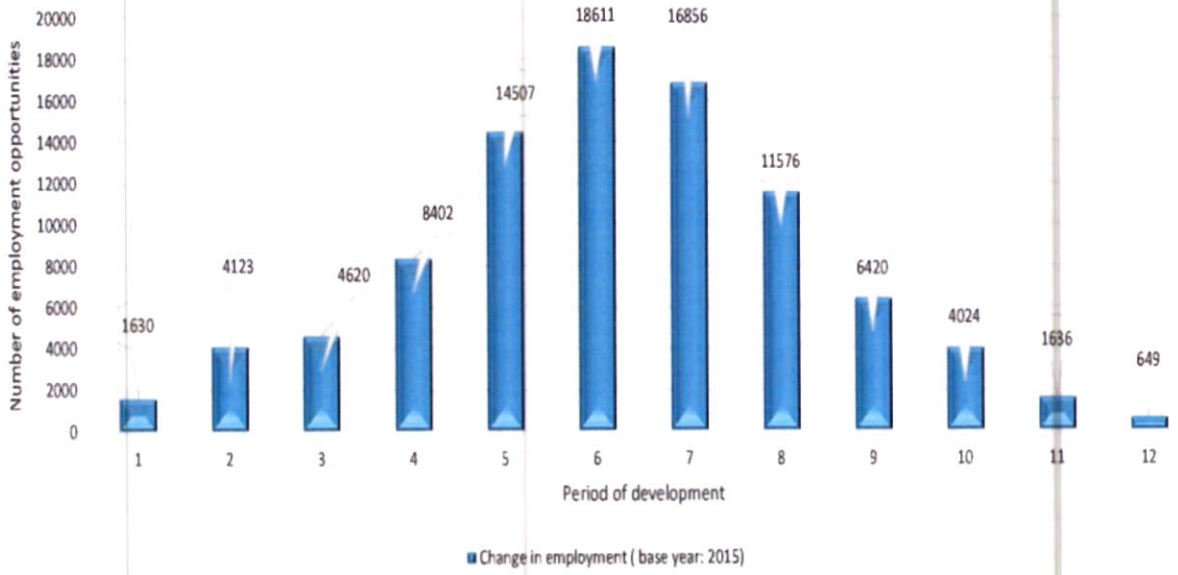


Figure 26: Change in annual employment resulting from the rollout of the Pipeline projects over 10 years

The direct employment related to the Pipeline projects is determined based on an estimated 12 workers of varying skills per house. These workers can work on two houses simultaneously and therefore the direct employment need is halved. Table 18 indicates the employment numbers for different skill levels at the highest requirement in terms of the rollout, i.e. year 6.

Table 18: Direct employment opportunities related to the peak year of the rollout of the Development Pipeline

Category of worker	Percentage allocation	Employment (Year 6)
Skilled	4%	555
Artisans (semi-skilled)	8%	1 031
Semi-skilled Labour	23%	3 092
Unskilled labour	46%	6 184
Finishing specialists (semi-skilled)	18%	2 458
TOTAL	**100%**	**13 320**

10. ALIGNMENT OF BRANDWACHT II WITH RODE ADJUSTED FORECASTS AND SOCIO-ECONOMIC IMPLICATIONS

10.1 Alignment with housing typology of adjusted Rode forecasts

The scope of a proposed development project is placed in context of the adjusted forecasts of demand for housing based on the stated typology adopted by Rode for forecasting purposes. Also refer to the nature of the housing typology adopted in Section 4.1. Table 19 provides a comparison of the housing typology (with amended demand forecasts by 2036) and the scope of dwelling units associated with the Brandwacht II development proposal. This is a snapshot and not directly comparable from a timing perspective as the forecasts relate to a planning term of 20 years for Stellenbosch Town and the project timeframe is based on an envisaged completion and occupancy over a much shorter timeframe, i.e. the two timeframes do not coincide.

