Housing analysis

Final report

CGD

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SGS Economics & Planning

Independent insight.

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EXECUTIVE SUMMARY

A strong understanding of housing demand, supply and the economics of housing development is critical to developing evidence-based planning policy.

SGS Economics and Planning (SGS) were commissioned by the City of Greater Dandenong (CGD) to undertake a housing analysis project, comprised of three stages:

1. Housing gap analysis – a comprehensive analysis of how housing demand, capacity and supply will align over time.
2. Housing feasibility – an analysis of the feasibility of different types of residential development, and
3. Housing scenarios – testing how housing supply may vary in response to increased demand or changed planning requirements.

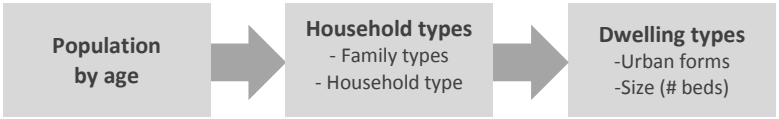
The work will inform the Greater Dandenong *Housing Strategy* and the refinement of the application of the Residential Zones (C182).

Housing demand

The demand for the overall *quantum* and *type* of housing is shaped by population growth, household size, household type and preference. Population forecasts provide a good basis for understanding future population and household growth, and can be used to determine likely household types. Historic preferences also provide an indication of the type of housing that is therefore likely to be demanded, however, preferences can change over time.

Estimates of dwelling demand were generated using a housing propensity model. The model estimates implied demand for dwelling types by analysing the likelihood, or propensity, for particular age groups to form particular households and then those households to reside in particular dwelling forms.

HOUSING DEMAND APPROACH



The approach utilises trends from the past four ABS Census periods (1996, 2001, 2006 and 2011), as well as population forecasts provided by CGD. This data-driven approach captures existing and changing demographics and preferences. This implicitly incorporates the home buyer's practical trade-off assessment.

To capture the evolving dwelling preferences for each household, the observed trends - between 1996 and 2011 - for each household type were projected to 2026 to align with population forecasts. As future population growth is projected to be significantly higher than growth experienced in previous years[1], demand for houses is projected to increase significantly.

[1] From 2001 to 2011, the CGD experienced annual growth of around 1,400 persons per year. Population projections provided by the CGD predict that this will increase to 2,700 between 2011 and 2026.

The following table presents the results of the housing demand analysis to 2026 for CGD, indicating that there will be demand for an additional 13,508 dwellings.

Demand for flats, units and apartments is expected to be highest to 2026 (growth of 2.8 per cent per annum), followed by semi-detached dwellings and townhouses (2.6 per cent per annum). In terms of overall demand, 5,662 flats, units and apartments will be demanded, followed by 5,600 separate houses.

HOUSING DEMAND BY DWELLING TYPE

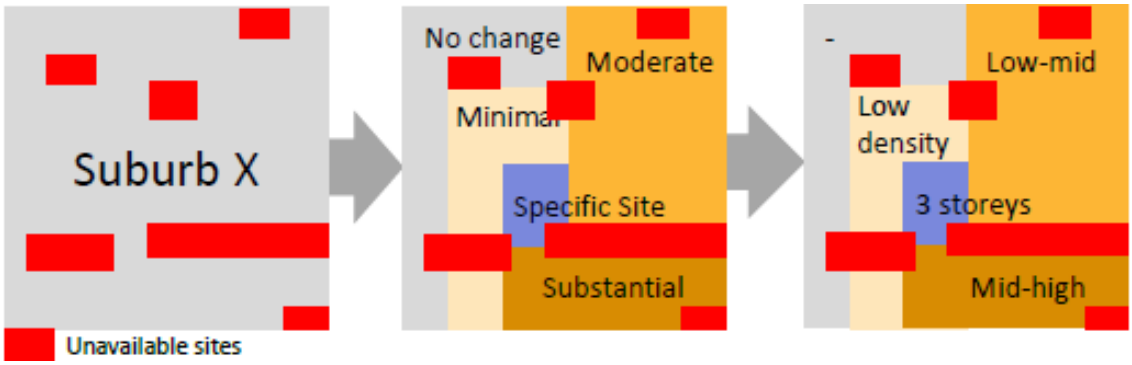
Dwelling type	2011	2016	2021	2026	2011-2026	
					Change	Annual growth
Separate house	35,472	37,038	39,978	41,103	5,630	1.0%
Semi-detached/ townhouse	4,369	4,954	5,780	6,385	2,016	2.6%
Flat/unit/apartment	11,025	12,662	14,945	16,687	5,662	2.8%
Other	773	834	924	973	200	1.5%
Total private dwellings	**51,640**	**55,488**	**61,627**	**65,148**	**13,508**	**1.6%**

Source: SGS Economics and Planning

Housing capacity

The capacity for additional housing was determined through two key steps: 1) identification of available land and 2) the likely or preferred scale of development (see figure below).

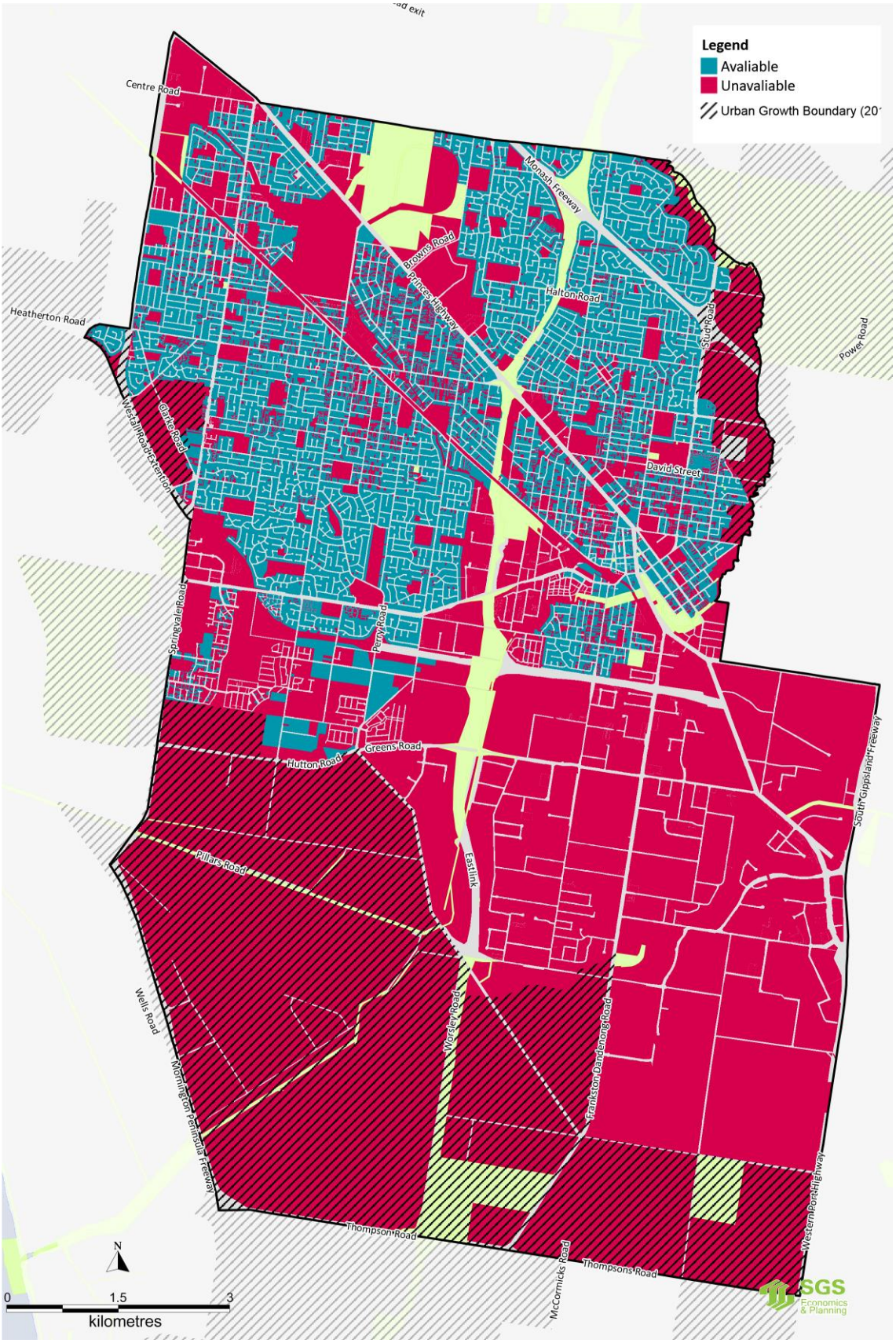
APPROACH TO ESTIMATING HOUSING SUPPLY



Source: SGS Economics and Planning

Available land captures all land with the ability to accommodate dwellings under current planning controls. It also includes sites with the potential to change in the future such as sites being transformed to residential (from industrial or vacant) or existing residential areas that have the future potential for redevelopment. Renewal sites already identified by Council and the Urban Development Program (UDP) are also captured.

AVAILABLE AND UNAVAILABLE LAND PARCELS



Source: SGS Economics and Planning

After available land was determined, the likely or preferred scale of development that could be achieved in these areas was identified.

The following table shows the capacity for additional housing in CGD. It shows that approximately 89,000 additional dwellings can be accommodated within the municipality. Urban renewal around Central Dandenong is a key driver of the suburb of Dandenong having the highest level of capacity, with space to accommodate an additional 30,989 dwellings.

CAPACITY ANALYSIS RESULTS

Suburb	Number of dwellings 2012	Total housing capacity	Number additional dwellings	% total additional dwellings
Bangholme	112	112	0	0.0%
Dandenong South	203	211	8	0.0%
Dandenong	10,099	41,088	30,989	34.8%
Dandenong North	8,071	13,872	5,801	6.5%
Keysborough	7,200	17,345	10,145	11.4%
Noble Park	11,506	30,016	18,510	20.8%
Noble Park North	2,844	4,723	1,879	2.1%
Springvale	7,006	21,923	14,917	16.7%
Springvale South	3,966	10,836	6,870	7.7%
Total	**51,007**	**140,126**	**89,119**	**100.0%**

Source: SGS Economics and Planning

While capacity exists for an additional 89,000 dwellings, this is not an indication of the future scale of development. Rather, capacity estimates provides an indication of the maximum possible number of dwellings that can be accommodated within the municipality. Ideally, the level of housing capacity should be very high and far larger than expected demand.

Housing supply

Using housing capacity figures as an upper limit, the likely supply of housing to 2026 was determined through a two-step process that aligned with realistic development activity and demand. Firstly, the rate of development was scaled back to reflect that not all available land within the municipality will be developed to 2026. For example, if we consider a street with 10 houses, only a limited number of houses (perhaps one or two) might be redeveloped within the 14 year period.

Secondly, supply was constrained by demand. This step reflects that development will not occur unless there is sufficient demand to drive this development.

The following table provides the results of the analysis showing the total number of dwellings that can be realistically accommodated within the municipality in 2026. Of total supply to 2026, around half (32,400) will be medium density dwellings (semi-detached/row/terrace/townhouse dwellings), around one quarter will be higher density dwellings (flat/unit/apartment dwellings) and one quarter will be separate houses/ detached dwellings.

On a per annum basis from 2012-26, this equates to just over 1,000 additional dwellings per annum.

FORECAST DWELLING SUPPLY, 2026

Suburb	Separate house	Semi-detached/ row/ terrace/ townhouse	Flat/ unit/ apartment	Total	Average annual requirement for new dwellings
Bangholme	112	-	-	112	-
Dandenong South	169	42	-	211	1
Dandenong	321	6,139	9,829	16,290	442
Dandenong North	5,374	2,835	208	8,417	25
Keysborough	5,341	3,588	940	9,869	191
Noble Park	1,921	8,026	4,042	13,990	177
Noble Park North	1,885	987	38	2,910	5
Springvale	285	7,101	1,575	8,961	140
Springvale South	323	3,753	308	4,384	30
CGD	**15,732**	**32,472**	**16,940**	**65,144**	**1,010**

Source: SGS Economics and Planning

Feasibility

Feasibility testing provides a strong evidence base to understand current and possible future forms of housing development. It can also shed light on why certain types of development are not currently delivered in CGD.

A feasibility analysis was carried out for 12 housing types:

- Townhouses 2br (700sqm)
- Townhouses 3br (1,500sqm)
- Apartments 2 storey – (700sqm) - combination of 1br & 2br apartments
- Apartments 2 storey – (1,500sqm) - combination of 1br, 2br & 3br apartments
- Apartments 3 storey – (700sqm) - combination of 1br & 2br apartments
- Apartments 3 storey – (1,500sqm) - combination of 1br, 2br & 3br apartments
- Apartments 4 storey – (700sqm) - combination of 1br & 2br apartments
- Apartments 4 storey – (1,500sqm) -combination of 1br, 2br & 3br apartments
- Apartments 5 storey – (1,500sqm) - combination of 1br & 2br apartments
- Apartments 5 storey – (1,500sqm) - combination of 1br, 2br & 3br apartments
- Apartments 8 storey – (2,000sqm) - combination of 1br, 2br & 3br apartments
- Apartments 10 storey – (2,000sqm) - combination of 1br, 2br & 3br apartments

The analysis looked at three key components for each housing type:

- Firstly, the feasibility of each housing type was tested. This step examined the commercial feasibility of the housing type, irrespective of whether the housing type is permitted in any given location.
- Secondly, financially feasible housing types were compared to available land to determine where within CGD this type of development could occur.
- Thirdly, sieve mapping was undertaken to highlight where within CGD financially feasible housing types could be developed under existing planning controls.

This allows for the impact that planning controls have on potential development throughout the municipality to be understood.

The analysis considered construction costs, selling costs, profit margins and the cost of land among other attributes. Sales data was obtained from m3property or imputed where there was insufficient data. The results are summarised in the following table. Where development is feasible, that is, a sufficient profit margin is drawn following the cost of development and land, then this is marked in green. Development

which is on the borderline of feasible is marked in yellow – and development which is not currently feasible is marked in red.

RELATIVE FEASIBILITY OF HOUSING TYPES

	Dandenong	Central Dandenong	Dandenong North	Keysborough	Springvale	Springvale South	Noble Park	Noble Park North
Townhouses 2br (700sqm)	X	X	X	Y	Y	?	X	X
Townhouses 3br (1500sqm)	X	X	X	Y	?	X	X	X
Apartments 2 storey – (700sqm) combination of 1br & 2br apartments	?	X	Y	Y	Y	?	X	X
Apartments 2 storey – (1500sqm) combination of 1br, 2br & 3br apartments	X	X	?	Y	Y	?	X	X
Apartments 3 storey – (700sqm) combination of 1br & 2br apartments	Y	Y	Y	Y	Y	Y	Y	Y
Apartments 3 storey – (1500sqm) combination of 1br, 2br & 3br apartments	Y	X	Y	Y	Y	Y	X	X
Apartments 4 storey – (700sqm) combination of 1br & 2br apartments	Y	Y	Y	Y	Y	Y	Y	Y
Apartments 4 storey – (1500sqm) combination of 1br, 2br & 3br apartments	Y	Y	Y	Y	Y	Y	?	Y
Apartments 5 storey – (1500sqm) combination of 1br & 2br apartments	Y	Y	Y	Y	Y	Y	Y	Y
Apartments 5 storey – (1500sqm) combination of 1br, 2br & 3br apartments	Y	Y	Y	Y	Y	Y	Y	Y
Apartments 8 storey – (2000sqm) combination of 1br, 2br & 3br apartments	Y	Y	Y	Y	Y	Y	Y	Y
Apartments 10 storey – (2000sqm) combination of 1br, 2br & 3br apartments	X	X	X	Y	Y	Y	X	X

The results of the feasibility analysis show that:

- Townhouses are not feasible according to the assumptions used in the analysis. However, this is a commonly delivered housing type in CGD. This suggests that existing landowners typically deliver this housing type.
- Higher density development is generally more feasible.
- 10 storey apartments are less feasible however this is due to the cost of construction per square metre rising for developments greater than nine storeys.

The feasibility of a housing type does not necessarily indicate that it will be delivered. Development precedence and the depth of the market are important considerations.

A comparison with current planning controls show that townhouses are permitted in many locations throughout CGD, while five, eight and 10 storey apartments are confined to Springvale activity centre and Central Dandenong. This does not pose a problem to accommodating forecast housing demand.

Scenarios analysis

Two scenarios were tested to understand the capability of CGD to accommodate:

1) higher than forecast population growth, and
2) expected population growth under proposed planning zone changes.

Scenario 1

Scenario 1 examines higher population growth under the existing planning scheme. Compared to the base case, the high growth scenario projects an additional 14,516 residents in the decade to 2026.

POPULATION FORECASTS, BASE CASE AND HIGH GROWTH SCENARIO

	Base case		High growth scenario		Variance
Year	Population	Annual growth rate	Population	Annual growth rate	(high growth – base case)
1996	131,796	-	131,796	-	-
2001	127,724	-0.6%	127,724	-0.6%	-
2006	130,068	0.4%	130,068	0.4%	-
2011	142,167	1.8%	142,167	1.8%	-
2016	153,169	1.5%	157,345	2.0%	4,176
2021	172,333	2.4%	182,733	3.0%	10,400
2026	183,305	1.2%	197,821	1.6%	14,516
2011 to 2026	**41,138**	**1.7%**	**55,654**	**2.2%**	**14,516**

Source: CGD population projections (2014), ABS Census (1996, 2001, 2006, 2011)

Compared to the base case, the high growth scenario would drive supply of an additional 4,480 dwellings within CGD, including an additional 1,415 dwellings in Dandenong, 1,099 dwellings in Keysborough, 768 dwellings in Springvale, and 811 dwellings in Noble Park. CGD has the capacity to accommodate this required increase in dwellings under this scenario.

TOTAL DWELLING SUPPLY, 2026, HIGH GROWTH SCENARIO

Suburb	Separate house	Semi-detached/ row/ terrace/ townhouse	Flat/ unit/ apartment	Total
Bangholme	112	0	0	112
Dandenong South	169	42	0	211
Dandenong	323	6,695	10,687	17,705
Dandenong North	5,411	2,956	192	8,559
Keysborough	5,384	4,497	1,087	10,968
Noble Park	1,931	8,798	4,071	14,801
Noble Park North	1,888	1,018	36	2,942
Springvale	290	7,749	1,690	9,729
Springvale South	324	3,992	282	4,597
CGD	**15,832**	**35,748**	**18,044**	**69,624**

Source: SGS Economics and Planning

Reflecting increased demand, there is a higher total annual requirement for dwellings for the high growth scenario. The high growth scenario requires annual supply of 1,330 dwellings, an additional 320 annual dwellings compared to the base case.

Should a scenario such as this play out, and higher demand be observed, the housing market would respond to increased demand with higher rates of development.

Scenario 2

Scenario 2 examines the implications of proposed zones. The proposed changes to existing residential zones will result in an overall reduction of potential housing capacity within the municipality. The key reason for this is the proposed rezoning of some locations from Residential Growth Zone (RGZ1) to General Residential Zone (GRZ1).

The results show that under the proposed zones scenario, housing capacity within CGD will fall by 9,100 dwellings compared to the base case.

CAPACITY ANALYSIS RESULTS, PROPOSED ZONES SCENARIO

Suburb	Number of dwellings 2012	Total identified supply	Number additional dwellings	% total additional dwellings
Bangholme	112	112	0	0.0%
Dandenong South	203	211	8	0.0%
Dandenong	10,099	34,539	24,440	30.6%
Dandenong North	8,071	13,872	5,801	7.3%
Keysborough	7,200	17,345	10,145	12.7%
Noble Park	11,506	27,084	15,578	19.5%
Noble Park North	2,844	4,723	1,879	2.3%
Springvale	7,006	22,283	15,277	19.1%
Springvale South	3,966	10,836	6,870	8.6%
Total	**51,007**	**131,005**	**79,998**	**100.0%**

Source: SGS Economics and Planning

Whilst capacity is reduced, it is still well above the number of dwellings which will be demanded to 2026. However, the type of dwellings that can be supplied under this scenario differs from the base case with a greater number of semi-detached type dwellings supplied under the proposed zones scenario. There are fewer flats/units/apartments, a result of rezoning in CGD.

Conclusion

There is sufficient housing capacity to accommodate demand. The analysis shows that CGD has sufficient housing capacity to accommodate forecast housing demand to 2026. There does, however, appear to be a mismatch between supply and demand in terms of housing type. While there is projected to be continued significant demand for separate houses, there are limited development opportunities for this housing type throughout the municipality, especially upon completion of major redevelopment sites such as Metro 3175 and Meridian in Dandenong and Somerfield in Keysborough. Conversely, the supply of semi-detached/ terrace/ townhouses is projected to be significantly greater than demand.

While this may at first appear to be an issue, in reality, people are willing to make a trade-off between location and housing type and between similar development forms. For example, a shortage in the supply of detached houses can realistically be met by provision of more medium density dwellings, such as semi-detached/ terrace/ townhouse dwellings, as they are similar development forms that can accommodate similar household types. On the other hand, a shortage of supply in detached houses is unlikely to be met by apartments.

The projected over supply of semi-detached/ terrace/ townhouse dwellings and under supply of separate houses is not likely to be a significant issue as households can shift between the two dwelling types with relative ease. Furthermore, recent housing trends within the CGD (see Section 2.3) indicate a growing preference for higher density housing.

Current local policy is focussed on directing a significant proportion of future residential growth into activity centres, specifically Central Dandenong. This analysis shows that these planning controls allow for the required level of development to satisfy housing demand to 2026. Furthermore, local policy that advocates for the development of more diverse housing stock - to enable different household types and incomes to live within the municipality – will be realised.

Many housing types are feasible, but higher density developments are usually more feasible. The most feasible types of development – eight storey and five storey apartment developments - are not supported by the planning scheme outside of the Springvale activity centre and Central Dandenong. The planning scheme should assist in directing higher density development and population growth into CGD's centres.

The analysis also highlighted that townhouse developments are generally unfeasible across the municipality, unless land costs are excluded. This suggests that existing landowners primarily drive this development type and may increase profitability through owner-builder construction.

The levy applied in Central Dandenong does have an impact on feasibility. The analysis assumes Central Dandenong would achieve the same sale prices as the suburb of Dandenong whilst being subject to higher development costs. As Central Dandenong undergoes further development, the sale values of dwellings may increase relative to other locations, reducing the impact the levy might have on feasibility.

Whilst a range of housing types are feasible, they are not currently present across the municipality. This is primarily due to the depth of the market and development precedence. The current depth of the property market in CGD does not support risk-taking by developers. That is, demand is not high enough across a range of housing types to warrant developers providing new housing products. This is linked to development precedents – the relatively risk averse nature of property developers often do not want to deliver untested housing types.

However, the spectrum of housing types provided in CGD will change over time. Increased sale values, relative to development costs, will support the feasibility of a wider range of housing types.

Scenario testing showed that **CGD has sufficient dwelling supply to meet future demand, including an increase in the rate of population growth.** Should a scenario such as this play out, and higher demand was observed, the housing market would respond to increased demand with higher rates of development.

Scenario 2 (proposed zones) identified that the proposed changes to existing residential zones will result in an overall reduction of potential housing capacity (approximately 9,100 fewer dwellings) within the municipality. Compared to the base case, there are a greater number of semi-detached/ townhouse dwellings supplied under the proposed zones scenario and fewer flats/units/apartments – a result of the proposed rezoning. Whilst capacity will be reduced, it is still sufficiently high enough to accommodate forecast housing demand.

The proposed zones continue to support development around the core of the municipality's activity centres and provide good transition between more intense development and lower density residential areas. The key impact of the proposed zones on housing supply will be the decrease in supply as a result of rezoning some locations from RGZ1 to GRZ1, particularly around central Dandenong.

1 INTRODUCTION

1.1 Project purpose

A strong understanding of housing demand, supply and the economics of housing development is critical to developing evidence-based planning policy.

The CGD's vision is to:

"…foster a strong housing market that meets the community's diverse and changing needs, contributes to the revitalization of the municipality, directs housing growth to appropriate locations and delivers housing that enables all Greater Dandenong residents to access a range of affordable, sustainable and well-designed housing products and services."

Achieving this vision requires strong policy that is supported by an understanding of:
- Forecast population growth, and how this may vary over time
- demand for different housing types
- the 'gap' between what will be built and what is needed, and
- if desired housing types are supported by current development economics.

SGS Economics and Planning (SGS) was commissioned by the CGD to undertake a housing analysis task, comprising of three stages:

1. Housing gap analysis – a comprehensive analysis of how housing demand and supply will align over time.
2. Housing feasibility – an analysis of the feasibility of different types of residential development
3. Housing scenarios – testing how housing supply may vary in response to increased demand or changed planning requirements.

The work will inform the Greater Dandenong *Housing Strategy* and the refinement of the application of the Residential Zones (C182).

1.2 Background

Melbourne is experiencing rapid population growth at a higher rate than previously experienced. Melbourne's current population, of around 4.4 million people, is expected to increase to around six million residents by 2030.

This rapid increase in population means that additional dwellings must be provided to accommodate new residents. Accommodating this growing population presents many challenges and opportunities for both state and local government. One key challenge lies in determining the location and type of housing provided. In one respect, Melbourne is fortunate in that its growth is generally not restricted by topographical factors, such as mountain ranges. Consequently, a large proportion of the city's recent growth has been directed to growth areas on the urban fringe. This Greenfield development requires provision of new infrastructure and services and is often not adequately connected to the public transport network. This type of growth is not sustainable. There are significant opportunities throughout Melbourne for new housing to be developed within existing urban areas, close to existing infrastructure and services.

There are many benefits associated with infill development compared to Greenfield development, including reduced costs. The evidence base suggests that the following costs are attributable to Greenfield development:

- Non-urban land consumption - with less non-urban land being available for productive uses such as agriculture, recreational, environmental and aesthetic uses.
- Infrastructure connection costs - particularly with respect to transport and utilities infrastructure but also potentially in terms of social infrastructure service provision.
- Transport congestion costs - as Greenfield residents are distantly located from jobs and services, lengthy commuting times and distances result, causing significant social and environmental costs.
- Labour force productivity costs – as agglomeration economies and human capital benefits are thwarted by spatial dislocation and congestion.
- Reduced housing choice – as constrained infill housing options fail to match the latent demand for inner and middle ring suburban living, with prospective residents prepared to trade-off private space with improved accessibility to jobs and services.[2]

Of course, there are also costs associated with infill development, including that it is generally more costly to construct, requires a degree of supporting infrastructure investment, and may cause existing residents to experience amenity reductions (assuming they have a clear preference for lower density living). Additionally, poor infill housing design can impart real costs on individual properties, be it through overshadowing, loss of privacy, or increased noise. This highlights the importance of the statutory planning system in sufficiently enforcing good design.

Even so, the evidence base clearly shows that at the aggregate level, the benefits of infill housing substantially outweigh the costs.

The research also suggests that the most productive distribution of infill housing is in and around town centres, enabling capacity in the public transit and other infrastructure networks to be leveraged. However, it is often difficult to promote this in-centre development, which generally is higher density in nature, without an established medium density housing market. It is preferable that medium density development is directed towards the periphery of designated town centres, leaving the centre's core for employment, mixed and higher density residential development, and thereby creating a gradual reduction in density as you move away from the centre's core.

A challenge for local government is to adequately identify and understand the capacity of their local area to accommodate development within existing urban areas.

1.3 Report structure

This report is structured around the three stages of housing analysis. The remainder of the report is presented as follows:

- Section 2 presents housing demand analysis results
- Section 3 outlines results of the housing capacity analysis
- Section 4 presents results from the housing supply analysis
- Section 5 presents results from the feasibility analysis
- Section 6 presents results from Scenario 1 testing (high growth scenario)
- Section 7 presents results from Scenario 2 testing (proposed zones), and
- Section 8 provides a summary of the portfolio of work undertaken and discusses implications for CGD.

[2] There are also limited opportunities for people to enter the housing market in locations other than the urban fringe.

2 HOUSING DEMAND

This section identifies housing demand within the CGD. Projected population growth is used to determine household types and, in turn, the implied demand for different types and sizes of dwellings based on household preferences.

In summary, 13, 508 additional dwellings will be demanded to 2026. Of these:

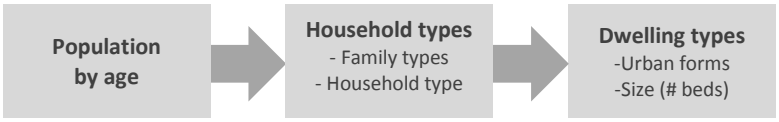
- 5,630 will be separate houses
- 2,016 will be townhouses/semi-detached
- 5,662 will be apartments/flats/units.

2.1 Overview of approach

The demand for the overall *quantum* and *type* housing is shaped by population growth, household size, household type and preference. Population forecasts provide a good basis for understanding future population and household growth, and can be used to determine likely household types. Historic preferences also provide an indication of the type of housing that is therefore likely to be demanded, however, preferences can change over time.

Estimates of dwelling demand have been generated using a housing propensity model. The model estimates implied demand for dwelling types by analysing the likelihood, or propensity, for particular age groups to form particular households and then those households to reside in particular dwelling forms (see Figure 1).

FIGURE 1. HOUSING DEMAND APPROACH



The approach utilises trends from the past four ABS Census periods (1996, 2001, 2006 and 2011), as well as population forecasts provided by CGD. This data-driven approach captures existing and changing demographics and preferences. This implicitly incorporates the home buyer's practical trade-off assessment.

2.2 Population and household formation

Population and age structure

Table 1 presents past population growth (1996-2011) and population forecasts to 2026. As of 2011, the population was 142,167. From 2001-11, the population grew by 14,443 people, at a rate of between -0.6 to 1.8 per cent per annum.

Between 2011 and 2026, an additional 41,138 residents are projected to reside within the municipality. Annual growth is expected to be highest to 2021 – with average growth of 1.5 and 2.4 per cent to 2016 and 2021 respectively - and to halve between 2021 and 2026, at which time there is projected to be approximately 183,300 residents.

These projections highlight that demand for housing will be highest between 2016 and 2021.

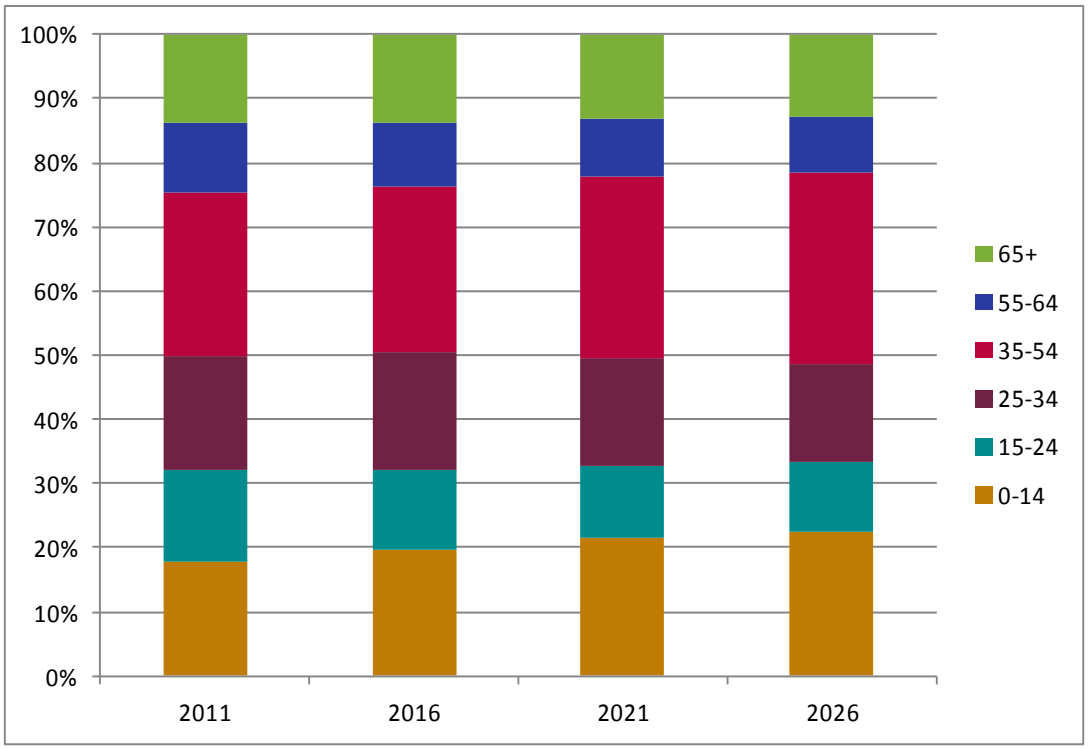
TABLE 1. POPULATION FORECASTS

Year	Population	Annual growth rate
1996	131,796	-
2001	127,724	-0.6%
2006	130,068	0.4%
2011	142,167	1.8%
2016	153,169	1.5%
2021	172,333	2.4%
2026	183,305	1.2%
2011 to 2026	**41,138**	**1.7%**

Source: CGD population projections (2014), ABS Census (1996, 2001, 2006, 2011)

Figure 2 presents projected age of the population for 2011, 2016, 2021 and 2026. It shows that, of all age groups, a higher proportion of residents were aged 35 to 54 years in 2011, comprising 26 per cent of the total population. The proportion of residents in this age group is projected to increase by 2026 to approximately 30 per cent. The proportion of residents aged up to 14 years is also projected to increase (from 18 per cent in 2011 to 22 per cent in 2026). These trends suggest increased demand for family friendly dwellings. The proportion of all other age groups is projected to decrease to 2026; residents aged 15 to 24 years are projected to experience the most significant decline (from 14 per cent to 11 per cent).

FIGURE 2. POPULATION GROWTH BY AGE



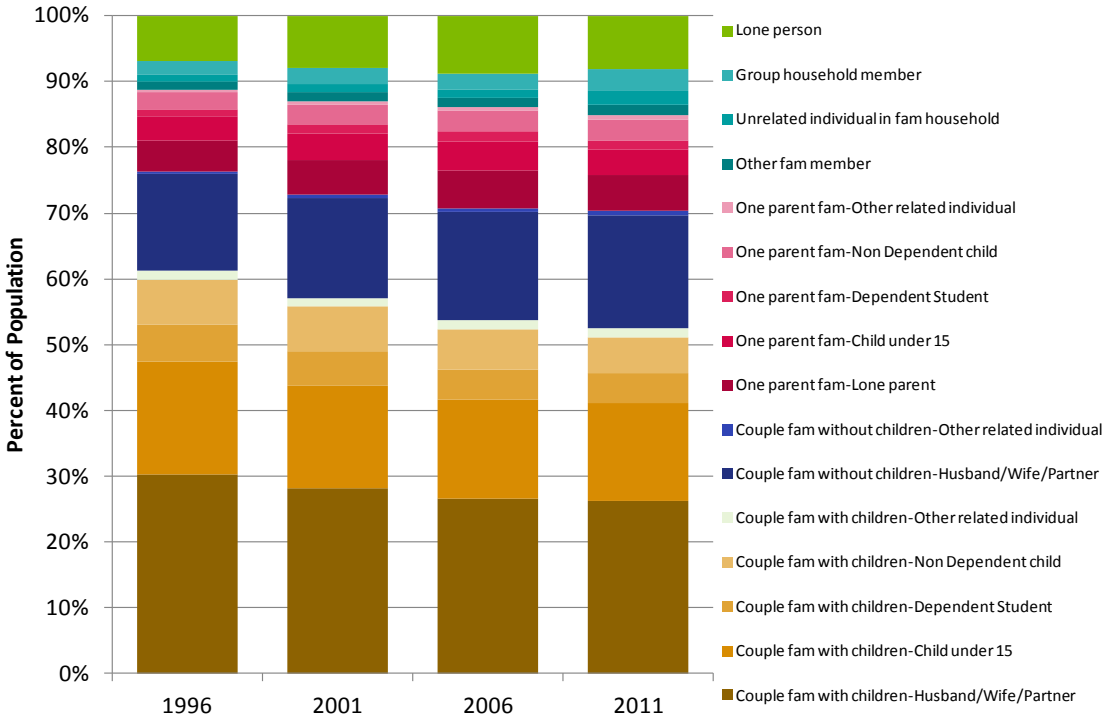
Source: CGD population projections (2014)

Household formation preferences

Certain households have a propensity to form particular household types, given their age specific characteristics. For example, children aged up to 10 are likely to be living in a couple or one parent family with children. Alternatively, those aged 65 plus typically form part of a couple family without children or lone person household. These propensities have been slowly changing, which, in turn, have implications for housing requirements.

Figure 3 presents household types across the last for Census periods for CGD. The figure shows that, in 2011, approximately half of the total population of the municipality resided in a couple family with children household type. In 1996, this household type accounted for around 60 per cent of the total population, indicating a decline in this household type, compared to other household types. Between 1996 and 2011, the proportion of couple families without children increased by two per cent, from 14 to 16 per cent. Over the same period, the proportion of one parent families increased from 12 per cent to 14 per cent. The proportion of lone person households increased marginally, by one per cent.

FIGURE 3. HOUSEHOLD TYPE FOR TOTAL POPULATION, CGD



Source: ABS Census 1996, 2001, 2006 & 2011

Household type forecasts

Trends demonstrated from 1996 to 2011 for each 10 year age group have been projected out to 2026 to capture evolving household formation structures into the future. These formation propensities have then been applied to the projected population by age.

Table 2 presents population by household type. The largest population growth is forecast for one parent families, an increase of 10,853 people between 2011 and 2026 (or three per cent growth per annum). Other family and group households are projected to grow at slightly lower rates - 2.7 per cent and 2.6 per cent per annum respectively - albeit from a lower base. In terms of absolute numbers, couple families with children are projected to increase by the greatest amount between 2011 and 2026, by approximately 14,600 people.

TABLE 2. POPULATION FORECAST BY HOUSEHOLD TYPE

Household type	2011	2016	2021	2026	2011-2026	
					Change	Annual growth
Couple family with children	69,148	71,800	79,530	83,800	14,652	1.3%
Couple family with no children	23,699	25,252	27,731	28,469	4,770	1.2%
One parent family	19,203	22,942	27,117	30,056	10,853	3.0%
Other family	4,827	5,337	6,411	7,199	2,372	2.7%
Group household	4,593	5,099	6,120	6,770	2,178	2.6%
Lone person household	10,587	11,843	13,208	14,082	3,495	1.9%
Other	10,110	10,896	12,216	12,928	2,818	1.7%
Total persons	**142,167**	**153,169**	**172,333**	**183,305**	**41,138**	**1.7%**

Source: CGD and SGS Economics and Planning

These changes in household type will have varying implications for the types of dwellings demanded in the future. The preferences, and how they have been changing, are explored in the following section.

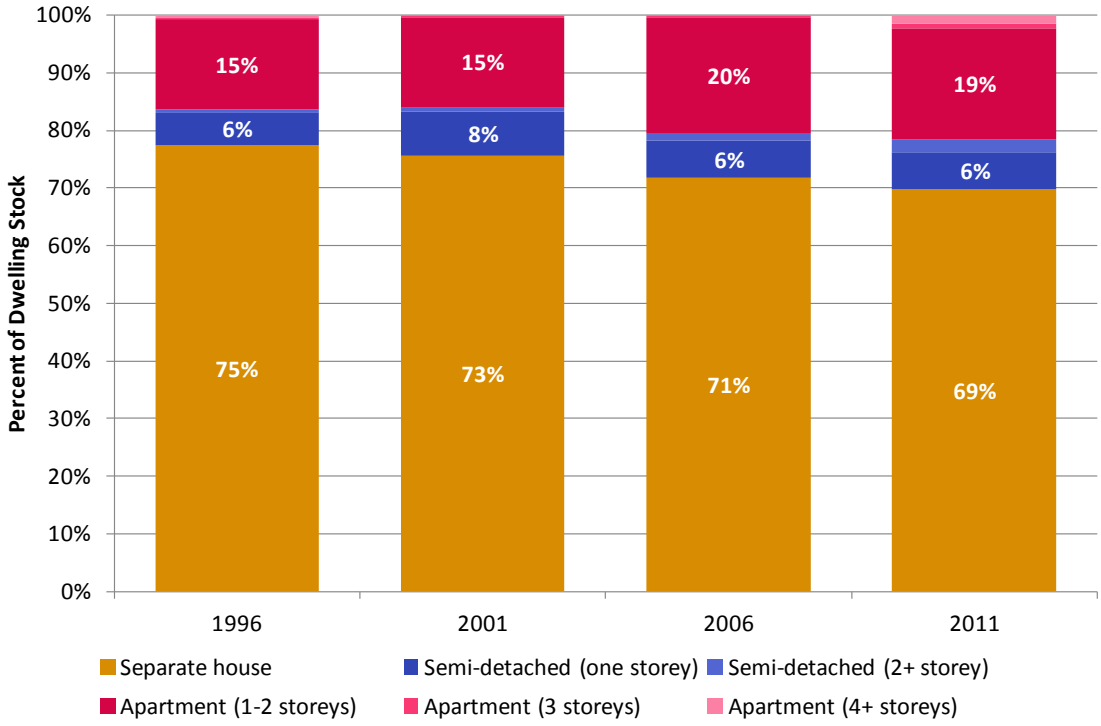
2.3 Dwelling preferences and demand

Dwelling structure preferences

Historical trends in dwelling preferences have been used to forecast future dwelling demand. This is an 'implied demand' as it incorporates home buyer's practical trade-offs, based on the supply that is available. If alternative housing stock was available, there is potential for buyers to present alternative preferences.

In 2011, separate houses comprised approximately 69 per cent of the total dwelling stock, a decrease of around six per cent from 1996 (Figure 4). The proportion of semi-detached dwellings within the municipality decreased by around two per cent over the same period and comprised around six per cent of dwellings in 2011. Between 1996 and 2011, the proportion of one and two storey apartments increased by around four per cent to account for 19 per cent of dwelling stock in 2011. The proportion of three (and above) storey apartments in the municipality increased from around one per cent in 1996 to two per cent in 2011.

FIGURE 4. DWELLING SUPPLY BY DWELLING TYPE, 1996 TO 2011

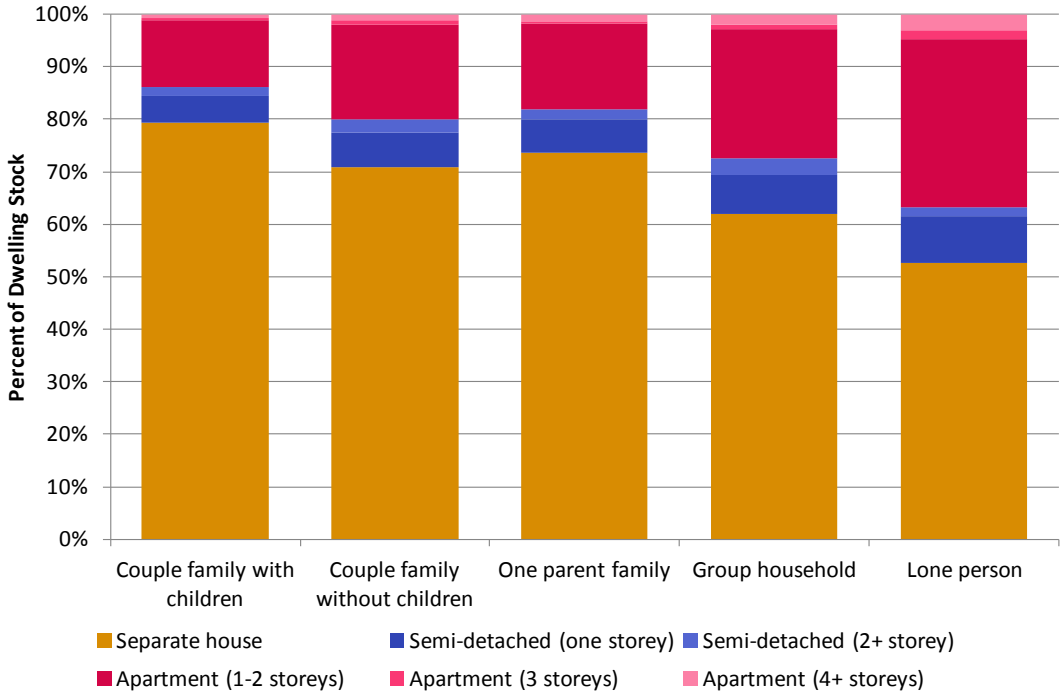


Source: ABS Census 1996, 2001, 2006, 2011

Dwelling structure types for the main household groups in 2011 are shown in Figure 6. In 2011, the majority (approximately 80 per cent) of couple families with children lived in separate houses. The propensity for this household type to live in separate houses has declined over time and is likely to continue to do so in the future.

Couple families without children have a greater preference for apartments, particularly one and two storey apartments, and semi-detached dwellings than couple families with children. The propensity for couple families without children to live in separate houses has decreased over time (around eight per cent between 1996 and 2011). While group households have a relatively high preference for apartments, this preference has declined over time and separate houses remain the most in demand dwelling type for these households. Of all household types, lone person households have the greatest preference for apartments - the propensity of this household type to live in apartments has remained relatively constant over time – and they have the lowest preference for separate houses.

FIGURE 5. DWELLING TYPE BY HOUSEHOLD TYPE, 2011



Source: ABS Census 2011

Considering current dwelling preferences and the projections for growth in family and group households, demand should continue to be greatest for separate houses. Due to the higher than average projected growth of *lone* and *group* households within the municipality - and their propensity to choose higher density dwellings - there will be continued demand for apartments.

However, if dwelling preferences do change, this would have implications on the future demand for particular dwelling types. The existing supply of housing has impacted on dwelling preferences due to the dominance of separate housing and a relatively limited amount of other housing options.

Dwelling size preferences (number of bedrooms)

Different households also have a propensity to demand varying dwelling sizes, as determined by the number of bedrooms in a dwelling. Future demand by dwelling size can be estimated using these preferences, in the same way as dwelling structural types are forecast.

Table 3 presents the proportion of dwelling stock by number of bedrooms from 2006 to 2011. During this period, the type of dwelling stock remained consistent for one and two bedroom houses. The proportion of three bedroom houses decreased by two per cent while the proportion of four or more bedroom houses increased by two per cent.

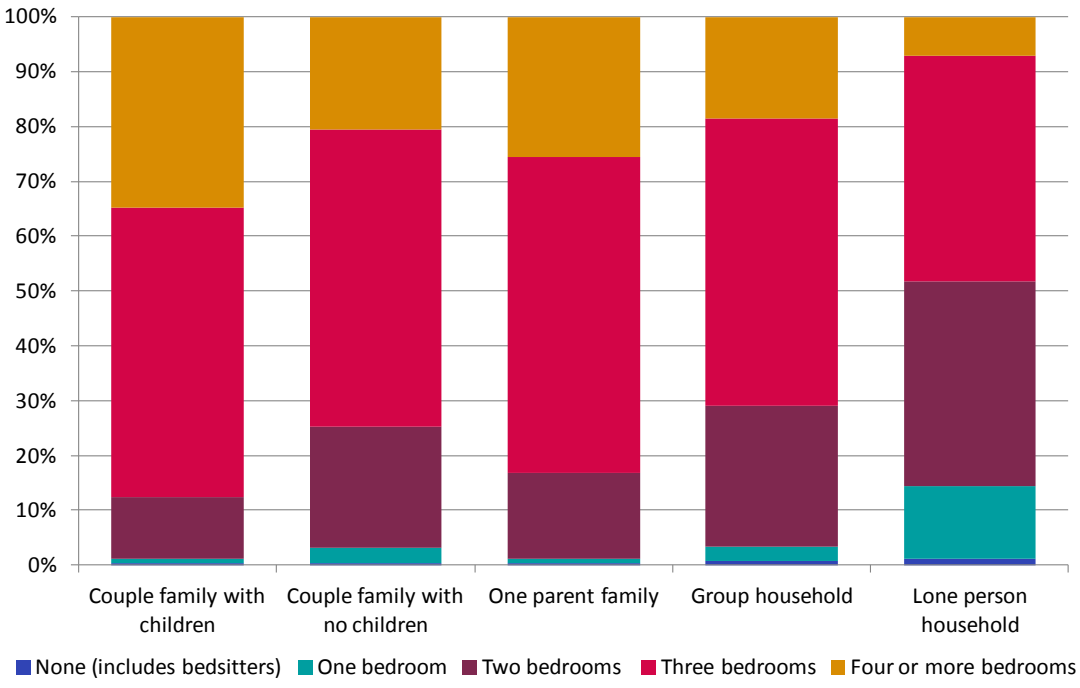
TABLE 3. DWELLING SUPPLY BY NUMBER OF BEDROOMS

	2006		2011		Change in stock (2006-2011)
	# dwellings	% total stock	# dwellings	% total stock	
None (includes bedsits)	214	0%	313	1%	0%
One bedroom	1,889	4%	2,044	4%	0%
Two bedrooms	9,674	20%	10,598	21%	0%
Three bedrooms	25,723	54%	26,476	51%	-2%
Four + bedrooms	10,523	22%	12,208	24%	2%
Total	**48,023**	**100%**	**51,640**	**100%**	**0%**

Source: ABS Census (2006, 2011)

Figure 6 illustrates the proportion of dwellings, by size and household type in 2011. It shows that all household types have the greatest preference for three bedroom dwellings, however to varying degrees. While couple families with children and other family households have the greatest preference for larger (three bedroom and above) dwellings, lone person households are the most inclined to occupy one and two bedroom dwellings.

FIGURE 6. DWELLING SIZE BY HOUSEHOLD TYPE



Source: ABS Census 2011

Housing demand forecasts

To capture the evolving dwelling preferences for each household, the observed trends - between 1996 and 2011 - for each household type have been projected to 2026 to align with population forecasts. As future population growth is projected to be significantly higher than growth experienced in previous years[3], demand for houses is projected to increase significantly.

[3] From 2001 to 2011, the CGD experienced annual growth of around 1,400 persons per year. Population projections provided by the CGD predict that this will increase to 2,700 between 2011 and 2026.

Table 4 shows that there will be demand for an additional 13,508 dwellings within CGD to 2026. In terms of annual growth, demand is projected to be highest for higher density dwellings, including flat/unit/apartment dwellings (2.8 per cent) and semi-detached/townhouse dwellings (2.6 per cent). This is supported by state and local policy which promotes higher density development in locations in close proximity to employment, public transport and services, specifically within and throughout the periphery of activity centres.

Demand for dwellings will be evenly split between separate houses and flat/unit/apartment dwellings, with demand for an additional 5,600 dwellings projected for each of these two dwelling types (and each accounting for 42 per cent of additional dwellings). There is expected to be moderate future demand for semi-detached/townhouse dwellings (2,016 or 15 per cent of total additional dwellings).

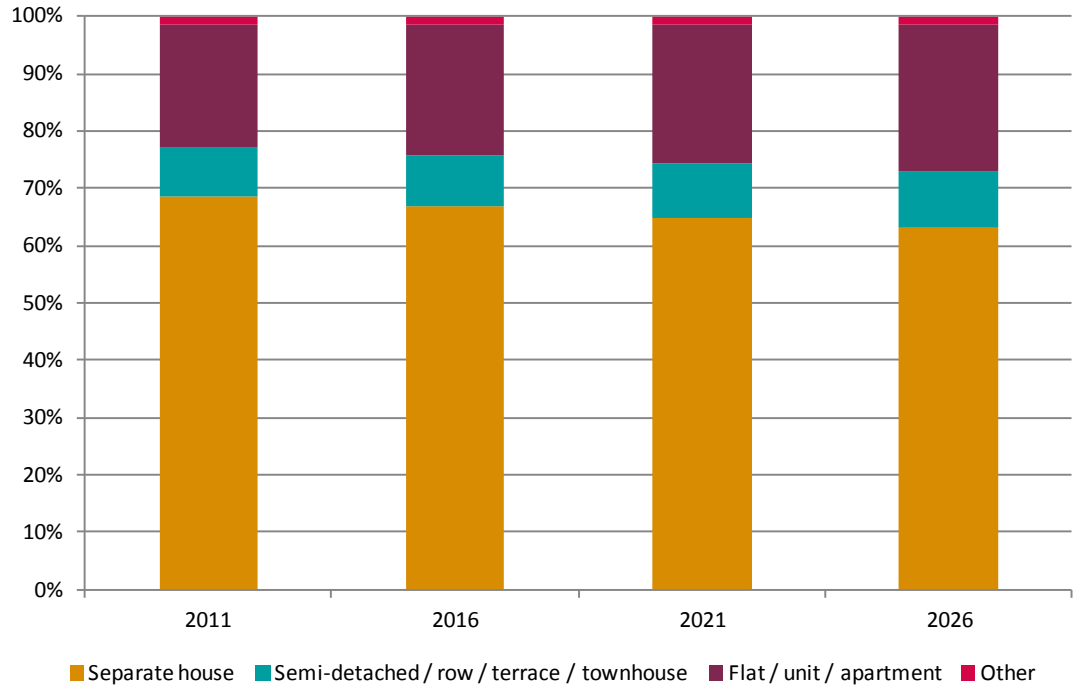
TABLE 4. HOUSING DEMAND BY DWELLING TYPE

Dwelling type	2011	2016	2021	2026	2011-2026	
					Change	Annual growth
Separate house	35,472	37,038	39,978	41,103	5,630	1.0%
Semi-detached/ townhouse	4,369	4,954	5,780	6,385	2,016	2.6%
Flat/unit/apartment	11,025	12,662	14,945	16,687	5,662	2.8%
Other	773	834	924	973	200	1.5%
Total private dwellings	**51,640**	**55,488**	**61,627**	**65,148**	**13,508**	**1.6%**

Source: SGS Economics and Planning

Figure 7 illustrates the number and proportion of dwellings demanded by dwelling type from 2011 to 2026. While the demand for all housing types is expected to grow as per Table 4, the overall share of demand will change over time due to changing households and their preferences. While demand will grow by one per cent per annum for separate houses, as an overall share of dwellings demanded, they will fall by six per cent.

FIGURE 7. DWELLING TYPE FORECASTS, CGD



Source: SGS Economics and Planning

Forecast demand for dwellings to 2026 within CGD by number of bedrooms is presented in Table 5. In terms of absolute numbers, there will be greatest demand for four or more bedroom dwellings (6,167 additional dwellings or 46 per cent of additional dwellings), equating to an average annual growth rate of 2.8 per cent. There will be demand for an additional 3,764 two bedroom dwellings (28 per cent of total additional demanded dwellings), and a further 2,100 three bedroom dwellings (16 per cent of additional dwellings).

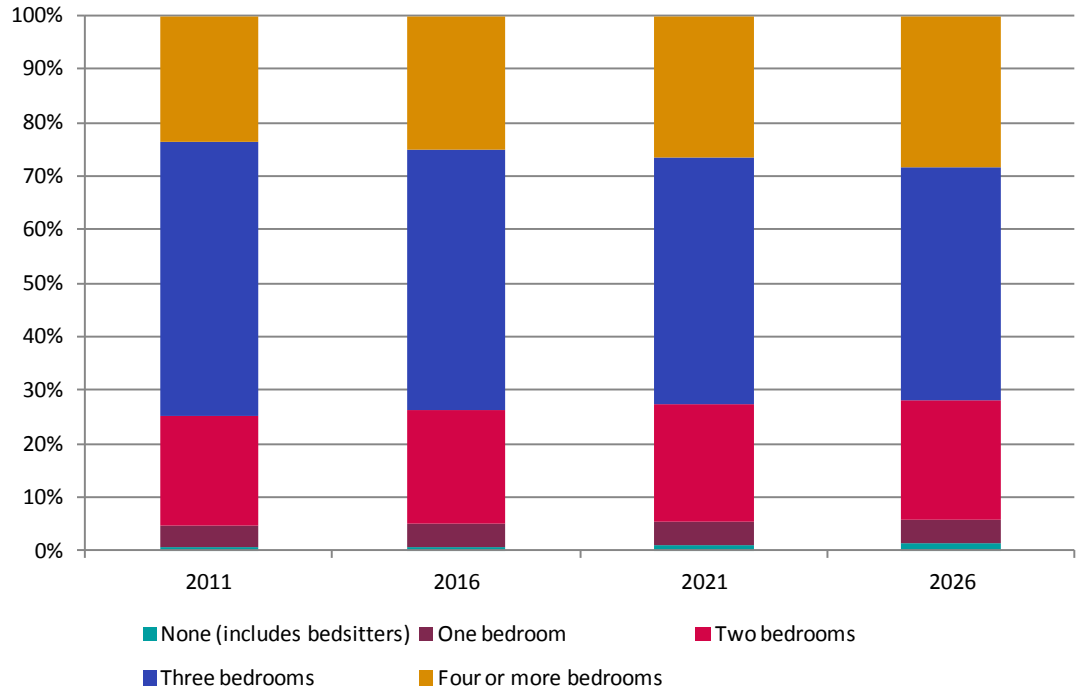
TABLE 5. HOUSING DEMAND BY NUMBER OF BEDROOMS

Dwelling type	2011	2016	2021	2026	2011-2026	
					Change	Annual growth
None (includes bedsitters)	313	443	610	772	459	6.2%
One bedroom	2,044	2,374	2,770	3,063	1,018	2.7%
Two bedrooms	10,598	11,805	13,370	14,362	3,764	2.0%
Three bedrooms	26,476	27,049	28,537	28,576	2,100	0.5%
Four or more bedrooms	12,208	13,818	16,339	18,375	6,167	2.8%
Total dwellings	**51,640**	**55,488**	**61,627**	**65,148**	**13,508**	**1.6%**

Source: SGS Economics and Planning

Figure 8 illustrates the proportion of dwellings demanded by dwelling size from 2011 to 2026. It shows that, while three bedroom houses are projected to be the most predominant housing type within the municipality to 2026, demand for these dwellings will decrease (by seven per cent) over the period. Driven by the projected growth in family with children and group households, demand for four or more bedroom houses is projected to increase to 2026 to account for approximately 28 per cent of total dwellings by 2026, an increase of five per cent of the period. Demand for one and two bedroom dwellings is projected to increase to a lesser extent to reach five and 22 per cent of total dwellings respectively.

FIGURE 8. NUMBER OF BEDROOMS DEMAND FORECAST



Source: SGS Economics and Planning

3 HOUSING CAPACITY

This section identifies the likely housing capacity for CGD by suburb and dwelling type. Land available for future residential development is first identified, followed by projected total identified dwelling capacity for the municipality to 2026.

In summary, there is capacity for an additional 89,119 dwellings. Of these:

- 34.8 per cent will be in Dandenong
- 20.8 per cent will be in Noble Park, and
- 16.7 per cent will be in Springvale.

This aligns with currently available land, of which there are 34,873 lots or 2,411 hectares. Of this:

- 19 per cent of available land (464 hectares or 6,914 lots) is in Noble Park
- 19 per cent of available land (465 hectares or 7,151 lots) are in Dandenong North, and
- 17 per cent of available land (5,131 hectares or 412 lots) is in Keysborough.

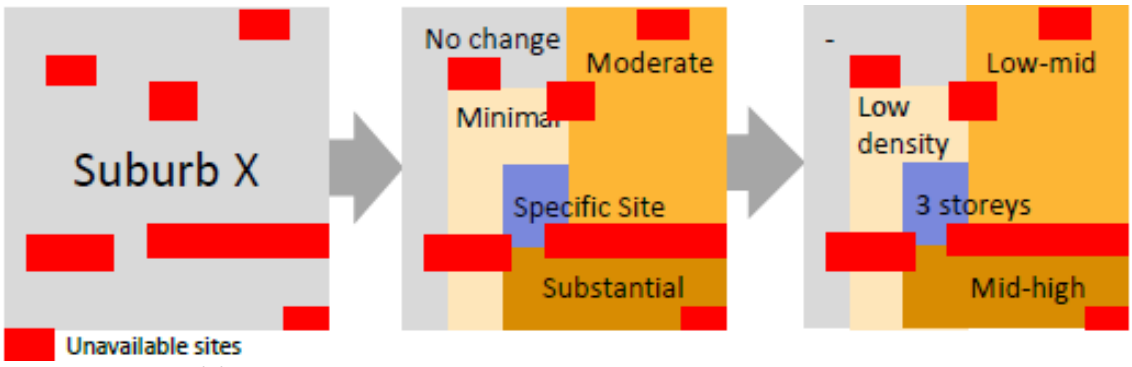
3.1 Overview of approach

Figure 9 illustrates the approach used to determine potential housing capacity.

Firstly, available land was identified. This captures all land with the ability to accommodate dwellings under current planning controls. It also includes sites or land with the potential to change in the future. This includes sites being transformed to residential (from industrial or vacant) or existing residential areas that have the future potential for redevelopment. Renewal sites already identified by Council and the Urban Development Program (UDP) are also captured.

Following the identification of all land available for future residential development, the likely or preferred scale of development that could be achieved in these areas was determined.

FIGURE 9. APPROACH TO ESTIMATING HOUSING SUPPLY



Source: SGS Economics and Planning

Where actual information regarding particular redevelopment sites was available, this was used. In the absence of such information, an analysis of the current dwelling stock (via 2012 Housing Development Data) in conjunction with broad development assumptions was made to determine the location and potential scale of development. This component of the analysis was based on policy aspirations and likely development forms.

A built form model was then used to determine the type of built form – for example, separate, semi-detached, townhouse or apartment style dwellings – likely to be delivered within each suburb/precinct of CGD.

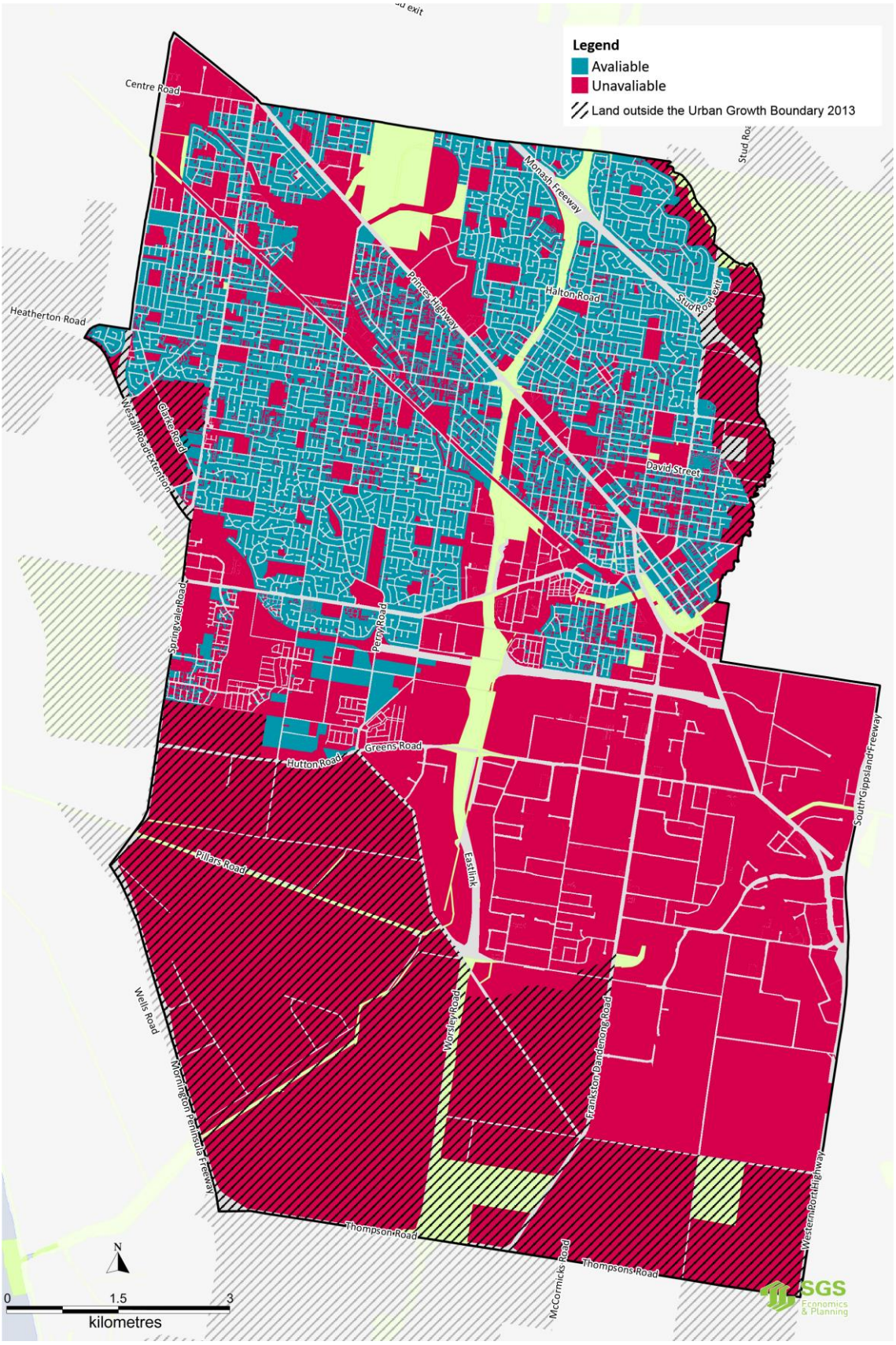
3.2 Available land

Using lot-level Housing Development Data, available land was identified by excluding land with the following attributes:

- **Small lots –** any parcel under 300 square metres was excluded. While site amalgamation could potentially make the site developable it is extremely difficult and very rare.
- **Recent development** – any site that had been recently developed based on the 2004-12 Housing Development Data or from the 2013 Urban Development Program - Major Redevelopment Site databases.
- **Multiple ownership** – any site with over three dwellings was assumed to have some form of strata titling/ multiple ownership. This has been seen to be a major barrier to redevelopment potential.
- **Major non-residential uses** – parkland, schools, and other major non-residential uses have been excluded. This included land covered by industrial zones, public use zones, green wedge zones, park and recreation zones, special use zones and the Public Acquisition Overlay.
- **Key strategic redevelopment sites** – were independently assessed and added back in as required.

Figure 10 shows the resulting identified available and unavailable land.

FIGURE 10. AVAILABLE AND UNAVAILABLE LAND PARCELS IN CGD



Source: SGS Economics and Planning

Land within the south of the municipality is generally classified as unavailable – this reflects land zoned for industrial purposes and land outside the Urban Growth Boundary within the Green Wedge Zone, as well as locations that have undergone recent development, such as in Keysborough. Most identified available land corresponds with incremental change (General Residential Zone) areas.

Table 6 shows the number, and area, of total lots and available land within each suburb. Throughout the municipality there are approximately 59,000 lots. Of these, around 59 per cent (34,873 lots) have been classified as land available for residential development. As a proportion of total area, Noble Park and Dandenong North have the highest proportion of available land. Around 41 per cent of all land in Dandenong (360 hectares) has been identified as available. While the proportion of available land to total land in Dandenong is comparatively smaller than other suburbs, future development in this area will be of a much higher density and yield a significantly greater number of dwellings. Suburbs in the south of the municipality have very limited available land due to their industrial and semi-rural land uses.

For a variety of reasons, even though land has been classified as available, this does not mean that the land will necessarily be developed. This is explored further in Section 3.3.

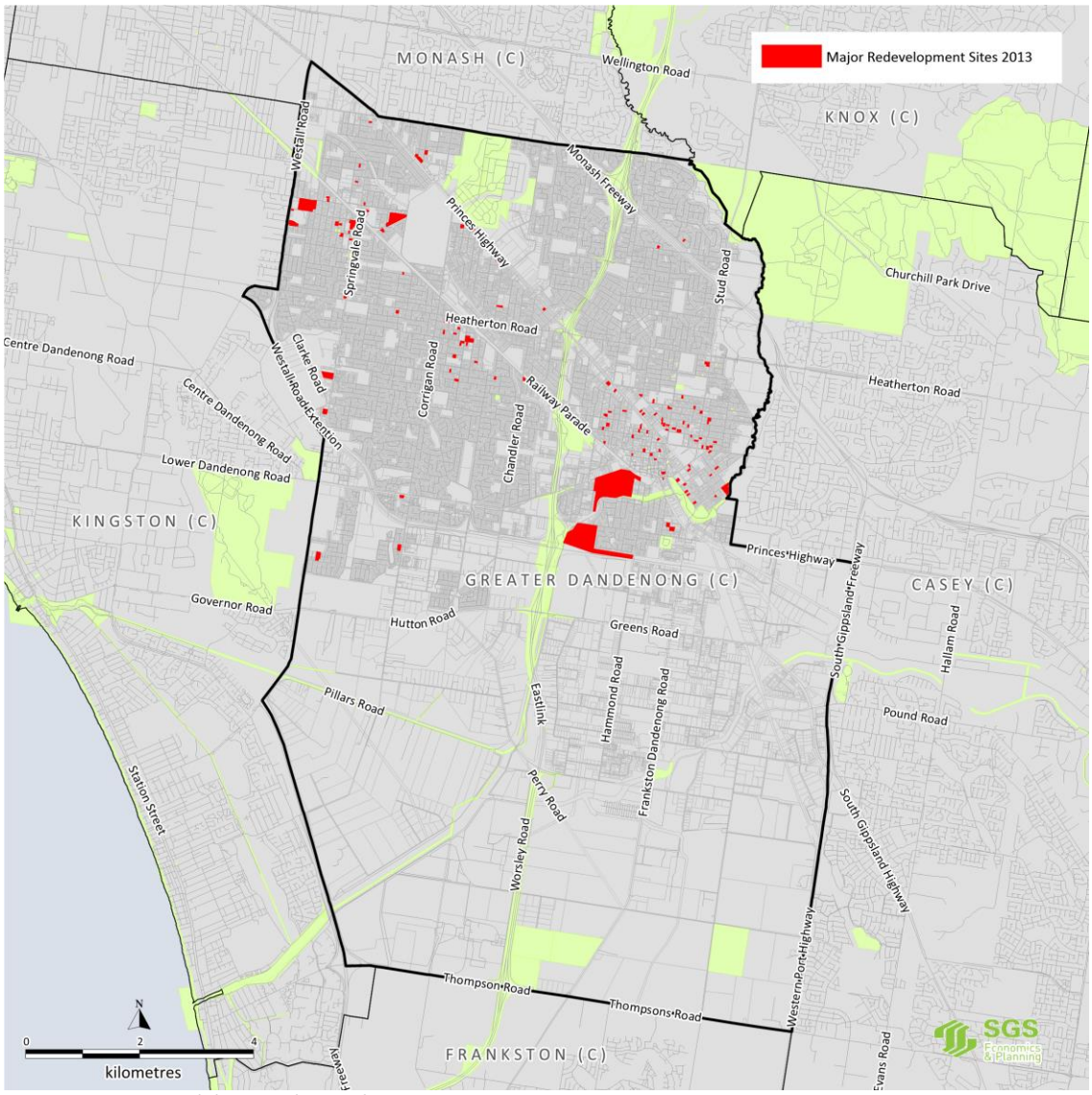
TABLE 6. AVAILABLE LAND

	Total lots		Available land		% of available land (ha)
Suburb	Number of lots	Total area (ha)	Number of lots	Total area (ha)	
Bangholme	284	3,439	-	-	0%
Dandenong South	3,628	1,952	10	0	0%
Dandenong	10,997	879	4,814	360	41%
Dandenong North	8,252	699	7,151	465	67%
Keysborough	8,528	1,826	5,131	412	23%
Noble Park	12,068	670	6,914	464	69%
Noble Park North	2,993	296	2,596	155	53%
Springvale	7,867	936	5,127	349	37%
Springvale South	4,137	359	3,130	204	57%
Total	**58,754**	**11,055**	**34,873**	**2,411**	**22%**

Source: SGS Economics and Planning

After identifying available land, major redevelopment sites – as identified through the 2013 Urban Development Program (UDP) – within the municipality were isolated (Figure 11). As the UDP identifies the number of dwellings likely to be developed on each site, these estimates were included directly in dwelling supply projections.

FIGURE 11. MAJOR REDEVELOPMENT SITES



Source: SGS Economics and Planning, Urban Development Program 2013

Table 7 provides a breakdown of these major redevelopment sites by suburb. It shows that major redevelopment sites around the activity centres within the municipality will yield the highest number of additional dwellings. Dandenong contains the largest land area for major redevelopment sites. Analysis of Housing Development Data (HDD) and the UDP identified these sites as having capacity for an additional 2,465 dwellings[4]. There is capacity for an additional 835 dwellings in major redevelopment sites in Springvale and a further 470 additional dwellings in Noble Park.

TABLE 7. MAJOR REDEVELOPMENT SITES

Suburb	Total area (ha)	Number of dwellings
Bangholme	0	0
Dandenong South	0	8
Dandenong	23	2,465
Dandenong North	0	65
Keysborough	0	53
Noble Park	3	470
Noble Park North	0	0
Springvale	13	835
Springvale South	2	103
Total	**42**	**3,999**

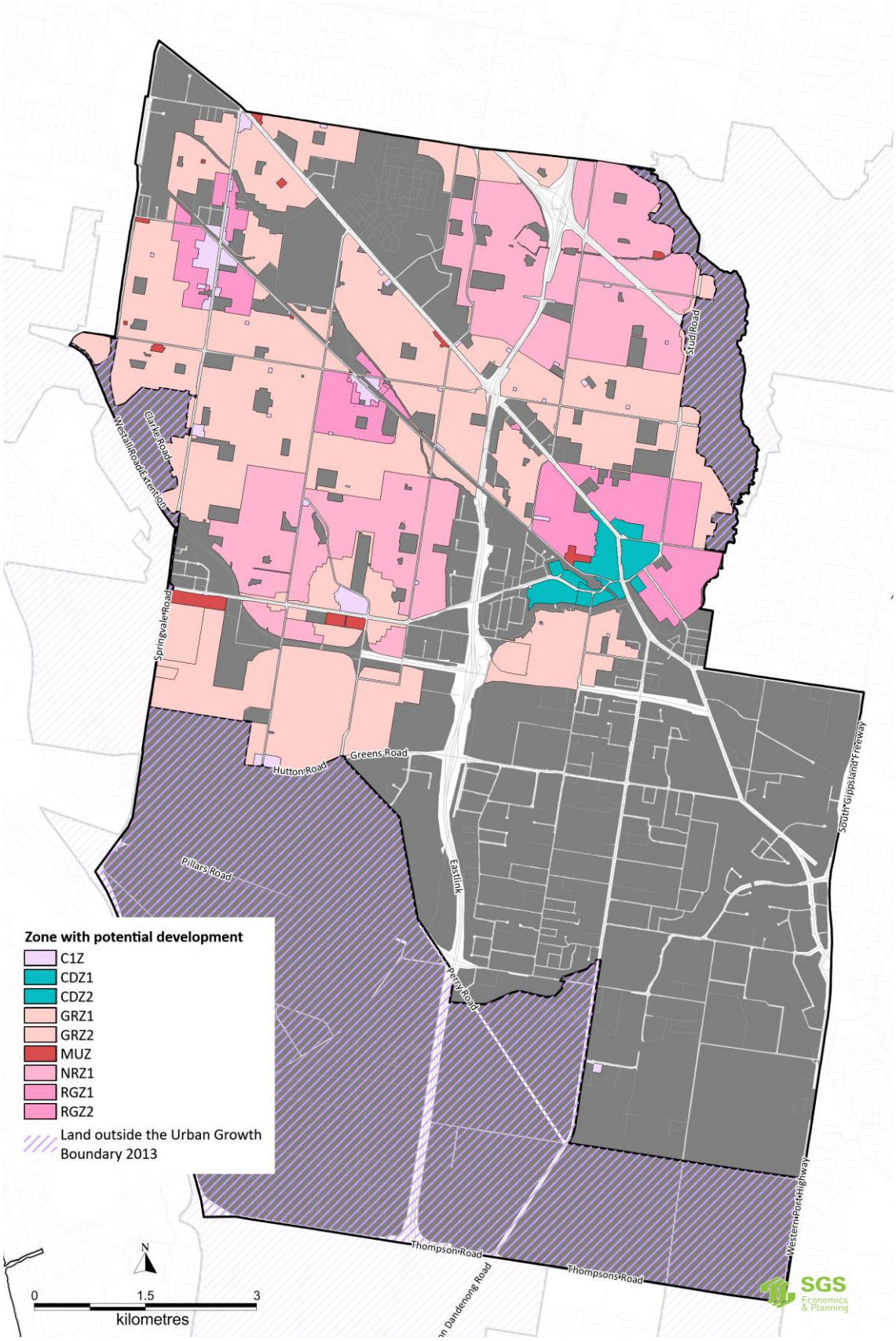
Source: SGS Economics and Planning, Urban Development Program 2013

The development potential of available sites was then determined using the designated building storey controls within the planning provisions and a range of built form assumptions. Where actual development potential information was available for individual sites, this was utilised instead. This included the above Major Redevelopment Sites identified in the 2013 UDP.

Figure 12 illustrates the zones that helped inform the analysis.

[4] This figure does not include dwellings already developed at these sites

FIGURE 12. ZONES WITH DEVELOPMENT POTENTIAL



Source: SGS Economics and Planning using CGD planning scheme

The following built form assumptions were made to translate a particular site into a dwelling capacity estimate. The full set of assumptions used to determine future housing supply can be found in the Appendix.

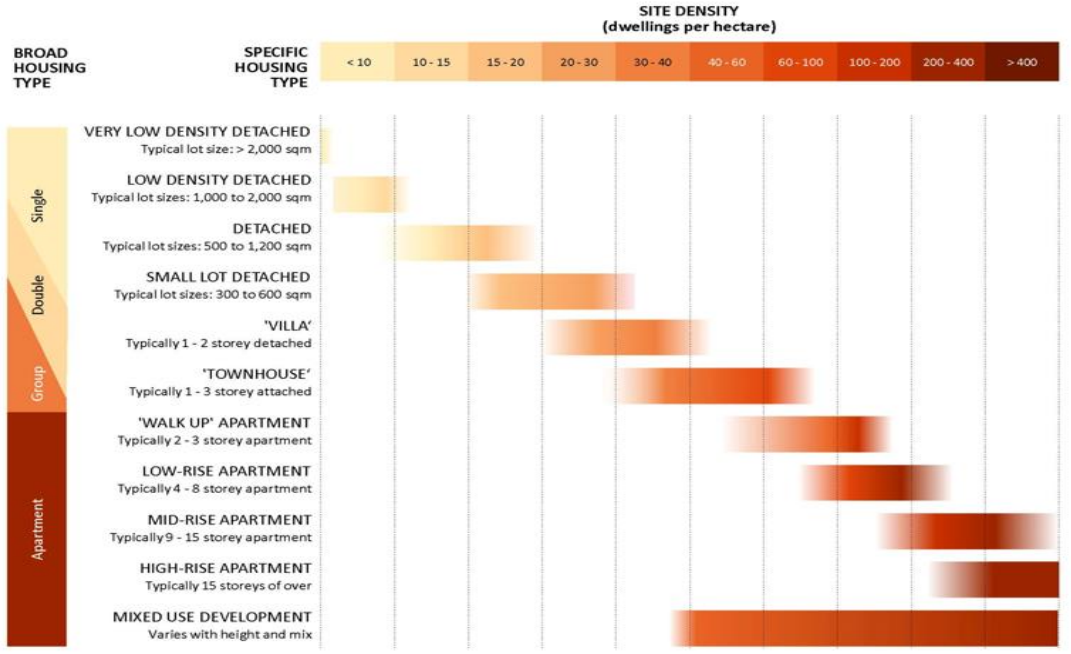
TABLE 8. BUILT FORM ASSUMPTIONS

Attribute	Assumption
Site coverage	Apartments 70 per cent of land parcel Attached dwellings 60 per cent of land parcel
Building efficiency	Apartments 75 per cent of floor plate
Dwelling size/ density	Apartments 130 square metres Attached dwellings 50 dwellings per hectare Detached houses 15 dwellings per hectare Semi-detached 30 dwellings per hectare Mix of dwellings 80 dwellings per hectare

Source: SGS Economics and Planning using CGD local policy and broad assumptions

The figure below provides an indication of the types of dwellings that are likely supplied on particular lot sizes, and at what densities. For example, detached houses are typically provided on lot sizes between 500 and 1,200 square metres at between 10 to 20 dwellings per hectare, while medium density housing, such as townhouses, is typically produced on lots of between 35 and 80 dwellings per hectare.

FIGURE 13. DENSITY AND HOUSING TYPES



As an example, this analysis has assumed a density of 30 dwellings per hectare for the Neighbourhood Residential Zone (NRZ). This density assumption broadly accounts for setbacks and site coverage requirements. As per the figure above, this density would typically translate to detached dwelling forms. This density could be achieved by multiple detached dwellings on a large lot.

Figure 14 provides some examples of different housing types and densities (from left to right – single detached house on single lot at low density, two detached houses on a lot, side-by-side semi-detached houses, group houses and apartment complex).

FIGURE 14. EXAMPLES OF HOUSING TYPES

3.3 Development potential

The following section examines recent rates of dwelling growth and identifies the number of total identified future dwellings that can be accommodated within the municipality to 2026.

Rate of recent development

The rate of recent development (2004-12) for each suburb was used to understand the rate of future development and, therefore, to determine the likely dwelling supply for each suburb to 2026.

Table 9 shows that the rate of housing development from 2004-12[5] varied between suburbs. Over the period, total dwelling stock within the municipality increased by 4,815 dwellings, equivalent to 602 dwellings per year and an average growth rate of 1.2 per cent. Keysborough experienced the biggest increase in dwellings, adding an additional 1,698 dwellings. Approximately 1,255 additional dwellings were developed in the suburb of Dandenong during this time. Dandenong South experienced the highest rate of growth however this was from a very low base. Dandenong North, Noble Park North, Springvale and Springvale South all experienced limited growth in dwellings (under one per cent annual growth) between 2004 and 2012.

TABLE 9. RATE OF RECENT DEVELOPMENT

Suburb	Number of dwellings 2004	Number of dwellings 2012	Net change in dwellings 2004-2012	Additional dwellings per year	Annual growth rate
Bangholme	115	112	-3	0	-0.3%
Dandenong South	2	203	201	25	78.2%
Dandenong	8,844	10,099	1,255	157	1.7%
Dandenong North	7,908	8,071	163	20	0.3%
Keysborough	5,502	7,200	1,698	212	3.4%
Noble Park	10,589	11,506	917	115	1.0%
Noble Park North	2,786	2,844	58	7	0.3%
Springvale	6,692	7,006	314	39	0.6%
Springvale South	3,754	3,966	212	27	0.7%
Total	**46,192**	**51,007**	**4,815**	**602**	**1.2%**

[5] 2004 and 2012 Housing Development Data was used to determine the rate of recent development in the CGD. In determining dwelling demand (in Section 2), 2011 ABS Census data was used. As such, there is a slight discrepancy in dwelling numbers when considering demand and supply, however this number is not considered significant.

Source: Housing Development Data, SGS Economics and Planning

These recent rates of development for each suburb were applied to total identified supply (see Table 10 overleaf) to determine the amount of dwellings likely to be supplied by 2026 (see Table 11 in Section 4.2).

Total housing capacity

Built form assumptions (see Table 8 and Appendix) were applied to project total housing capacity (Table 10). The table presents current dwelling stock (as at 2012) alongside total capacity estimates. The approach taken is unconstrained i.e. the figures assume that all available land will be developed and to its full potential, as permitted by local policy.

However, this scenario is not likely as the identified housing capacity will not be developed. Rather, this provides an indication of the maximum possible number of dwellings that can be accommodated. The following section considers the likely uptake of identified housing capacity.

Under current planning controls, and using the assumptions outlined above, approximately 90,000 additional dwellings can be accommodated within the municipality. As a result of the focus on urban renewal around Central Dandenong, the suburb of Dandenong has the capacity to accommodate the most additional dwellings, equating to just over one third of total additional dwellings. Noble Park and Springvale have the capacity to accommodate 21 per cent (18,510 dwellings) and 17 per cent (14,917 dwellings) of the municipality's future dwelling supply respectively. Dandenong North, Springvale South and Noble Park North have comparatively limited capacity to accommodate future dwellings.

TABLE 10. CAPACITY ANALYSIS RESULTS

Suburb	Number of dwellings 2012	Total housing capacity	Number additional dwellings	% total additional dwellings
Bangholme	112	112	0	0.0%
Dandenong South	203	211	8	0.0%
Dandenong	10,099	41,088	30,989	34.8%
Dandenong North	8,071	13,872	5,801	6.5%
Keysborough	7,200	17,345	10,145	11.4%
Noble Park	11,506	30,016	18,510	20.8%
Noble Park North	2,844	4,723	1,879	2.1%
Springvale	7,006	21,923	14,917	16.7%
Springvale South	3,966	10,836	6,870	7.7%
Total	**51,007**	**140,126**	**89,119**	**100.0%**

Source: SGS Economics and Planning

4 HOUSING SUPPLY

This section looks at the likely realisation of identified housing capacity within CGD to 2026.

In summary:

- 65,144 houses will be supplied to 2026, this includes:
  - 15,732 will be separate houses
  - 32,472 will be townhouses/semi-detached
  - 16,940 will be apartments/flats/units
- On a per suburb basis:
  - Dandenong will accommodate an additional 16,290 dwellings, of which 60 per cent will be apartments
  - Springvale will yield an additional 8,961 dwellings, of which 79 per cent will be semi-detached/ townhouses
  - Noble Park will yield an additional 13,990 dwellings, of which 57 per cent will be semi-detached/ townhouses
- Overall, there is sufficient housing supply within CGD to meet future demand.

4.1 Overview of approach

Using housing capacity figures as a base, the following section looks at the likely supply of dwellings to 2026.

Likely dwelling supply was determined through a two-step process that ensured alignment of future dwelling supply with demand and realistic development activity. Firstly, the rate of development was constrained, or scaled back, to reflect that, realistically, not all available land within the municipality will be developed to 2026. For example, if we consider a street with 10 houses, only a limited number of houses (perhaps one or two) might be redeveloped within the 14 year period.

Secondly, dwelling supply was constrained by aligning it with the previously identified demand (Section 2.3). This step was undertaken to reflect that development will not occur unless there is sufficient demand to drive this development.

4.2 Housing supply

Table 11 provides the results of the analysis, showing the total number of dwellings that can realistically be accommodated within the municipality in 2026. Of total supply, around half (32,400) will be medium density dwellings (semi-detached/row/terrace/townhouse dwellings), around one quarter will be higher density dwellings (flat/unit/apartment dwellings) and one quarter will be separate houses/ detached dwellings.

TABLE 11. REALISATION OF DWELLING SUPPLY, 2026

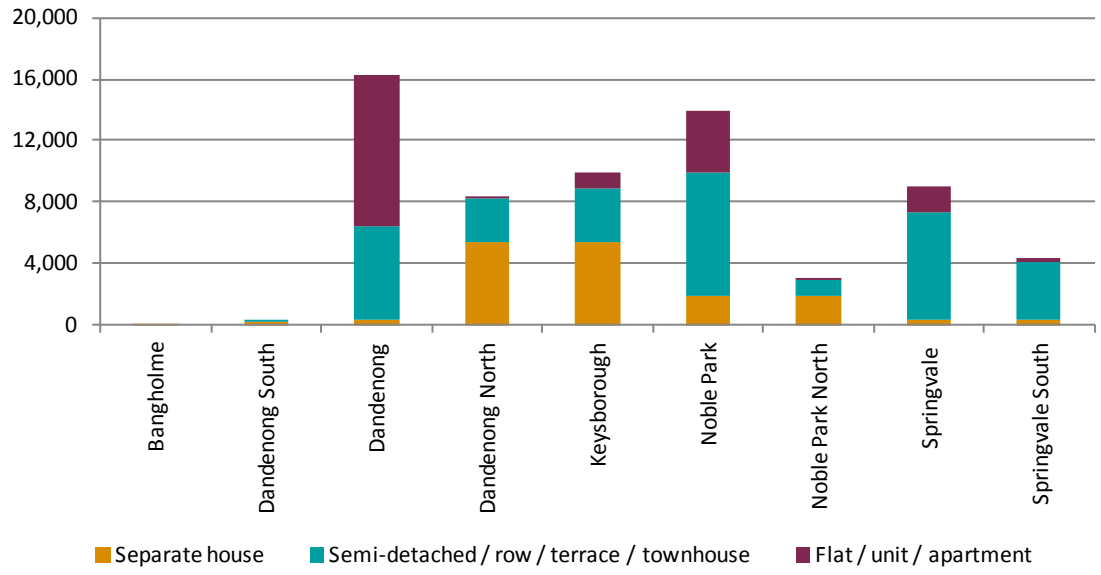
Suburb	Separate house	Semi-detached/ row/ terrace/ townhouse	Flat/ unit/ apartment	Total
Bangholme	112	-	-	112
Dandenong South	169	42	-	211
Dandenong	321	6,139	9,829	16,290
Dandenong North	5,374	2,835	208	8,417
Keysborough	5,341	3,588	940	9,869
Noble Park	1,921	8,026	4,042	13,990
Noble Park North	1,885	987	38	2,910
Springvale	285	7,101	1,575	8,961
Springvale South	323	3,753	308	4,384
CGD	**15,732**	**32,472**	**16,940**	**65,144**

Source: SGS Economics and Planning

Note: this realisation of dwelling supply to 2026 is sufficient to accommodate the demand for dwellings to 2026 identified in the Masterplan concepts for the Warwick Avenue Precinct.

Figure 15 provides an illustration of the data in the above table.

FIGURE 15. REALISATION OF DWELLING SUPPLY, 2026



Source: SGS Economics and Planning

Table 12 shows the projected average annual change in dwellings from 2012-26 by suburb and housing type. It shows that the CGD has the potential to supply an additional 1,010 dwellings per year to 2026, equating to an additional 14,137 dwellings and a final dwelling provision of 65,144 dwellings. As a result of targeted revitalisation efforts and planning controls, Dandenong will experience the most dwelling growth per year (442 dwellings). Noble Park and Springvale activity centres will experience a similar amount of dwelling growth (177 and 140 dwellings respectively), while Keysborough will also see considerable growth (191 dwellings). The amount of dwellings developed within other locations is more modest, reflecting that these areas are nominated for incremental and limited change.

The table indicates a decline in the number of separate houses to 2026; this is a result of more intense, higher density development, such as the demolition of a house to build a new house or an additional house being developed alongside an existing house (i.e. backyard subdivision).

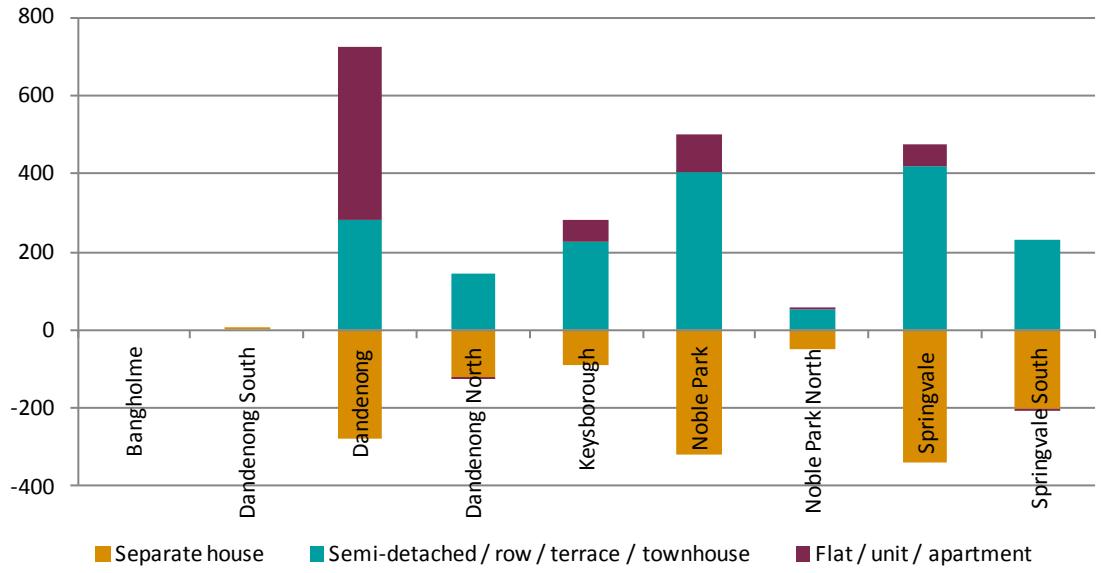
Again, it must be recognised that this high dwelling growth is a result of significantly higher projected future population growth than has been seen in the past.

TABLE 12. ANNUAL REQUIREMENT FOR DWELLINGS TO 2026

Suburb	Separate house	Semi-detached/ row/ terrace/ townhouse	Flat/ unit/ apartment	Total
Bangholme	-	-	-	-
Dandenong South	1	-	-	1
Dandenong	-281	280	443	442
Dandenong North	-120	144	0	25
Keysborough	-91	228	54	191
Noble Park	-321	404	94	177
Noble Park North	-49	53	0	5
Springvale	-337	421	56	140
Springvale South	-201	231	-1	30
CGD	**-1,398**	**1,761**	**647**	**1,010**

Figure 16 provides an illustration of the data in the above table, showing the annual supply of dwellings to 2026 for each suburb.

FIGURE 16. ANNUAL REQUIREMENT FOR DWELLINGS TO 2026



Source: SGS Economics and Planning and Housing Development Data

5 FEASIBILITY ANALYSIS

This section examines the feasibility of a range of housing types across CGD. This analysis aids in understanding why certain housing products are being delivered over others.

The analysis shows that:

- Higher density development is generally more feasible, with three and four storey apartment developments on 700 square metres feasible throughout the municipality.
- Two storey apartment developments and townhouses are less feasible. Generally, these lower-density and lower scale housing developments are delivered by existing landowners for whom the cost of land is not a consideration.
- The most feasible housing type tested is eight storey apartments, while due to an increased cost of construction, 10 storey developments are less feasible.
- Keysborough is the most feasible suburb to develop in, while Noble Park is the least feasible.

These results reflect current property dynamics of CGD and may change over time as the cost of land and housing increases.

Strategic land use policy and residential development controls aim to ensure housing is well located and aligns with economic, environmental, social and cultural sustainability objectives at a state and municipal level.

At their core, housing policies typically aim to:

- Locate housing in locations which have good accessibility to public and road transport, services and community facilities
- Encourage a diversity of housing to meet the needs of the current population, and
- Promote housing types which will meet future housing needs.

The ability for demand to be met by supply of medium density housing types is dependent upon a range of factors, including financial feasibility. This report tests the supply forecasts made in the housing gap analysis by analysing the financial feasibility of developing a range of medium density housing types.