Table 19: Comparison of the adjusted demand forecast of Rode and the development scope for Brandwacht II

Housing type	Amended Rode demand forecast	Brandwacht II Project
Houses smaller than 80 m^2 (affordable)	9 277	
Houses larger than 80 m^2	2 793	182
Flats	2 402	
Townhouses	2 829	78
Total units	**17 301**	**260**

Source: Rode and Associates and own calculations

10.2 Alignment with annual demand forecasts

In order to realistically understand the Brandwacht II project in the context of the adjustment to the housing unit forecasts prepared by Rode, several assumptions are applied to create the alignment with specific reference to the take-up, construction and occupation of dwelling units. The assumptions are as follows:

- Duration of the project culminating in the construction and occupancy of all dwelling units and other components in accordance with the following:
    - Year 1 – external services
    - Year 2 – internal services
    - Year 3 – selling and construction commences
- Sell-out of the project (number of years for the completion of construction and occupancy of all units);
- Phasing of the project with the introduction of components at different stages over the duration of the project;
- Costs of construction (reflect the current per m^2 costs for different dwelling types);
- Inflation projections;

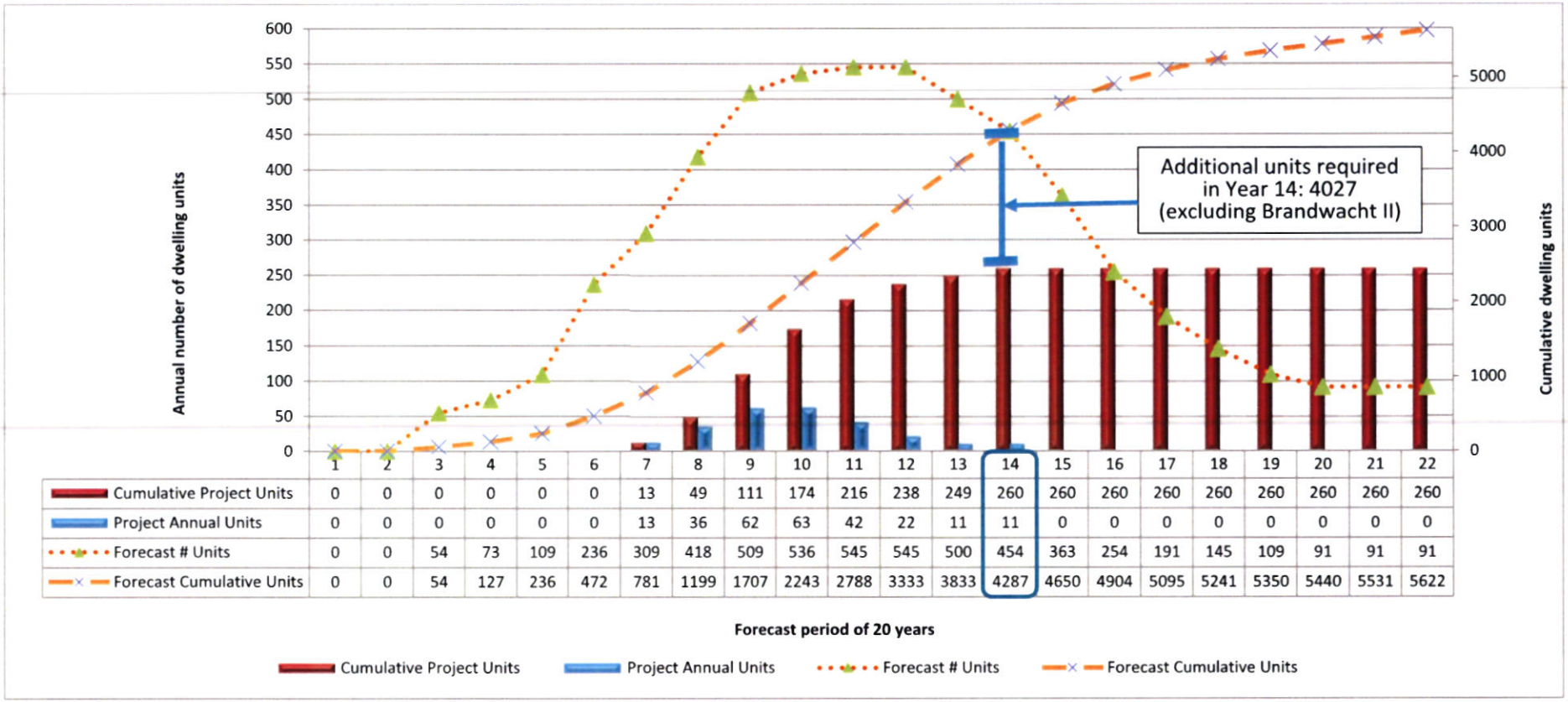
- In contract building cost escalations;
- Development charges applied by the Stellenbosch Municipality based on 2017 ratios; and
- Property rates applied based on the Stellenbosch Rates Policy and 2017 factors.