5.1 Purpose of housing feasibility testing

The findings from Stage 1 suggest that CGD is already well placed to meet demand pressures at a high level. However, other factors need to be considered:

- Will the housing outcomes align with the desired vision[6] for CGD, and are there opportunities to strengthen these housing outcomes?

[6] Council's housing vision is that "The CGD will foster a strong housing market that meets the community's diverse and changing needs, contributes to the revitalization of the municipality, directs housing growth to appropriate locations and delivers housing that enables all Greater Dandenong residents to access a range of affordable, sustainable and well-designed housing products and services."

- Will environmental, social, economic and cultural objectives be met by future housing development?
- Will the opportunities for new housing be taken up (developed)?
- What are the factors that will influence the take up of housing opportunities?
- How can Council identify and facilitate the take up of housing opportunities?

In some cases, housing policy and development controls can seek to increase densities in certain locations without great effect. Many local plans are prepared under the premise that "If you zone it, they will build it" with no or very limited economic basis. However, the planning and redevelopment process is much more complex and influenced by a myriad of factors. The financial feasibility of development is the main driver of change.

Without plans being underpinned by an understanding of the economics of development, it can lead to situations whereby higher height limits fail to yield higher density development in activity centres, while medium density development, such as townhouses, proliferate in less accessible locations.

One tool that can be used to answer these questions is a housing feasibility model.

Testing the feasibility of several housing types across the whole of CGD seeks to answer the following questions:

- In what locations are townhouses, three storey, four storey and five storey apartment developments financially feasible? How does this compare to current zoning and built form controls?
- In locations where certain housing types are not feasible but are 'permissible', what is the key reason?
- If housing types are financially feasible and permissible, have these housing types been built? If not, what is the reason?

This work will provide guidance to Council on refining housing policy, zoning and overlays and other investments to support local housing policy by providing evidence on where new densities could be financially feasible for delivery by the private sector.

Development feasibility testing provides a clear evidence base to guide decision making and ensure that the economics of development is considered throughout all housing planning stages. It can be used as a dynamic process to test and refine land use scenarios which can in turn inform other Council investments in supporting infrastructure and services.

The approach provides a guide only. The market realities and decision making of individual developers is complex. Ultimately, the findings will assist in helping Council better understand the role of planning controls and other Council investments in influencing the take up of housing opportunities over time.

This approach is widely used other jurisdictions – NSW and the UK - as shown in the case study boxes below. While the original driver of developing a model varies in each jurisdiction, they all apply the analysis at the lot level and use a similar residual land value technique. They all test if planning controls, including infrastructure contributions and affordable housing requirements, are feasible given market realities. The UK model was developed centrally and can be used by local government or development industry/land owners to test development viability of individual sites once a development proposal is put forward. In NSW, the model is held centrally at the Department and provided to local government to test LGA wide local plans. The various models demonstrate the multiple applications of the tool and the value that it can add to housing policy and site development.

Urban Feasibility Model, NSW

The Metropolitan Development Program team in the NSW Department of Planning and Infrastructure has developed an Urban Feasibility Model. This model was identified in the Metropolitan Planning Strategy as an important tool for evidence based plan making. The model is used by local government to calculate development potential and economic feasibility at the building lot level to inform the

preparation of local plans. The model calculates lot level dwelling potential and type, construction costs and whether it would be economically feasible to construct, based on the individual site controls contained in a local Environmental Plan (LEP) and/or Development Control Plan (DCP). The model is currently used to analyse council's Principal LEPs to determine if the planning settings support the delivery of future housing needs. The model is interactive and dynamic. It can also be used to forecast the location, type, density and timing of development under different LEP planning and property market scenarios.

Testing development viability and the impact of developer contributions, London, UK

In the UK, one of the critiques of the national government requiring local government to meet targets for housing supply and affordability, is that the targets set may not be realistic and achievable. Often the viability of new housing development is not considered in the early plan making stages. This can place unrealistic expectations on the development industry and the required infrastructure contributions may place unexpected constraints on housing supply.

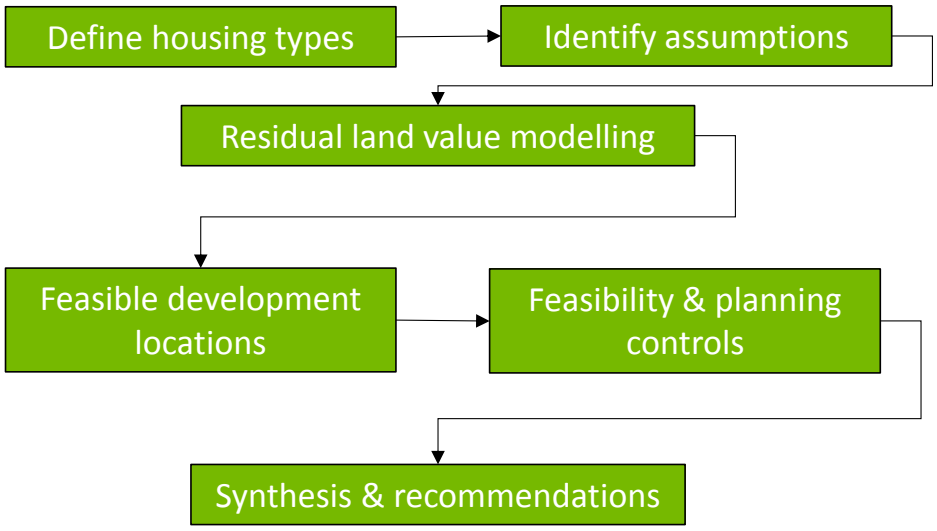
New national guidance was put in place to require local authorities to set targets for the amount of affordable housing in their local areas based on the likely economic viability of land for housing, informed by a Strategic Housing Market Assessment. The GLA has further supported this approach by providing a **viability toolkit** to assist local authorities to determine economically viable percentages and mixes of affordable housing, alongside other planning obligations, including financial contributions to community infrastructure, and sustainability and other design standards as well and other agreements to mitigate the impacts of new development (under Section 106).

The toolkit is designed to indicate the financial viability of developments in order to act as a starting point to negotiating Section 106 agreements. It allows the user to test the economic implications of different types and amounts of planning obligation and, in particular, the amount and mix of affordable housing.

Source: GLA (2010) GLA Affordable Housing and S.106 Toolkit: Guidance Notes. http://static.london.gov.uk/mayor/planning/aff-housing/docs/toolkit2010-guidancenotes.pdf

5.2 Method

The approach applied to the housing feasibility testing is shown in the following diagram



The method begins by taking a broader view by identifying the commercial feasibility of housing types generally (irrespective of whether the housing type is permitted in any given location), then moves to examine where feasible development is allowed within CGD given available land and existing zones and overlays. This allows for the impact that planning controls have on potential development throughout the municipality to be understood.

The five key steps as shown in the diagram are:

1. Define **housing types** which represent the type of housing desired from a policy perspective.
2. Define **key assumptions** to each housing type, including:
   - Number of dwellings
   - Number of bedrooms
   - Building size
   - Construction costs
   - Other development costs
   - Selling costs.
3. Undertake **residual land value modelling** for each housing type in each suburb to determine financial feasibility.
4. Compare financially feasible housing types to available land to determine **where we could see this type of development.**
5. Undertake sieve mapping to highlight where financially feasible housing types could be developed under **existing planning controls**.

The detailed approach and assumptions guiding the analysis are presented in the Appendix.

5.3 Approach to feasibility testing

Define housing types

Through consulting with Council, a range of housing types were identified for testing. These are variants of townhouses and low-rise apartments and are listed below along with the minimum lot size specified by Council:

- Townhouses 2br (700sqm)
- Townhouses 3br (1,500sqm)
- Apartments 2 storey – (700sqm) - combination of 1br & 2br apartments
- Apartments 2 storey – (1,500sqm) - combination of 1br, 2br & 3br apartments
- Apartments 3 storey – (700sqm) - combination of 1br & 2br apartments
- Apartments 3 storey – (1,500sqm) - combination of 1br, 2br & 3br apartments
- Apartments 4 storey – (700sqm) - combination of 1br & 2br apartments
- Apartments 4 storey – (1,500sqm) -combination of 1br, 2br & 3br apartments
- Apartments 5 storey – (1,500sqm) - combination of 1br & 2br apartments
- Apartments 5 storey – (1,500sqm) - combination of 1br, 2br & 3br apartments
- Apartments 8 storey – (2,000sqm) - combination of 1br, 2br & 3br apartments
- Apartments 10 storey – (2,000sqm) - combination of 1br, 2br & 3br apartments

Single dwellings and villa units were not tested in this analysis, even though these are desired and appropriate for some locations. The reason for excluding these housing types from analysis is:

1) As the most common housing type throughout Melbourne and CGD, single dwellings and units are proven to be feasible, and
2) Increasing housing supply in CGD will require a mix of development at medium and higher densities, given the availability of land.

Define key assumptions

The mechanics of undertaking feasibility analysis are relatively straight-forward: the costs and revenues associated with a development are estimated and compared in a model, allowing the feasibility (strong, marginal, or infeasible) to be assessed.

However, the key to undertaking robust feasibility assessment is the accuracy in the various assumptions and inputs used in the feasibility model. Although there is generic guidance available (e.g. Rawlinson's or Cordell's construction cost guides are commonly used) the exact costs and revenues associated with an individual development will vary for different locations, construction techniques, dwelling types and developer types.

This feasibility assessment is based on a Residential Land Value (RLV) model. The RLV is an estimate of the value of the land at the completion of the development that is derived by deducting all development costs from the total sales revenues. Using the RLV approach, development is likely to be viable if the RLV is equal to or exceeds the current land value.

Development costs include all construction costs and contingencies, external works, professional fees, infrastructure levies or contributions, council fees and the developer's profit margin.

Sales revenues are based on an assessment of the current market price for the dwellings provided.

The results of the RLV modelling can be expressed in two ways:

1. The estimated RLV can be compared to the current land value. If the former exceed the latter then a development is likely to be viable.
2. Alternatively, feasibility can be expressed as the ratio of the RLV to the current land value. If this ratio is equal to or greater than one the development is likely to be viable. If the ratio is less than one then the development is less likely to be viable.

In addition to the initial feasibility analysis, sensitivity testing is undertaken to account for potential variations in the key assumptions used in the model. In particular, assumptions around land prices, dwelling prices, construction costs and development yields (that is, the total number of dwellings or density of development) can vary from one development to the next. The sensitivity analysis will seek to determine if changes to these variables are likely to make development more or less feasible.

In this analysis, a ratio of RLV to current land value is utilised and represented using 'traffic light' coding with:

- Feasible or 'likely' lots (green) having an RLV to current land value ratio of more than 1.1
- Marginally feasible lots (amber) having an RLV to current land value ratio of between 0.9 and 1.1
- Unfeasible or 'unlikely' lots (red) having an RLV to current land value ratio of below 0.9.

Dwelling yield, density, lot size

The following table documents key inputs for each housing type. The number of dwellings for each housing type has been determined via a design method. Each housing type was sketched electronically to inform the number of dwellings that could be accommodated within each particular building height and lot size. These sketches are presented in the following section.

Key results are shown in the table below.

TABLE 13. ASSUMPTIONS FOR DWELLING YIELD, DENSITY AND LOT SIZE

Housing type	Number of new dwellings	Density (dwellings per hectare (dph))	Minimum size (sqm)
Townhouses 2br	Total: 4	57dph	700sqm
Townhouses 3br	Total: 8	53dph	1,500sqm
Apartments 2 storey	1 bed: 2 2 bed: 4 Total: 6	86dph	700sqm
Apartments 2 storey	1 bed: 2 2 bed: 8 3 bed: 2 Total: 12	80dph	1,500sqm
Apartments 3 storey	1 bed: 4 2 bed: 8 Total: 12	171dph	700sqm
Apartments 3 storey	1 bed: 9 2 bed: 12 3 bed: 3 Total: 24	160dph	1,500sqm
Apartments 4 storey	1 bed: 6 2 bed: 12 Total: 18	25dph	700sqm
Apartments 4 storey	1 bed: 12 2 bed: 16 3 bed: 4 Total: 32	213dph	1,500sqm
Apartments 5 storey	1 bed: 12 2 bed: 20 Total: 32	213dph	1,500sqm
Apartments 5 storey	1 bed: 15 2 bed: 20 3 bed: 5 Total: 40	267dph	1,500sqm
Apartments 8 storey	1 bed: 48 2 bed: 16 3 bed: 32	480dph	2,000sqm
Apartments 10 Storey	1 bed: 60 2 bed: 20 3 bed: 40	600 dph	2,000 sqm

Development costs, construction costs, contribution charges, selling costs and sales values are in the Appendix.

Limitations to approach

There are limitations to financial feasibility testing which should be considered when interpreting results. These are the varying nature of assumptions, changes in property values and the role of landowners.

As shown in Section 3.2, a wide variety of assumptions are used in feasibility testing. Changes in these assumptions have the potential to reduce or increase financial feasibility.

The property market is constantly changing and shifting. Whilst property values have generally grown consistently across metropolitan Melbourne, and are likely to continue doing so, a fall in prices would affect the feasibility of development by reducing developer margins. Similarly, future land value escalations are likely to lead to a broader range of housing types becoming feasible.

Land ownership

Developments which are led by owner occupiers are often undertaken to enable landowners to obtain value from capital growth, to build retirement nest eggs, and so on. As this land is already owned, the cost of it is not a factor in financial feasibility testing. This means that a wider range of housing types are feasible and more profitable. At the same time however, development which is led by owner occupiers is traditionally 'conservative', mirroring tried and tested housing types in close proximity.

A second consideration is the timing of land purchase. In some cases, a developer may purchase a property and hold onto it for some time, possibly as a principal place of residence or a residential investment property. Redevelopment may not occur until land values increase to a point where it becomes viable.

Types of developers

Feasibility testing is informed by market-based rates. However, some developers, particularly builders, may be able to undertake construction at a cheaper rate due to economies of scale. This could mean that cost of labour is lower or that building materials could be sourced at a cheaper rate, for example.

Planning controls

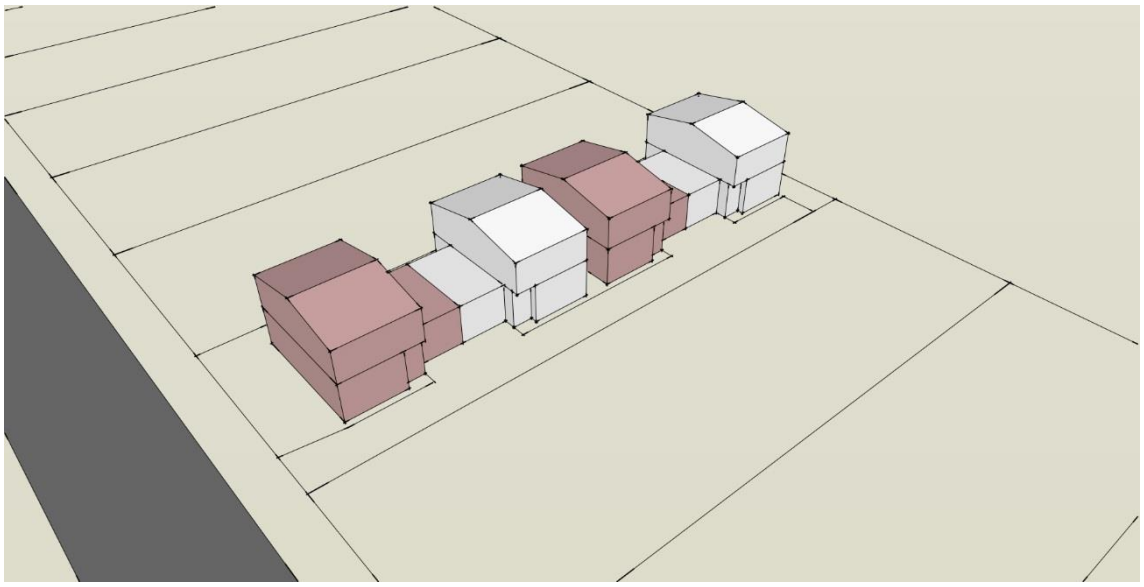
Planning controls which permit a higher density of development may affect the value of land. Throughout this analysis, land values by suburb have been sourced from the CGD rates database. It is possible that changes to zones since valuation may have had a positive or negative impact on land values.

5.4 Townhouse – two storey, two bedroom

Description

Description:	A typical example of two storey scale development is increasingly common across established areas of Melbourne. For this housing type, net dwelling area is assumed to be 496sqm and dwelling size 124sqm.
Lot characteristics:	Council has advised 700sqm as the minimum for this type of development, which would yield four townhouses inclusive of required car parking (one car park per dwelling).
Why include?	As a housing type that is well tested by the market, townhouses tend to deliver strong development and financial certainty.

FIGURE 17. TWO STOREY TWO BEDROOM TOWNHOUSE VISUALISATION



The following table outlines the approximate sales values that are associated with two bedroom townhouses across CGD.

TABLE 14. TWO BEDROOM TOWNHOUSE SALES VALUES

Suburb	Townhouse 2br		Total revenue for type
	Size	Sales value	
Dandenong	103	$375,000	$1,500,000
Springvale	148	$477,906	$1,911,626
Keysborough	138	$455,000	$1,820,000
Noble Park	133	$347,500	$1,390,000
Springvale South	124	$455,149	$1,820,596

Feasibility results

The following table highlights the feasibility of this housing type by suburb. This shows that after the cost of land is taken into account, Keysborough is the only suburb where this development type is clearly feasible. Two bedroom townhouses are marginally feasible in Springvale, however. This is a reflection of dwelling prices being higher in Keysborough and Springvale, generating developer returns which are high enough to provide financial feasibility.

TABLE 15. TWO BEDROOM TOWNHOUSE FEASIBILITY ANALYSIS RESULTS BY SUBURB

Townhouses 2br (700sqm)	Total Costs	Total Revenue	Residual Land Value	Land Value	Ratio
Dandenong	$1,340,003	$1,500,000	$159,997	$426,730	0.51
Dandenong North	$1,340,003	$1,500,000	$159,997	$319,115	0.68
Central Dandenong	$1,395,727	$1,500,000	$215,721	$426,730	0.39
Keysborough	$1,313,309	$1,820,000	$506,691	$359,230	1.41
Springvale	$1,356,468	$1,911,626	$555,158	$554,394	1.11
Springvale South	$1,352,827	$1,820,596	$467,770	$566,147	0.93
Noble Park	$1,335,603	$1,390,000	$54,397	$536,202	0.21
Noble Park North	$1,335,603	$1,390,000	$54,397	$485,201	0.23

These results however, do not reflect current products which are being delivered, as two bedroom townhouses are quite common. This suggests that the primary developer delivering two bedroom townhouses already owns the land in question. This is supported by the fact that RLV is positive for each suburb. This indicates that an adequate profit would be returned in all locations if land is already owned.

FIGURE 18. TWO BEDROOM TOWNHOUSE FEASIBILITY ANALYSIS RESULTS

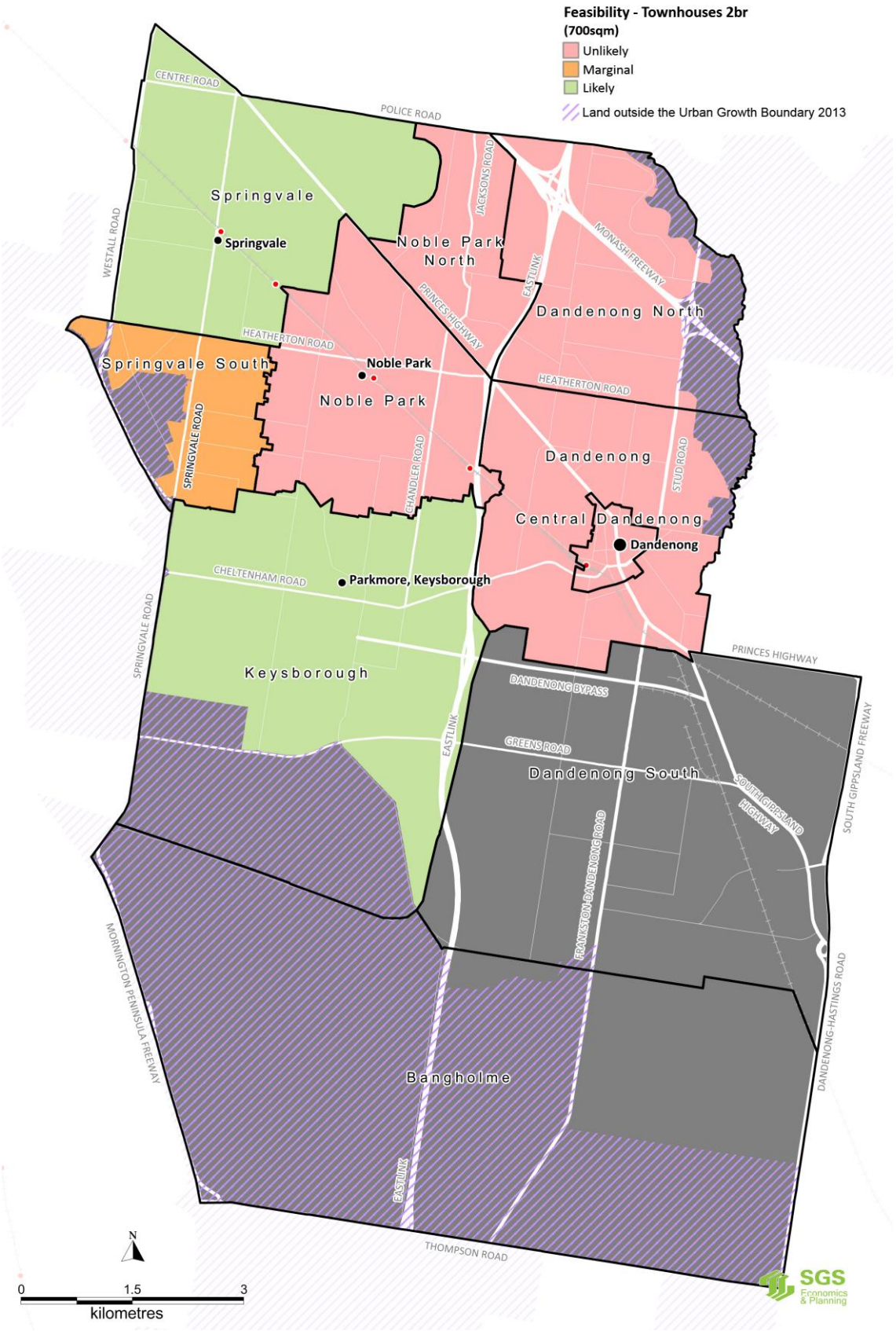
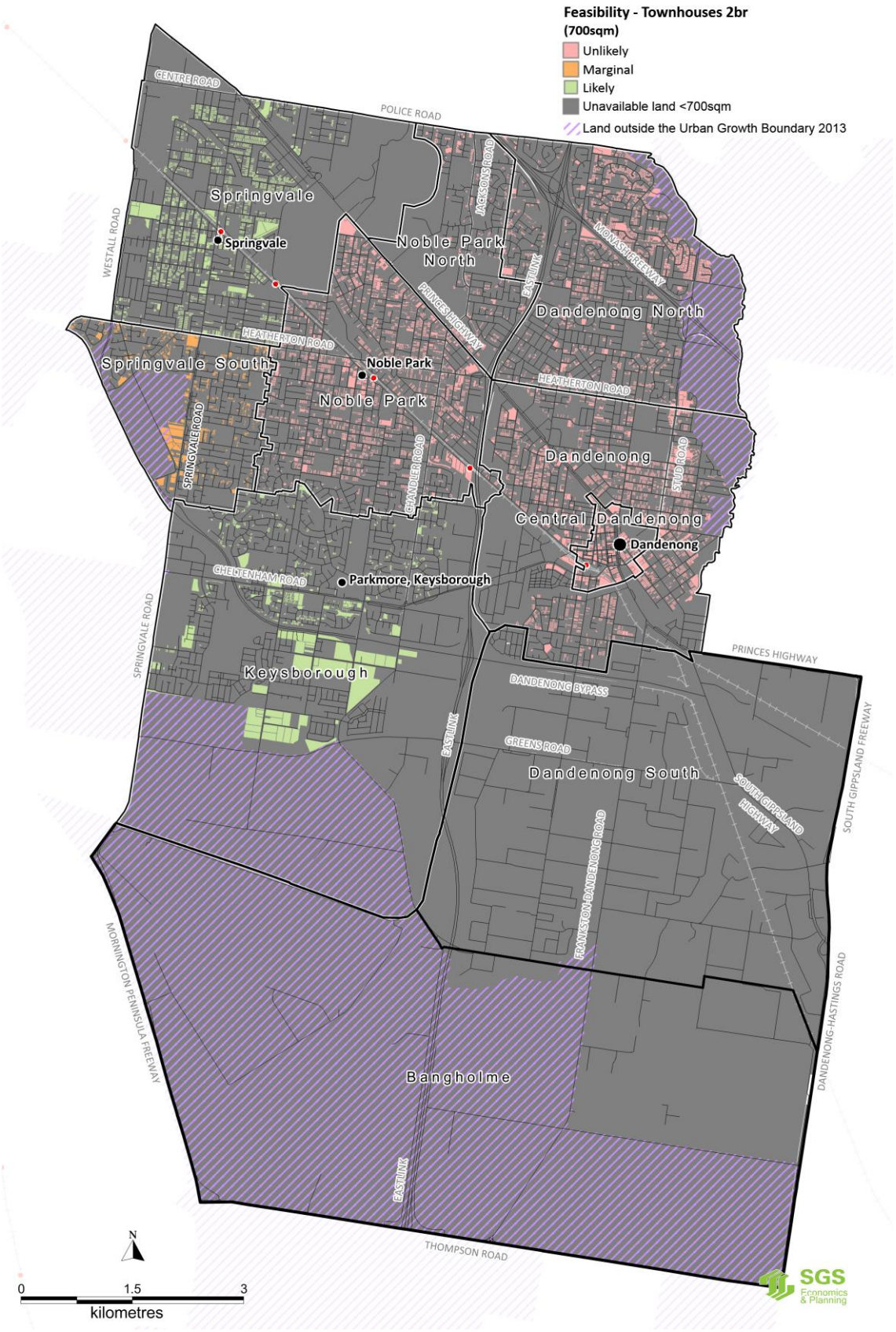


FIGURE 19. TWO BEDROOM TOWNHOUSE FEASIBILITY AND AVAILABLE LAND



Comparison to existing planning controls

This section will consider suitable lots of available land, feasible locations and the planning scheme. The objective is to identify and compare the number of two bedroom townhouse developments that could feasibly be achieved to the number of these developments which would be permitted under current planning scheme controls.

The below table shows that:

- 18.5 per cent (6,427) of available lots are large enough to support this housing type
- 5.5 per cent (1,893) of available lots are large enough to support this housing type and are feasible
- 18 per cent (6,359) of available lots are large enough to support this housing and are supported by planning controls
- 4.8 per cent (1,691) of available lots are large enough, have supporting planning controls and are feasible in CGD.

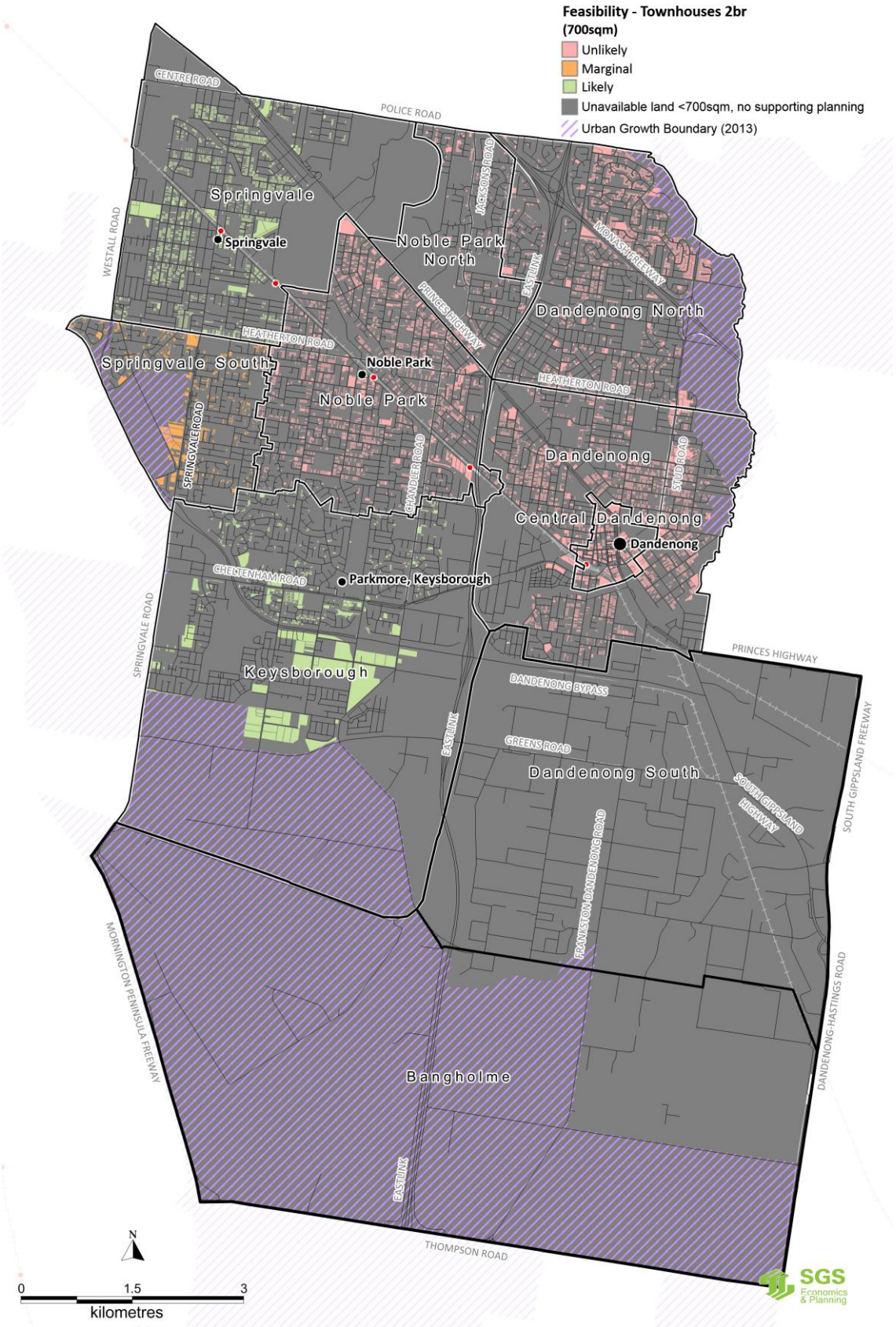
TABLE 16. TWO BEDROOM TOWNHOUSE LOT AVAILABILITY, LOT SIZE AND PLANNING SUPPORT

	All land			Planning supported land		
	Available Lots	Available Lots >700m²	Feasible Available Lots >700m²	Available Lots	Available Lots >700m²	Feasible Available Lots >700m²
Dandenong	4,814	1,584	0	4,806	1,579	0
Dandenong North	7,151	1,204	0	7,146	1,204	0
Keysborough	5,131	336	336	5,129	334	334
Noble Park	6,914	1,539	0	6,889	1,529	0
Noble Park North	2,596	207	0	2,588	202	0
Springvale	5,127	1,219	1,219	5,023	1,173	1,173
Springvale South	3,130	338	338	3,128	338	338
Total	**34,863**	**6,427**	**1,893**	**34,709**	**6,359**	**1,691**

Source: SGS Economics and Planning
Excludes 10 available lots in Dandenong south.

Townhouses are a housing type more prone to variations in feasibility, given that the product is more often delivered by those who own the land. This means that it is likely that a majority of the available lots that are large enough would be feasible to those particular people. Further to this, townhouse development can occur on smaller lots, albeit with smaller yields.

FIGURE 20. TWO BEDROOM TOWNHOUSE FEASIBILITY, AVAILABLE LAND AND PLANNING CONTROLS

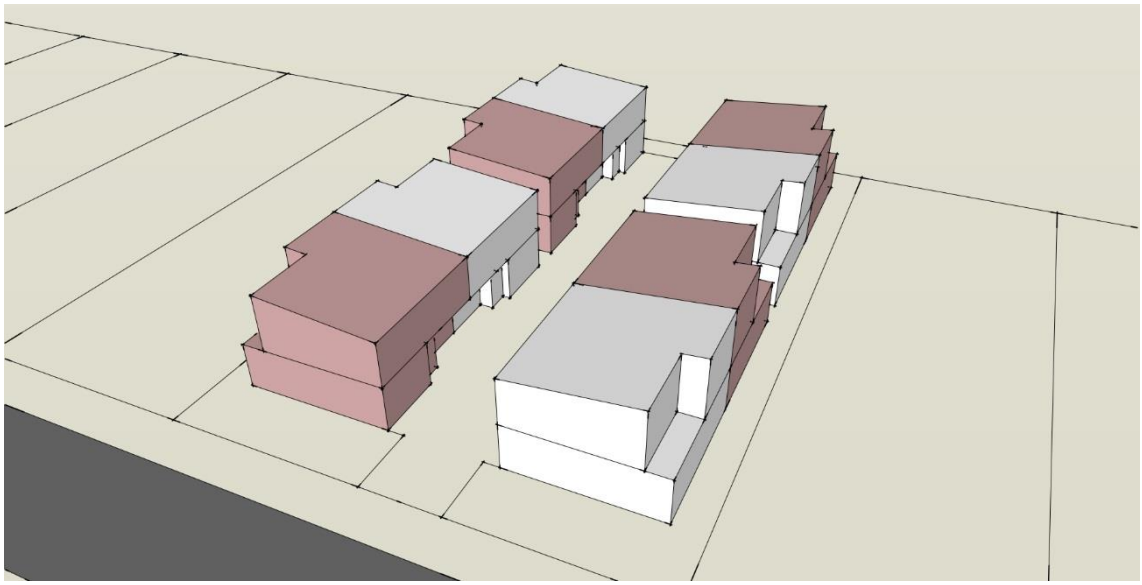


5.5 Townhouse – double storey, three bedroom

Description

Description:	A typical example of two storey scale development increasingly common across established areas of Melbourne. Assumptions used for this dwelling type include a land net dwelling area and total building area of 1,184sqm.
Lot characteristics:	Council have advised 1,500sqm as the minimum for this type of development, which would yield 8 townhouses inclusive of required car parking (16 car spaces).
Why include?	As a housing type that is well tested by the market, townhouses tend to deliver strong development and financial certainty.

FIGURE 21. DOUBLE STOREY THREE BEDROOM TOWNHOUSE VISUALISATION



The following table outlines the approximate sales values that are associated with three bedroom townhouses across CGD.

TABLE 17. THREE BEDROOM TOWNHOUSE SALES VALUES

	Townhouse 3br		Total revenue for type
Suburb	Size	Sales value	
Dandenong	111	$412,750	$3,302,000
Springvale	160	$526,000	$4,208,000
Keysborough	165	$530,000	$4,240,000
Noble Park	158	$431,628	$3,453,023
Springvale South	148	$500,952	$4,007,619

Feasibility results

The following table highlights the feasibility of this housing type by suburb. This shows that after the cost of land is taken into account, Keysborough is the only suburb where this development type is feasible. Three bedroom townhouses are marginally feasible in Springvale. This is a reflection of dwelling prices being higher in Keysborough and Springvale, generating developer returns which are high enough to provide financial feasibility.

TABLE 18. THREE BEDROOM TOWNHOUSE FEASIBILITY ANALYSIS RESULTS BY SUBURB

Townhouses 3br (1,500sqm)	Total Costs	Total Revenue	Residual Land Value	Land Value	Ratio
Dandenong	$3,045,429	$3,302,000	$256,571	$906,216	0.28
Dandenong North	$3,045,429	$3,302,000	$256,571	$675,612	0.38
Central Dandenong	$3,172,260	$3,302,000	$129,740	$906,216	0.14
Keysborough	$3,122,774	$4,240,000	$1,117,226	$761,573	1.47
Springvale	$3,081,669	$4,208,000	$1,126,331	$1,179,782	0.95
Springvale South	$3,073,654	$4,007,619	$933,965	$1,204,966	0.78
Noble Park	$3,051,470	$3,453,023	$401,553	$1,140,798	0.35
Noble Park North	$3,051,470	$3,453,023	$401,553	$1,031,510	0.39

As with two bedroom townhouses, these results do not reflect current products which are being delivered, as three bedroom townhouses are quite common. This suggests that the primary developer delivering three bedroom townhouses already owns the land in question. This is supported by the fact that RLV is positive for each suburb. This indicates that an adequate profit would be returned in all locations if land is already owned.

FIGURE 22. THREE BEDROOM TOWNHOUSE FEASIBILITY ANALYSIS RESULTS

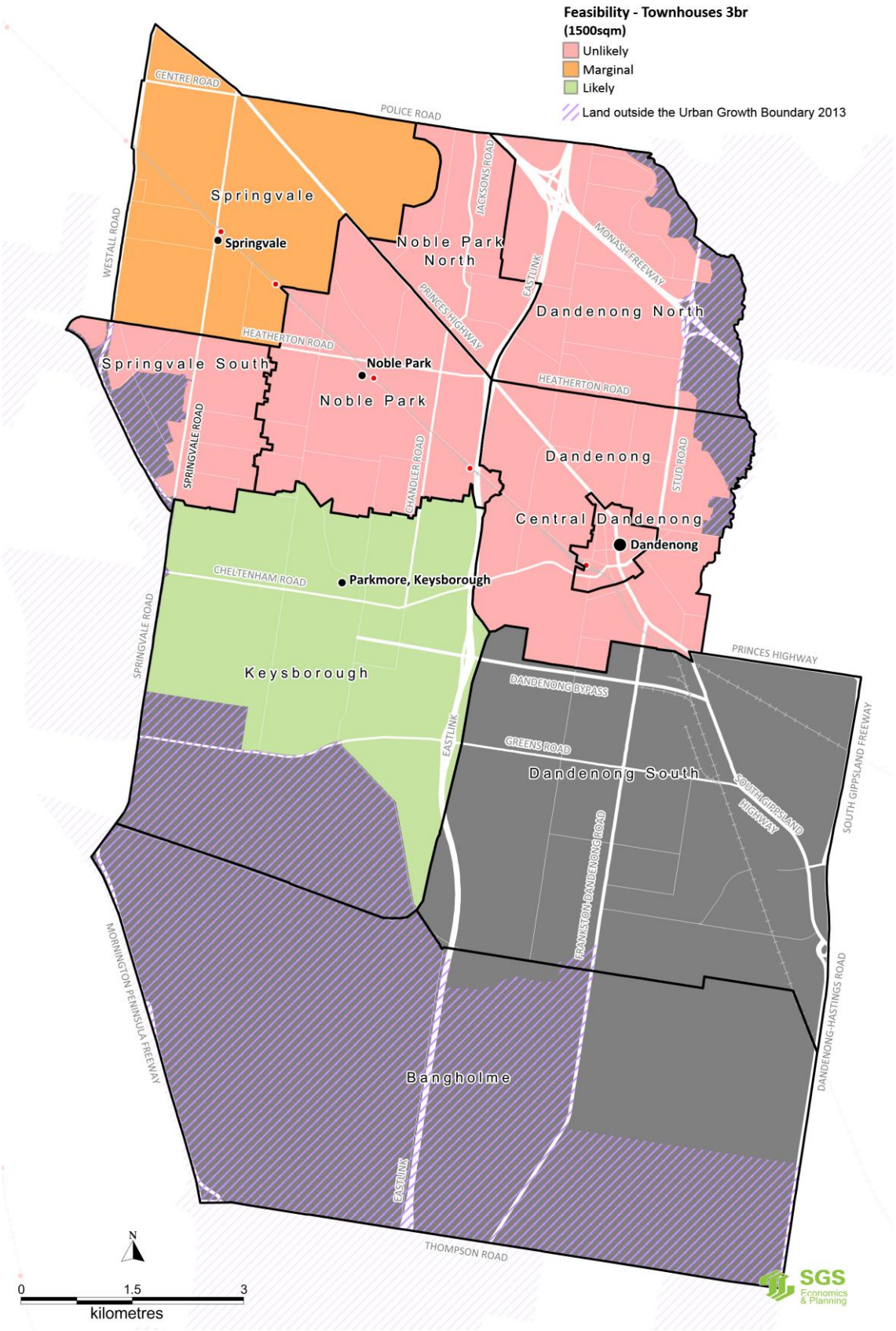
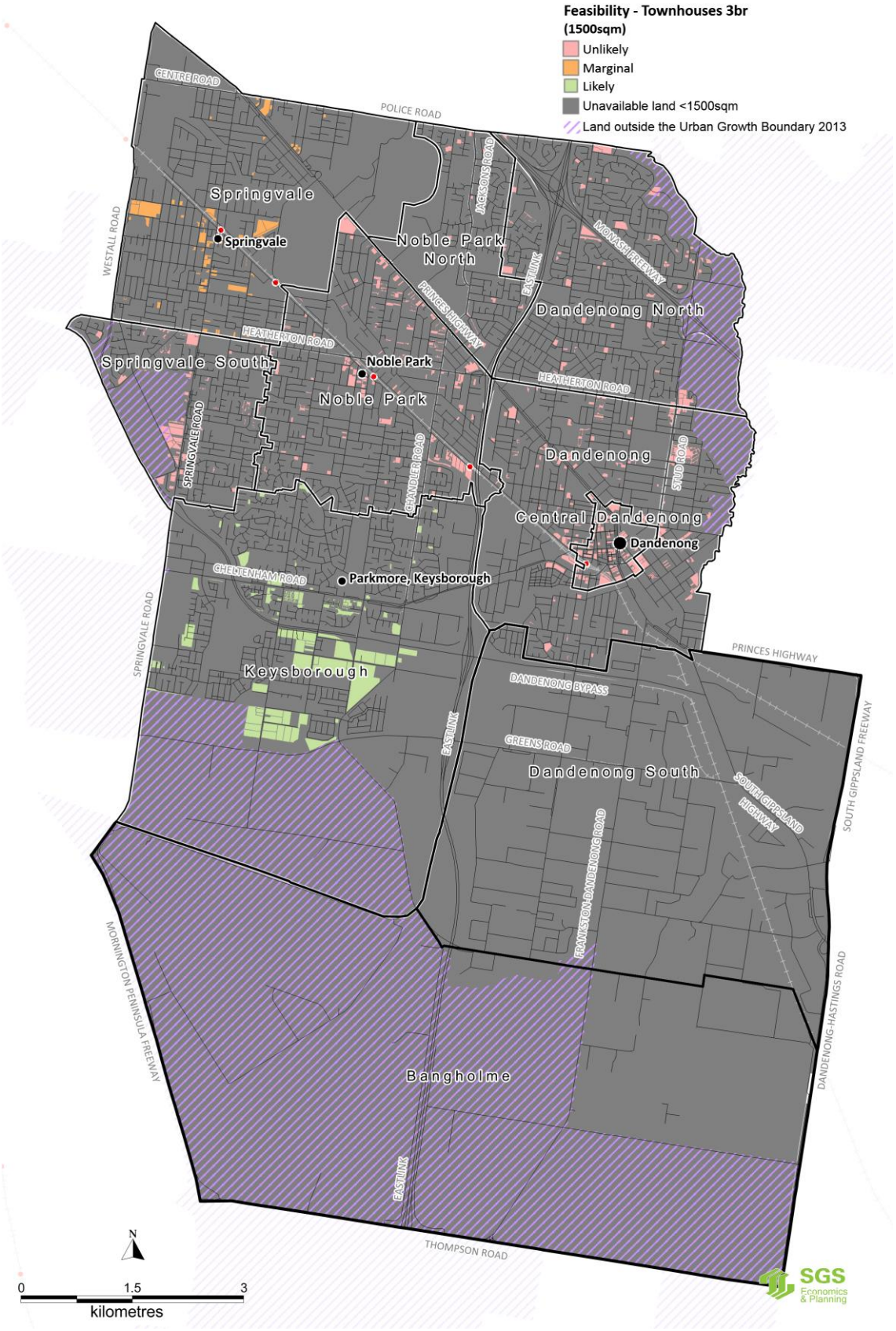


FIGURE 23. THREE BEDROOM TOWNHOUSE FEASIBILITY AND AVAILABLE LAND



Comparison to existing planning controls

This section will consider suitable lots of available land, feasible locations and the planning scheme. The objective is to identify and compare the number of three bedroom townhouse developments that could feasibly be achieved to the number of these developments which would be permitted under current planning scheme controls.

The below table shows that:

- 1.7 per cent (590) of available lots are large enough to support this housing type
- 0.4 per cent (146) of available lots are large enough to support this housing type and are feasible
- 1.6 per cent (541) of available lots are large enough to support this housing and are supported by planning controls
- 0.4 per cent (134) of available lots are large enough, have supporting planning controls and are feasible in CGD.

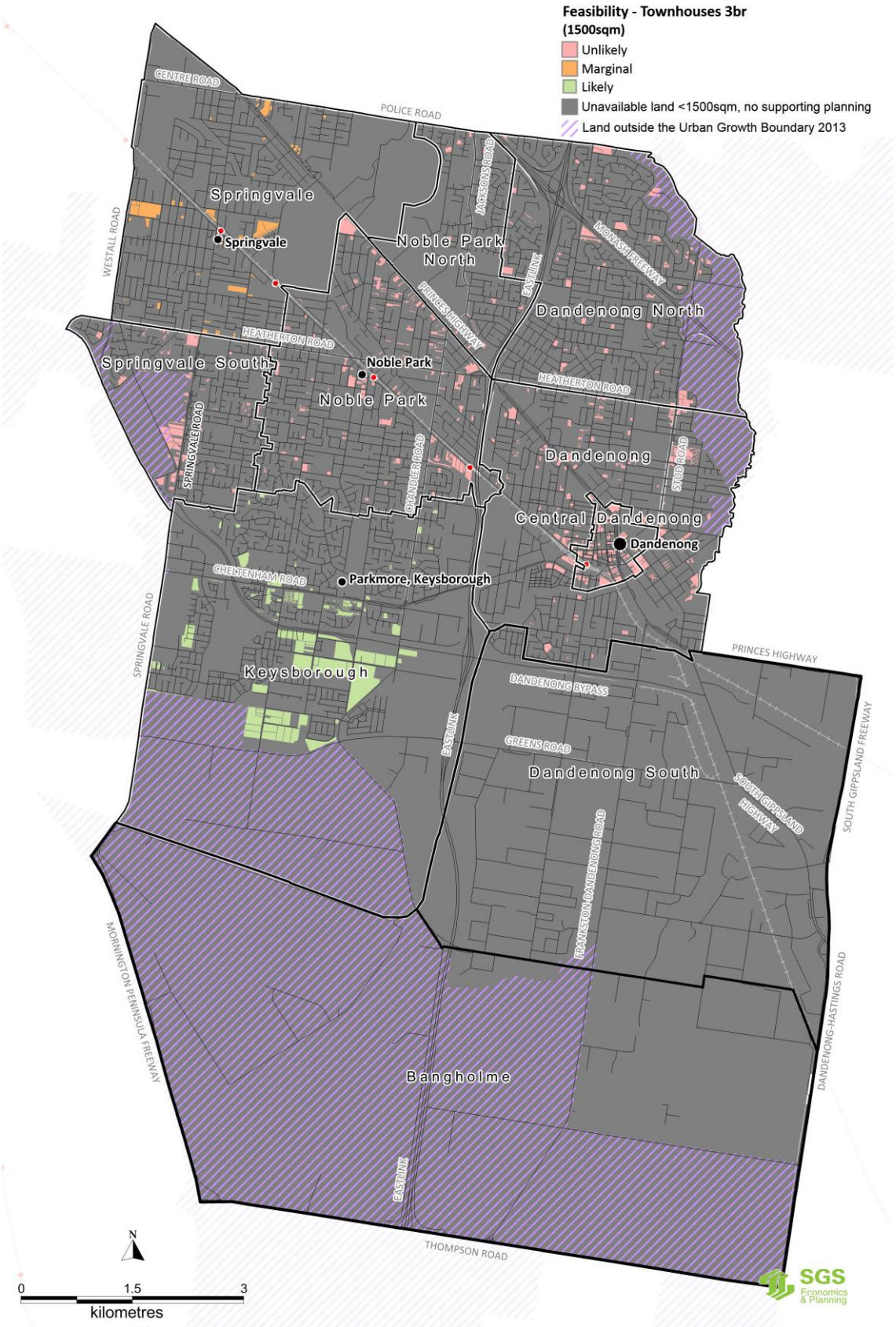
TABLE 19. THREE BEDROOM TOWNHOUSE LOT AVAILABILITY, LOT SIZE AND PLANNING SUPPORT

	All land			Planning supported land		
	Available Lots	Available Lots >1,500 m²	Feasible Available Lots >1,500 m²	Available Lots	Available Lots >1,500 m²	Feasible Available Lots >1,500 m²
Dandenong	4,814	178	0	4,806	176	0
Dandenong North	7,151	59	0	7,146	59	0
Keysborough	5,131	86	86	5,129	85	85
Noble Park	6,914	134	0	6,889	129	0
Noble Park North	2,596	14	0	2,588	13	0
Springvale	5,127	60	60	5,023	45	45
Springvale South	3,130	59	0	3,128	59	0
Total	34,863	590	146	34,709	566	134

Source: SGS Economics and Planning

Townhouses are a housing type more prone to variation in feasibility, given that the product is more often delivered by those who own the land. This means that it is likely that a majority of the available lots that are large enough could be feasible. However, the limited number of lots which are larger than 1,500 square metres means that other housing types that could achieve a higher yield, if permitted by planning controls, may be pursued by developers instead.

FIGURE 24. THREE BEDROOM TOWNHOUSE FEASIBILITY, AVAILABLE LAND AND PLANNING CONTROLS



5.6 Apartments – two storey (small site)

Description

Description:	Two storey apartment development generally does not generate sufficient revenue to justify basement of semi-basement parking. In this model parking at ground level, behind and under the dwellings. Three single storey one bed dwelling are located adjacent to the street and three two storey two bed dwellings are located towards the centre and rear of the lot. Parking for all apartments located underneath (see second illustration below). Assumptions used for this housing type include a net dwelling area of 418sqm, a total building area of 502sqm and a balcony area of 48sqm.
Lot characteristics:	Council have advised 700sqm land size as the minimum for this type of development. The design presented accommodates six dwellings and six car spaces.
Why include?	Test feasibility of small scale apartment development on a single lot, with surface parking. Likely to be a more affordable housing product that larger dwellings and/or developments with garages or basement parking.

FIGURE 25. TWO STOREY APARTMENT VISUALISATION

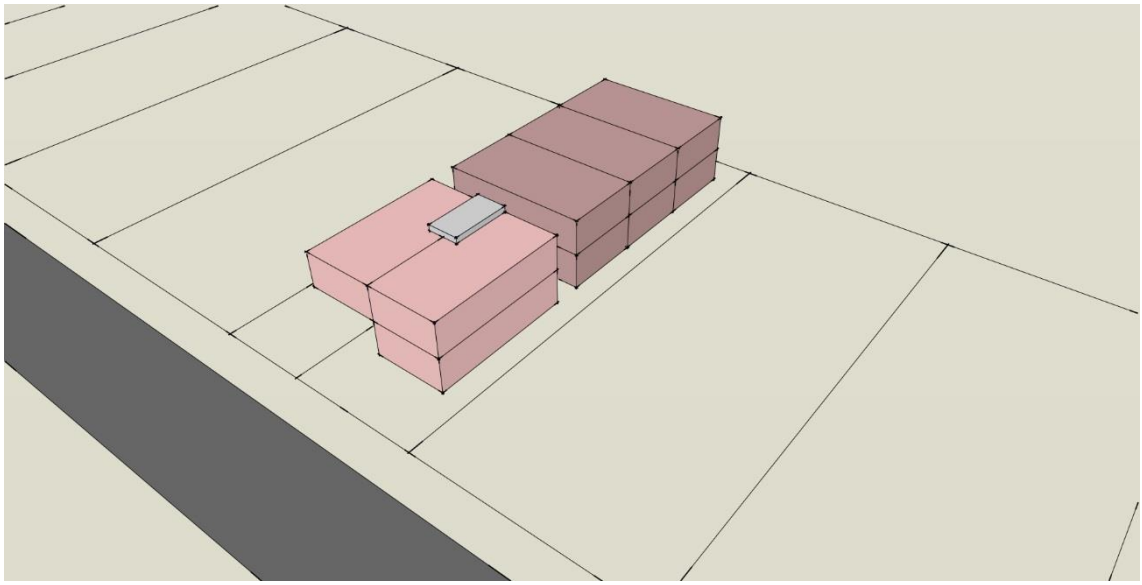
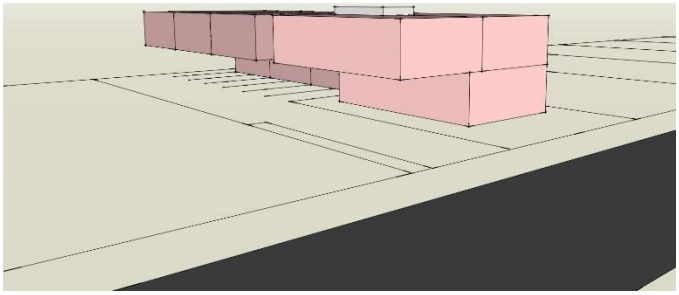


FIGURE 26. TWO STOREY APARTMENT VISUALISATION 2



The following table outlines the approximate sales values that are associated with one and two bedroom apartment townhouses across CGD.

TABLE 20. TWO STOREY APARTMENT SALES VALUES

	Apartment 1br		Apartment 2br		Total revenue for type
Suburb	Size	Sales value	Size	Sales value	
Dandenong	50	$283,700	74	$360,000	$2,007,400
Springvale	50	$302,500	71	$410,000	$2,245,000
Keysborough	62	$318,552	92	$397,000	$2,225,104
Noble Park	55	$305,000	79	$328,500	$1,924,000
Springvale South	51	$288,095	79	$390,476	$2,138,095

Feasibility results

The following table highlights the feasibility of this housing type by suburb. This shows that after the cost of land is taken into account, Dandenong North, Keysborough and Springvale are the only suburbs where this development type is feasible. Development in Dandenong and Springvale South is marginally feasible. This reflects higher dwelling prices in Keysborough and Springvale and relatively lower land values within Dandenong North.

TABLE 21. TWO STOREY APARTMENT FEASIBILITY ANALYSIS RESULTS BY SUBURB

Apartment (700sqm) – combination 1br and 2br	Total Costs	Total Revenue	Residual Land Value	Land Value	Ratio
Dandenong	$1,585,842	$2,007,400	$421,558	$426,730	0.99
Dandenong North	$1,585,842	$2,007,400	$421,558	$319,115	1.32
Central Dandenong	$1,651,386	$2,007,400	$356,014	$426,730	0.83
Keysborough	$1,614,014	$2,225,104	$611,091	$359,230	1.70
Springvale	$1,595,346	$2,245,000	$649,654	$554,394	1.17
Springvale South	$1,591,070	$2,138,095	$547,025	$566,147	0.97
Noble Park	$1,582,506	$1,924,000	$341,494	$536,202	0.64
Noble Park North	$1,582,506	$1,924,000	$341,494	$485,201	0.70

FIGURE 27. TWO STOREY APARTMENT FEASIBILITY ANALYSIS RESULTS

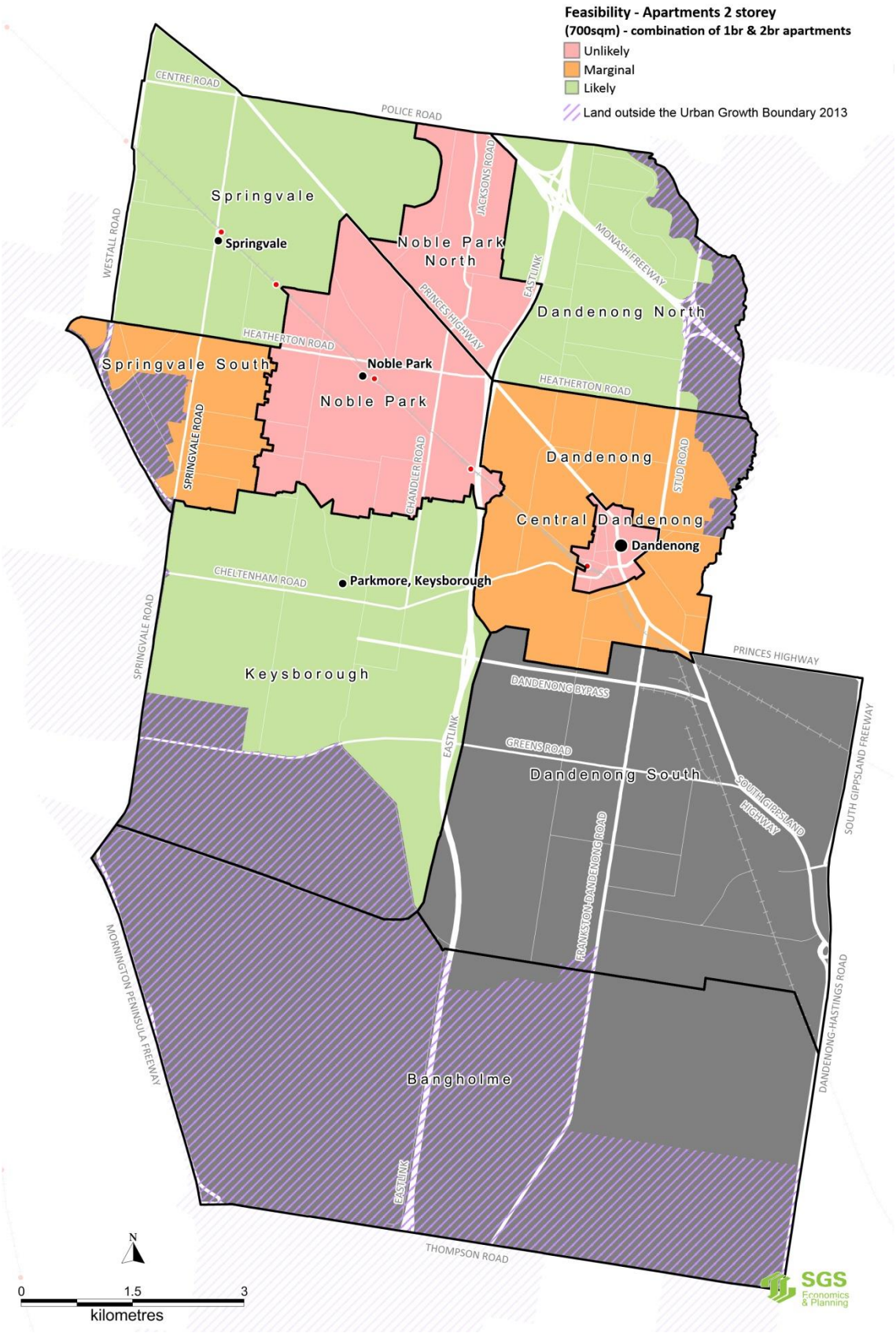
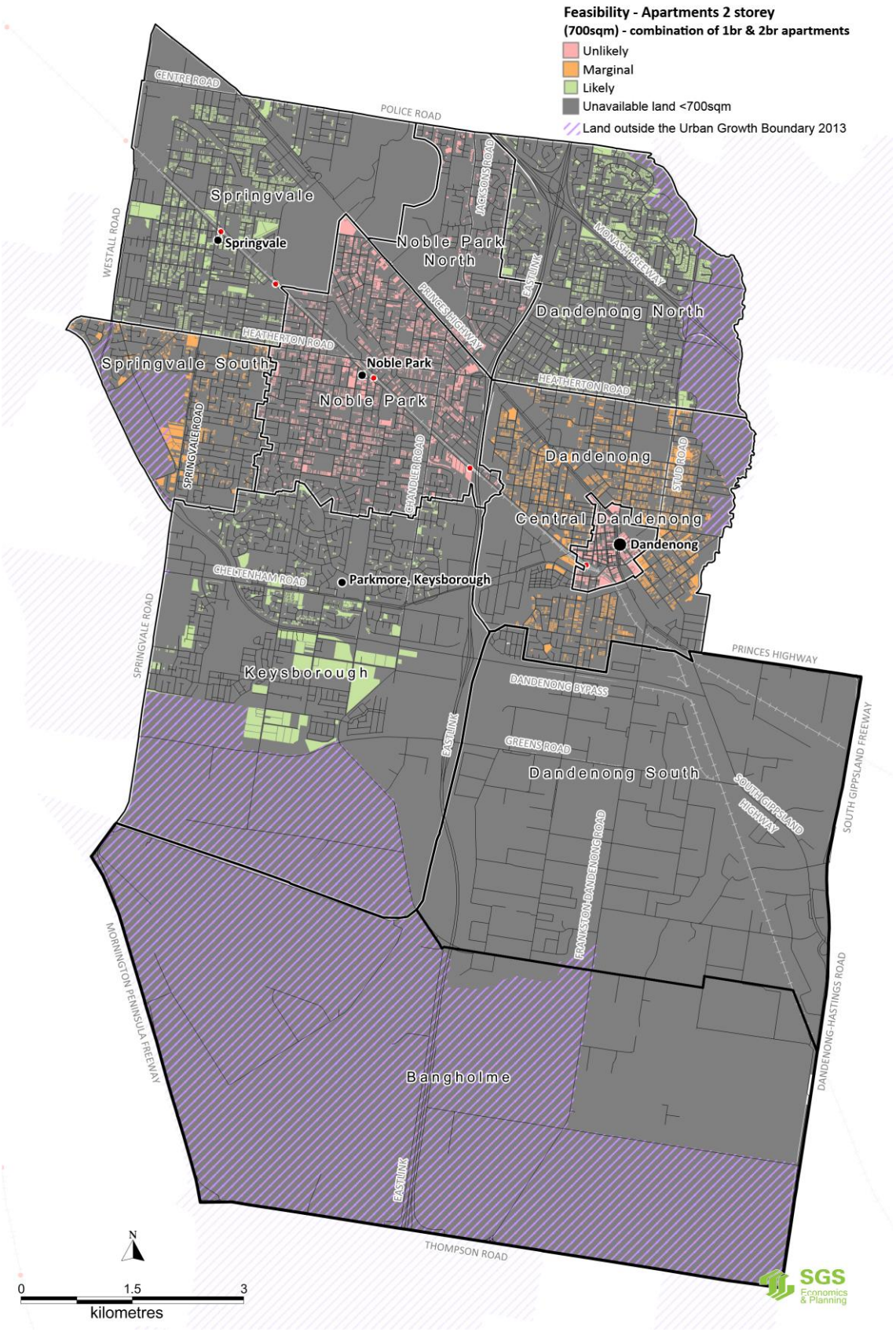


FIGURE 28. TWO STOREY APARTMENT FEASIBILITY AND AVAILABLE LAND



Comparison to existing planning controls

This section will consider suitable lots of available land, feasible locations and the planning scheme. The objective is to identify and compare the number of two storey apartment developments that could feasibly be achieved to the number of these developments which would be permitted under current planning scheme controls.

The below table shows that:

- 18.4 per cent (6,427) of available lots are large enough to support this housing type
- 13.4 per cent (4,681) of available lots are large enough to support this housing type and are feasible
- 4.5 per cent (1,577) of available lots are large enough to support this housing and are supported by planning controls
- 3.8 per cent (1,316) of available lots are large enough, have supporting planning controls and are feasible in CGD.

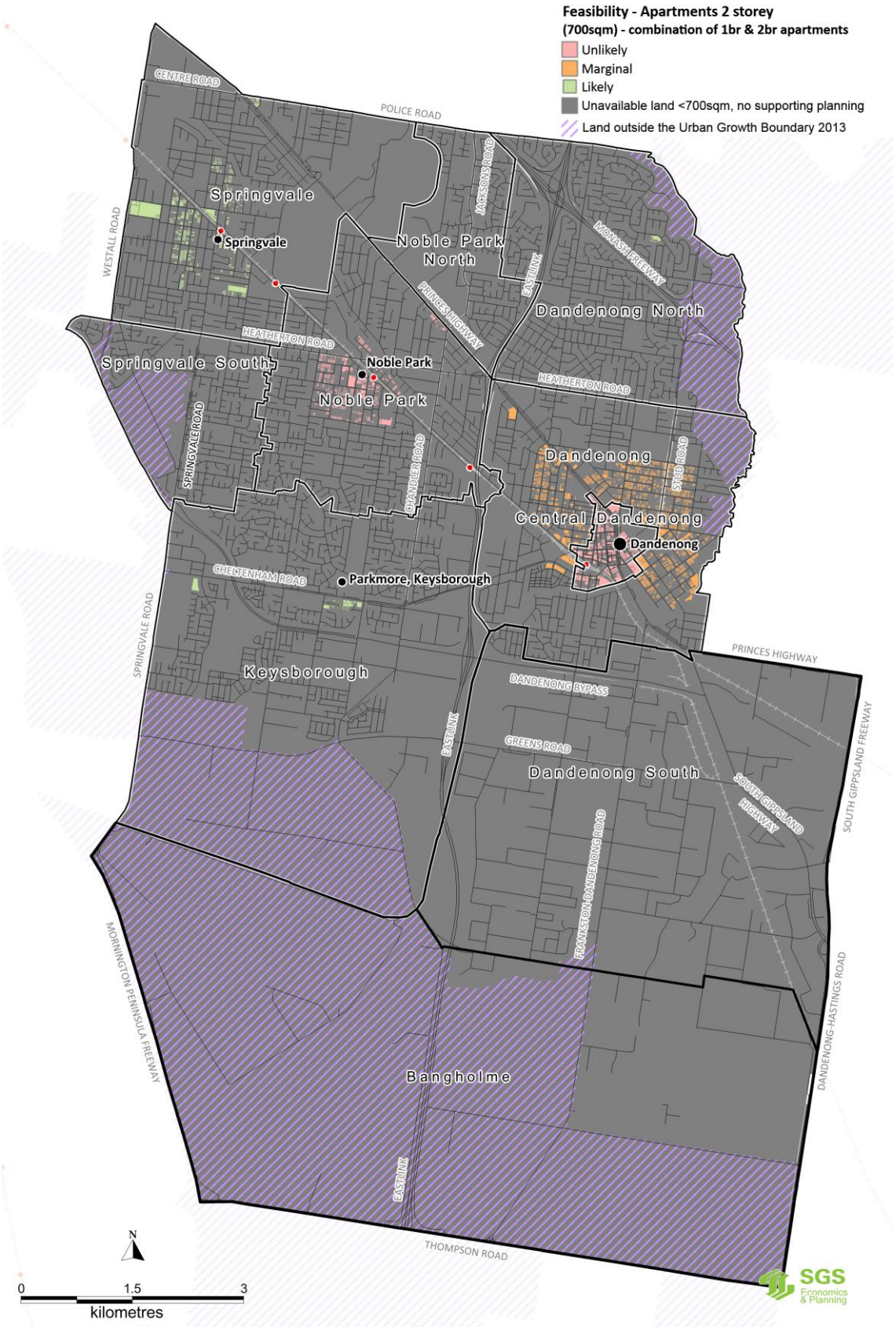
TABLE 22. TWO STOREY APARTMENTS (700M²) LOT AVAILABILITY, LOT SIZE AND PLANNING SUPPORT

	All land			Planning supported land		
	Available Lots	Available Lots >700m²	Feasible Available Lots >700m²	Available Lots	Available Lots >700m²	Feasible Available Lots >700m²
Dandenong	4,814	1,584	1,584	2,017	989	989
Dandenong North	7,151	1,204	1,204	3	3	3
Keysborough	5,131	336	336	48	23	23
Noble Park	6,914	1,539	0	615	256	0
Noble Park North	2,596	207	0	0	5	0
Springvale	5,127	1,219	1,219	785	299	299
Springvale South	3,130	338	338	0	2	2
Total	**34,863**	**6,427**	**4,681**	**3,468**	**1,577**	**1,316**

Source: SGS Economics and Planning

Two storey apartment developments are not a common housing type currently being delivered in CGD. This is because developers with the expertise and experience in delivering this housing type tend to seek higher development yields through additional storeys. This housing type can be seen more regularly in locations of Melbourne with higher land values. The feasibility results suggest however, that this product could be delivered in CGD.

FIGURE 29. TWO STOREY APARTMENT FEASIBILITY, AVAILABLE LAND AND PLANNING CONTROLS

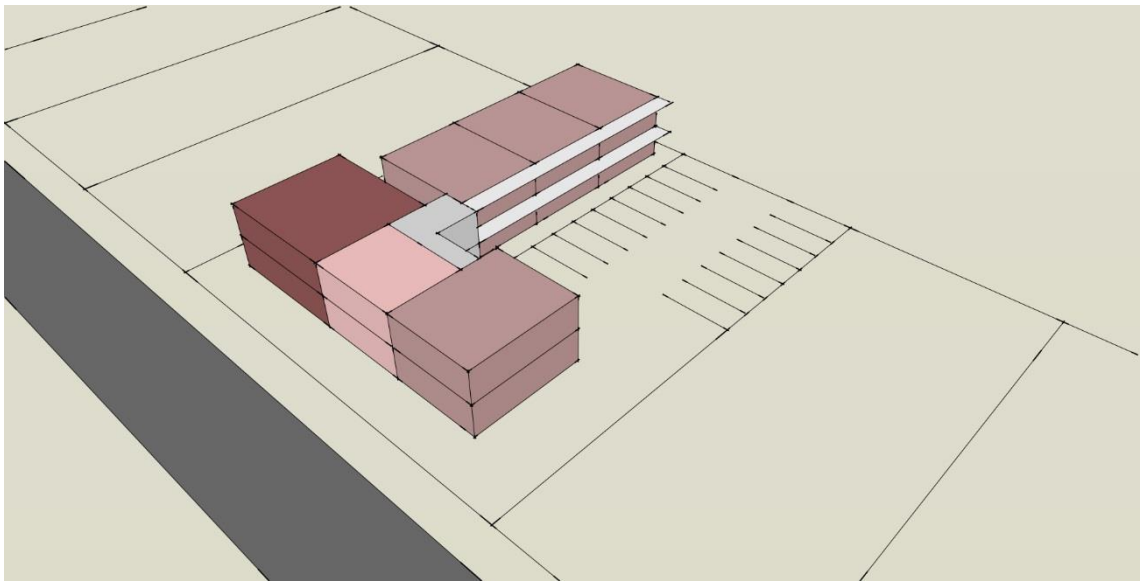


5.7 Apartments – two storey (large lot)

Description

Description:	Two storey apartment development generally does not generate sufficient revenue to justify basement of semi-basement parking. In this model parking at ground level in a car court. This approach was common practice in the 1960s and 1970 but is much less common in current development where garages or basement parking arrangement are generally preferred. This building type yields a total of 12 dwellings: six single storey dwelling are located adjacent to the street and another six dwelling are located on a second wing that is perpendicular to the street. Assumptions used for this type include a net dwelling area of 940sqm, a total building area of 1,128sqm and a balcony area of 96sqm.
Lot characteristics:	Council have advised 1,500sqm as the minimum for this type of development. The lot below is modelled on a site that is 36 x 42 metres (two lots of 18 x 42).
Why include?	Test feasibility of small scale apartment development on larger lot with surface parking. Likely to be a more affordable housing product that larger dwellings and/or developments with garages or basement parking.

FIGURE 30. TWO STOREY (LARGE LOT) APARTMENT VISUALISATION



The following table outlines the approximate sales values that are associated with one, two and three bedroom apartments across CGD.

TABLE 23. TWO STOREY (LARGE LOT) APARTMENT SALES VALUES

Suburb	Apartment 1br		Apartment 2br		Apartment 3br		Total revenue for type
	Size	Sales value	Size	Sales value	Size	Sales value	
Dandenong	50	$283,700	74	$360,000	96	$366,735	$4,180,869.39
Springvale	50	$302,500	71	$410,000	110	$567,021	$5,019,042.55
Keysborough	62	$318,552	92	$397,000	120	$417,633	$4,648,369.77
Noble Park	55	$305,000	79	$328,500	103	$342,184	$3,922,367.35
Springvale South	51	$288,095	79	$390,476	103	$540,020	$4,780,040.53

Feasibility results

The following table highlights the feasibility of this housing type by suburb. This shows that after the cost of land is taken into account, this development type is feasible in Keysborough and Springvale. Development is marginally feasible in Dandenong North and Springvale South. Again, this reflects higher sales values in Keysborough and Springvale and lower land values in Dandenong North.

TABLE 24. TWO STOREY (LARGE LOT) APARTMENT FEASIBILITY ANALYSIS RESULTS BY SUBURB

Apartment (700sqm) – combination 1br, 2br, 3br	Total Costs	Total Revenue	Residual Land Value	Land Value	Ratio
Dandenong	$3,528,748	$4,180,869	$652,121	$906,216	0.72
Dandenong North	$3,528,748	$4,180,869	$652,121	$675,612	0.97
Central Dandenong	$3,675,090	$4,180,869	$505,779	$906,216	0.56
Keysborough	$3,588,823	$4,648,370	$1,059,547	$761,573	1.39
Springvale	$3,562,275	$5,019,043	$1,456,767	$1,179,782	1.23
Springvale South	$3,552,715	$4,780,041	$1,227,325	$1,204,966	1.02
Noble Park	$3,518,408	$3,922,367	$403,959	$1,140,798	0.35
Noble Park North	$3,518,408	$3,922,367	$403,959	$1,031,510	0.39

FIGURE 31. TWO STOREY (LARGE LOT) APARTMENT FEASIBILITY ANALYSIS RESULTS

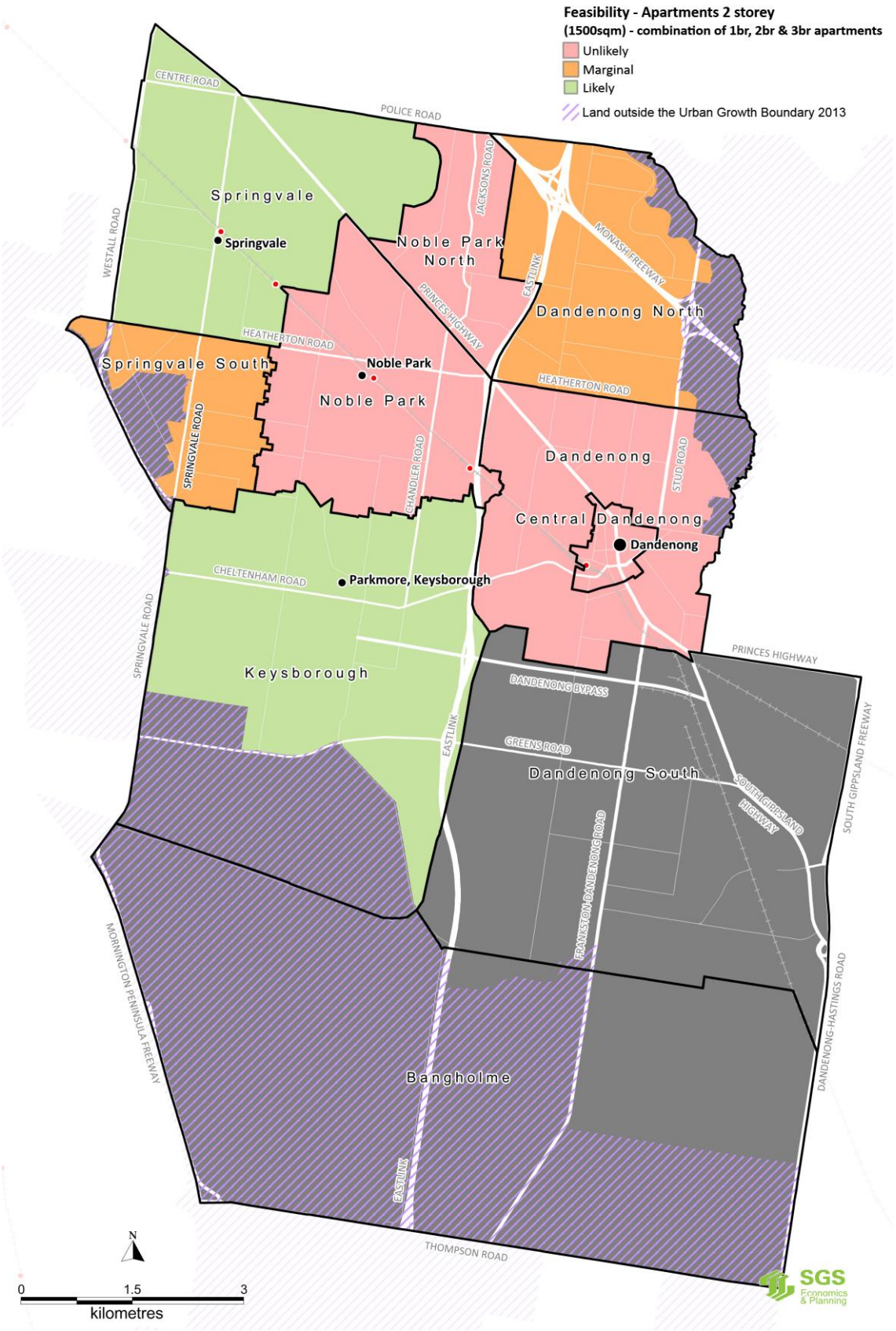
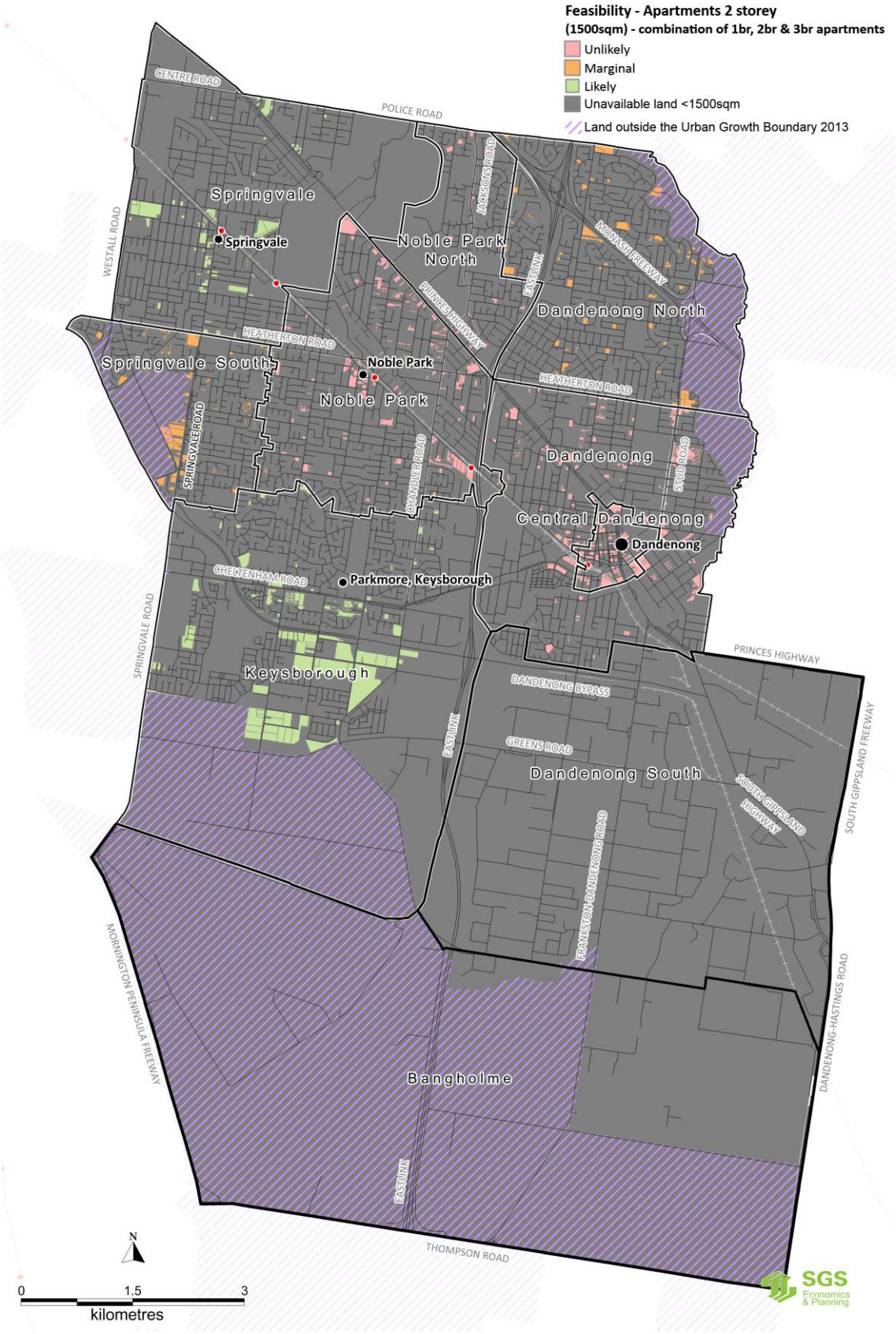


FIGURE 32. TWO STOREY (LARGE LOT) APARTMENT FEASIBILITY AND AVAILABLE LAND



Comparison to existing planning controls

This section will consider suitable lots of available land, feasible locations and the planning scheme. The objective is to identify and compare the number of two storey apartment developments that could feasibly be achieved to the number of these developments which would be permitted under current planning scheme controls.

The below table shows that:

- 1.7 per cent (590) of available lots are large enough to support this housing type
- 0.8 per cent (264) of available lots are large enough to support this housing type and are feasible
- 0.6 per cent (213) of available lots are large enough to support this housing and are supported by planning controls
- 0.1 per cent (46) of available lots are large enough, have supporting planning controls and are feasible in CGD.

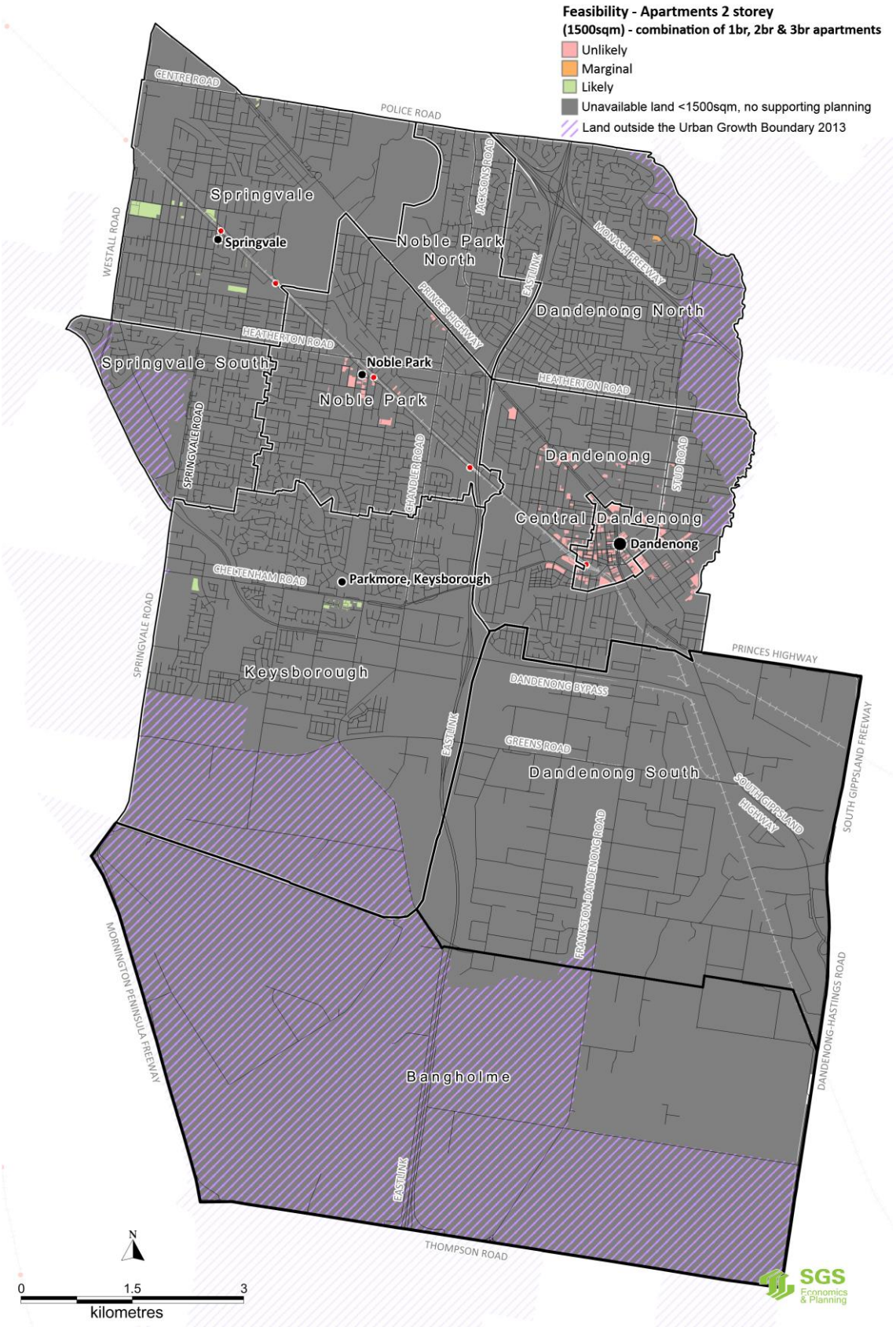
TABLE 25. TWO STOREY APARTMENTS (1500M²) LOT AVAILABILITY, LOT SIZE AND PLANNING SUPPORT

	All land			Planning supported land		
	Available Lots	Available Lots >1,500m²	Feasible Available Lots >1,500m²	Available Lots	Available Lots >1,500m²	Feasible Available Lots >1,500m²
Dandenong	4,814	178	0	2,017	130	0
Dandenong North	7,151	59	59	3	1	1
Keysborough	5,131	86	86	48	9	9
Noble Park	6,914	134	0	615	21	0
Noble Park North	2,596	14	0	0	0	0
Springvale	5,127	60	60	785	17	17
Springvale South	3,130	59	59	0	0	0
Total	**34,863**	**590**	**264**	**3,468**	**213**	**46**

Source: SGS Economics and Planning

Two storey apartments on 1,500sqm achieve an insufficient dwelling density and, consequently, insufficient sales revenues to compensate for the cost of development and to make development feasible. This is evidenced by only Keysborough and Springvale, Springvale South having sufficient underlying land values to make this development feasible. Large lots of 1,500sqm are more suited to dense townhouse development or higher apartment blocks.

FIGURE 33. TWO STOREY (LARGE LOT) APARTMENT FEASIBILITY, AVAILABLE LAND AND PLANNING CONTROLS

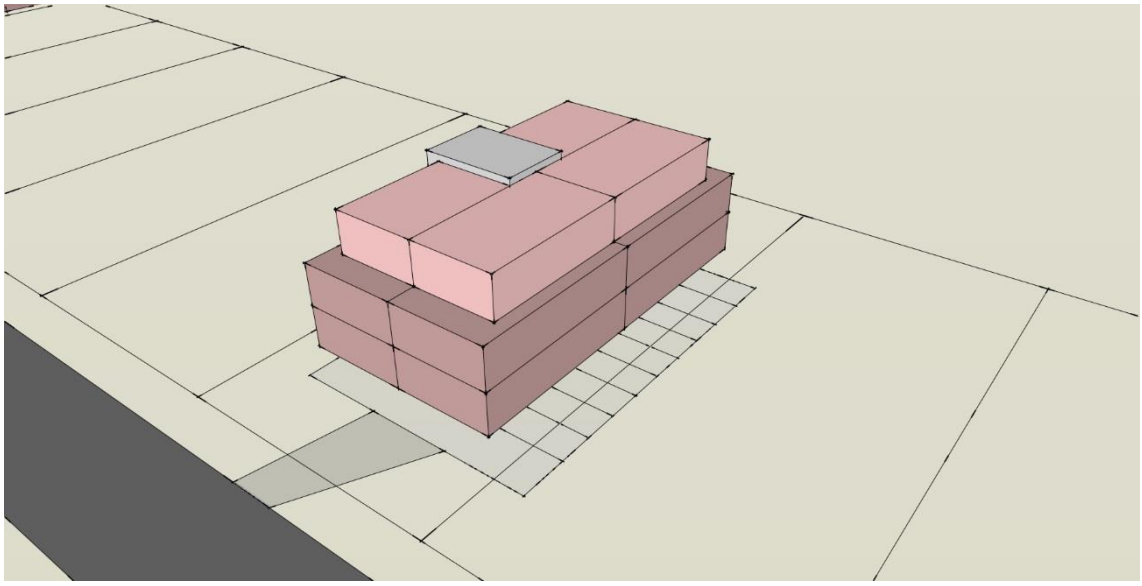


5.8 Apartments - three storey (small lot)

Description

Description:	Small three storey apartment building on basement (or semi-basement) carpark. Four apartments per floor with single lift/stair core. Modelling based on 12 apartments: eight two-bedroom and four one-bedroom apartments. Assumptions for this dwelling type include a net dwelling area of 836sqm, a total building area of 1,003sqm and a balcony area of 96sqm.
Lot characteristics:	Council have advised a land size of 700sqm as the minimum for this type of development. The model below is on a site of approximately 750 sqm (18 x 42). Wider site is necessary to accommodate the 'double loaded' basement parking configuration illustrated. A total of 12 car spaces have been provided.
Why include?	Test feasibility of small scale three storey apartment development.

FIGURE 34. THREE STOREY APARTMENT VISUALISATION



The following table outlines the approximate sales values that are associated with one and two bedroom apartments across CGD.

TABLE 26. THREE STOREY APARTMENT SALES VALUES

	Apartment 1br		Apartment 2br		Total revenue for type
Suburb	**Size**	**Sales value**	**Size**	**Sales value**	
Dandenong	50	$283,700	74	$360,000	$4,014,800
Springvale	50	$302,500	71	$410,000	$4,490,000
Keysborough	62	$318,552	92	$397,000	$4,450,209
Noble Park	55	$305,000	79	$328,500	$3,848,000
Springvale South	51	$288,095	79	$390,476	$4,276,190

Feasibility results

The following table highlights the feasibility of this housing type by suburb. This shows that after the cost of land is taken into account, this development type is feasible throughout all suburbs within CGD. Feasibility is highest in Keysborough (a result of higher sales prices) and Dandenong North (a result of lower land values). Central Dandenong and Springvale South incur the biggest building costs while

Springvale and Keysborough have the highest total revenues. Land values are highest in Springvale and Springvale South. While still considered feasible, feasibility for this housing type is lowest within Noble Park and Noble Park North, a result of relatively high land values.