Figure 27 indicates the outcome from an application of the growth trajectory and reflects the annual and cumulative take-up of dwelling units over the envisaged duration for the completion of the entire Brandwacht II project, i.e. all dwelling units are constructed with occupation. In addition, this is aligned with the demand forecasts prepared by Rode as adjusted, applying the same progressive growth trajectory displaying annual and cumulative number of units over 20 years.

An analysis of the data illustrated in Figure 27 focuses on the following timeframes using year 1 of the Rode adjusted forecast as the point of departure. Based on this premise, it is further assumed that it would take five years to obtain the requisite approvals, a further two years to introduce the external bulk and internal infrastructure and a further eight years to fully develop Brandwacht II. These time frames are aligned with the start of the forecast period envisaged in the urban development planning for Stellenbosch Town. Note that to ensure the validity of the analysis, it is necessary to compare the same scope (type) of housing envisaged for Brandwacht II and that included in the adjusted demand forecasts for said houses prepared by Rode.

Demand for housing in the urban area of Stellenbosch Town is estimated (applying the principle stated above) at 4287 units by year 14 for the same category of housing envisaged for Brandwacht II. At the end of the 8-year construction period, the Brandwacht II project would deliver 260 units, keeping all other thing equal and ignoring other development projects that have the same mix of residential housing as envisaged for Brandwacht II.

It is important to understand the context of planning for housing demand in Stellenbosch Town over 20 years and how this fits with development proposals such as Brandwacht II, hence the complete forecast period is illustrated in Figure 27. The illustration suggests that the cumulative units envisaged for the Brandwacht II project at the end of 14-years, which includes a development period of 8 years, contributes 6,06% to the total cumulative number of units forecast over the first 14 years of the residential development planning forecast for Stellenbosch Town.



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Cumulative Project Units	0	0	0	0	0	0	13	49	111	174	216	238	249	260	260	260	260	260	260	260	260	260
Project Annual Units	0	0	0	0	0	0	13	36	62	63	42	22	11	11	0	0	0	0	0	0	0	0
Forecast # Units	0	0	54	73	109	236	309	418	509	536	545	545	500	454	363	254	191	145	109	91	91	91
Forecast Cumulative Units	0	0	54	127	236	472	781	1199	1707	2243	2788	3333	3833	4287	4650	4904	5095	5241	5350	5440	5531	5622

Figure 27: Annual and cumulative demand forecasts and the estimated occupancy timeframe envisaged for the Brandwacht II development

10.3 Benefits to Stellenbosch economy and Stellenbosch Municipality

10.3.1 Development Charges (DCs)

DCs would accrue to the Stellenbosch Municipality based on the nature and scope of the Brandwacht II development. The DCs normally accrue to a Municipality based on the commencement of a project phase. We also assume that the Municipality (and not the developer) will introduce the required bulk services, which in turn has implications for the Municipality's funds flow and any negotiation associated with the introduction of bulk services by the developer.

Given the anticipated time frame for the Brandwacht II development, it is envisaged that DCs would be paid as a lump sum and not as part of phasing the project. Based on the current DCs levied by the Municipality (in 2017 terms), it is estimated that R18,3 million would be due and payable to cover the external bulk and service requirements for the project. An escalation of this figure at 6% per annum over the following four years prior to the introduction of the services, results in a figures of R24,5 million.

10.3.2 Total capital expenditure

The capital expenditure of and associated with the Brandwacht II development refers to three components: the introduction or provision of bulk (external) services (subject to capacity constraints) by the Municipality, introduction of internal services by the developer and the construction of the dwelling units and other components. Figure 28 indicates estimates of the combined annual and cumulative capital expenditure for the three components over the envisaged duration for the development of the proposed Brandwacht II project.

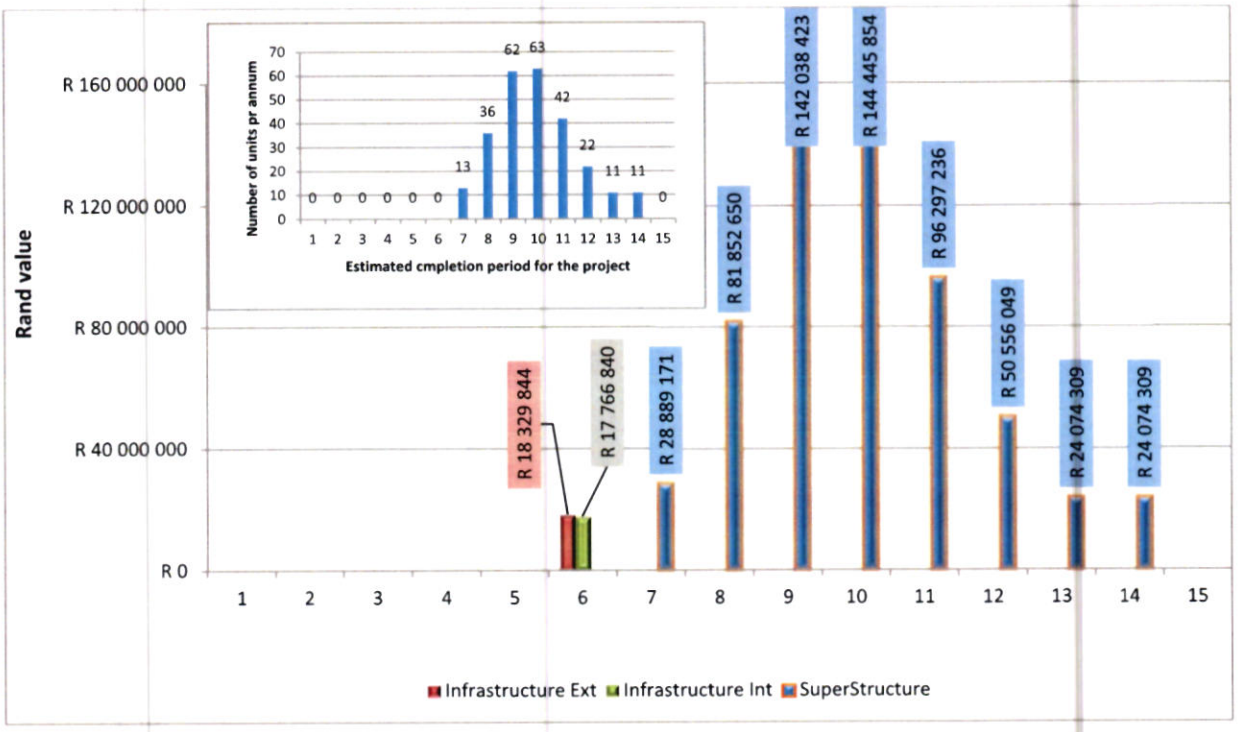


Figure 28: Annual envisaged capital expenditure for the timeframe envisaged for the completion of construction

The Brandwacht II project has a four-year lag period, followed by a one-year period for the introduction of any bulk and internal services and an 8-year development period for completion of the development and occupancy of the dwellings. Sales will commence once the planning and approval period is complete which refers to the four-year lag associated with the said processes.

Note that the construction period mimics the progressive growth trajectory for planning development in Stellenbosch Town over a period of 20 years. Based on this growth trajectory, the total investment in infrastructure (external and internal) and superstructure over the duration of the project, is estimated at R628,3 million in current terms. The spending on top structures is estimated at R592,2 million over the 8-year construction period in current terms. Accounting for building cost inflation through in-contract escalations of an assumed 6% per annum, by the time top structures are introduced based on the timeframes stated above, the total capital expenditure related to top structures would increase in to be R1 002,7 million.

10.3.3 Property rates

The Municipality will levy property rates on the sale of a land portion and on the improved value. We have assumed for the purpose of this assessment, that property rates will apply to the completed dwelling unit or commercial component (if applicable) based on the envisaged duration of the project and the application of the growth trajectory. We determined the cumulative rates income after five years and thereafter applied an escalation of 8% for the remaining period of the forecast period even though it is not possible to estimate the values of the properties going forward, or to estimate the increase in the rates factor applied by the Stellenbosch Municipality for budgetary purposes. Also note that the rates are considered in current terms (2017).

Figure 29 illustrates the rates accruing the Municipality on annual and cumulative basis for the duration of the project applying the progressive growth trajectory and the stated escalation. Once the development is complete, a rates income of R5,1 million would accrue to the Municipality once construction is complete and occupation is taken per the adopted time frames. Over a period of 20 years, applying the escalation of 8% to the rates income, this would increase to R8,1 million once the development is complete with accumulation until the end of the forecast period of 20 years. Note that no increase in the value of the properties is assumed and only the escalation on the rates factor is taken into account.