TABLE 27. THREE STOREY APARTMENT FEASIBILITY ANALYSIS RESULTS BY SUBURB

Apartment (700sqm) – combination 1br and 2br	Total Costs	Total Revenue	Residual Land Value	Land Value	Ratio
Dandenong	$3,027,883	$4,014,800	$986,917	$426,730	2.31
Dandenong North	$3,027,883	$4,014,800	$986,917	$319,115	3.09
Central Dandenong	$3,152,709	$4,014,800	$862,091	$426,730	2.02
Keysborough	$3,067,088	$4,450,209	$1,383,121	$359,230	3.85
Springvale	$3,046,891	$4,490,000	$1,443,109	$554,394	2.60
Springvale South	$3,038,338	$4,276,190	$1,237,852	$566,147	2.19
Noble Park	$3,021,211	$3,848,000	$826,789	$536,202	1.54
Noble Park North	$3,021,211	$3,848,000	$826,789	$485,201	1.70

FIGURE 35. THREE STOREY APARTMENT FEASIBILITY ANALYSIS RESULTS

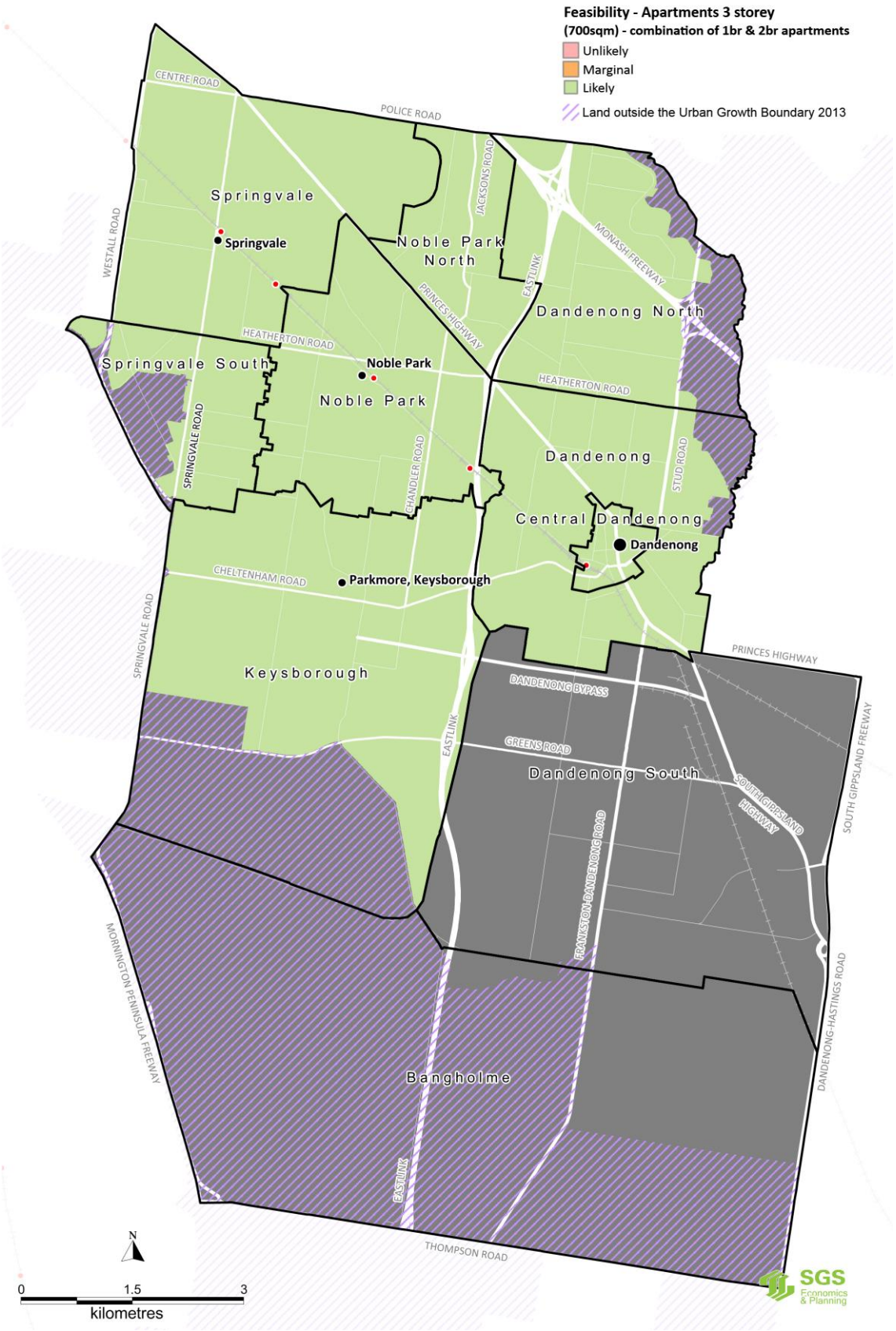
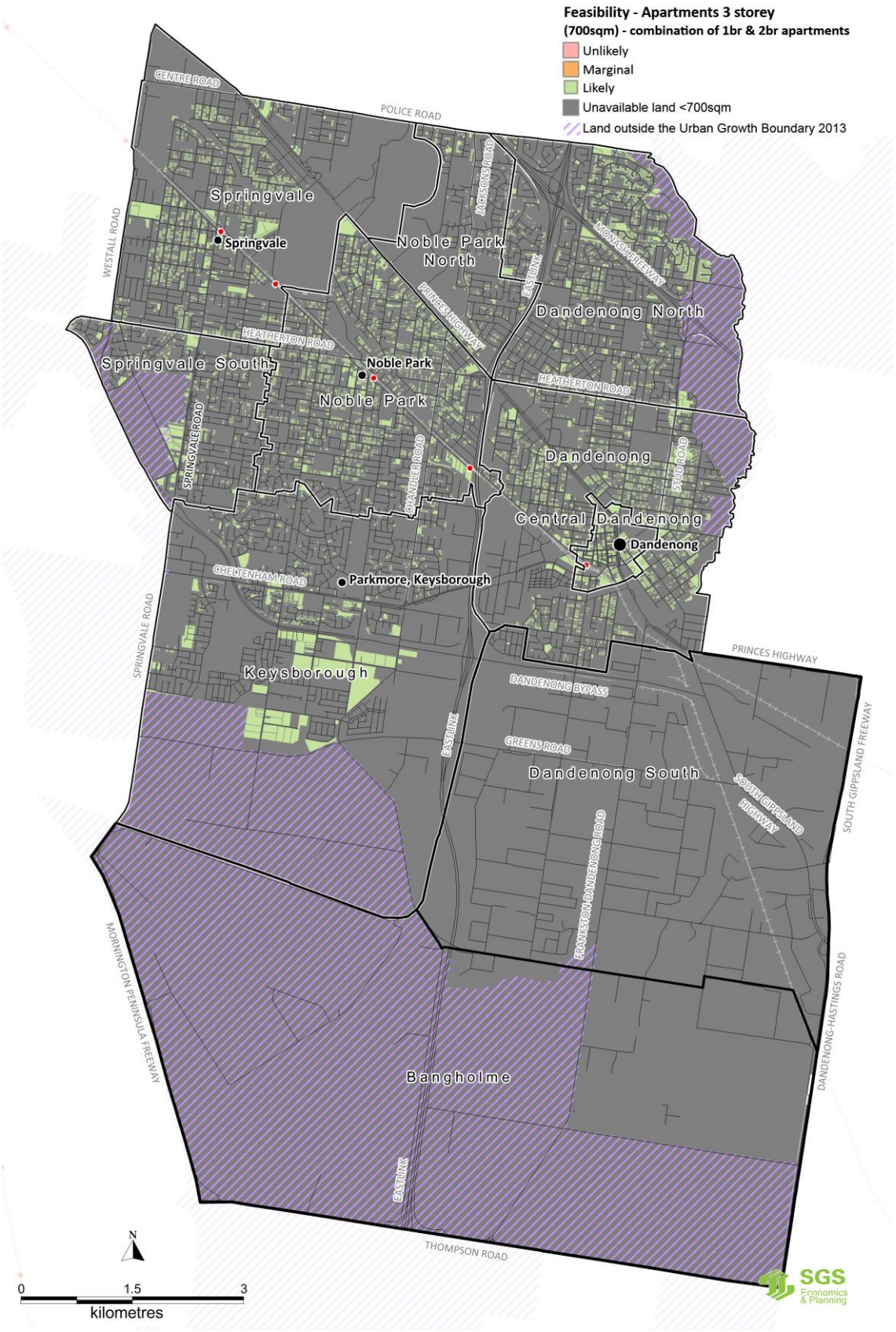


FIGURE 36. THREE STOREY APARTMENT FEASIBILITY AND AVAILABLE LAND



Comparison to existing planning controls

This section will consider suitable lots of available land, feasible locations and the planning scheme. The objective is to identify and compare the number of three storey apartment developments that could feasibly be achieved to the number of these developments which would be permitted under current planning scheme controls.

The table below shows that:

- 18.4 per cent (6,427) of available lots are large enough to support this housing type
- 18.4 per cent (6,427) of available lots are large enough to support this housing type and are feasible
- 4.5 per cent (1,577) of available lots are large enough to support this housing and are supported by planning controls
- 4.5 per cent (1,577) of available lots are large enough, have supporting planning controls and are feasible in CGD.

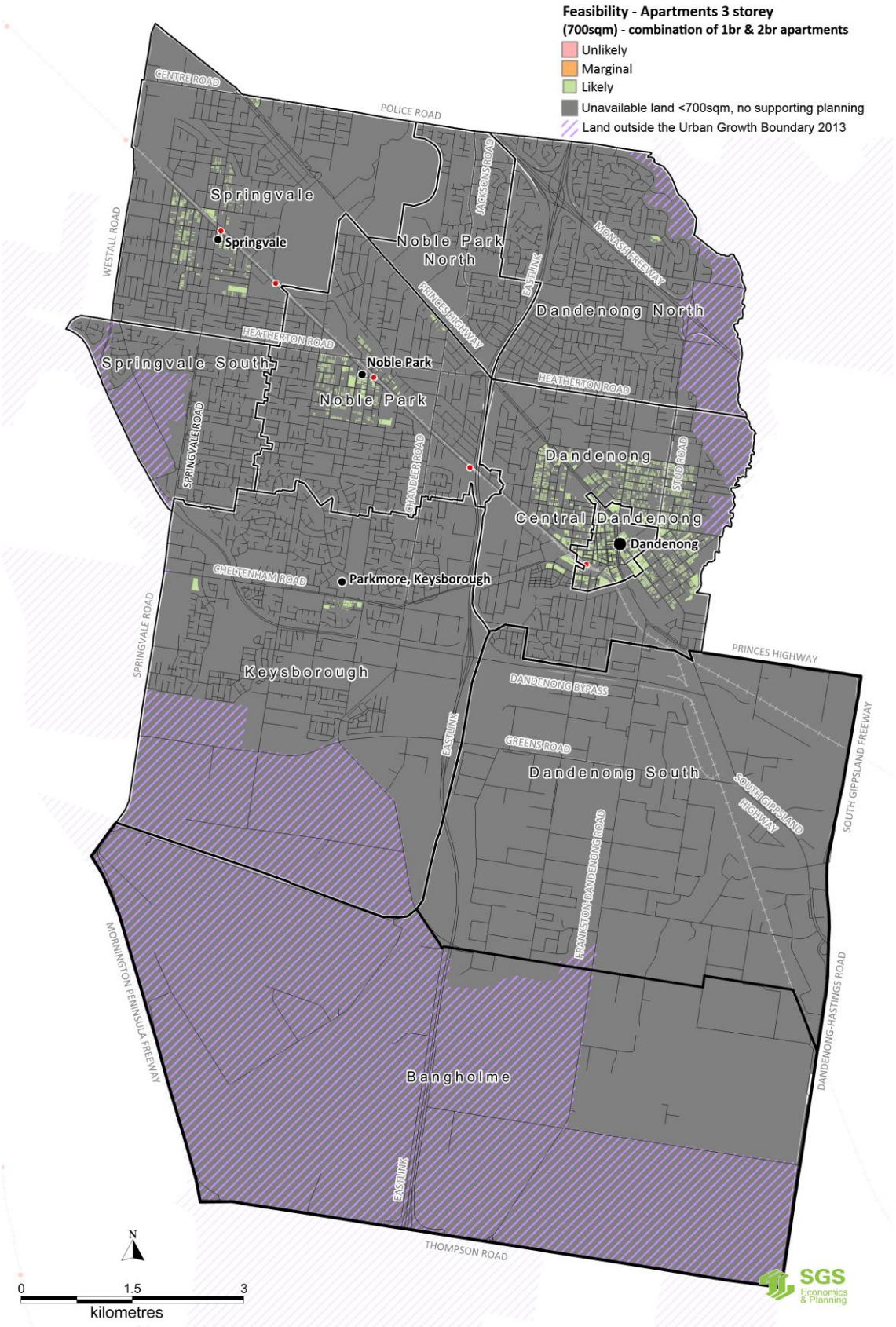
TABLE 28. THREE STOREY APARTMENTS (700M²) LOT AVAILABILITY, LOT SIZE AND PLANNING SUPPORT

	All land			Planning supported land		
	Available Lots	Available Lots >700m²	Feasible Available Lots >700m²	Available Lots	Available Lots >700m²	Feasible Available Lots >700m²
Dandenong	4,814	1,584	1,584	2,016	977	977
Dandenong North	7,151	1,204	1,204	3	3	3
Keysborough	5,131	336	336	48	12	12
Noble Park	6,914	1,539	1,539	615	245	245
Noble Park North	2,596	207	207	0	0	0
Springvale	5,127	1,219	1,219	779	252	252
Springvale South	3,130	338	338	0	0	0
Total	**34,863**	**6,427**	**6,427**	**3,659**	**1,577**	**1,577**

Source: SGS Economics and Planning

The inclusion of an additional storey means that, compared to two storey apartments, three storey apartments are generally financially feasible. This is shown by feasible available lots larger than 700sqm being located across CGD. However, only 1,157 out of the 6,445 feasible available lots greater than 700sqm are supported by planning controls which allow this development.

FIGURE 37. THREE STOREY APARTMENT FEASIBILITY, AVAILABLE LAND AND PLANNING CONTROLS

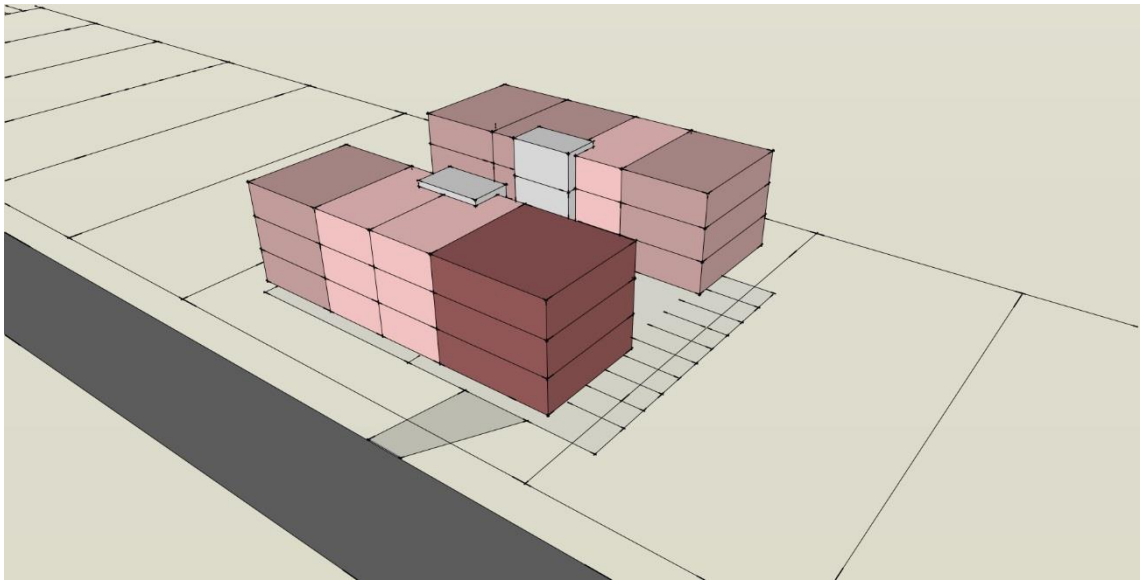


5.9 Apartments - three storey (large lot)

Description

Description:	The three storey apartment development on a large lot has been modelling as two separate buildings: one oriented towards the street and the other at the rear of the lot. This configuration allow the new dwellings to retain the 'conventional' relationship between dwelling fonts and backs (that is, the new dwellings are not oriented towards the side boundaries) and permits all apartments to be cross-ventilated. A single 'core' services each building. The mix of dwellings (one, two, and three beds) is indicated by the different colours in the visualisation. Various configurations and dwelling mix are possible. Assumptions for this dwelling type include a net dwelling area of 1,716sqm, a total building area of 2,059sqm and a balcony area of 192sqm.
Lot characteristics:	Council have advised a land size of 1,500sqm as the minimum for this type of development. The lot below is modelled on a site that is 36 x 42 metres (two lots of 18 x 42). A total of 27 car spaces have been provided.
Why include?	Test feasibility of three storey scale apartment development on larger lot with basement.

FIGURE 38. THREE STOREY (LARGE LOT) APARTMENT VISUALISATION



The following table outlines the approximate sales values that are associated with one, two and three bedroom apartments across CGD.

TABLE 29. THREE STOREY (LARGE LOT) APARTMENT SALES VALUES

Suburb	Apartment 1br		Apartment 2br		Apartment 3br		Total revenue for type
	Size	Sales value	Size	Sales value	Size	Sales value	
Dandenong	50	$283,700	74	$360,000	96	$366,735	$7,973,504
Springvale	50	$302,500	71	$410,000	110	$567,021	$9,343,563
Keysborough	62	$318,552	92	$397,000	120	$417,633	$8,883,868
Noble Park	55	$305,000	79	$328,500	103	$342,184	$7,713,551
Springvale South	51	$288,095	79	$390,476	103	$540,020	$8,898,632

Feasibility results

The following table highlights the feasibility of this housing type by suburb. This shows that after the cost of land is taken into account, this development type is feasible in all suburbs except for Central Dandenong, Noble Park and Noble Park North. Development is less feasible in these locations due to higher costs (Central Dandenong) and lower sales prices and relatively high land values (Noble Park and Noble Park North). Development for this housing type is most feasible in Keysborough where building costs are modest and sales prices relatively high.

TABLE 30. THREE STOREY (LARGE LOT) APARTMENT FEASIBILITY ANALYSIS RESULTS BY SUBURB

Apartment (1,500sqm) – combination 1br, 2br, 3br	Total Costs	Total Revenue	Residual Land Value	Land Value	Ratio
Dandenong	$6,946,138	$7,973,504	$1,027,366	$906,216	1.13
Dandenong North	$6,946,138	$7,973,504	$1,027,366	$675,612	1.52
Central Dandenong	$7,234,650	$7,973,504	$738,854	$906,216	0.82
Keysborough	$7,028,579	$8,883,868	$1,855,289	$761,573	2.44
Springvale	$7,000,941	$9,343,564	$2,342,623	$1,179,782	1.99
Springvale South	$6,983,143	$8,898,632	$1,915,489	$1,204,966	1.59
Noble Park	$6,935,740	$7,713,551	$777,811	$1,140,798	0.68
Noble Park North	$6,935,740	$7,713,551	$777,811	$1,031,510	0.75

FIGURE 39. THREE STOREY (LARGE LOT) APARTMENT FEASIBILITY ANALYSIS RESULTS

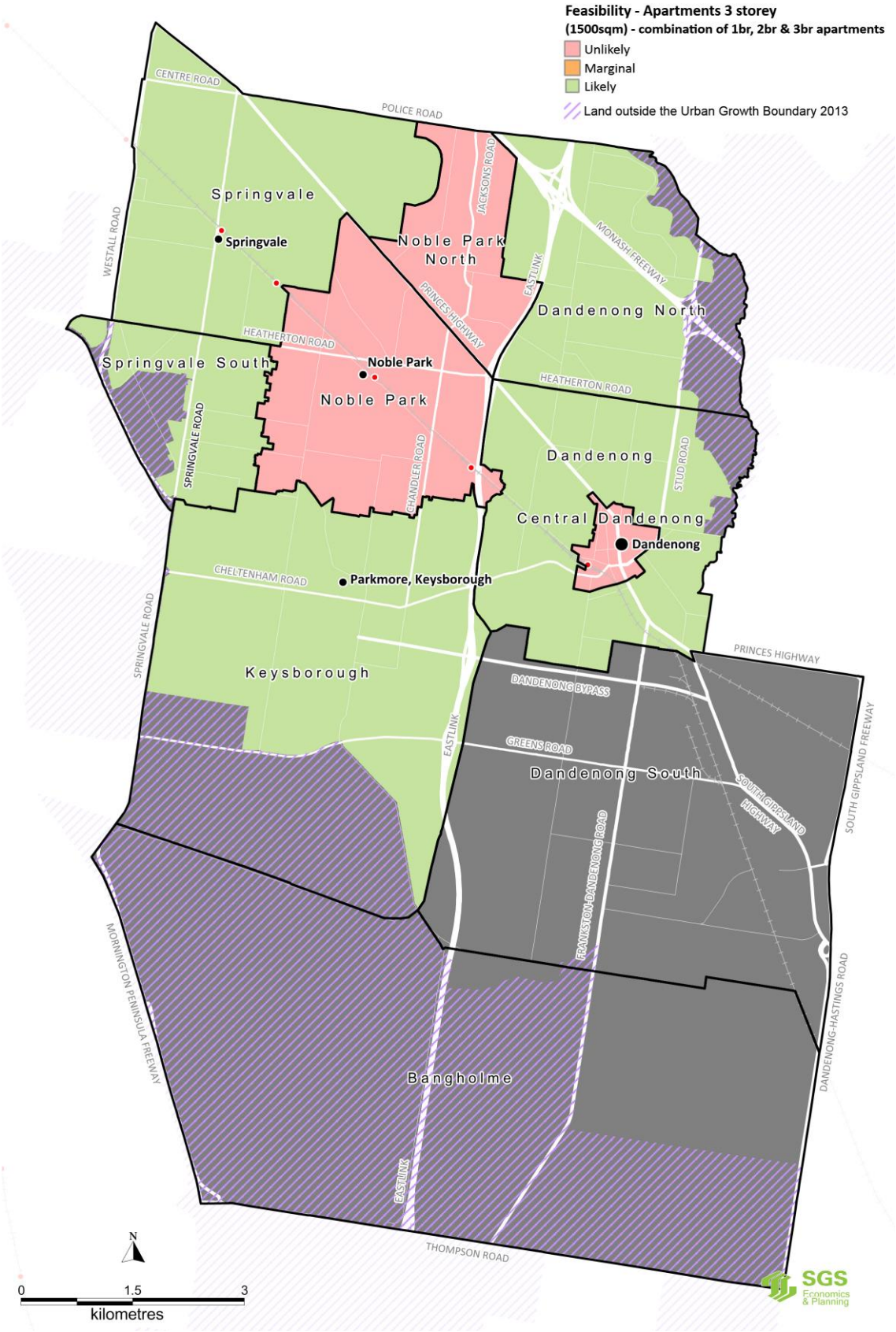
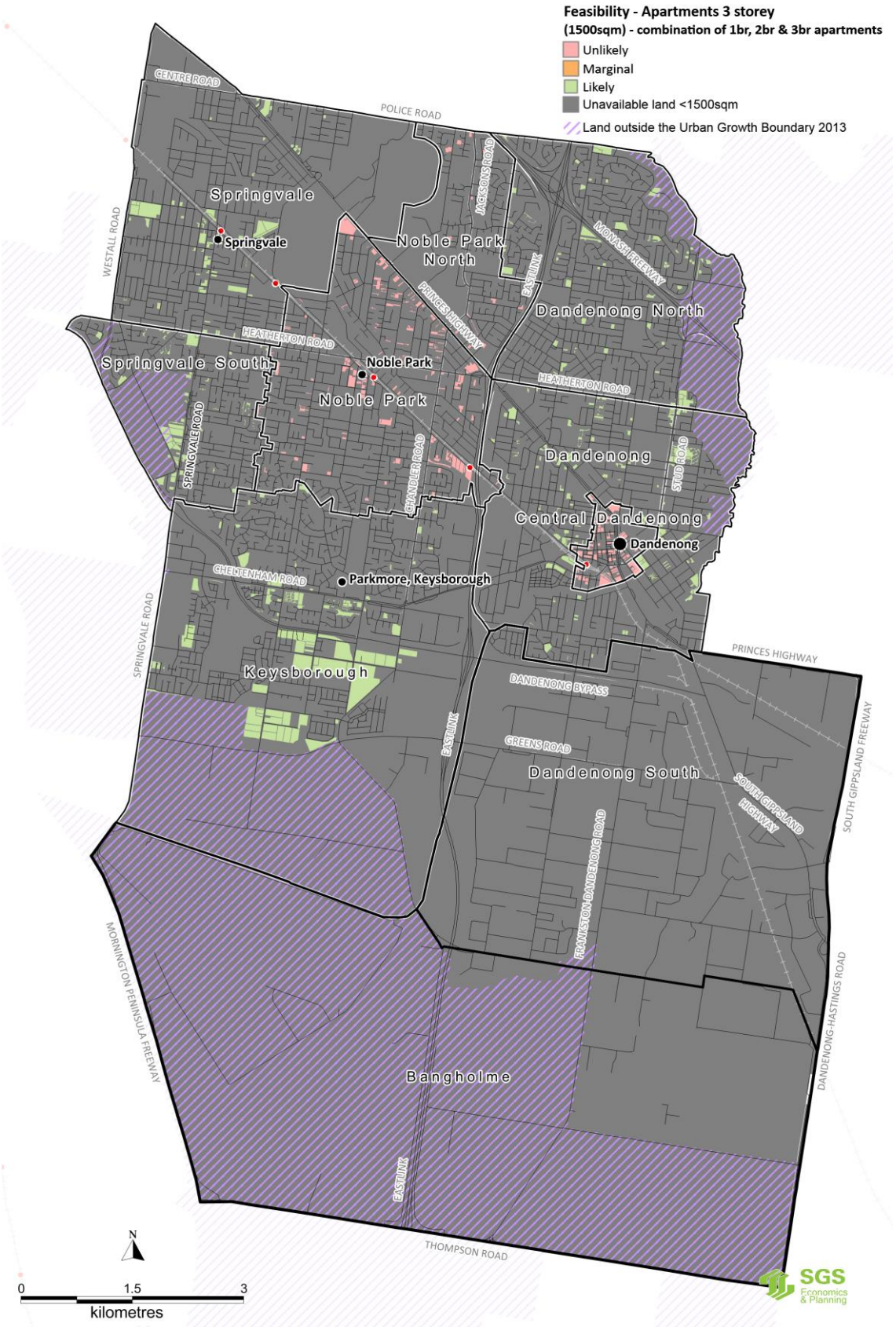


FIGURE 40. THREE STOREY (LARGE LOT) APARTMENT FEASIBILITY AND AVAILABLE LAND



Comparison to existing planning controls

This section will consider suitable lots of available land, feasible locations and the planning scheme. The objective is to identify and compare the number of three storey apartment developments that could feasibly be achieved to the number of these developments which would be permitted under current planning scheme controls.

The table below shows that:

- 1.7 per cent (590) of available lots are large enough to support this housing type
- 1.3 per cent (442) of available lots are large enough to support this housing type and are feasible
- 0.6 per cent (213) of available lots are large enough to support this housing and are supported by planning controls
- 0.5 per cent (185) of available lots are large enough, have supporting planning controls and are feasible in CGD.

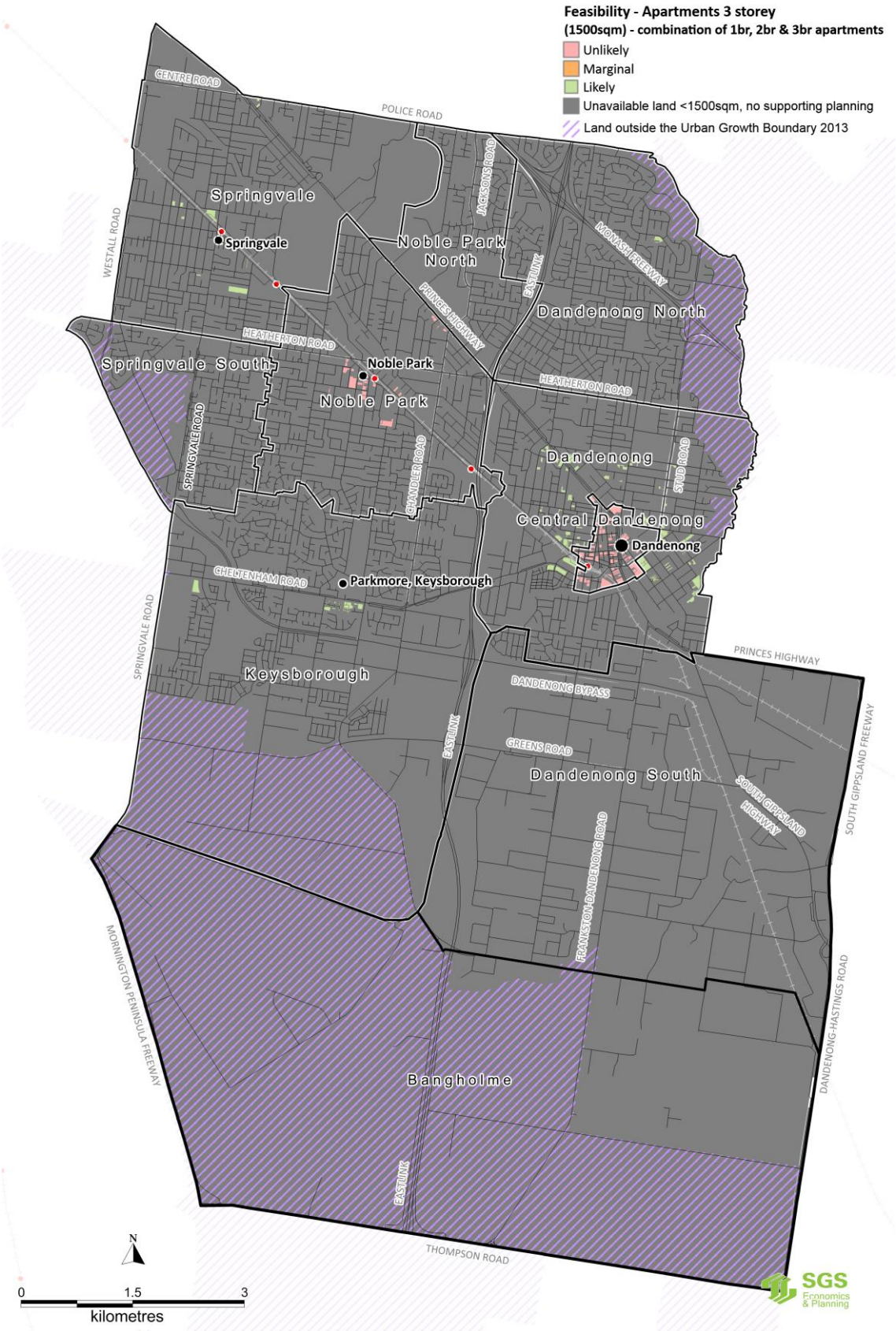
TABLE 31. THREE STOREY APARTMENTS (1500M^2) LOT AVAILABILITY, LOT SIZE AND PLANNING SUPPORT

	All land			Planning supported land		
	Available Lots	Available Lots >1,500m^2	Feasible Available Lots >1,500m^2	Available Lots	Available Lots >1,500m^2	Feasible Available Lots >1,500m^2
Dandenong	4,814	178	178	2,016	129	129
Dandenong North	7,151	59	59	3	1	1
Keysborough	5,131	86	86	48	9	9
Noble Park	6,914	134	0	615	21	0
Noble Park North	2,596	14	0	0	0	0
Springvale	5,127	60	60	779	13	13
Springvale South	3,130	59	59	0	0	0
Total	**34,863**	**590**	**442**	**3,659**	**213**	**185**

Source: SGS Economics and Planning

Of the 213 available lots with appropriate planning controls, 185 are also feasible. For this housing type, the key barrier to delivery is likely to be feasibility, rather than planning. Dwelling yield on this size lot is insufficient, except in areas of high value, to achieve feasibility.

FIGURE 41. THREE STOREY (LARGE LOT) APARTMENT FEASIBILITY, AVAILABLE LAND AND PLANNING CONTROLS

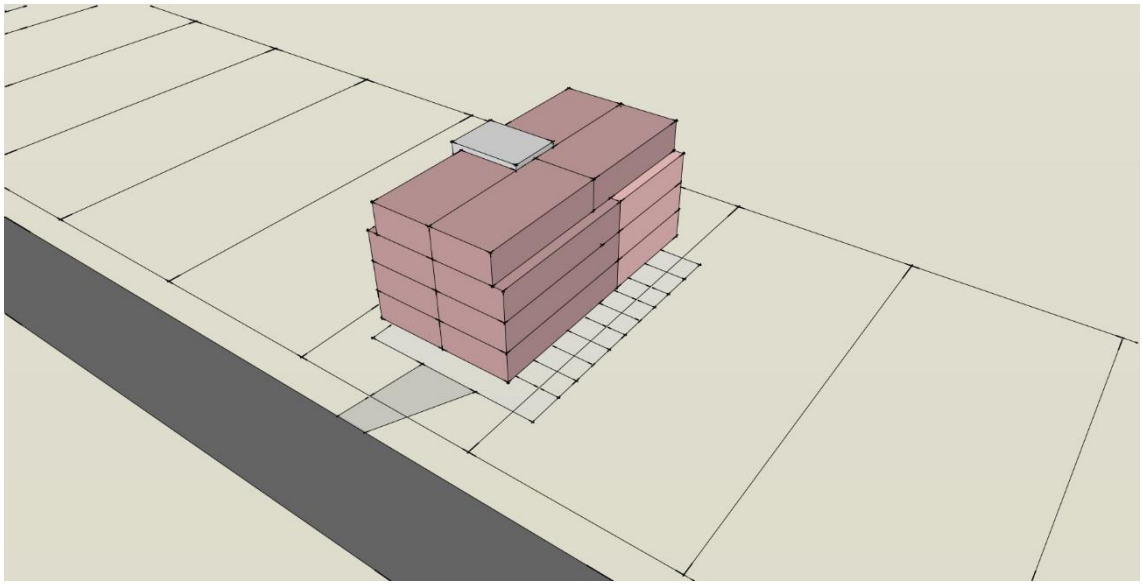


5.10 Apartments - four storey (small lot)

Description

Description:	Small four storey apartment building on basement (or semi-basement) carpark. Four apartments per floor with single lift/stair core. Modelling based on 18 apartments: six one-bed and 12 two-bed. Assumptions used for this housing type include a net dwelling area of 1,096sqm, a total building area of 1,315sqm and balcony area of 128sqm.
Lot characteristics:	Council have advised 700sqm as the minimum for this type of development. The model below is on a site of approximately 750 sqm (18 x 42). Wider site is necessary to accommodate the 'double loaded' basement parking configuration illustrated. 16 car parking spaces have been provided.
Why include?	Test feasibility of small scale four storey apartment development.

FIGURE 42. FOUR STOREY APARTMENT VISUALISATION



The following table outlines the approximate sales values that are associated with one and two bedroom apartments across CGD.

TABLE 32. FOUR STOREY APARTMENT SALES VALUES

	Apartment 1br		Apartment 2br		Total revenue for type
Suburb	**Size**	**Sales value**	**Size**	**Sales value**	
Dandenong	50	$283,700	74	$360,000	$5,302,200
Springvale	50	$302,500	71	$410,000	$5,915,000
Keysborough	62	$318,552	92	$397,000	$5,881,313
Noble Park	55	$305,000	79	$328,500	$5,115,000
Springvale South	51	$288,095	79	$390,476	$5,633,333

Feasibility results

The following table highlights the feasibility of this housing type by suburb. This shows that after the cost of land is taken into account, this type of development is feasible across all suburbs within CGD. Development is most feasible in Keysborough. Again, this reflects comparatively low building costs and land values and relatively high sales prices. Feasibility for this housing type is lowest in Noble Park and

Noble Park North due to low sales prices and land values. Notably, total building costs are highest within Central Dandenong due to the Infrastructure Recovery Charge (approximately $182,000 in this case).

TABLE 33. FOUR STOREY APARTMENT FEASIBILITY ANALYSIS RESULTS BY SUBURB

Apartment (700sqm) – combination 1br and 2br	Total Costs	Total Revenue	Residual Land Value	Land Value	Ratio
Dandenong	$4,387,360	$5,302,200	$914,840	$426,730	2.14
Dandenong North	$4,387,360	$5,302,200	$914,840	$319,115	2.87
Central Dandenong	$4,569,128	$5,302,200	$733,072	$426,730	1.72
Keysborough	$4,433,864	$5,881,313	$1,447,450	$359,230	4.03
Springvale	$4,411,872	$5,915,000	$1,503,128	$554,394	2.71
Springvale South	$4,400,605	$5,633,333	$1,232,728	$566,147	2.18
Noble Park	$4,379,872	$5,115,000	$735,128	$536,202	1.37
Noble Park North	$4,379,872	$5,115,000	$735,128	$485,201	1.52

FIGURE 43. FOUR STOREY APARTMENT FEASIBILITY ANALYSIS RESULTS

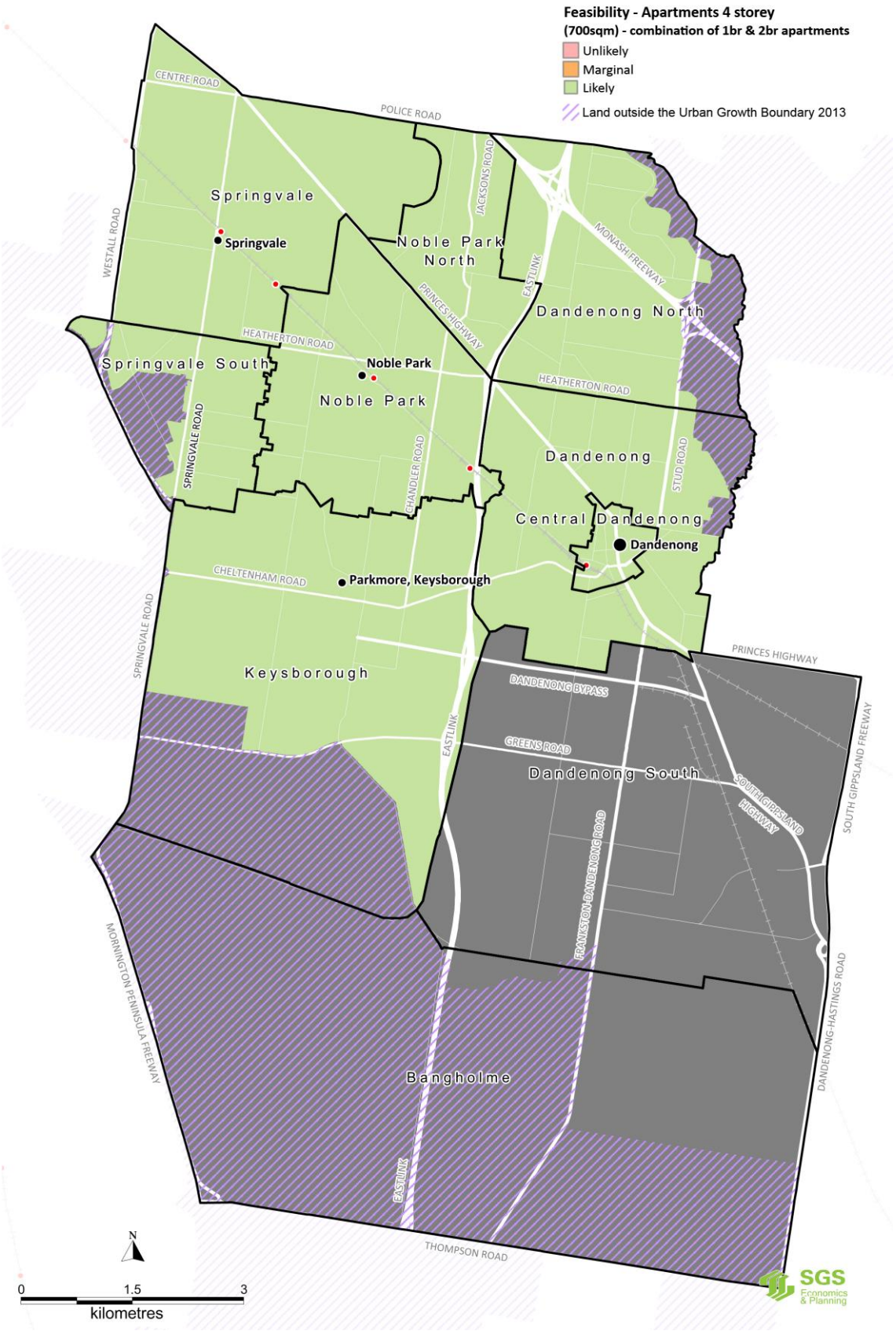
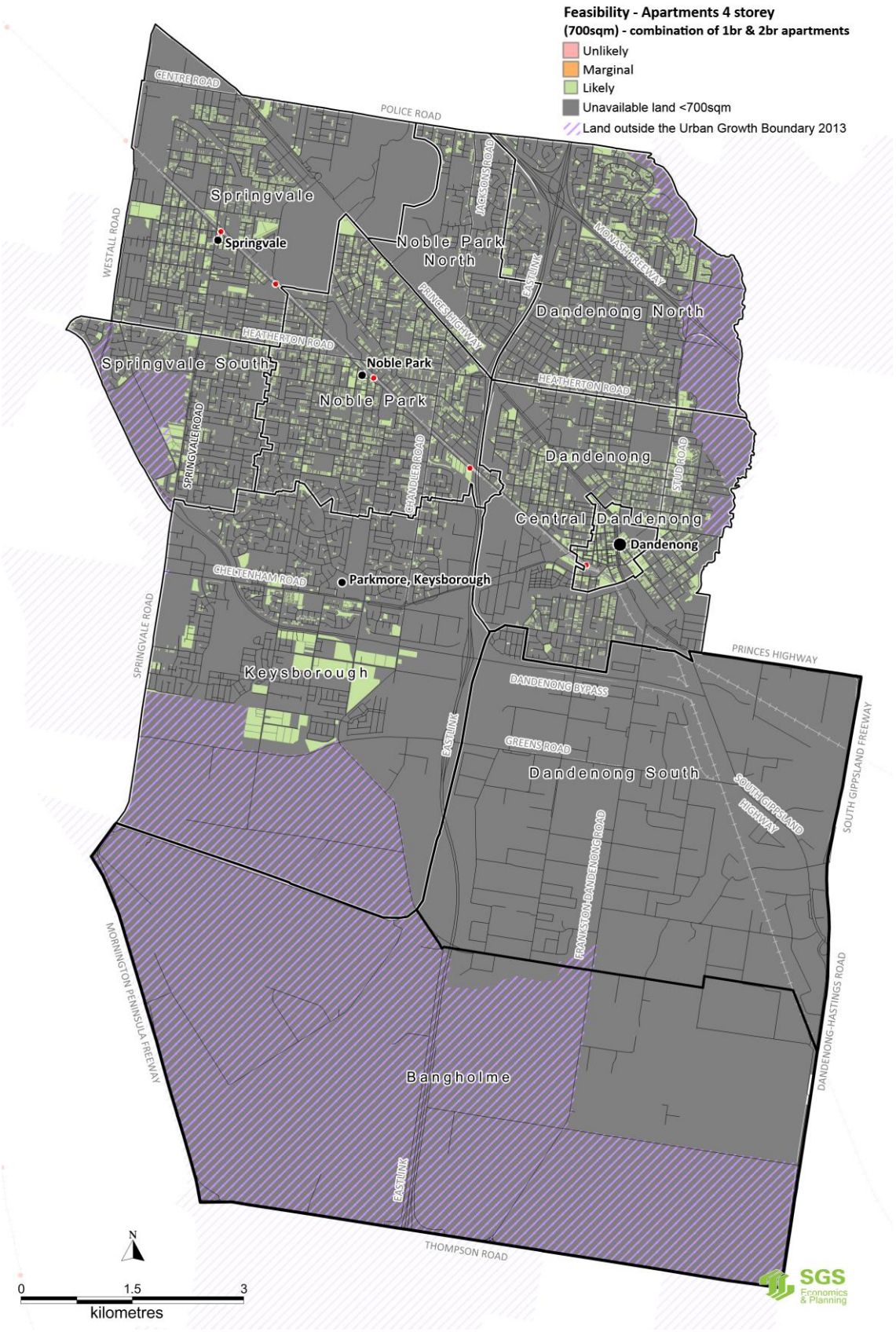


FIGURE 44. FOUR STOREY APARTMENT FEASIBILITY AND AVAILABLE LAND



Comparison to existing planning controls

This section will consider suitable lots of available land, feasible locations and the planning scheme. The objective is to identify and compare the number of four storey apartment developments that could feasibly be achieved to the number of these developments which would be permitted under current planning scheme controls.

The table below shows that:

- 18.4 per cent (6,427) of available lots are large enough to support this housing type
- 18. per cent (6,427) of available lots are large enough to support this housing type and are feasible
- 4.1 per cent (1,423) of available lots are large enough to support this housing and are supported by planning controls
- 4.1 per cent (1,423) of available lots are large enough, have supporting planning controls and are feasible in CGD.

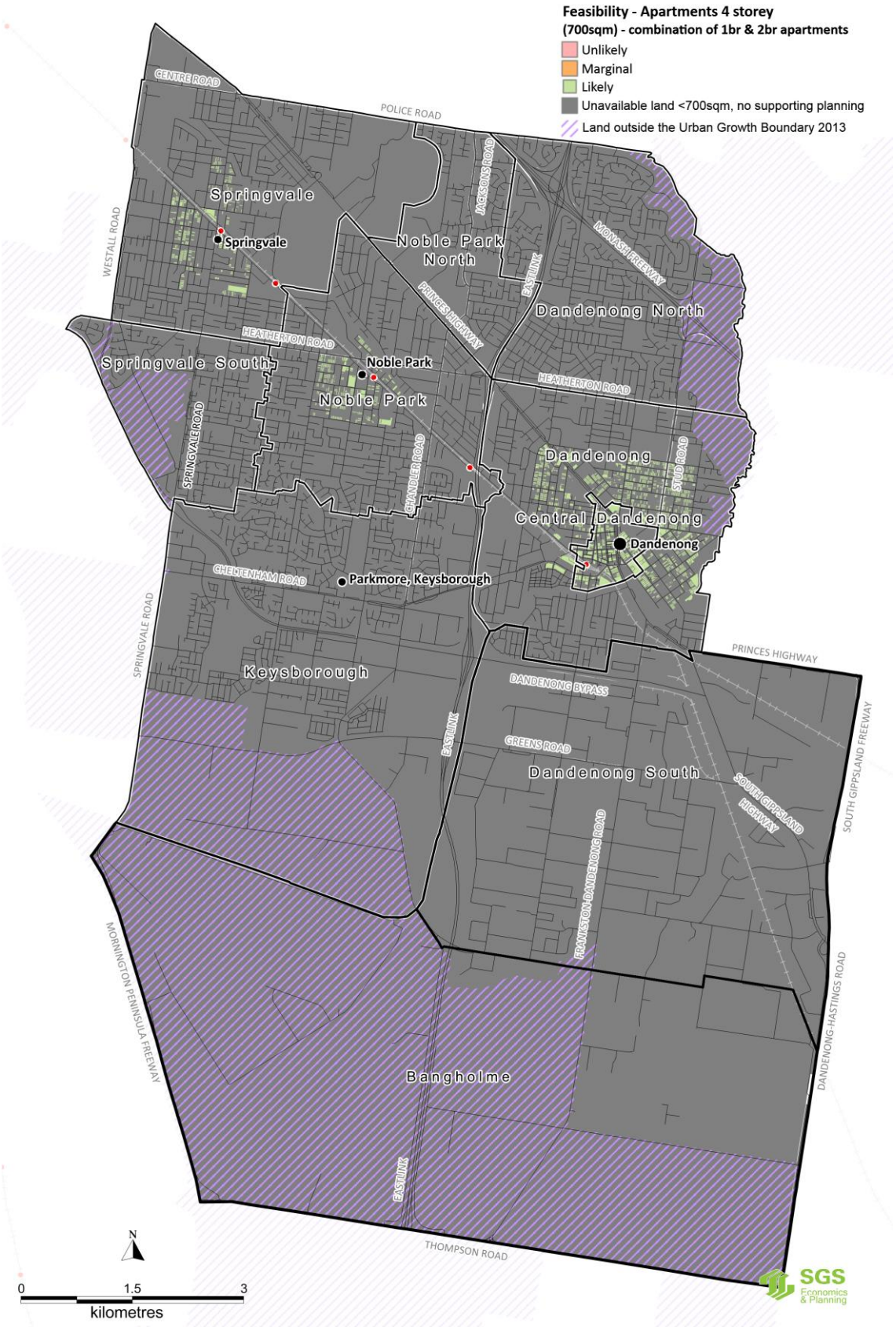
TABLE 34. FOUR STOREY APARTMENTS (700M^2) LOT AVAILABILITY, LOT SIZE AND PLANNING SUPPORT

	All land			Planning supported land		
	Available Lots	Available Lots >700m²	Feasible Available Lots >700m²	Available Lots	Available Lots >700m²	Feasible Available Lots >700m²
Dandenong	4,814	1,584	1,584	1,994	967	967
Dandenong North	7,151	1,204	1,204	0	0	0
Keysborough	5,131	336	336	0	0	0
Noble Park	6,914	1,539	1,539	574	224	224
Noble Park North	2,596	207	207	0	0	0
Springvale	5,127	1,219	1,219	764	243	243
Springvale South	3,130	338	338	0	0	0
Total	**34,863**	**6,427**	**6,427**	**3,311**	**1,423**	**1,423**

Source: SGS Economics and Planning

Four storey apartment blocks on 700sqm are feasible in all locations where they are allowed by planning controls. This suggests that barrier to delivery is planning; of the 6,447 lots large enough that are available, only 1,423 are supported by planning controls.