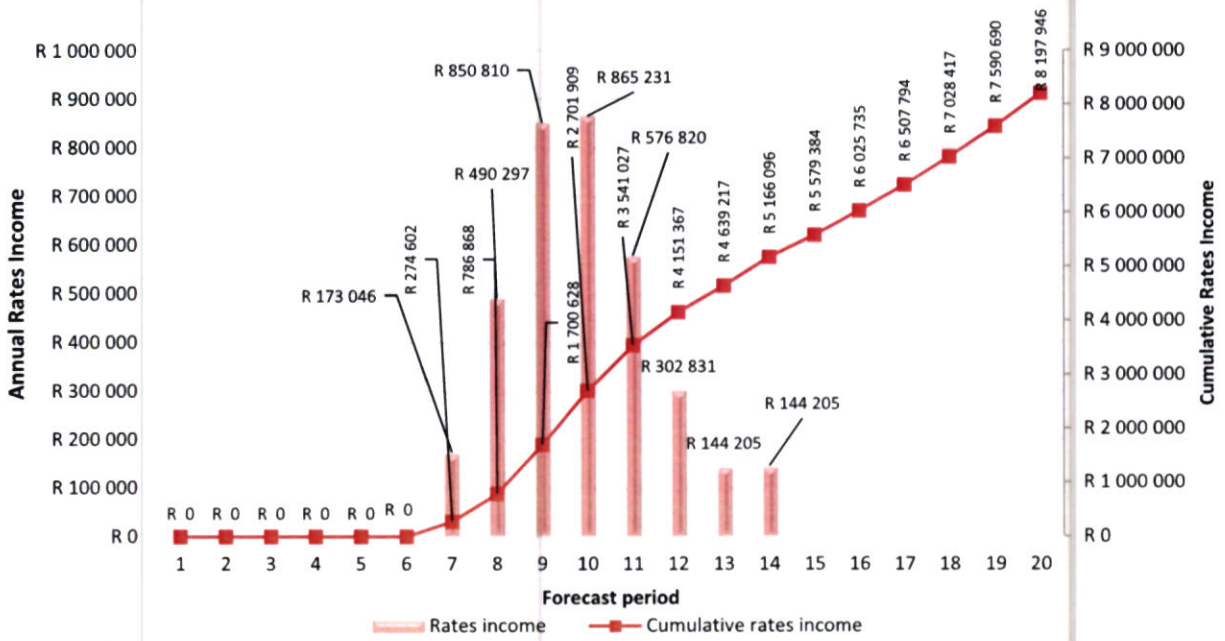


Figure 29: Property rates accruing to the Municipality on an annual and cumulative basis of 20 years

10.3.4 Economic impact

The economic impact is reflected by a direct investment into the bulk and external services, internal and site-specific services and the construction of top structures (housing units). The economic impact is realised through the multiplying effect of those funds through the Stellenbosch economy. Figure 30 illustrates the direct and multiplied economic impact based on the estimate of the total capital expenditure over the envisaged duration of the project and reflects the effect over three-year revolving periods, hence the fact that the impact of the Brandwacht II project extends beyond the 8-year development phase for a further two years. The impact does not abruptly end after five years, but tapers off, where-after the economy achieves additional benefit from the occupation of the dwellings by residents and their ongoing spend.

Figure 30 indicates that the Brandwacht II development would generate an economic benefit of R1 265 million over the 8-year development period, of which a large portion of the R1002 million direct investment at the time and a portion of the indirect spending would accrue to the Stellenbosch economy. Note these figures are based on the impact six years from now and after an 8-year development period. Other areas of the Cape Winelands, Cape Metropolitan Area, Western Cape and other parts of South Africa would also benefit from direct and indirect purchases during the construction period. Consequently, the direct investment impact considers the inter-regional effects and backward and forward linkages that exist between the Stellenbosch economy, Cape Town Metropolitan Area, the rest of the Western Cape and South Africa.