FIGURE 45. FOUR STOREY APARTMENT FEASIBILITY, AVAILABLE LAND AND PLANNING CONTROLS

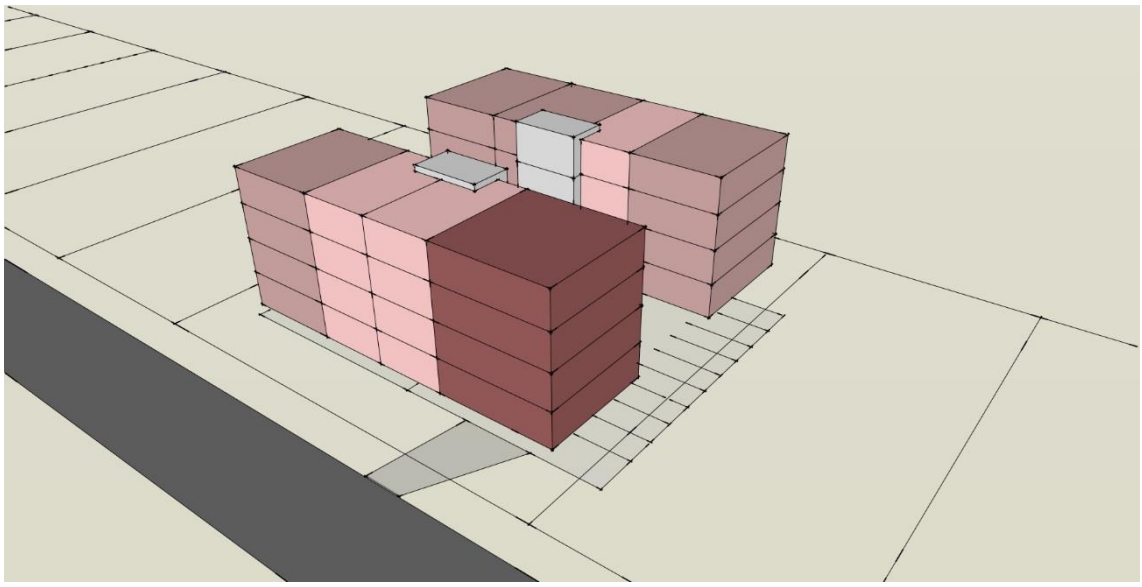


5.11 Apartments - four storey (large lot)

Description

Description:	The four storey apartment development on a large lot has been modelling as two separate buildings: one oriented towards the street and the other at the rear of the lot. This configuration allow the new dwellings to retain the 'conventional' relationship between dwelling fonts and backs (that is, the new dwellings are not oriented towards the side boundaries) and permits all apartments to be cross-ventilated. A single 'core' services each building. The mix of dwellings (one, two, and three beds) is indicated by the different colours in the visualisation. Various configurations and dwelling mix are possible. Modelling based on 32 apartments: four three-bed, 16 two-bed and 12 one-bed. Dwelling mix will vary. Assumptions used for this housing type include a net dwelling area of 2,288sqm, a total building area of 2,746sqm and balcony area of 256sqm.
Lot characteristics:	Council have advised 1,500sqm as the minimum for this type of development. The lot below is modelled on a site that is 36 x 42 metres (two lots of 18 x 42). 36 car parking spaces have been provided.
Why include?	Test feasibility of four storey apartment development on a larger lot.

FIGURE 46. FOUR STOREY (LARGE LOT) APARTMENT VISUALISATION



The following table outlines the approximate sales values that are associated with one, two and three bedroom apartments across CGD.

TABLE 35. FOUR STOREY (LARGE LOT) APARTMENT SALES VALUES

Suburb	Apartment 1br		Apartment 2br		Apartment 3br		Total revenue for type
	Size	Sales value	Size	Sales value	Size	Sales value	
Dandenong	50	$283,700	74	$360,000	96	$366,735	$10,631,338
Springvale	50	$302,500	71	$410,000	110	$567,021	$12,458,085
Keysborough	62	$318,552	92	$397,000	120	$417,633	$11,845,157
Noble Park	55	$305,000	79	$328,500	103	$342,184	$10,284,734
Springvale South	51	$288,095	79	$390,476	103	$540,020	$11,864,842

Feasibility results

The following table highlights the feasibility of this housing type by suburb. This shows that after the cost of land is taken into account, development of this housing type is feasible in all suburbs except for Noble Park, where it is marginally feasible. This is a reflection of relatively low sales prices and higher land values. Again, development is considered most feasible in Keysborough (due to lower building costs and land values and relatively high sales prices).

TABLE 36. FOUR STOREY (LARGE LOT) APARTMENT FEASIBILITY ANALYSIS RESULTS BY SUBURB

Apartment (1,500sqm) – combination 1br, 2br, 3br	Total Costs	Total Revenue	Residual Land Value	Land Value	Ratio
Dandenong	$9,162,916	$10,631,339	$1,468,422	$906,216	1.62
Dandenong North	$9,162,916	$10,631,339	$1,468,422	$675,612	2.17
Central Dandenong	$9,543,306	$10,631,339	$1,088,033	$906,216	1.20
Keysborough	$9,260,596	$11,845,157	$2,584,561	$761,573	3.39
Springvale	$9,235,986	$12,458,085	$3,222,099	$1,179,782	2.73
Springvale South	$9,212,257	$11,864,843	$2,652,586	$1,204,966	2.20
Noble Park	$9,149,052	$10,284,735	$1,135,682	$1,140,798	1.00
Noble Park North	$9,149,052	$10,284,735	$1,135,682	$1,031,510	1.10

FIGURE 47. FOUR STOREY (LARGE LOT) APARTMENT FEASIBILITY ANALYSIS RESULTS

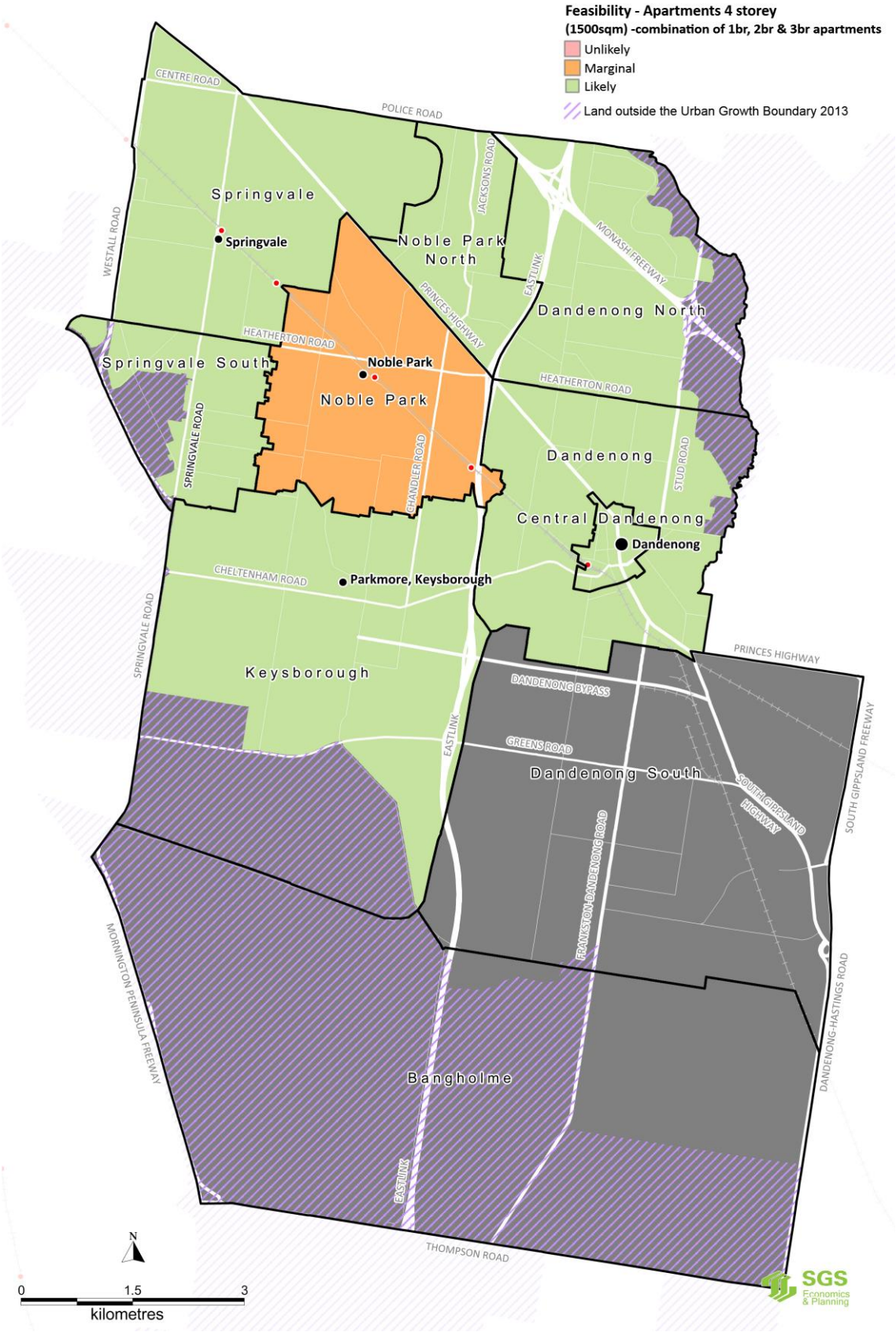
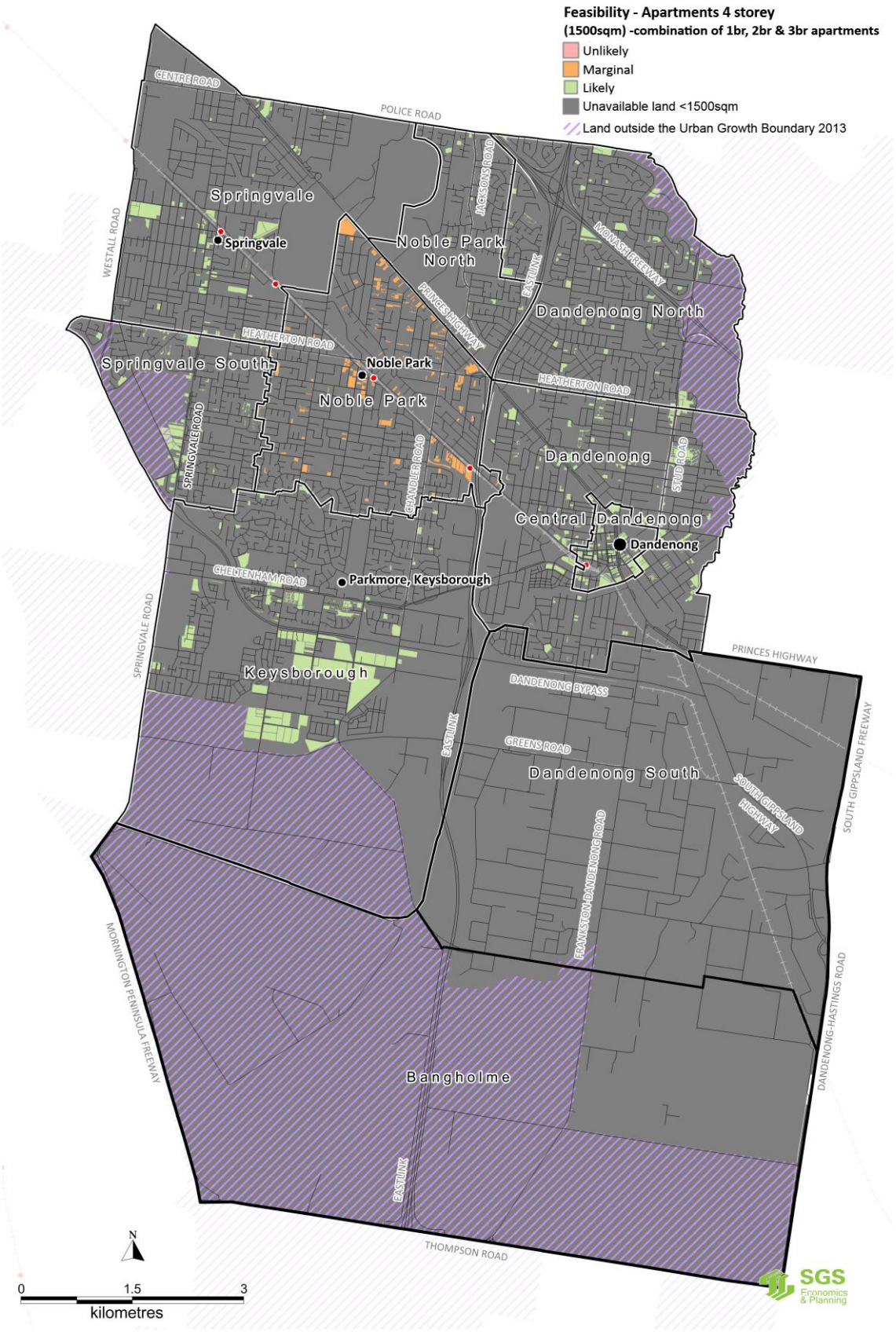


FIGURE 48. FOUR STOREY (LARGE LOT) APARTMENT FEASIBILITY AND AVAILABLE LAND



Comparison to existing planning controls

This section will consider suitable lots of available land, feasible locations and the planning scheme. The objective is to identify and compare the number of four storey apartment developments that could feasibly be achieved to the number of these developments which would be permitted under current planning scheme controls.

The table below shows that:

- 1.7 per cent (590) of available lots are large enough to support this housing type
- 1.7 per cent (590) of available lots are large enough to support this housing type and are feasible
- 0.4 per cent (152) of available lots are large enough to support this housing and are supported by planning controls
- 0.4 per cent (152) of available lots are large enough, have supporting planning controls and are feasible in CGD.

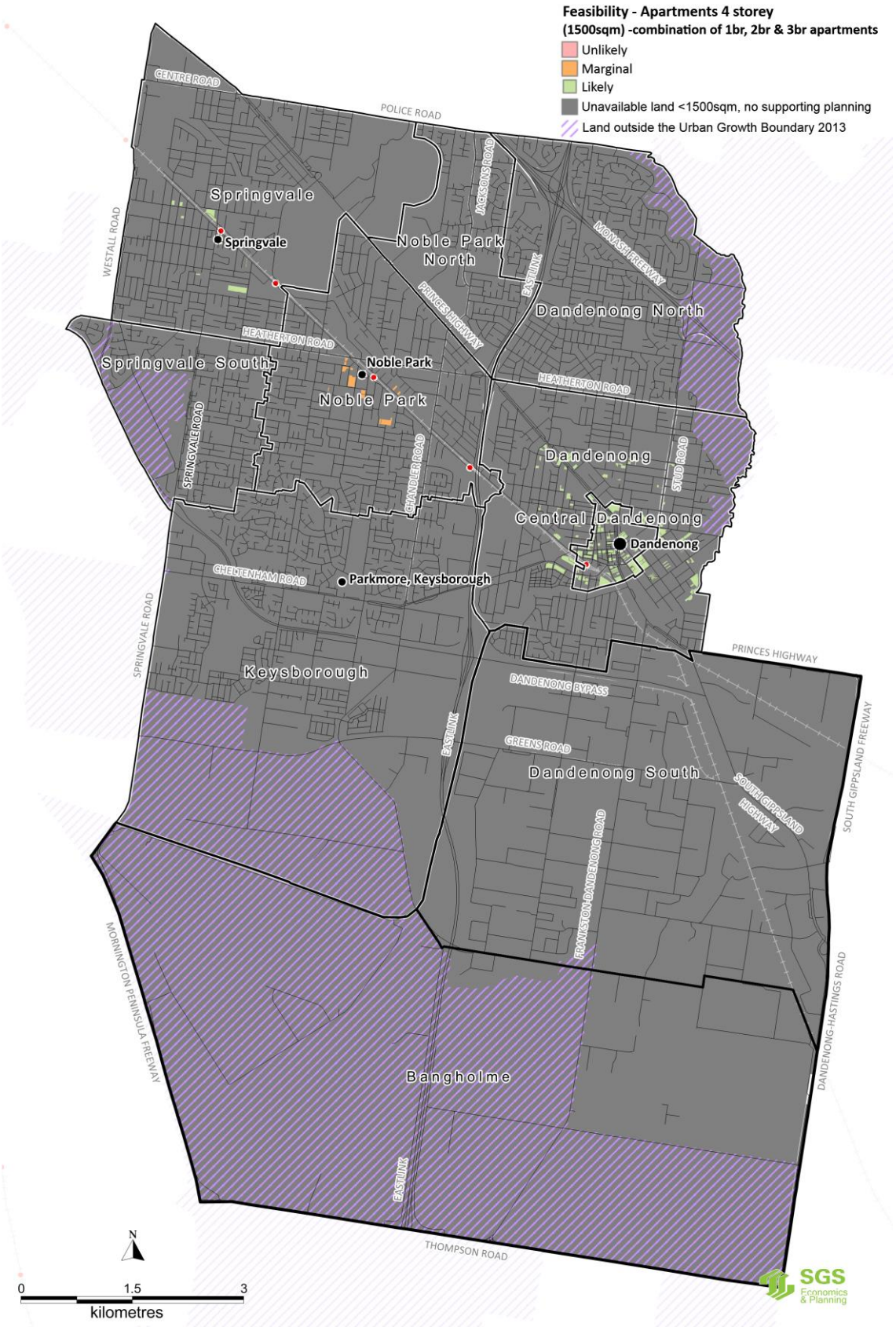
TABLE 37. FOUR STOREY APARTMENTS (1500M²) LOT AVAILABILITY, LOT SIZE AND PLANNING SUPPORT

	All land			Planning supported land		
	Available Lots	Available Lots >1,500m²	Feasible Available Lots >1,500m²	Available Lots	Available Lots >1,500m²	Feasible Available Lots >1,500m²
Dandenong	4,814	178	178	1,994	122	122
Dandenong North	7,151	59	59	0	0	0
Keysborough	5,131	86	86	0	0	0
Noble Park	6,914	134	134	574	12	12
Noble Park North	2,596	14	14	0	0	0
Springvale	5,127	60	60	764	11	11
Springvale South	3,130	59	59	0	0	0
Total	**34,863**	**590**	**590**	**3,311**	**152**	**152**

Source: SGS Economics and Planning

Four storey apartment blocks on 1,500sqm are feasible in all locations where they are allowed by planning controls. However, there are just 152 lots in CGD. This suggests that increasing this housing type could be achieved by amending planning controls.

FIGURE 49. FOUR STOREY (LARGE LOT) APARTMENT FEASIBILITY, AVAILABLE LAND AND PLANNING CONTROLS

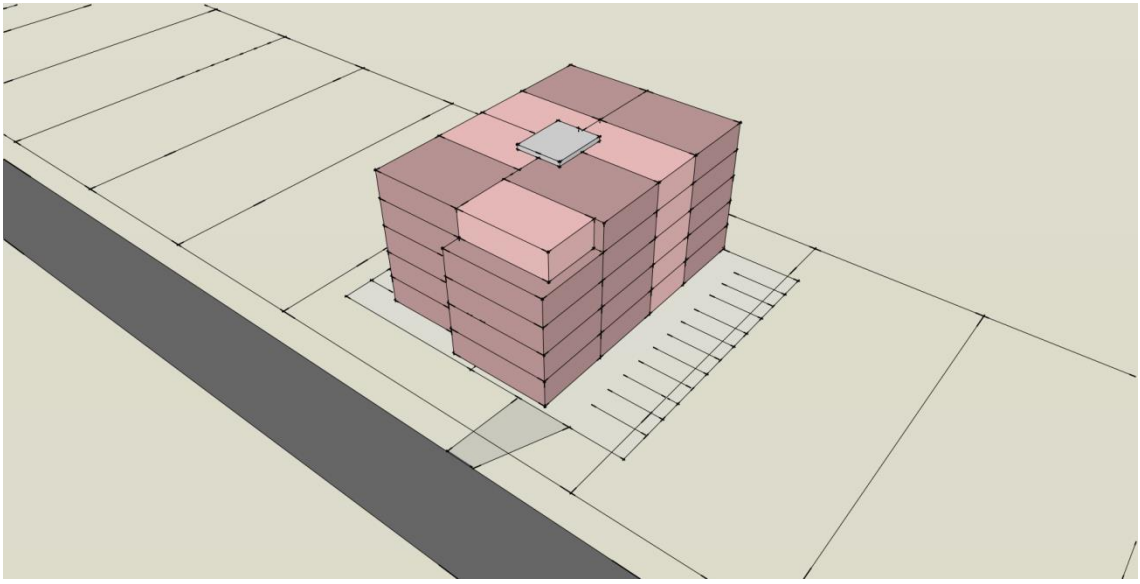


5.12 Apartments - five storey (1br & 2br)

Description

Description:	The five storey apartment has been modelled as a single building which allow increased setback when compared to the three and four storey examples. The building has a single core. Dwelling mix will vary. This option yields 40 dwellings. Assumptions used for this housing type include a net dwelling area of 2,712sqm, a total building area of 3,254sqm and balcony area of 320sqm**.**
Lot characteristics:	Council have advised 1,500sqm as the minimum for this type of development. The lot below is modelled on a site that is 36 x 42 metres (two lots of 18 x 42). 40 car parking spaces have been provided. The size of the basement takes up a large proportion of the lot to accommodate this amount of parking.
Why include?	Test feasibility of five storey apartment development on a larger lot, with smaller dwellings.

FIGURE 50. FIVE STOREY APARTMENT VISUALISATION



The following table outlines the approximate sales values that are associated with one and two bedroom apartments across CGD.

TABLE 38. FIVE STOREY APARTMENT SALES VALUES

	Apartment 1br		Apartment 2br		Total revenue for type
Suburb	**Size**	**Sales value**	**Size**	**Sales value**	
Dandenong	50	$283,700	74	$360,000	$13,179,200
Springvale	50	$302,500	71	$410,000	$14,680,000
Keysborough	62	$318,552	92	$397,000	$14,624,836
Noble Park	55	$305,000	79	$328,500	$12,764,000
Springvale South	51	$288,095	79	$390,476	$13,980,952

Feasibility results

The following table highlights the feasibility of this housing type by suburb. This shows that after the cost of land is taken into account, development of this housing type is considered feasible across all suburbs within CGD. Development is most feasible in Keysborough (high sales prices and lower land values). Building costs are highest in Central Dandenong and lowest in Noble Park and Noble Park North while land values are highest in Springvale South.

TABLE 39. FIVE STOREY APARTMENT FEASIBILITY ANALYSIS RESULTS BY SUBURB

Apartment (1,500sqm) – combination 1br and 2br	Total Costs	Total Revenue	Residual Land Value	Land Value	Ratio
Dandenong	$10,815,256	$13,179,200	$2,363,944	$906,216	2.61
Dandenong North	$10,815,256	$13,179,200	$2,363,944	$675,612	3.50
Central Dandenong	$11,263,143	$13,179,200	$1,916,057	$906,216	2.11
Keysborough	$10,925,309	$14,624,836	$3,699,527	$761,573	4.86
Springvale	$10,875,288	$14,680,000	$3,804,712	$1,179,782	3.22
Springvale South	$10,847,326	$13,980,952	$3,133,626	$1,204,966	2.60
Noble Park	$10,798,648	$12,764,000	$1,965,352	$1,140,798	1.72
Noble Park North	$10,798,648	$12,764,000	$1,965,352	$1,031,510	1.91

FIGURE 51. FIVE STOREY APARTMENT FEASIBILITY ANALYSIS RESULTS

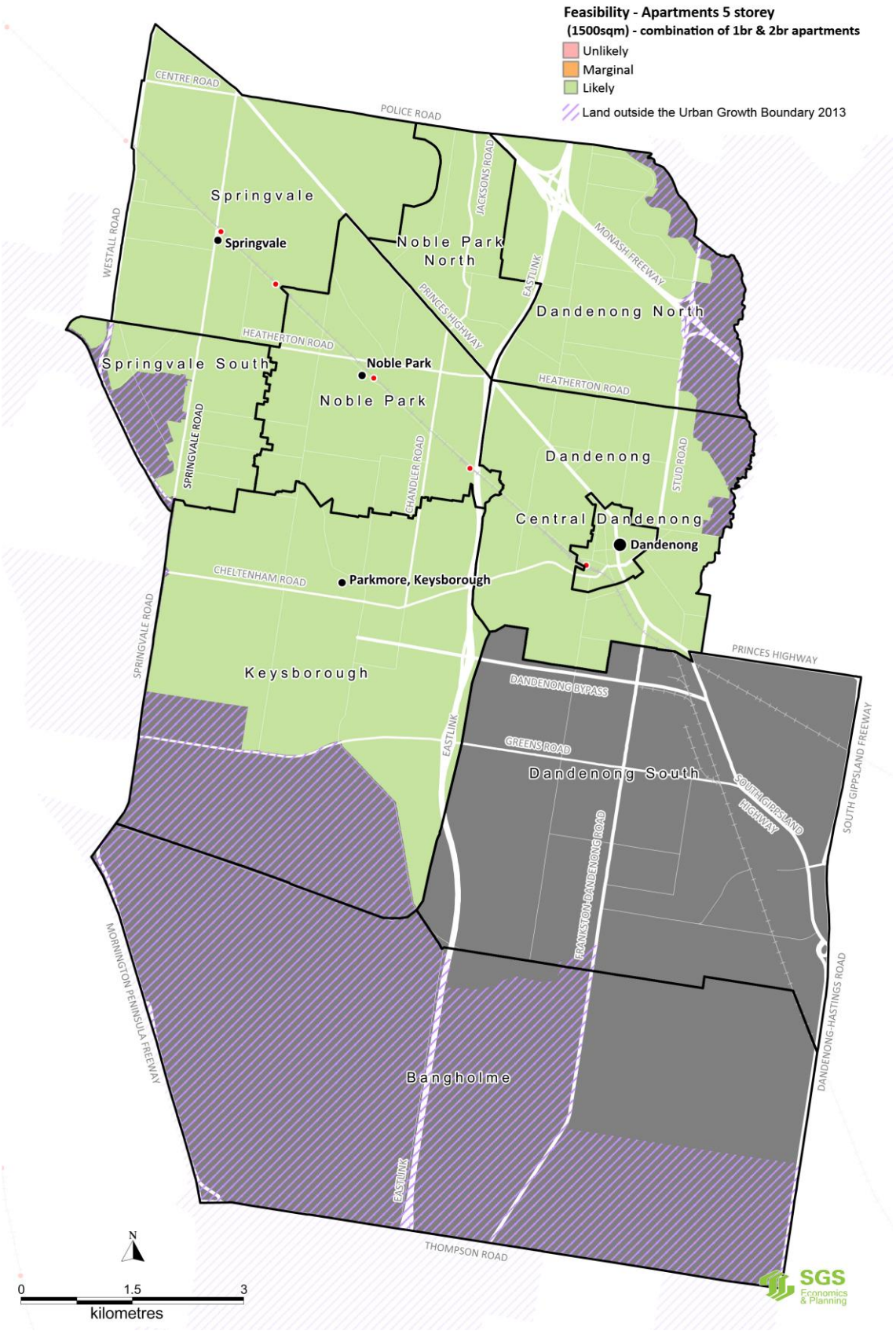
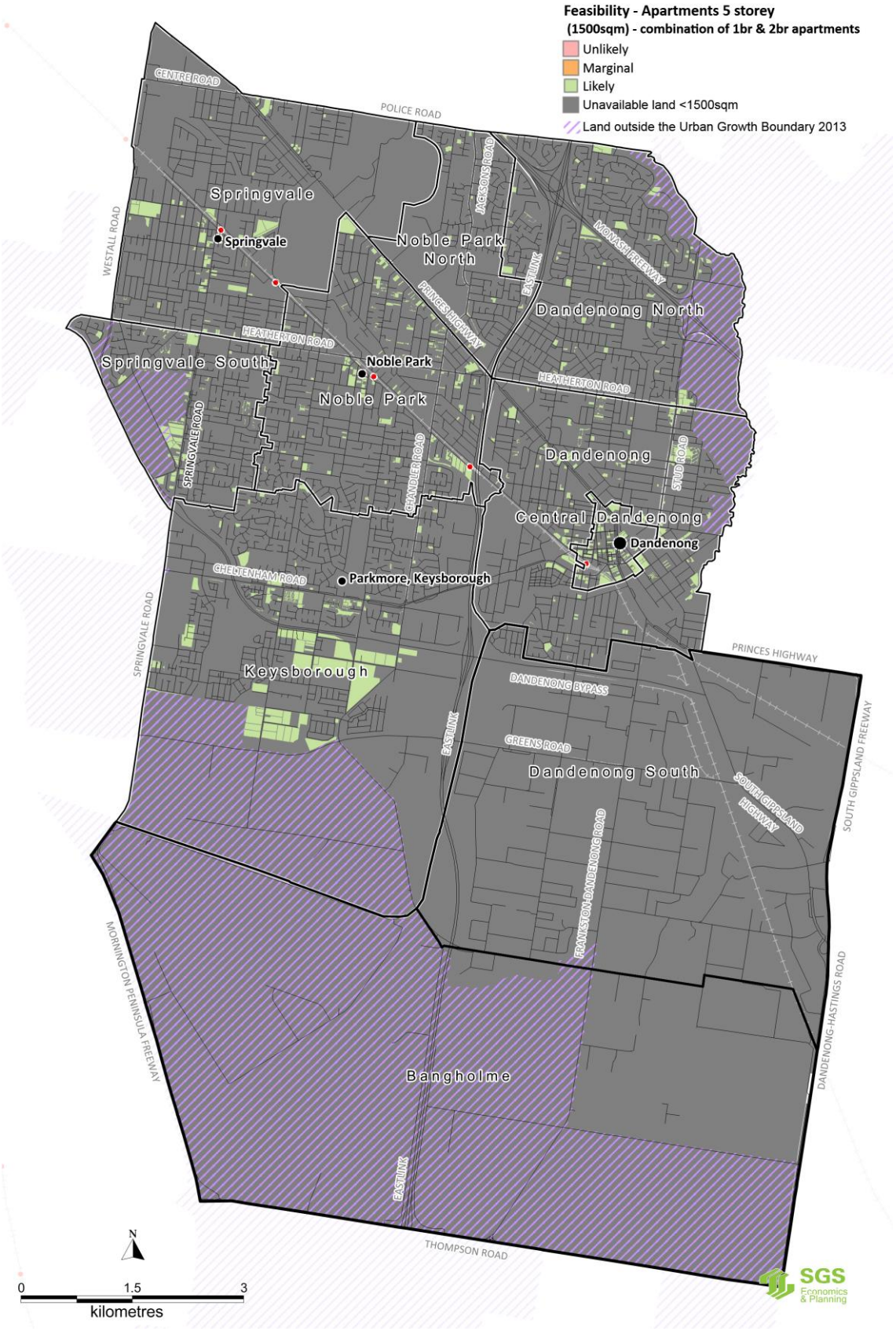


FIGURE 52. FIVE STOREY APARTMENT FEASIBILITY AND AVAILABLE LAND



Comparison to existing planning controls

This section will consider suitable lots of available land, feasible locations and the planning scheme. The objective is to identify and compare the number of five storey apartment developments that could feasibly be achieved to the number of these developments which would be permitted under current planning scheme controls.

The table below shows that:

- 1.7 per cent (590) of available lots are large enough to support this housing type
- 1.7 per cent (590) of available lots are large enough to support this housing type and are feasible
- 0.2 per cent (68) of available lots are large enough to support this housing and are supported by planning controls
- 0.2 per cent (68) of available lots of available lots are large enough, have supporting planning controls and are feasible in CGD.

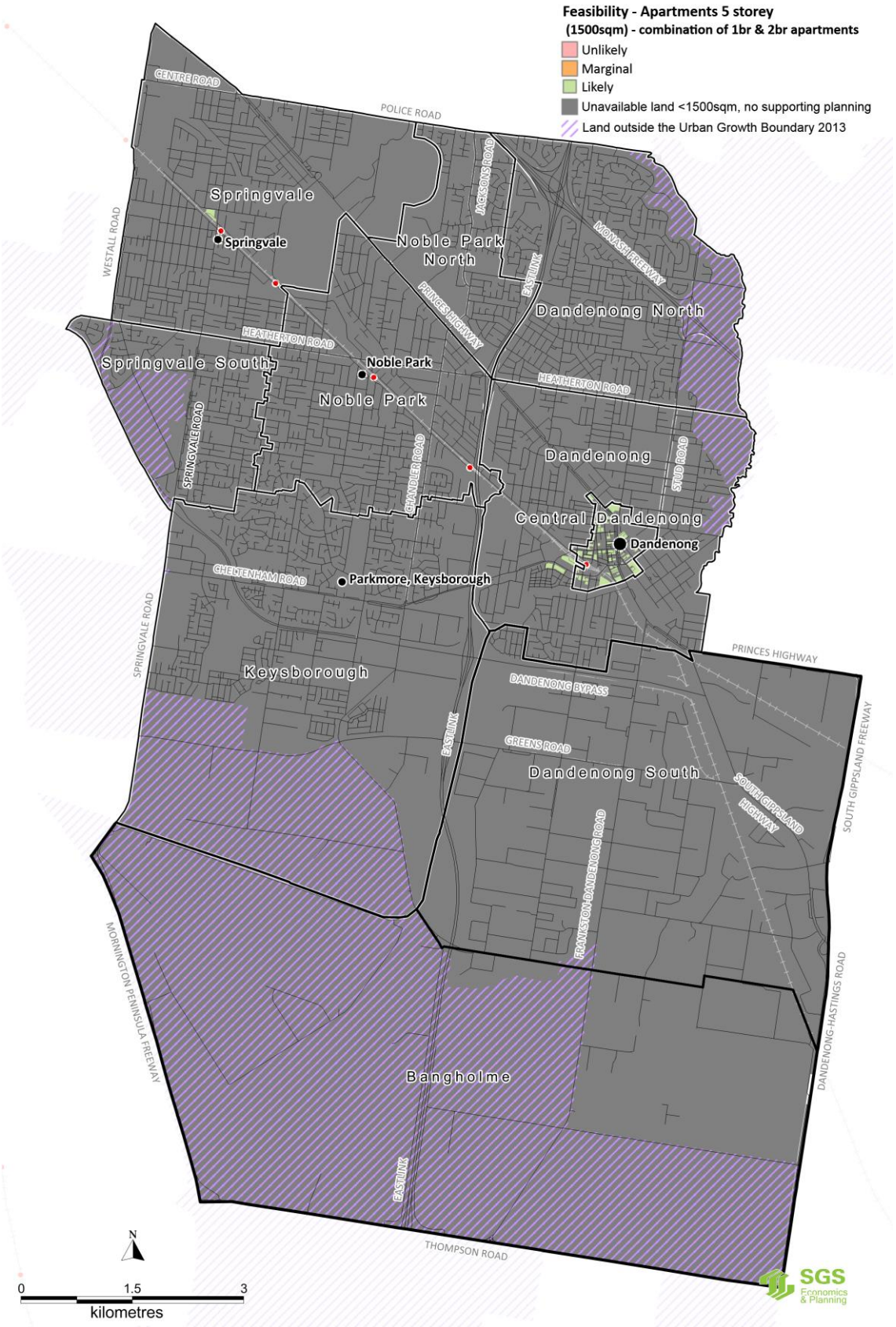
TABLE 40. FIVE STOREY APARTMENTS, 1 & 2 BED, (1500M²) LOT AVAILABILITY, LOT SIZE AND PLANNING SUPPORT

	All land			Planning supported land		
	Available Lots	Available Lots >700m²	Feasible Available Lots >700m²	Available Lots	Available Lots >700m²	Feasible Available Lots >700m²
Dandenong	4,814	178	178	315	60	60
Dandenong North	7,151	59	59	0	0	0
Keysborough	5,131	86	86	0	0	0
Noble Park	6,914	134	134	0	0	0
Noble Park North	2,596	14	14	0	0	0
Springvale	5,127	60	60	0	5	5
Springvale South	3,130	59	59	0	0	0
Total	**34,863**	**590**	**590**	**315**	**68**	**68**

Source: SGS Economics and Planning

68 lots in the municipality are larger than 1,500sqm and allow five storey apartments to be constructed. In these locations, feasibility is achieved. However, feasibility is achieved on all land (618 lots) which are large enough. This suggests that this housing type could be encouraged through amending planning controls.

FIGURE 53. FIVE STOREY APARTMENT FEASIBILITY, AVAILABLE LAND AND PLANNING CONTROLS

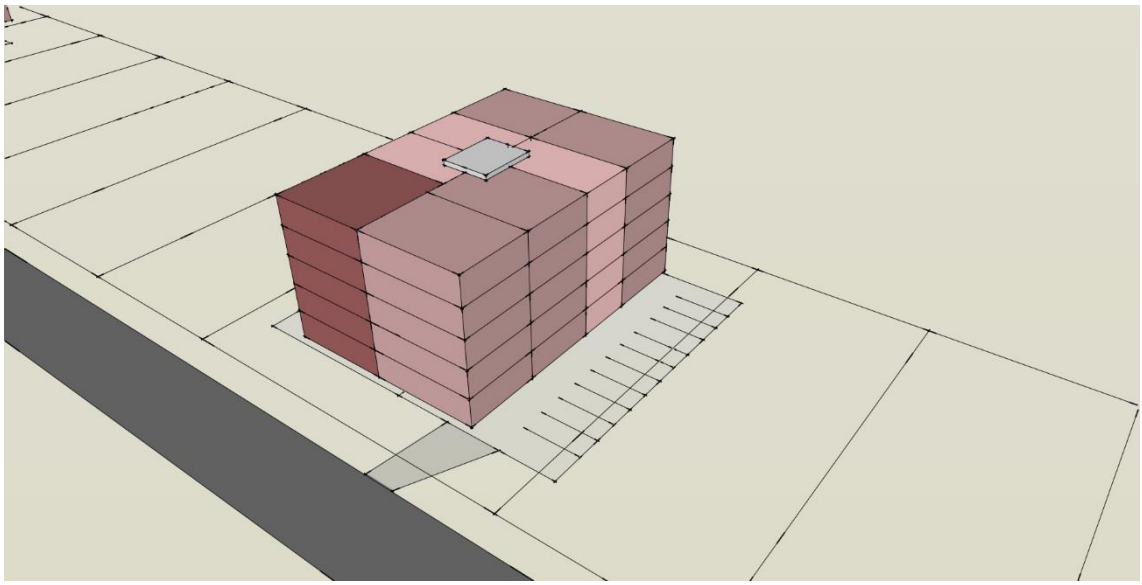


5.13 Apartments - five storey (1br, 2br & 3br)

Description

Description:	The five storey apartment has been modelled as a single building which allow increased setback when compared to the three and four storey examples. The building has a single core. Dwelling mix will vary. This option yields 40 dwellings. Assumptions used for this housing type include a net dwelling area of 2,860sqm, a total building area of 3,423sqm and balcony area of 320sqm.
Lot characteristics:	Council have advised 1,500sqm as the minimum for this type of development. The lot below is modelled on a site that is 36 x 42 metres (two lots of 18 x 42). 45 car parking spaces have been provided. The size of the basement takes up a large proportion of the lot to accommodate this amount of parking.
Why include?	Test feasibility of five storey apartment development on a larger lot.

FIGURE 54. FIVE STOREY APARTMENT VISUALISATION



The following table outlines the approximate sales values that are associated with one, two and three bedroom apartments across CGD.

TABLE 41. FIVE STOREY (LARGE LOT) APARTMENT SALES VALUES

Suburb	Apartment 1br		Apartment 2br		Apartment 3br		Total revenue for type
	Size	Sales value	Size	Sales value	Size	Sales value	
Dandenong	50	$283,700	74	$360,000	96	$366,735	$13,289,173
Springvale	50	$302,500	71	$410,000	110	$567,021	$15,572,606
Keysborough	62	$318,552	92	$397,000	120	$417,633	$14,806,446
Noble Park	55	$305,000	79	$328,500	103	$342,184	$12,855,918
Springvale South	51	$288,095	79	$390,476	103	$540,020	$14,831,053

Feasibility results

The following table highlights the feasibility of this housing type by suburb. This shows that after the cost of land is taken into account, development of this housing type is feasible across all suburbs within CGD. Development is again most feasible in Keysborough (low land value and relatively high revenues). Total revenue is highest in Springvale. Total building costs are greatest in Central Dandenong (notably, close to $500,000 higher than in Dandenong and Dandenong North as a result of the Infrastructure Recovery Charge) while land values are lowest in Dandenong North.

TABLE 42. FIVE STOREY (LARGE LOT) APARTMENT FEASIBILITY ANALYSIS RESULTS BY SUBURB

Apartment (1,500sqm) – combination 1br, 2br, 3br	Total Costs	Total Revenue	Residual Land Value	Land Value	Ratio
Dandenong	$11,368,373	$13,289,173	$1,920,801	$906,216	2.12
Dandenong North	$11,368,373	$13,289,173	$1,920,801	$675,612	2.84
Central Dandenong	$11,840,147	$13,289,173	$1,449,026	$906,216	1.60
Keysborough	$11,481,291	$14,806,447	$3,325,156	$761,573	4.37
Springvale	$11,459,710	$15,572,606	$4,112,896	$1,179,782	3.49
Springvale South	$11,430,048	$14,831,054	$3,401,006	$1,204,966	2.82
Noble Park	$11,351,042	$12,855,918	$1,504,876	$1,140,798	1.32
Noble Park North	$11,351,042	$12,855,918	$1,504,876	$1,031,510	1.46

FIGURE 55. FIVE STOREY (LARGE LOT) APARTMENT FEASIBILITY ANALYSIS RESULTS

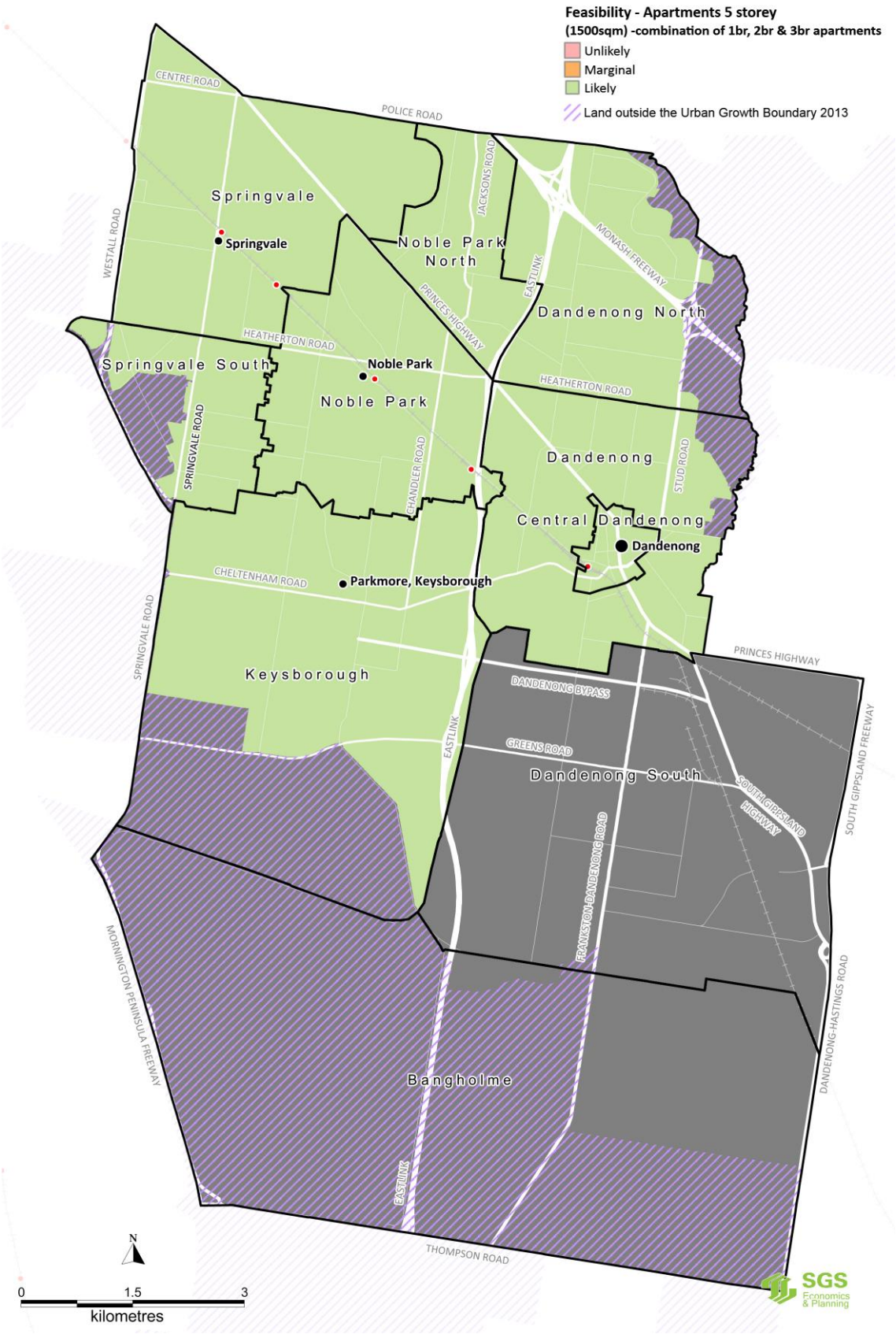
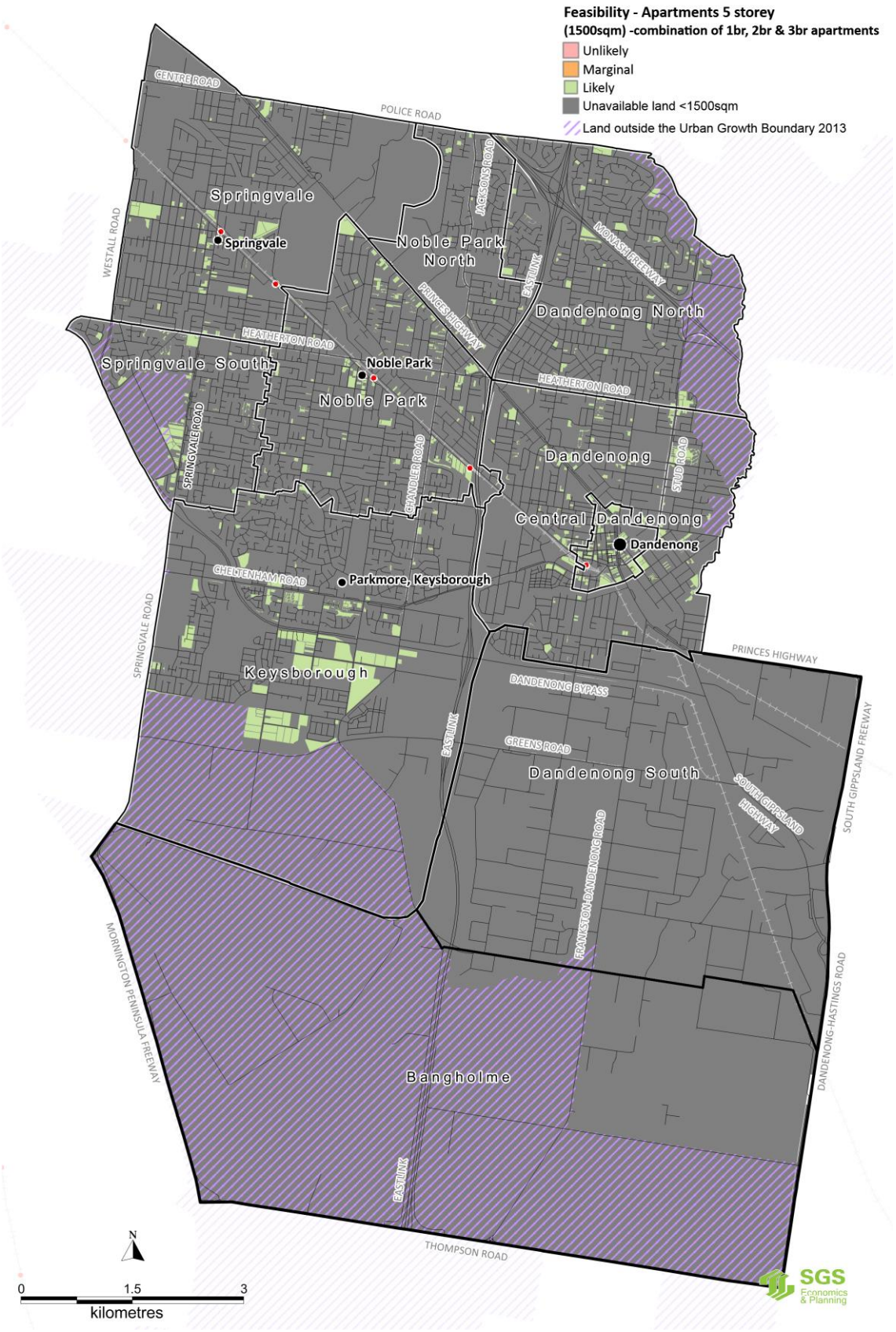


FIGURE 56. FIVE STOREY (LARGE LOT) APARTMENT FEASIBILITY AND AVAILABLE LAND



Comparison to existing planning controls

This section will consider suitable lots of available land, feasible locations and the planning scheme. The objective is to identify and compare the number of five storey apartment developments that could feasibly be achieved to the number of these developments which would be permitted under current planning scheme controls.