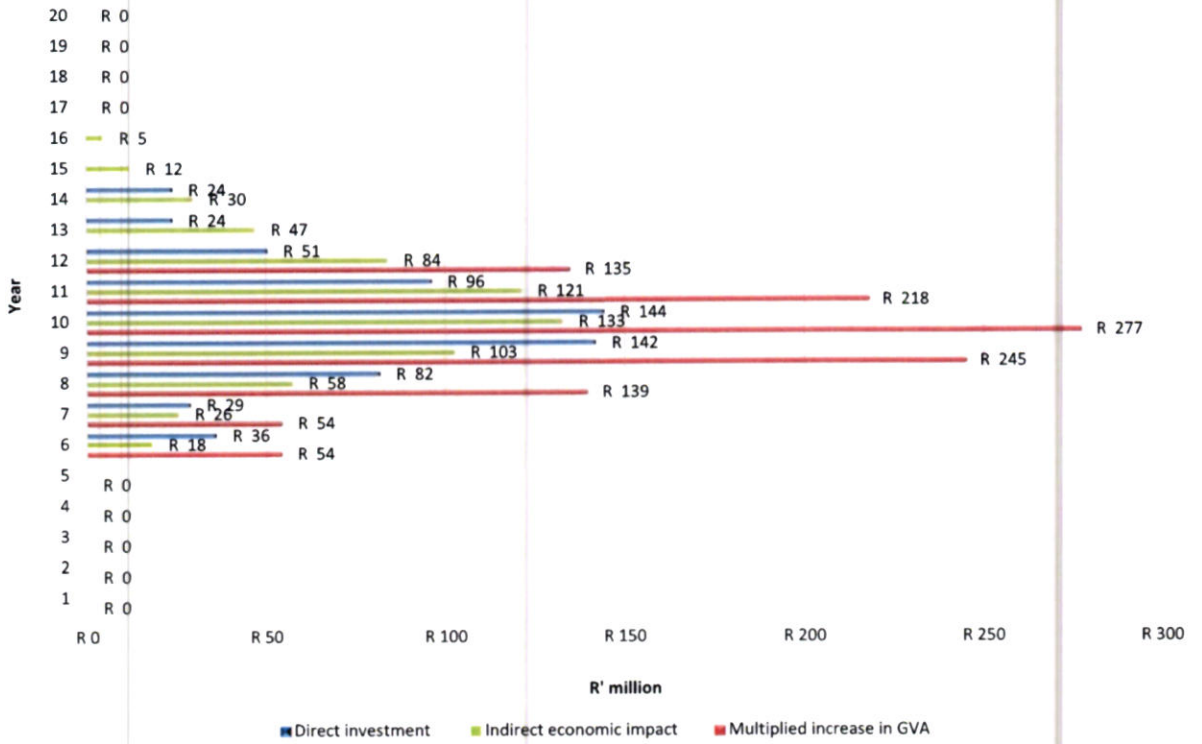


Figure 30: Direct and indirect impact of the Brandwacht II project on the Stellenbosch economy and further afield over a period of seven years

10.3.5 Employment impact

Employment generated over the construction period of the Brandwacht II development based on the applied growth trajectory is premised on a ratio of Gross Value Added (GVA) per employee. Figure 31 illustrates the employment created per annum based on the extrapolation of the GVA per employee trend for the Stellenbosch economy. This is reflected in the change per annum (defined as the difference between the multiplied increase in employment on an annual basis in the secondary sector of the economy and employment in the Stellenbosch Municipal area in 2015 as the base employment number.

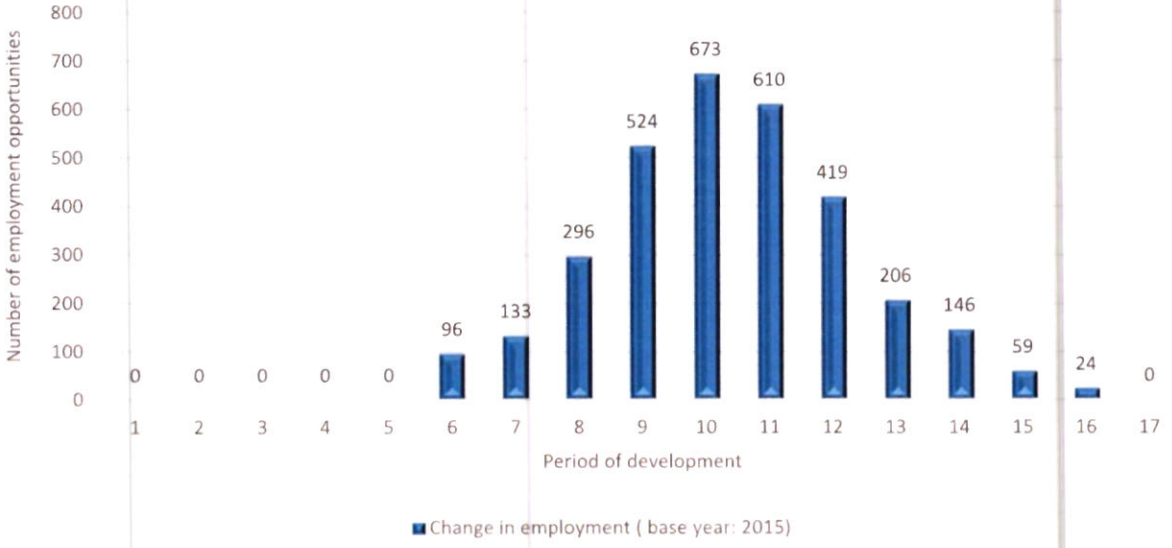


Figure 31: Change in annual employment of the secondary sector of the Stellenbosch economy resulting from the Brandwacht II development

Figure 31 illustrates that in year 1, which is the introduction of bulk and external infrastructure, 53 jobs are created based on the estimated capital expenditure. Once construction of top structures commences, 673 temporary jobs would be added to the existing employment of the Stellenbosch Municipal area at the peak of the construction period. A total of 3 186 temporary jobs will be added during the entire construction period. Some jobs will endure for a further two years, i.e. in Year 15 and 16 once construction is complete as tapering off of indirect opportunities occurs.

11. FIT FOR PURPOSE

In order for the project to be fit for the purpose, broad market and socio-economic criteria need to be considered. Brandwacht II should with some limited variance, fall within the demand forecasts for different housing units in Stellenbosch Town, must offer socio-economic benefits to locals and ensure the Municipality is able to consider the project from both a financial, policy and planning context. This report adopts an economic perspective related to supply and demand, and the need to deliver benefit to the local economy and jobs to people.

Figure 32 contributes to the illustration of the fit for purpose presented in Figure 1 by indicating the outcomes of the analysis and alignment with the premise of a fit for purpose. Fit for purpose implies whether or not the development project is able to tick the boxes. From an economic perspective, several criteria would apply, including the following:

- The project needs to ensure that potential demand is met from a supply perspective;
- The housing types fit with the need and emerging trends and the housing development framework of the Stellenbosch Municipality;
- The project does not result in a fund flow deficit for the Municipality in terms of service infrastructure (which should be covered by DCs);
- The local economy benefits from the development in terms of direct capital expenditure and backward and forward linkages between sectors; and
- Jobs, even on a temporary basis, are created and devolved to locals that are able to work on the project.