The table below shows that:

- 1.7 per cent (590) of available lots are large enough to support this housing type
- 1.7 per cent (590) of available lots are large enough to support this housing type and are feasible
- 0.2 per cent (68) of available lots are large enough to support this housing and are supported by planning controls
- 0.2 per cent (68) of available lots of available lots are large enough, have supporting planning controls and are feasible in CGD.

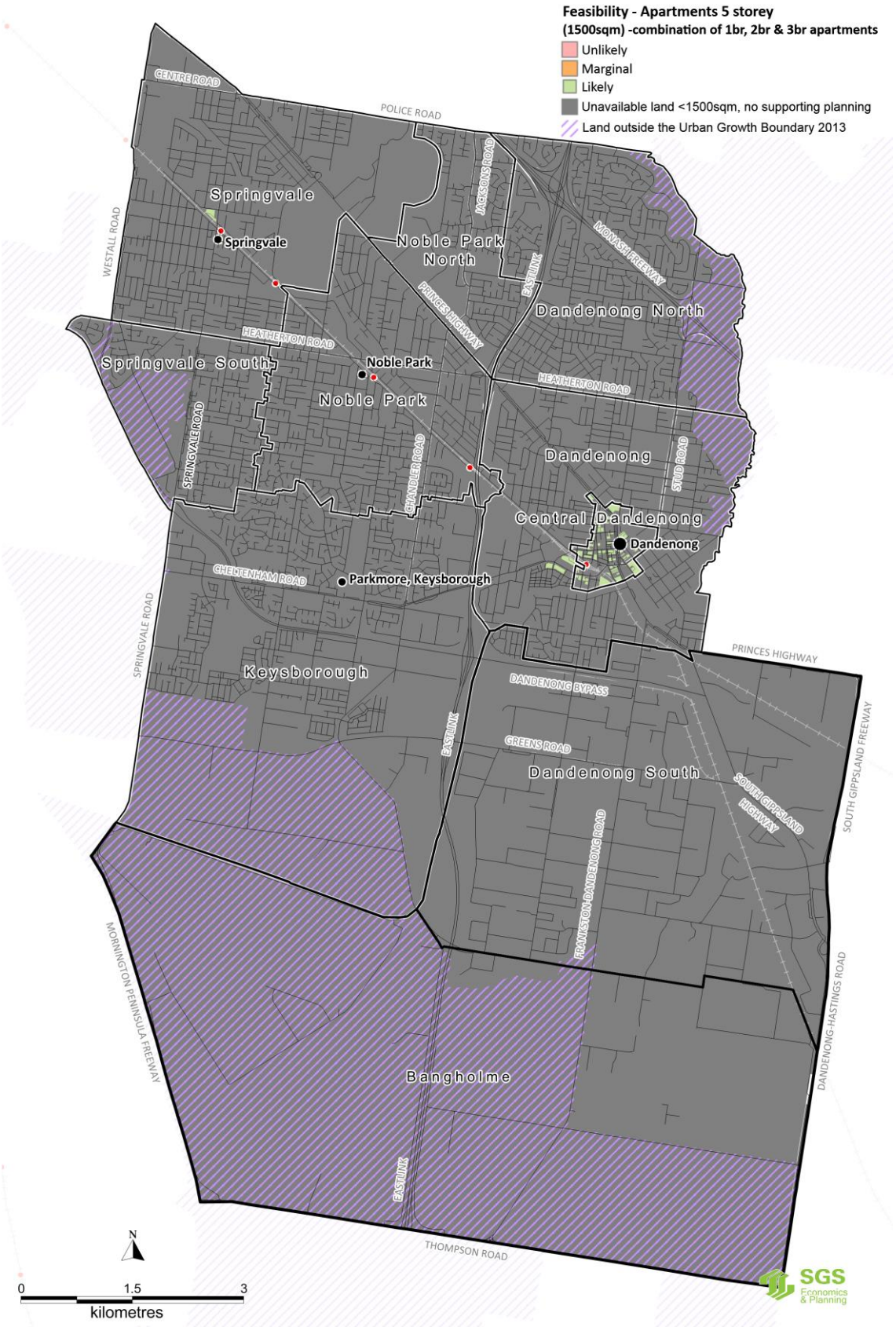
TABLE 43. FIVE STOREY APARTMENTS, 1, 2 & 3 BED, (1500M²) LOT AVAILABILITY, LOT SIZE AND PLANNING SUPPORT

	All land			Planning supported land		
	Available Lots	Available Lots >1,500m²	Feasible Available Lots >1,500m²	Available Lots	Available Lots >1,500m²	Feasible Available Lots >1,500m²
Dandenong	4,814	178	178	305	60	60
Dandenong North	7,151	59	59	0	0	0
Keysborough	5,131	86	86	0	0	0
Noble Park	6,914	134	134	0	0	0
Noble Park North	2,596	14	14	0	0	0
Springvale	5,127	60	60	35	5	5
Springvale South	3,130	59	59	0	0	0
Total	**34,863**	**590**	**590**	**315**	**68**	**68**

Source: SGS Economics and Planning

Results for this housing type (five storey apartments with a mix of one, two and three bedrooms) are the same as for five storey apartments with a mix of one and two bedrooms; this suggests that at this level, the mix of bedroom sizes is immaterial to feasibility.

FIGURE 57. FIVE STOREY (LARGE LOT) APARTMENT FEASIBILITY, AVAILABLE LAND AND PLANNING CONTROLS

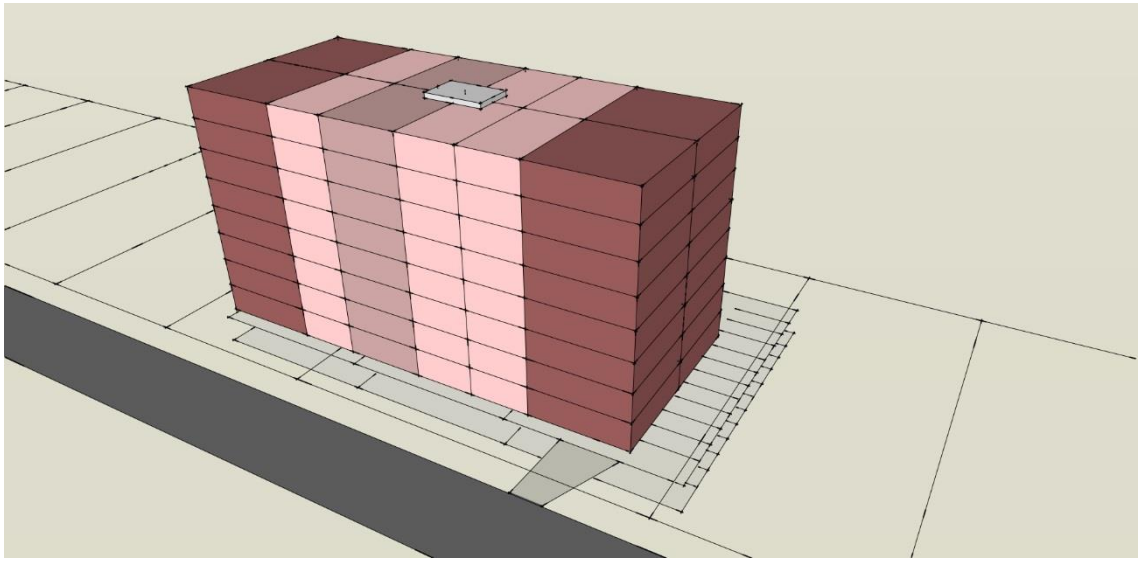


5.14 Apartments - eight storey (1br, 2br & 3br)

Description

Description:	The eight storey apartment has been modelled as a single building which allow increased setback when compared to the five storey and below examples. The building has a single core. Dwelling mix will vary. This option yields 96 dwellings. Assumptions used for this housing type include a net dwelling area of 7,008sqm, a total building area of 8,410sqm and balcony area of 768sqm.
Lot characteristics:	Council have advised 2,000sqm as the minimum for this type of development. The lot below is modelled on a site that is 54 x 42 metres (three lots of 18 x 42). 128 car parking spaces have been provided. This means two levels of basement car parking are required size of the basement takes up a large proportion of the lot to accommodate this amount of parking.
Why include?	Test feasibility of eight storey apartment development on a larger lot.

FIGURE 58. EIGHT STOREY APARTMENT VISUALISATION



The following table outlines the approximate sales values that are associated with one, two and three bedroom apartments across CGD.

TABLE 44. EIGHT STOREY APARTMENT SALES VALUES

	Apartment 1br		Apartment 2br		Apartment 3br		Total revenue for type
Suburb	**Size**	**Sales value**	**Size**	**Sales value**	**Size**	**Sales value**	
Dandenong	50	$283,700	74	$360,000	96	$366,735	$31,113,110
Springvale	50	$302,500	71	$410,000	110	$567,021	$39,224,681
Keysborough	62	$318,552	92	$397,000	120	$417,633	$35,006,752
Noble Park	55	$305,000	79	$328,500	103	$342,184	$30,845,878
Springvale South	51	$288,095	79	$390,476	103	$540,020	$37,356,839

Feasibility results

The following table highlights the feasibility of this housing type by suburb. This shows that after the cost of land is taken into account, development of this housing type is very feasible across all suburbs within CGD. Feasibility is highest in Keysborough and Springvale where revenue is higher.

TABLE 45. EIGHT STOREY APARTMENT FEASIBILITY ANALYSIS RESULTS BY SUBURB

Apartment (1,500sqm) – combination 1br, 2br, 3br	Total Costs	Total Revenue	Residual Land Value	Land Value	Ratio
Dandenong	$27,452,499	$31,113,110	$3,660,611	$1,205,895	3.04
Dandenong North	$27,452,499	$31,113,110	$3,660,611	$898,422	4.07
Central Dandenong	$28,593,449	$31,113,110	$3,660,611	$1,205,895	3.04
Keysborough	$27,608,244	$35,006,752	$7,398,508	$1,013,037	7.30
Springvale	$27,776,962	$39,224,681	$11,447,719	$1,570,650	7.29
Springvale South	$27,702,248	$37,356,839	$9,654,591	$1,604,229	6.02
Noble Park	$27,441,809	$30,845,878	$3,404,068	$1,518,670	2.24
Noble Park North	$27,441,809	$30,845,878	$3,404,068	$1,372,953	2.48

FIGURE 59. EIGHT STOREY APARTMENT FEASIBILITY ANALYSIS RESULTS

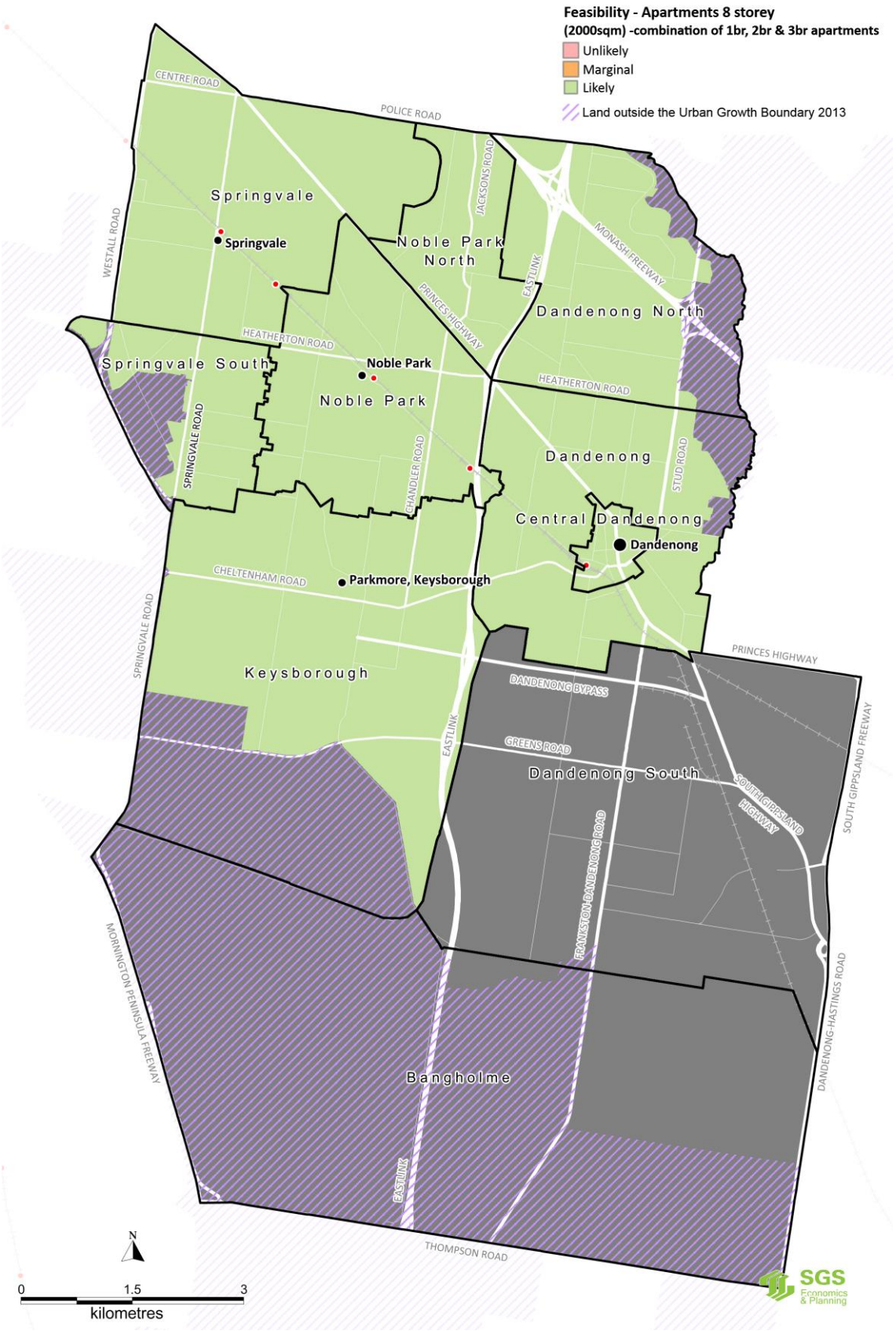
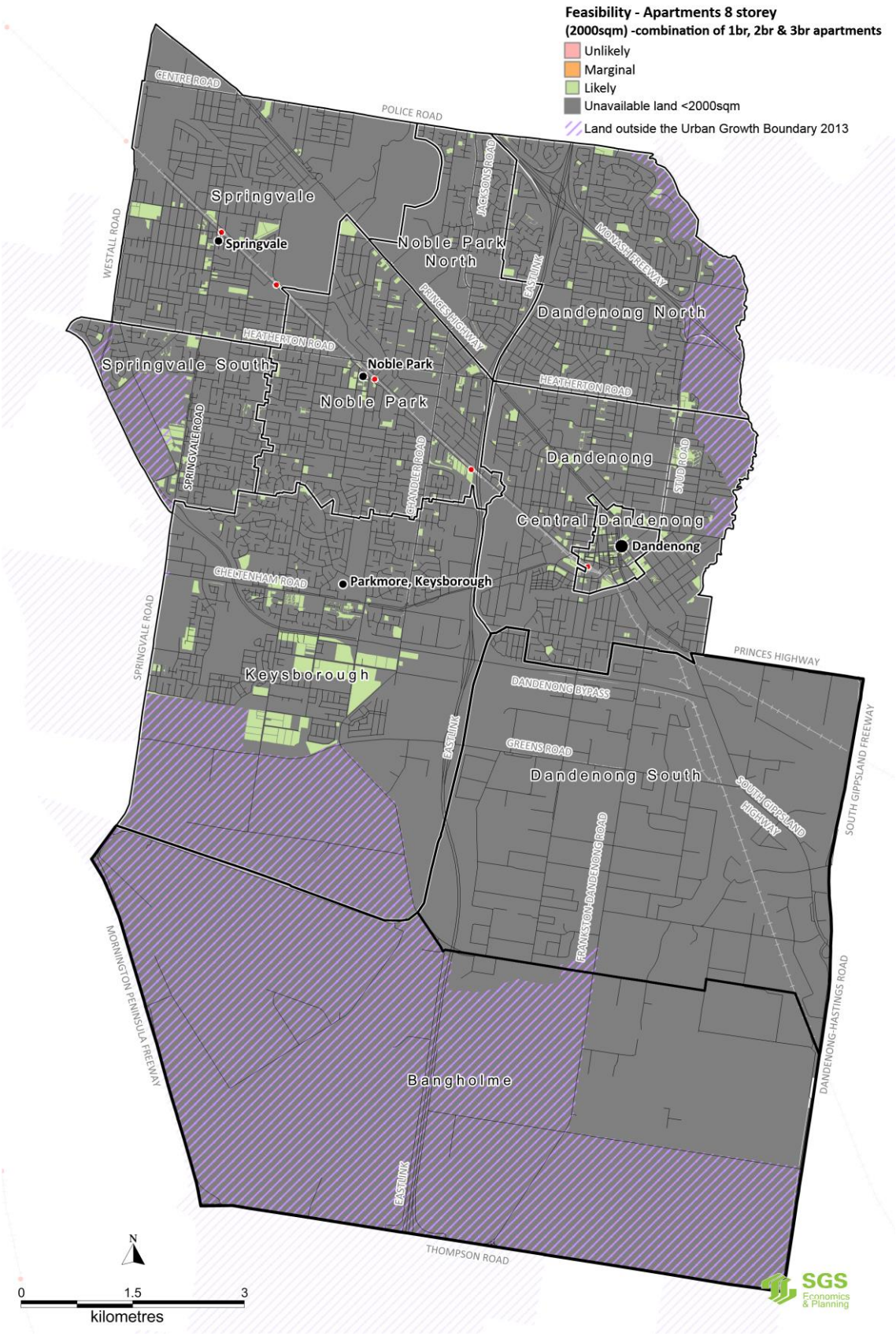


FIGURE 60. EIGHT STOREY APARTMENT FEASIBILITY AND AVAILABLE LAND



Comparison to existing planning controls

This section will consider suitable lots of available land, feasible locations and the planning scheme. The objective is to identify and compare the number of eight storey apartment developments that could feasibly be achieved to the number of these developments which would be permitted under current planning scheme controls.

The table below shows that:

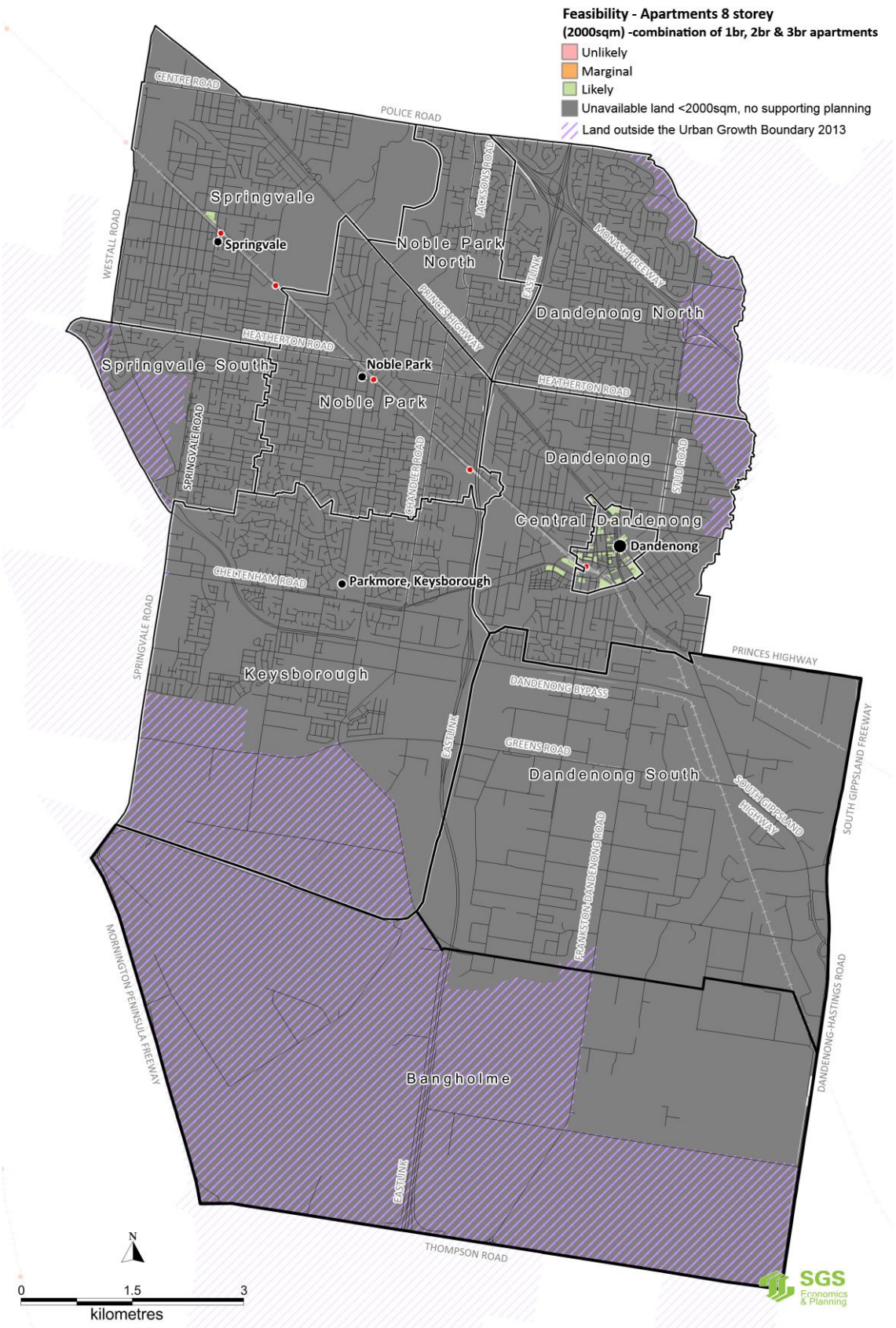
- 1.1 per cent (385) of available lots are large enough to support this housing type
- 1.1 per cent (385) of available lots are large enough to support this housing type and are feasible
- 0.2 per cent (68) of available lots are large enough to support this housing and are supported by planning controls
- 0.2 per cent (68) of available lots of available lots are large enough, have supporting planning controls and are feasible in CGD.

TABLE 46. EIGHT STOREY APARTMENTS, 1, 2 & 3 BED, (2000M^2) LOT AVAILABILITY, LOT SIZE AND PLANNING SUPPORT

	All land			Planning supported land		
	Available Lots	Available Lots >2,000m^2	Feasible Available Lots >2,000m^2	Available Lots	Available Lots >2,000m^2	Feasible Available Lots >2,000m^2
Dandenong	4,814	111	111	305	42	42
Dandenong North	7,151	37	37	0	0	0
Keysborough	5,131	78	78	0	0	0
Noble Park	6,914	77	77	0	0	0
Noble Park North	2,596	10	10	0	0	0
Springvale	5,127	37	37	35	3	3
Springvale South	3,130	35	35	0	0	0
Total	**34,863**	**385**	**385**	**315**	**68**	**68**

Source: SGS Economics and Planning

FIGURE 61. EIGHT STOREY APARTMENT FEASIBILITY, AVAILABLE LAND AND PLANNING CONTROLS

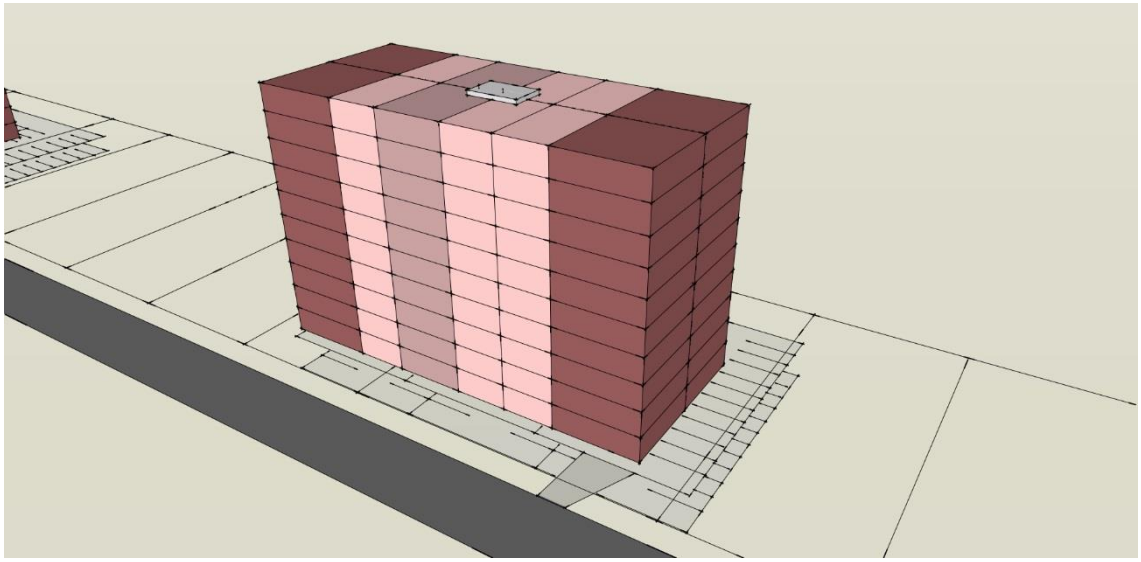


5.15 Apartments - 10 storey (1br, 2br & 3br)

Description

Description:	The 10 storey apartment has been modelled as a single building which allow increased setback when compared to the five storey and below examples. The building has a single core. Dwelling mix will vary. This option yields 120 dwellings. Assumptions used for this housing type include a net dwelling area of 8,760sqm, a total building area of 10,512sqm and balcony area of 960sqm.
Lot characteristics:	Council have advised 2,000sqm as the minimum for this type of development. The lot below is modelled on a site that is 54 x 42 metres (three lots of 18 x 42). 160 car parking spaces have been provided. This level of car parking requires two levels of underground parking to be provided, which takes up a large proportion of the lot area.
Why include?	Test feasibility of 10 storey apartment development on a larger lot.

FIGURE 62. 10 STOREY APARTMENT VISUALISATION



The following table outlines the approximate sales values that are associated with one, two and three bedroom apartments across CGD.

TABLE 47. 10 STOREY APARTMENT SALES VALUES

	Apartment 1br		Apartment 2br		Apartment 3br		Total revenue for type
Suburb	**Size**	**Sales value**	**Size**	**Sales value**	**Size**	**Sales value**	
Dandenong	50	$283,700	74	$360,000	96	$366,735	$38,891,388
Springvale	50	$302,500	71	$410,000	110	$567,021	$49,030,851
Keysborough	62	$318,552	92	$397,000	120	$417,633	$43,758,440
Noble Park	55	$305,000	79	$328,500	103	$342,184	$38,557,347
Springvale South	51	$288,095	79	$390,476	103	$540,020	$46,696,049

Feasibility results

The following table highlights the feasibility of this housing type by suburb.

The results show that 10 storey apartments, based on the assumptions used in this analysis, are only feasible in Keysborough, Springvale and Springvale South. Other locations unfeasible as total revenues do not cover total costs.

The reason for this is that development of nine storeys or higher has a higher per square metre cost of construction. Using Rawlinson's data, the cost per square metre for apartment buildings greater than nine storeys is $2,543 per square metres for medium grade quality. This compares to $2,223 per square metres for apartment developments between three and nine storeys.

This higher rate per square metre suggests that to make this type of development feasible, a larger number of dwellings must be accommodated within the building envelope. This could be achieved by producing smaller apartments. This would increase revenue.

TABLE 48. 10 STOREY APARTMENT FEASIBILITY ANALYSIS RESULTS BY SUBURB

Apartment (1,500sqm) – combination 1br, 2br, 3br	Total Costs	Total Revenue	Residual Land Value	Land Value	Ratio
Dandenong	$38,790,229	$38,891,388	$101,159	$1,205,895	0.08
Dandenong North	$38,790,229	$38,891,388	$101,159	$898,422	0.11
Central Dandenong	$40,411,217	$38,891,388	$101,159	$1,205,895	0.08
Keysborough	$38,984,911	$43,758,440	$4,773,529	$1,013,037	4.71
Springvale	$39,195,808	$49,030,851	$9,835,043	$1,570,650	6.26
Springvale South	$39,102,415	$46,696,049	$7,593,633	$1,604,229	4.73
Noble Park	$38,776,867	$38,557,347	-$219,520	$1,518,670	-0.14
Noble Park North	$38,776,867	$38,557,347	-$219,520	$1,372,953	-0.16

FIGURE 63. 10 STOREY APARTMENT FEASIBILITY ANALYSIS RESULTS

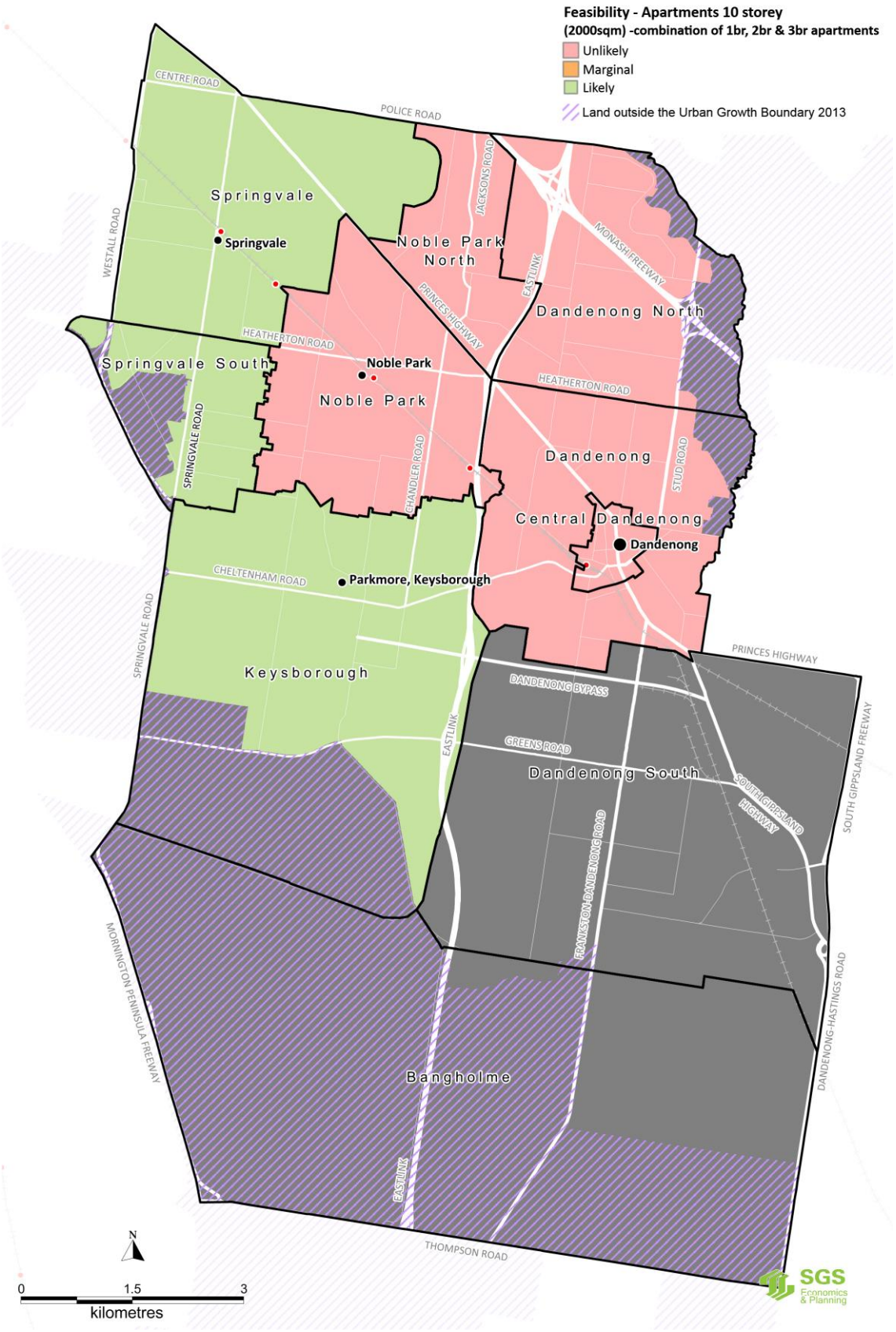
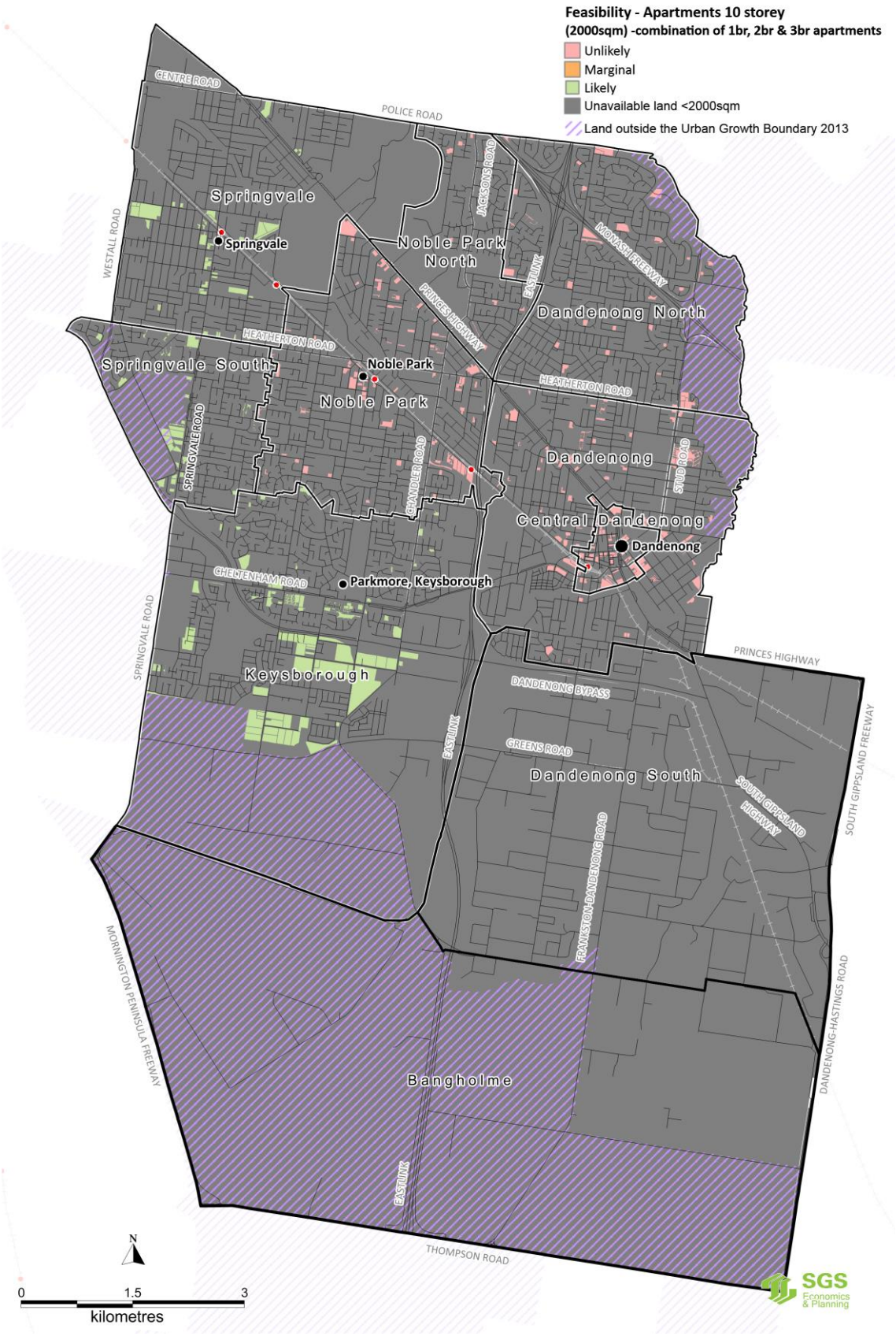


FIGURE 64. 10 STOREY APARTMENT FEASIBILITY AND AVAILABLE LAND



Comparison to existing planning controls

This section will consider suitable lots of available land, feasible locations and the planning scheme. The objective is to identify and compare the number of 10 storey apartment developments that could feasibly be achieved to the number of these developments which would be permitted under current planning scheme controls.

The table below shows that:

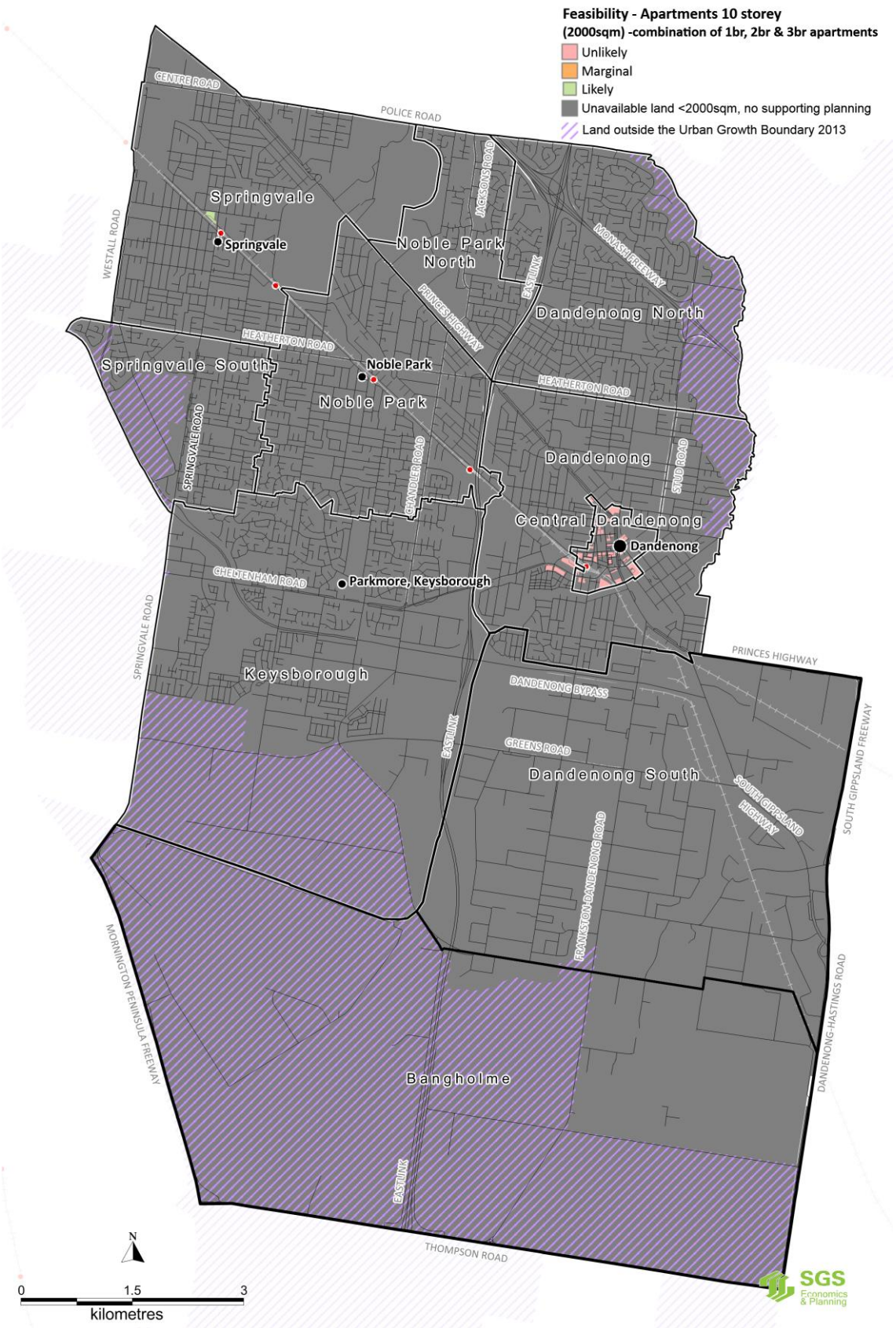
- 1.1 per cent (385) of available lots are large enough to support this housing type
- 1.1 per cent (385) of available lots are large enough to support this housing type and are feasible
- 0.2 per cent (68) of available lots are large enough to support this housing and are supported by planning controls
- 0.2 per cent (68) of available lots of available lots are large enough, have supporting planning controls and are feasible in CGD.

TABLE 49. 10 STOREY APARTMENTS, 1, 2 & 3 BED, (2000M²) LOT AVAILABILITY, LOT SIZE AND PLANNING SUPPORT

	All land			Planning supported land		
	Available Lots	Available Lots >2,000m²	Feasible Available Lots >2,000m²	Available Lots	Available Lots >2,000m²	Feasible Available Lots >2,000m²
Dandenong	4,814	111	111	305	42	42
Dandenong North	7,151	37	37	0	0	0
Keysborough	5,131	78	78	0	0	0
Noble Park	6,914	77	77	0	0	0
Noble Park North	2,596	10	10	0	0	0
Springvale	5,127	37	37	35	3	3
Springvale South	3,130	35	35	0	0	0
Total	**34,863**	**385**	**385**	**315**	**68**	**68**

Source: SGS Economics and Planning

FIGURE 65. 10 STOREY (LARGE LOT) APARTMENT FEASIBILITY, AVAILABLE LAND AND PLANNING CONTROLS



5.16 Summary results

Overall, key patterns are evident in the feasibility of different housing types across CGD. Apartments achieving a higher density (four storeys and above) are generally feasible across the municipality, particularly in suburbs with higher underlying land values, such as Keysborough. In contrast, lower yielding housing types, particularly townhouses, are less financially feasible based on the assumptions applied in the analysis.

An exception to this are 10 storey apartments which are not feasible in Dandenong, Central Dandenong, Dandenong North, Noble Park and Noble Park North. A higher cost of construction for developments greater than nine storeys leads to this result. In reality, developers would adjust variables such as dwelling size or construction quality to enable this type of development to be feasible.

A key consideration here is the type of developer who delivers these housing types. While more complex housing types, such as apartments, are mostly provided by builders and small developers, townhouse developments are more often delivered by existing landowners. Due to existing ownership of land, financial feasibility is achievable for these lower yielding housing types.

Table 50 overleaf presents a summary of the residual land value results for each suburb within CGD.

TABLE 50. SUMMARY RESIDUAL LAND VALUE RATIO RESULTS

	Townhouses 2br (700sqm)	Townhouses 3br (1500sqm)	Apartments 2 storey – (700sqm) - combination of 1br & 2br apartments	Apartments 2 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 3 storey – (700sqm) - combination of 1br & 2br apartments	Apartments 3 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 4 storey – (700sqm) - combination of 1br & 2br apartments	Apartments 4 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 5 storey – (1500sqm) - combination of 1br & 2br apartments	Apartments 5 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 8 storey – (2000sqm) - combination of 1br, 2br & 3br apartments	Apartments 10 storey – (2000sqm) - combination of 1br, 2br & 3br apartments
Dandenong Central	0.51	0.28	0.99	0.72	2.31	1.13	2.14	1.62	2.61	2.12	3.04	0.08
Dandenong	0.39	0.14	0.83	0.56	2.02	0.82	1.72	1.20	2.11	1.60	3.04	0.08
Dandenong North	0.68	0.38	1.32	0.97	3.09	1.52	2.87	2.17	3.50	2.84	4.07	0.11
Keysborough	1.41	1.47	1.70	1.39	3.85	2.44	4.03	3.39	4.86	4.37	7.30	4.71
Springvale	1.11	0.95	1.17	1.23	2.60	1.99	2.71	2.73	3.22	3.49	7.29	6.26
Springvale South	0.93	0.78	0.97	1.02	2.19	1.59	2.18	2.20	2.60	2.82	6.02	4.73
Noble Park	0.21	0.35	0.64	0.35	1.54	0.68	1.37	1.00	1.72	1.32	2.24	-0.14
Noble Park North	0.23	0.39	0.70	0.39	1.70	0.75	1.52	1.10	1.91	1.46	2.48	-0.16

Sensitivity testing

Vacant lot purchase

A key assumption in the feasibility modelling is that land purchased for development will typically have an existing dwelling on it. Associated demolition costs are included in the model.

There may be cases however where vacant land is purchased. Utilising rates data provided by CGD, average vacant lot prices were estimated for each suburb. As vacant lots are less expensive than those with a dwelling on it, this has a positive effect on financial feasibility and also highlights the significant impact land values have in feasibility results.

In comparison, as a result of purchasing a vacant lot:

- Two bedroom townhouses become feasible in Springvale South
- Three bedroom townhouses become feasible in Springvale and Springvale South
- Two storey apartments (700sqm) become feasible in Dandenong and Springvale South, and marginally feasible in Central Dandenong, Noble Park and Noble Park North
- Two storey apartments (1,500sqm) become feasible in Springvale South
- Three storey apartments (1,500sqm) become marginally feasible in Central Dandenong and Noble Park, and feasible in Noble Park North, and
- Four storey apartments (1,500sqm) become feasible in Noble Park.

The following table shows the number and size of vacant lots that are also classified as available land within CGD, by suburb. Whilst a broader range of housing types become feasible if land is vacant, the table below shows that only 158 vacant lots exist across CGD.