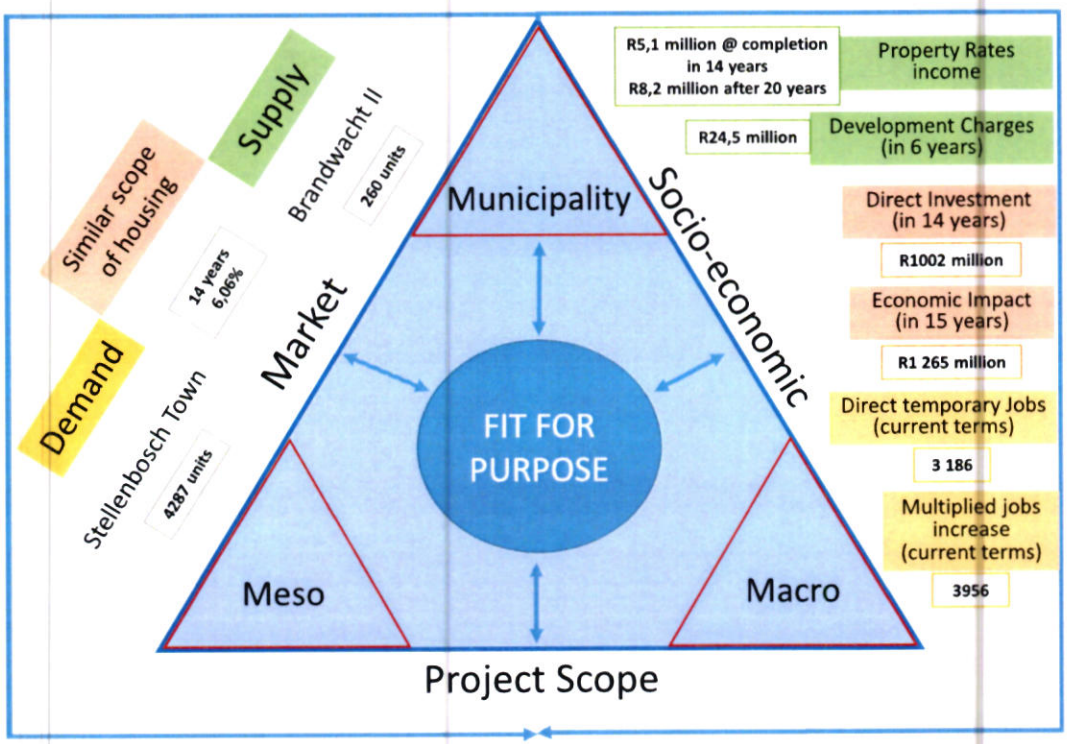


Figure 32: Market related and socio-economic contributions of the Brandwacht II project in the context of the fit for purpose

In terms of demand and supply, the Brandwacht II development adds 260 units of stock to the demand for housing, which based on the housing typology envisaged for the project, represents 4,62% of the total number of 5 622 units or 6,06% after 14 years once the development is complete and occupied. The development represents a direct investment of R1002 million (in 14 years) that will generate estimated Development Charges of R24,5 million (in six years) and property rates of R8,2 million for Stellenbosch Municipality over 20 years. Over the duration of the construction period, 3 168 people would directly work on the project, while a further 770 jobs would accrue due to the indirect effects of developing Brandwacht II. All of these benefits are estimates based on the development of 260 dwelling units over the 8-year construction period.

Note that there are no set benchmarks as each project is unique and has its own set of development objectives that result in a specific outcome. The question therefore arises whether or not the Brandwacht II project is able to tick some boxes:

Criteria	Outcome
The project addresses housing demand from a supply perspective	✓
The housing types fit with the need and emerging trends in terms of size, affordability and market segment	✓
The project does not result in a fund flow deficit for the Municipality in terms of service infrastructure (which should be covered by DCs)	✓
The local economy benefits from the development in terms of direct capital expenditure and leakages are minimised	✓
Jobs are created on a temporary basis with an emphasis on unskilled local labour	✓

As indicated above, the Brandwacht II project ticks the boxes based on the criteria used for assessment. Funding implications for the Municipality are flagged (indicated in orange), as well as the ultimate scope of housing types envisaged in the context of the environment and the housing policy framework of the Municipality.

12. KEY OUTCOMES

Brandwacht II offers a scope of 260 housing units that addresses various emerging trends related to demand for housing of which the key trends are lifestyle, proximity, availability of key infrastructure, access and transport. The proposed housing is intended to attract millennials and persons that work in Technopark and the surrounding areas.

Higher priced houses have emerged as a trend in Stellenbosch over the period 2008 to 2017 and it appears that supply is unable to meet the demand in the higher price segment. If this trend continues, average equilibrium prices and price points will increase and due to the lag in provision of supply or curtailing supply together with the inelasticity of supply, no integration of various housing typologies in development will be possible. The only way to reduce the average equilibrium price for houses is to permit development that underpins market demand for a range of housing typologies and implement policies that make it attractive for developers and investors to provide in the need for different types of housing.

Based on the adjustments of housing demand for Stellenbosch Town, indications are that 464 houses smaller than 80 m^2, 140 larger than m^2, 120 flats and 141 townhouses (a total of 865 dwelling units per annum on average) are required to cover the forecast demand over the next 20 years. A total of 17 301 units form part of the demand over the next 20 years, of which 9 277 are houses smaller than 80 m^2, 2 793 houses larger than 80 m^2, 2402 flats and 2 829 townhouses.

Brandwacht II forms part of a pipeline of projects envisaged by developers over the next 10 years. Although the pipeline does not necessary include all projects, indications are that total of 9 100 units is envisaged to be supplied over the following 10 years. A breakdown of the envisaged supply suggests that 31,56% of housing units supplied over 10 years accrues to dwelling units larger than 80 m^2, which are more aligned with middle to high-income groups, 31,43% to affordable housing (lower to middle-income groups), 16,81% to townhouses (middle-income group) and 20,20% to flats. Brandwacht II represents about 6,5% of the total number of houses larger than 80 m^2 and 2,2% of the total number of housing units envisaged as part of the pipeline (excluding indigent houses of smaller than 80 m^2).

The Brandwacht II project caters for the middle to high-income segment of the market and is specifically aimed at the household income bracket of between R809 203 to R1.6 million per annum, would also form part of the segment likely to take up the housing opportunity with units ranging from R2.5 million and R4 million.

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