TABLE 51. VACANT AND AVAILABLE LOTS, BY SUBURB

	Lot size < 700sqm	Lot size 700-1,500sqm	Lot size 1,500 - 2,000sqm	Lot size > 2,000sqm	Total
Dandenong	16	24	3	17	60
Dandenong North	8	3	0	1	12
Keysborough	31	4	0	9	44
Noble Park	4	5	2	3	14
Noble Park North	3	0	0	0	3
Springvale	9	3	1	2	15
Springvale South	0	1	0	0	1
Total	**80**	**40**	**6**	**32**	**158**

Source: SGS Economics and Planning

TABLE 52. SUMMARY RLV RATIO – VACANT LOT RESIDUAL LAND VALUE

	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Type 7	Type 8	Type 9	Type 10	Type 11	Type 12
	Townhouses 2br (700sqm)	Townhouses 3br (1500sqm)	Apartments 2 storey – (700sqm) - combination of 1br & 2br apartments	Apartments 2 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 3 storey – (700sqm) - combination of 1br & 2br apartments	Apartments 3 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 4 storey – (700sqm) - combination of 1br & 2br apartments	Apartments 4 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 5 storey – (1500sqm) - combination of 1br & 2br apartments	Apartments 5 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 5 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 5 storey – (1500sqm) - combination of 1br, 2br & 3br apartments
Dandenong	0.64	0.35	1.24	0.89	2.89	1.41	2.68	2.01	3.23	2.63	3.76	0.10
Dandenong North	0.70	0.38	1.35	0.98	3.16	1.54	2.93	2.20	3.54	2.87	4.11	0.11
Central Dandenong	0.48	0.18	1.04	0.69	2.53	1.01	2.15	1.49	2.62	1.98	3.76	0.10
Keysborough	2.22	2.28	2.68	2.16	6.05	3.79	6.34	5.28	7.56	6.79	11.34	7.31
Springvale	1.52	1.30	1.61	1.68	3.57	2.70	3.72	3.72	4.39	4.75	9.91	8.51
Springvale South	1.41	1.16	1.46	1.53	3.31	2.39	3.29	3.31	3.91	4.24	9.03	7.10
Noble Park	0.32	0.54	0.98	0.54	2.38	1.04	2.11	1.52	2.63	2.02	3.42	-0.22
Noble Park North	0.34	0.57	1.04	0.57	2.51	1.10	2.24	1.61	2.79	2.14	3.62	-0.23

Increased construction costs

Construction costs are a major input into feasibility modelling. In this analysis, construction costs comprise around 70 per cent of total development costs. To test feasibility against an increase in construction costs, these were raised by 10 per cent for all housing types in each suburb.

The results below indicate that a 10 per cent in construction cost will have the following effects:

- Townhouses (two bedroom and three bedroom) become unfeasible or marginally feasible throughout the municipality
- Two storey apartments are only feasible in Keysborough
- Three storey apartments (700sqm) become marginally unfeasible in Noble Park
- Three storey apartments (1,500sqm) become unfeasible in Central Dandenong and Dandenong North, and become marginally unfeasible in Springvale South
- Four storey apartments (700sqm) become unfeasible in Dandenong, Noble Park and Noble Park North
- Four storey apartments (1,500sqm) become unfeasible in Central Dandenong, Dandenong, Noble Park and Noble Park North and marginally unfeasible in Dandenong North
- Five storey apartments (700sqm) become unfeasible in Noble Park, and marginally unfeasible in Dandenong and Noble Park North
- Five storey apartments (1,500sqm) become unfeasible in Dandenong, Noble Park and Noble Park North and marginally unfeasible in Central Dandenong, and
- Eight storey apartments (2,000sqm) become unfeasible in Dandenong, Central Dandenong, Noble Park and Noble Park North.

Overall, the locations which experienced a marked decline in feasibility were those with lower land values and lower sale values, meaning that an increase in construction costs could not be absorbed to allow profitability under the assumptions of the model.

TABLE 53. SUMMARY RESIDUAL LAND VALUE RATIO – INCREASED CONSTRUCTION COSTS (10 PER CENT)

	Townhouses 2br (700sqm)	Townhouses 3br (1500sqm)	Apartments 2 storey – (700sqm) - combination of 1br & 2br apartments	Apartments 2 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 3 storey – (700sqm) - combination of 1br & 2br apartments	Apartments 3 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 4 storey – (700sqm) - combination of 1br & 2br apartments	Apartments 4 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 5 storey – (1500sqm) - combination of 1br & 2br apartments	Apartments 5 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 8 storey – (2000sqm) - combination of 1br, 2br & 3br apartments	Apartments 10 storey – (2000sqm) - combination of 1br, 2br & 3br apartments
Dandenong	0.22	-0.04	0.64	0.35	1.64	0.40	1.17	0.66	1.47	0.92	0.86	-3.00
Dandenong Central	0.09	-0.19	0.47	0.17	1.32	0.05	0.70	0.19	0.93	0.35	0.86	-3.00
Dandenong North	0.30	-0.05	0.85	0.47	2.19	0.54	1.56	0.88	1.98	1.24	1.16	-4.03
Keysborough	1.07	1.08	1.28	0.95	3.05	1.57	2.87	2.25	3.51	2.94	4.72	1.04
Springvale	0.89	0.71	0.90	0.95	2.09	1.42	1.96	1.99	2.35	2.57	5.62	3.89
Springvale South	0.71	0.53	0.70	0.74	1.68	1.04	1.44	1.48	1.75	1.92	4.38	2.41
Noble Park	-0.02	0.10	0.36	0.06	1.01	0.10	0.59	0.23	0.82	0.37	0.52	-2.60
Noble Park North	-0.02	0.11	0.39	0.07	1.11	0.11	0.65	0.25	0.91	0.41	0.57	-2.87
Dandenong South	0.30	-0.05	0.85	0.47	2.19	0.54	1.56	0.88	1.98	1.24	1.16	-4.03

Increased sales prices

Overall, locations with evidence of higher sale values across the dwelling types tested had higher financial feasibility. To examine this further, the sensitivity of results to increased sale prices was tested. This provides an indication of how feasibility may change in CGD as a result of growth in dwelling values.

In comparison to current prices, an increase of sale prices by 10 per cent results in:

- Townhouses (two bedroom) becoming feasible in Dandenong North and Springvale South
- Townhouses (three bedroom) becoming feasible in Springvale and marginally feasible in Springvale South
- Two storey apartments (700sqm) becoming feasible in Dandenong, Central Dandenong and Springvale South and marginally feasible in Noble Park and Noble Park North
- Two storey apartments (1,500sqm) becoming feasible in Dandenong, Dandenong North and Springvale South and marginally feasible in Central Dandenong
- Three storey apartments (1,500sqm) becoming feasible in Central Dandenong, Noble Park and Noble Park North
- Four storey apartments (1,500sqm) becoming feasible in Noble Park, and
- 10 storey apartments (2,000sqm) becoming feasible throughout CGD.

TABLE 54. SUMMARY RESIDUAL LAND VALUE RATIO – SALE VALUES INCREASE (10 PER CENT)

	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Type 7	Type 8	Type 9	Type 10	Type 11	Type 12
	Townhouses 2br (700sqm)	Townhouses 3br (1500sqm)	Apartments 2 storey – (700sqm) - combination of 1br & 2br apartments	Apartments 2 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 3 storey – (700sqm) - combination of 1br & 2br apartments	Apartments 3 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 4 storey – (700sqm) - combination of 1br & 2br apartments	Apartments 4 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 5 storey – (1500sqm) - combination of 1br & 2br apartments	Apartments 5 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 8 storey – (2000sqm) - combination of 1br, 2br & 3br apartments	Apartments 10 storey – (2000sqm) - combination of 1br, 2br & 3br apartments
Dandenong Central	0.85	0.63	1.44	1.16	3.22	1.98	3.34	2.75	4.00	3.53	5.51	3.18
Dandenong	0.72	0.49	1.29	1.00	2.92	1.66	2.91	2.33	3.51	3.01	5.51	3.18
Dandenong North	1.13	0.85	1.92	1.56	4.30	2.65	4.46	3.68	5.37	4.73	7.40	4.27
Keysborough	1.90	2.00	2.30	1.98	5.04	3.56	5.60	4.89	6.70	6.23	10.62	8.86
Springvale	1.44	1.30	1.56	1.64	3.38	2.75	3.74	3.74	4.42	4.75	9.69	9.26
Springvale South	1.24	1.09	1.33	1.40	2.91	2.30	3.13	3.15	3.71	4.00	8.25	7.53
Noble Park	0.46	0.64	0.98	0.68	2.23	1.33	2.29	1.86	2.80	2.40	4.19	2.29
Noble Park North	0.51	0.71	1.08	0.76	2.47	1.47	2.53	2.06	3.09	2.66	4.64	2.54

6 SCENARIO 1 – HIGH GROWTH

Scenario 1 – examines high growth population projections and existing zones.

Findings include that:

- Under a high population growth future, CGD will see an additional 14,500 residents by 2026. This will include an additional 7,700 couple family with children residents and an additional 2,300 residents within one parent families.
- 18,000 additional dwellings will be demanded under the high growth scenario, 4,400 additional dwellings as compared to the base case.
- Compared to the base case, the high growth scenario will see the supply of a total additional 4,480 dwellings within CGD, including an additional 1,415 dwellings in Dandenong, 1,099 dwellings in Keysborough, 768 dwellings in Springvale, and 811 dwellings in Noble Park.
- CGD has the capacity to accommodate this required increase in dwellings under this scenario.

6.1 Population and dwelling demand forecasts

Table 55 provides population forecasts for the base case and high growth scenario (provided by Council)[7]. Compared to the base case, the high growth scenario projects an additional 14,516 residents in the decade between 2016 and 2026. These additional residents under the high scenario are largely in the 25 to 65 age group (working age). Under the high growth scenario, there is projected to be around 55,600 residents within the municipality by 2026.

[7] It should be noted that the population projections used for the base case were considerably higher than those experienced in previous years. For example, from 2001 to 2011, the CGD experienced annual growth of around 1,400 persons per year. Population projections provided by the CGD and used for the base case predict that this will increase to 2,700 between 2011 and 2026. Population projections used for the high growth scenario project an increase in population of around 4,000 persons per year to 2026, considerably higher growth than has been experienced previously.

TABLE 55. POPULATION FORECASTS, BASE CASE AND HIGH GROWTH SCENARIO

Year	Base case		High growth scenario		Variance
	Population	Annual growth rate	Population	Annual growth rate	(high growth – base case)
1996	131,796	-	131,796	-	-
2001	127,724	-0.6%	127,724	-0.6%	-
2006	130,068	0.4%	130,068	0.4%	-
2011	142,167	1.8%	142,167	1.8%	-
2016	153,169	1.5%	157,345	2.0%	4,176
2021	172,333	2.4%	182,733	3.0%	10,400
2026	183,305	1.2%	197,821	1.6%	14,516
2011 to 2026	**41,138**	**1.7%**	**55,654**	**2.2%**	**14,516**

Source: CGD population projections (2014), ABS Census (1996, 2001, 2006, 2011)

Household type forecasts

The following tables (Table 56 and Table 57) show population forecasts by household type for the base case and high growth scenario for CGD. The model applies the same proportions to the high growth scenario as for the base case; consequently, couple families with children remain the most prominent household type under the high growth scenario, followed by one parent families and couple families with no children by 2026. Under the high growth scenario, couple family with children households will increase by approximately 22,400 residents to 2026 while one parent families will increase by approximately 13,200 residents.

Given the minor change in age structure (proportionally more working aged adults, a few more children, less retirees) there will be a small change in the formation of households. While all household types will increase, couple family with children increase more than others, representing 40 per cent of the change, as compared to 35 per cent under the base case. This will have implications for the type of dwellings being demanded.

TABLE 56. POPULATION FORECAST BY HOUSEHOLD TYPE, BASE CASE

Household type	2011	2016	2021	2026	2011-2026	
					Change	Annual growth
Couple family with children	69,148	71,800	79,530	83,800	14,652	1.3%
Couple family with no children	23,699	25,252	27,731	28,469	4,770	1.2%
One parent family	19,203	22,942	27,117	30,056	10,853	3.0%
Other family	4,827	5,337	6,411	7,199	2,372	2.7%
Group household	4,593	5,099	6,120	6,770	2,178	2.6%
Lone person household	10,587	11,843	13,208	14,082	3,495	1.9%
Other	10,110	10,896	12,216	12,928	2,818	1.7%
Total persons	**142,167**	**153,169**	**172,333**	**183,305**	**41,138**	**1.7%**

Source: CGD and SGS Economics and Planning

TABLE 57. POPULATION FORECAST BY HOUSEHOLD TYPE, HIGH GROWTH SCENARIO

Household type	2011	2016	2021	2026	2011-2026	
					Change	Annual growth
Couple family with children	69,148	73,822	84,716	91,551	22,403	1.9%
Couple family with no children	23,699	25,950	29,336	30,158	6,460	1.6%
One parent family	19,203	23,497	28,596	32,433	13,230	3.6%
Other family	4,827	5,532	6,871	7,741	2,914	3.2%
Group household	4,593	5,304	6,621	7,331	2,738	3.2%
Lone person household	10,587	12,055	13,690	14,769	4,182	2.2%
Other	10,110	11,186	12,905	13,838	3,728	2.1%
Total persons	**142,167**	**157,345**	**182,733**	**197,821**	**55,654**	**2.2%**

Source: CGD and SGS Economics and Planning

Housing demand forecasts

Table 58 and Table 59 show implied housing demand by dwelling type for the base case and high growth scenarios for CGD. Compared to the base case, which is projected to see an increase in demand of 13,500 dwellings to 2026, 18,000 dwellings will be demanded under the high growth scenario. Under the high growth scenario, approximately 44,000 separate houses and around 17,700 flats/units/apartments will be demanded to 2026. This represents an additional 4,400 dwellings, including 1,000 flats/units/apartments and 2,900 additional separate houses being demanded as compared to the base case.

Due to a greater proportion of family with children households under the high growth scenario, it is likely that there will be a greater increase in separate houses.

TABLE 58. HOUSING DEMAND BY DWELLING TYPE, BASE CASE

Dwelling type	2011	2016	2021	2026	2011-2026	
					Change	Annual growth
Separate house	35,472	37,038	39,978	41,103	5,630	1.0%
Semi-detached/ townhouse	4,369	4,954	5,780	6,385	2,016	2.6%
Flat/unit/apartment	11,025	12,662	14,945	16,687	5,662	2.8%
Other	773	834	924	973	200	1.5%
Total private dwellings	**51,640**	**55,488**	**61,627**	**65,148**	**13,508**	**1.6%**

Source: SGS Economics and Planning

TABLE 59. HOUSING DEMAND BY DWELLING TYPE, HIGH GROWTH SCENARIO

Dwelling type	2011	2016	2021	2026	2011-2026	
					Change	Annual growth
Separate house	35,472	37,961	42,183	43,997	8,525	1.4%
Semi-detached/ townhouse	4,369	5,075	6,092	6,821	2,452	3.0%
Flat/unit/apartment	11,025	12,965	15,721	17,777	6,752	3.2%
Other	773	852	966	1,028	255	1.9%
Total private dwellings	**51,640**	**56,852**	**64,962**	**69,624**	**17,984**	**2.0%**

Source: SGS Economics and Planning

Table 60 and Table 61 show housing demand by number of bedrooms for the base case and high growth scenario for CGD. By 2026, there will be demand for an additional 7,500 four (or more) bedroom

dwellings, 4,700 two bedroom dwellings and 4,000 three bedroom dwellings under the high growth scenario. This represents approximately 1,300 additional four (or more) bedroom dwellings than demanded under the base case.

TABLE 60. HOUSING DEMAND BY NUMBER OF BEDROOMS, BASE CASE

Dwelling type	2011	2016	2021	2026	2011-2026	
					Change	Annual growth
None (includes bedsitters)	313	443	610	772	459	6.2%
One bedroom	2,044	2,374	2,770	3,063	1,018	2.7%
Two bedrooms	10,598	11,805	13,370	14,362	3,764	2.0%
Three bedrooms	26,476	27,049	28,537	28,576	2,100	0.5%
Four or more bedrooms	12,208	13,818	16,339	18,375	6,167	2.8%
Total dwellings	**51,640**	**55,488**	**61,627**	**65,148**	**13,508**	**1.6%**

Source: SGS Economics and Planning

TABLE 61. HOUSING DEMAND BY NUMBER OF BEDROOMS, HIGH GROWTH SCENARIO

Dwelling type	2011	2016	2021	2026	2011-2026	
					Change	Annual growth
None (includes bedsitters)	313	454	643	823	510	6.7%
One bedroom	2,044	2,424	2,898	3,242	1,197	3.1%
Two bedrooms	10,598	12,082	14,051	15,290	4,692	2.5%
Three bedrooms	26,476	27,721	30,097	30,555	4,078	1.0%
Four or more bedrooms	12,208	14,171	17,273	19,714	7,506	3.2%
Total dwellings	**51,640**	**56,852**	**64,962**	**69,624**	**17,984**	**2.0%**

Source: SGS Economics and Planning

6.2 Housing capacity

Housing capacity under the high growth scenario does not vary from the base case, as it reflects planning policy rather than demand. Table 62 shows results of the base case analysis, indicating that, within existing planning controls, CGD has capacity to accommodate an additional 90,000 dwellings. This suggests that the municipality can accommodate increased housing demand. The current rate of development under the base case would increase to meet this demand.

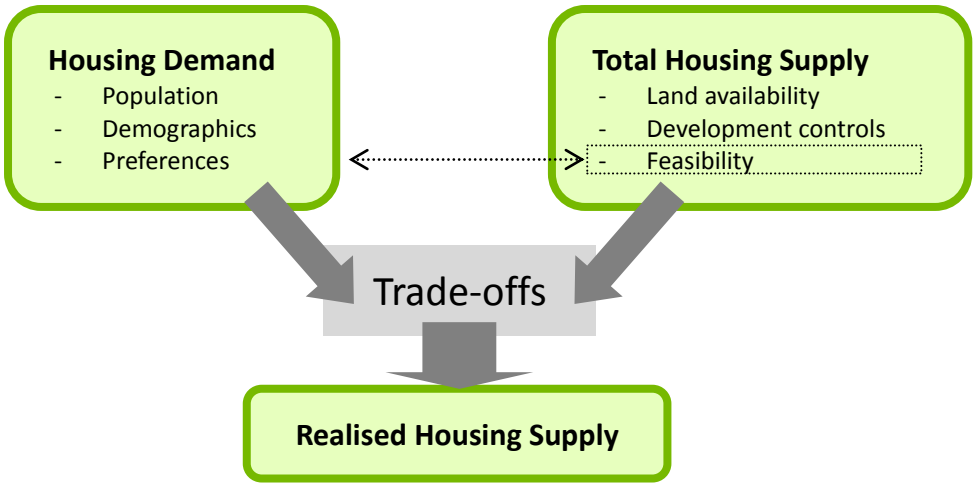
TABLE 62. CGD CAPACITY ANALYSIS RESULTS, BASE CASE

Suburb	Number of dwellings	Total identified supply	Number additional dwellings	% total additional dwellings
	2012			
Bangholme	112	112	0	0.0%
Dandenong South	203	211	8	0.0%
Dandenong	10,099	41,088	30,989	34.8%
Dandenong North	8,071	13,872	5,801	6.5%
Keysborough	7,200	17,345	10,145	11.4%
Noble Park	11,506	30,016	18,510	20.8%
Noble Park North	2,844	4,723	1,879	2.1%
Springvale	7,006	21,923	14,917	16.7%
Springvale South	3,966	10,836	6,870	7.7%
Total	**51,007**	**140,126**	**89,119**	**100.0%**

Source: SGS Economics and Planning

6.3 Realisation of identified supply

Thus far we have separately estimated future housing demand and supply. This stage is about understanding how demand and supply will interact to result in realised supply, or the number of dwellings by type and location that are most likely to be developed in Greater Dandenong over a defined period of time.



Source: SGS Economics and Planning

To estimate this interaction between demand and total supply we have looked at three aspects:

- The type of housing the future population would 'like' to live in based on their current observed preferences
- The type and location of housing that is potentially available based on the planning controls.
- The recent rate of development to understand how much of the total supply is likely to be realise in any one location over a given period of time.

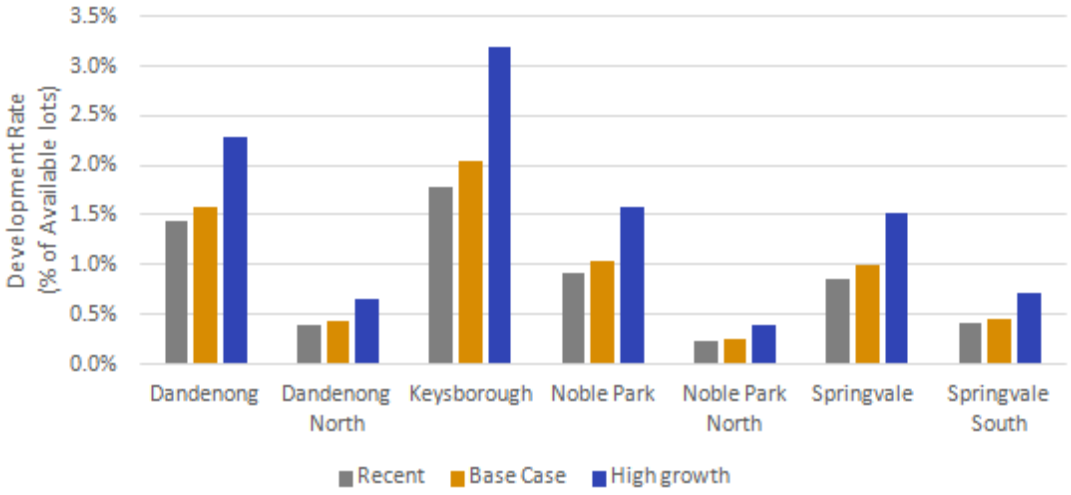
While the high growth scenario did not include any adjustments to total housing supply, as a result of the above interaction there are differences in realised dwelling supply between the base case and high growth scenario.

Figure 66 below presents the average development rates (that is the per cent of total 'available lots' that change in one year) for the last six years (recent) along with the base case and high growth scenarios. Compared to the base case, which adopted an increased development rate of 10 or 15 per cent for all suburbs across the municipality, development rates for the high growth scenario were increased to replicate realistic market conditions if a significantly higher demand was observed.[8] Given much of this increased demand is from family with children households, considerable additional demand is for larger housing products. As such, the housing market would respond to increased demand with higher rates of development, unless capacity is constrained due to a lack of available land or planning controls which limit housing yield.[9]

[8] That is, development rate was increased so supply would match increased demand to 2026.

[9] Development rates adopted for the high growth scenario are as follows: Bangholme 70%, Dandenong South 70%, Dandenong 60%, Dandenong North 70%, Keysborough 80%, Noble Park 75%, Noble Park North 70%, Springvale 75%, Springvale South 75%

FIGURE 66. ESTIMATED DEVELOPMENT RATES BY SUBURB - RECENT, BASE CASE AND HIGH GROWTH



Source: SGS Economics and Planning

Table 63 and Table 64 show the realisation of total dwelling supply for the base case and high growth scenario to 2026.

Compared to the base case, the high growth scenario will see the supply of a total additional 4,480 dwellings within CGD, most of which will be semi-detached type dwellings. This includes a total additional 1,415 dwellings in Dandenong, 1,099 dwellings in Keysborough, 768 dwellings in Springvale, and 811 dwellings in Noble Park.

Of total dwellings under the high growth scenario, 17,705 dwellings will be supplied in Dandenong (10,687 of these will be flat/unit/apartment type dwellings). Around 14,800 total dwellings will be supplied in Noble Park (around 60 per cent of which comprise semi-detached/townhouse type dwellings) and approximately 11,000 will be supplied in Keysborough, around half of which will be separate houses.

TABLE 63. REALISATION OF TOTAL DWELLING SUPPLY, 2026, BASE CASE

Suburb	Separate house	Semi-detached/ row/ terrace/ townhouse	Flat/ unit/ apartment	Total
Bangholme	112	0	0	112
Dandenong South	169	42	0	211
Dandenong	321	6,139	9,829	16,290
Dandenong North	5,374	2,835	208	8,417
Keysborough	5,341	3,588	940	9,869
Noble Park	1,921	8,026	4,042	13,990
Noble Park North	1,885	987	38	2,910
Springvale	285	7,101	1,575	8,961
Springvale South	323	3,753	308	4,384
CGD	**15,732**	**32,472**	**16,940**	**65,144**

Source: SGS Economics and Planning

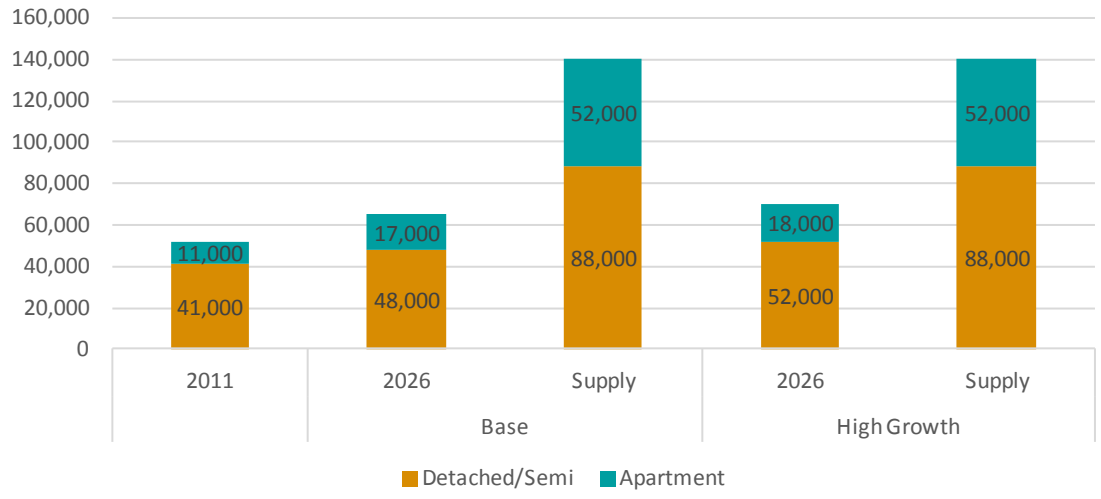
TABLE 64. REALISATION OF TOTAL DWELLING SUPPLY, 2026, HIGH GROWTH SCENARIO

Suburb	Separate house	Semi-detached/ row/ terrace/ townhouse	Flat/ unit/ apartment	Total
Bangholme	112	0	0	112
Dandenong South	169	42	0	211
Dandenong	323	6,695	10,687	17,705
Dandenong North	5,411	2,956	192	8,559
Keysborough	5,384	4,497	1,087	10,968
Noble Park	1,931	8,798	4,071	14,801
Noble Park North	1,888	1,018	36	2,942
Springvale	290	7,749	1,690	9,729
Springvale South	324	3,992	282	4,597
CGD	**15,832**	**35,748**	**18,044**	**69,624**

Source: SGS Economics and Planning

Figure 67 combines the results of this analysis by two broad housing types, detached and semi-detached houses and apartments. Under the high growth scenario we see that much of the additional growth is realised through detached and semi-detached houses. By 2026, CGD would have realised approximately 55 per cent of its detached and semi-detached housing supply and approximately 33 per cent of apartment supply under the base case. Under the high growth scenario this increases to 59 per cent and 35 per cent respectively.

FIGURE 67. REALISATION OF TOTAL DWELLING SUPPLY, BASE CASE VS HIGH GROWTH SCENARIO



Possible redevelopment outcomes

Given the vast majority of CGD is now established, most of the additional housing supply must come from the redevelopment of existing sites (residential and other). The following provides an indication of the amount of 'churn' or redevelopment that might be required to realise this future housing.

Table 65 and Table 66 show the annual requirement for realised dwellings to 2026 for the base case and high growth scenario. This analysis suggests that to realise a net addition of 1,010 dwellings per year 1,398 separate houses would be 'impacted' under the base case. This would result in 1,761 semi-detached houses and 647 apartments. This equates to an average project size of two dwellings (i.e. replace one house with two new houses). In reality, this will be realised through a wide range of development outcomes which means the impact to the separate house in many cases may be quite minimal.

Reflecting increased demand, there is a higher total annual requirement for dwellings for the high growth scenario. The high growth scenario requires annual supply of 1,330 dwellings, an additional 320 annual dwellings compared to the base case.

TABLE 65. ANNUAL REQUIREMENT FOR REALISED DWELLINGS TO 2026, BASE CASE

Suburb	Separate house	Semi-detached/ row/ terrace/ townhouse	Flat/ unit/ apartment	Total
Bangholme	0	0	0	-
Dandenong South	1	0	0	1
Dandenong	-281	280	443	442
Dandenong North	-120	144	0	25
Keysborough	-91	228	54	191
Noble Park	-321	404	94	177
Noble Park North	-49	53	0	5
Springvale	-337	421	56	140
Springvale South	-201	231	-1	30
CGD	**-1,398**	**1,761**	**647**	**1,010**

Source: SGS Economics and Planning

TABLE 66. ANNUAL REQUIREMENT FOR REALISED DWELLINGS TO 2026, HIGH GROWTH SCENARIO

Suburb	Separate house	Semi-detached/ row/ terrace/ townhouse	Flat/ unit/ apartment	Total
Bangholme	0	0	0	0
Dandenong South	1	0	0	1
Dandenong	-281	320	504	543
Dandenong North	-117	153	-1	35
Keysborough	-88	293	65	269
Noble Park	-320	460	96	235
Noble Park North	-48	55	0	7
Springvale	-337	467	65	195
Springvale South	-201	248	-2	45
CGD	**-1391**	**1,995**	**726**	**1,330**

Source: SGS Economics and Planning

7 SCENARIO 2 – PROPOSED ZONES

Scenario 2 – examines existing CGD population projections and proposed zones.

Findings include that:

- The proposed changes to existing residential zones will result in an overall reduction of potential housing supply within the municipality. The key reason for this is the proposed rezoning of some locations from Residential Growth Zone (RGZ1) to General Residential Zone (GRZ1).
- Under this scenario, total supply will fall by 9,100 dwellings compared to the base case.
- As the base case and proposed zones scenario have the same demand, the realisation of total dwelling supply is the same for both scenarios (65,148 dwellings).
- There are, however, differences in the types of dwellings supplied under each scenario; compared to the base case, there are a greater number of semi-detached type dwellings supplied under the proposed zones scenario. There are fewer flats/units/apartments, a result of rezoning within Dandenong.

7.1 Housing demand

Table 67 shows housing demand by dwelling type for the base case. It shows a demand for 65,148 total dwellings to 2026, an increase of 13,508 dwellings from 2011.

TABLE 67. HOUSING DEMAND BY DWELLING TYPE, BASE CASE

Dwelling type	2011	2016	2021	2026	2011-2026 Change	2011-2026 Annual growth
Separate house	35,472	37,038	39,978	41,103	5,630	1.0%
Semi-detached/ townhouse	4,369	4,954	5,780	6,385	2,016	2.6%
Flat/unit/apartment	11,025	12,662	14,945	16,687	5,662	2.8%
Other	773	834	924	973	200	1.5%
Total private dwellings	**51,640**	**55,488**	**61,627**	**65,148**	**13,508**	**1.6%**

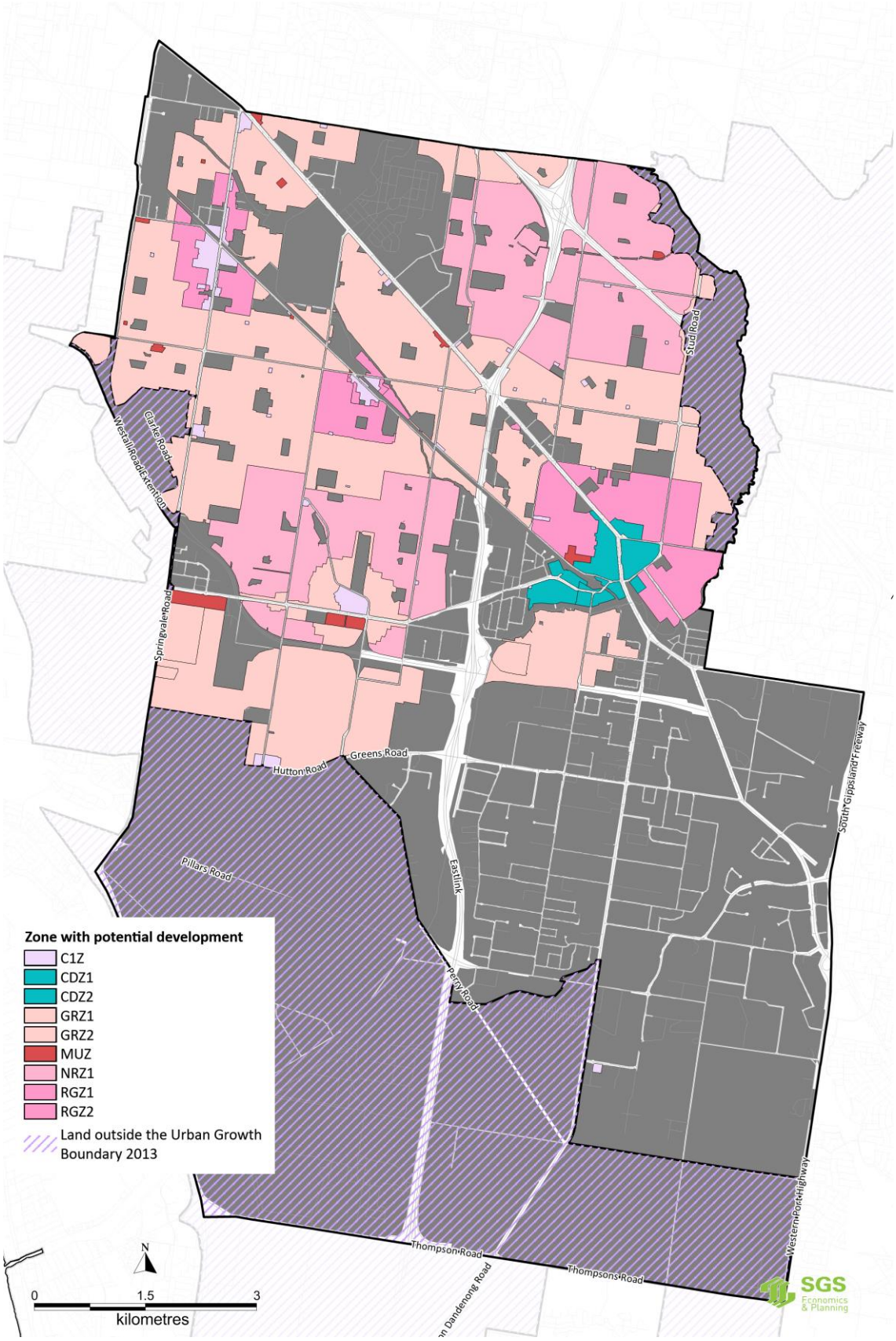
Source: SGS Economics and Planning

7.2 Available land

Figure 68 and Figure 69 below illustrate the existing zones (base case) and proposed zones (Scenario 2) for zones with residential development potential for CGD. In summary, relevant to this analysis, the proposed zones:

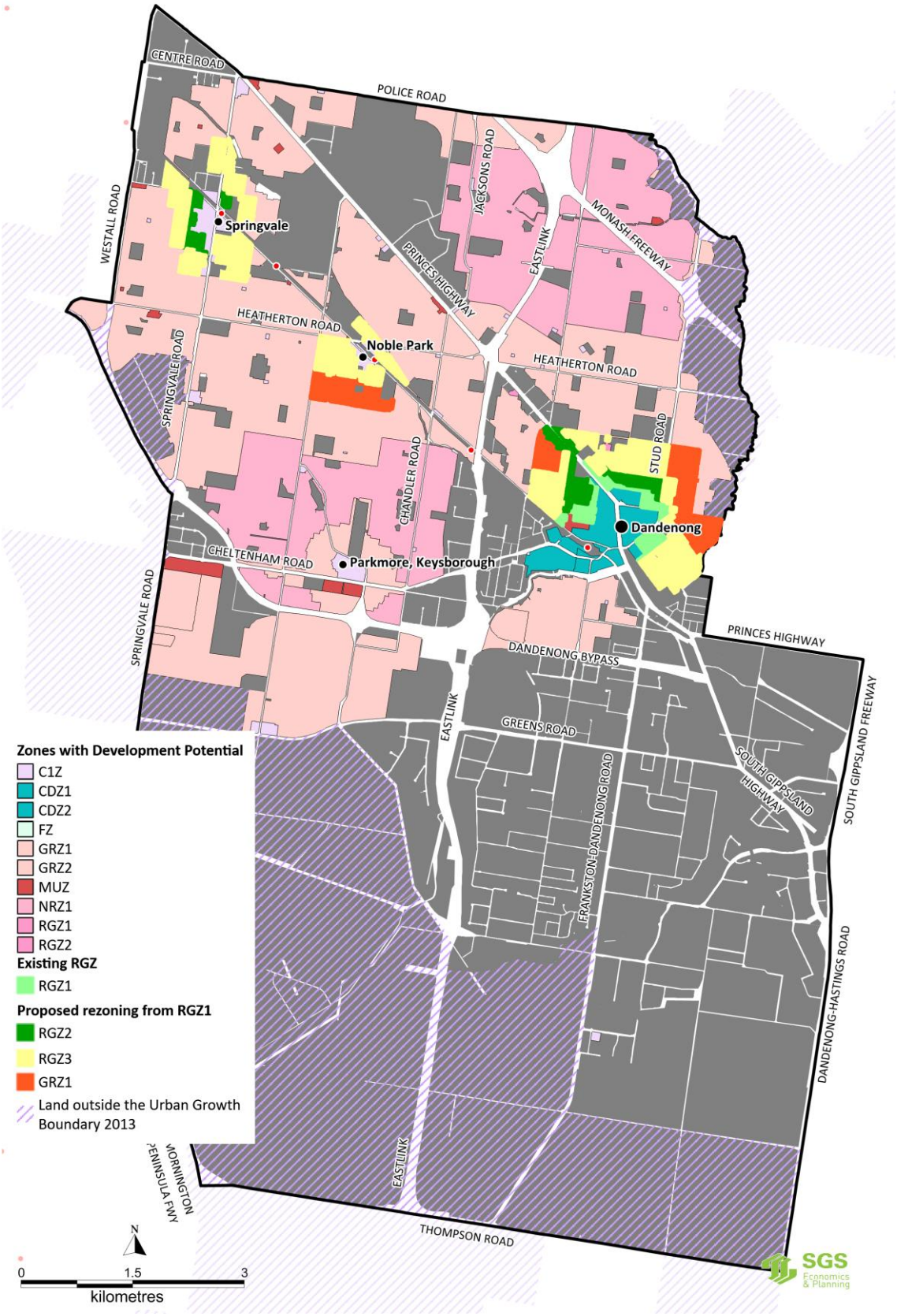
- Change controls around activity centres.
- Rezone some land around Springvale activity centre from GRZ1 to Residential Growth Zone3 (RGZ3).
- Rezone some land around Dandenong and Noble Park activity centres from RGZ1 zoned to GRZ1, reducing potential supply in these areas.

FIGURE 68. ZONES WITH DEVELOPMENT POTENTIAL, BASE CASE



Source: SGS Economics and Planning

FIGURE 69. ZONES WITH DEVELOPMENT POTENTIAL, PROPOSED ZONES



Source: SGS Economics and Planning

The following built form assumptions were made to determine a site's dwelling capacity estimate. The full set of assumptions used to determine future housing supply can be found in the Appendix.

TABLE 68. BUILT FORM ASSUMPTIONS

Attribute	Assumption
Site coverage	Apartments 70 per cent of land parcel
Building efficiency	Apartments 75 per cent of floor plate
Dwelling size/ density	Apartments 130 square metres Attached dwellings 50 dwellings per hectare Detached houses 15 dwellings per hectare Semi-detached 30 dwellings per hectare Mix of dwellings 80 dwellings per hectare

Source: SGS Economics and Planning using CGD local policy and broad assumptions

7.3 Development potential

Total identified supply

Table 69 and Table 70 show the capacity analysis results for CGD for the base case and for the proposed zones scenario.

The results show that under the proposed zones scenario there is a total identified supply of 131,005 dwellings. Notably, this is a supply of approximately 9,100 fewer dwellings than under the base case, which has a total identified supply of 140,126 dwellings. This reduction in potential dwelling supply can mainly be attributed to the proposed rezoning of some areas which are currently zoned RGZ1 being rezoned to GRZ1. According to the assumptions used, these proposed changes result in existing allowable densities of 162 dwellings per hectare within RGZ1 being reduced to 50 dwellings per hectare within the GRZ1.

Under the proposed zones scenario, just under one third of the municipality's capacity is within the suburb of Dandenong, around four per cent lower than the base case. Compared to the base case, Springvale has a higher proportion of the municipality's additional dwellings under the proposed zones scenario.

TABLE 69. CGD CAPACITY ANALYSIS RESULTS, BASE CASE

Suburb	Number of dwellings 2012	Total identified supply	Number additional dwellings	% total additional dwellings
Bangholme	112	112	0	0.0%
Dandenong South	203	211	8	0.0%
Dandenong	10,099	41,088	30,989	34.8%
Dandenong North	8,071	13,872	5,801	6.5%
Keysborough	7,200	17,345	10,145	11.4%
Noble Park	11,506	30,016	18,510	20.8%
Noble Park North	2,844	4,723	1,879	2.1%
Springvale	7,006	21,923	14,917	16.7%
Springvale South	3,966	10,836	6,870	7.7%
Total	**51,007**	**140,126**	**89,119**	**100.0%**

Source: SGS Economics and Planning

TABLE 70. CGD CAPACITY ANALYSIS RESULTS, PROPOSED ZONES SCENARIO

Suburb	Number of dwellings 2012	Total identified supply	Number additional dwellings	% total additional dwellings
Bangholme	112	112	0	0.0%
Dandenong South	203	211	8	0.0%
Dandenong	10,099	34,539	24,440	30.6%
Dandenong North	8,071	13,872	5,801	7.3%
Keysborough	7,200	17,345	10,145	12.7%
Noble Park	11,506	27,084	15,578	19.5%
Noble Park North	2,844	4,723	1,879	2.3%
Springvale	7,006	22,283	15,277	19.1%
Springvale South	3,966	10,836	6,870	8.6%
Total	**51,007**	**131,005**	**79,998**	**100.0%**

Source: SGS Economics and Planning

7.4 Realisation of identified supply

While the new zones scenario did not include any adjustments to demand, as a result of the interaction between total supply and demand, there are differences in realised dwelling supply between the base case and new zone scenario.

Figure 70 below presents the average development rates (that is the percent of total 'available lots' that change in one year) for the last six years along with the base and new zone scenarios. Compared to the base case, which adopted an increased development rate of 10 to 15 per cent for all suburbs across the municipality, development rates for the new zone scenario were increased only slightly to replicate realistic market conditions if the alternative zoning controls were applied. Given much of the reduction in supply was for apartments, which compared to demand were already oversupplied, this did not significantly impact likely development rates.

FIGURE 70. ESTIMATE DEVELOPMENT RATES BY SUBURB - RECENT, BASE CASE AND NEW ZONES

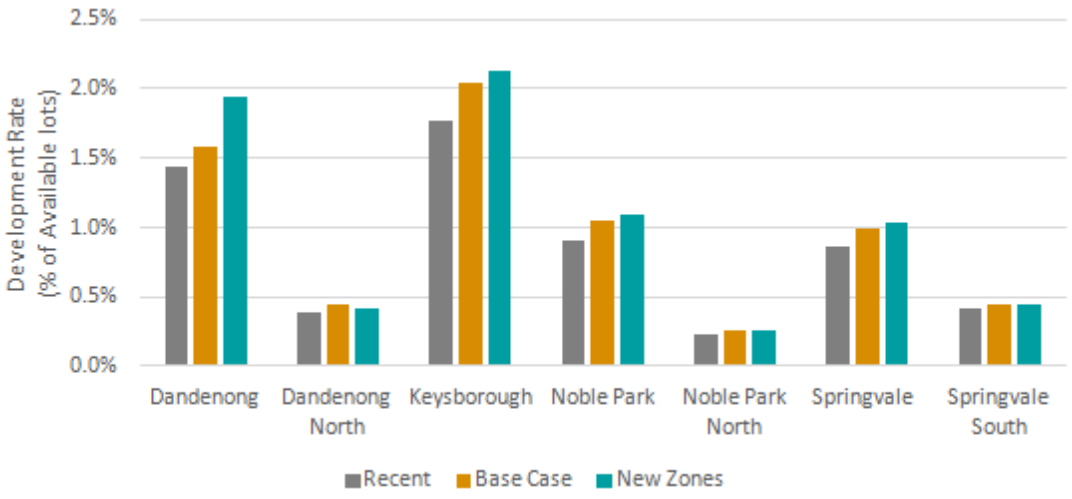


Table 71 and Table 72 show realisation of total dwelling supply for the base case and proposed zones scenario.

As the base case and proposed zones scenario have the same demand, the realisation of total dwelling supply is the same for both scenarios (65,148 dwellings). There are, however, differences in the types of dwellings supplied under each scenario.

Compared to the base case, there are a greater number of semi-detached type dwellings supplied under the proposed zones scenario (1,430 additional dwellings). There are fewer flats/units/apartments, a result of rezoning within Dandenong. Overall, the proposed zones scenario will see a slight reduction in dwelling supply in Noble Park and Dandenong and an increase in Springvale and Keysborough.

TABLE 71. REALISATION OF DWELLING SUPPLY, 2026, BASE CASE

Suburb	Separate house	Semi-detached/ row/ terrace/ townhouse	Flat/ unit/ apartment	Total
Bangholme	112	0	0	112
Dandenong South	169	42	0	211
Dandenong	321	6139	9829	16,290
Dandenong North	5374	2835	208	8,417
Keysborough	5341	3588	940	9,869
Noble Park	1921	8026	4042	13,990
Noble Park North	1885	987	38	2,910
Springvale	285	7101	1575	8,961
Springvale South	323	3753	308	4,384
CGD	**15,732**	**32,472**	**16,940**	**65,144**

Source: SGS Economics and Planning

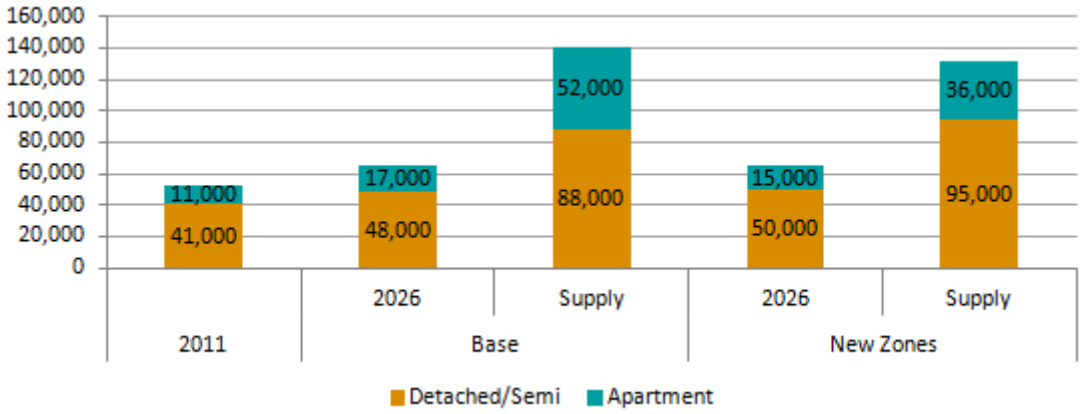
TABLE 72. REALISATION OF DWELLING SUPPLY, 2026, PROPOSED ZONES SCENARIO

Suburb	Separate house	Semi-detached/ row/ terrace/ townhouse	Flat/ unit/ apartment	Total
Bangholme	112	0	0	112
Dandenong South	169	42	0	211
Dandenong	322	7,299	8,603	16,225
Dandenong North	5,371	2,819	214	8,404
Keysborough	5,344	3,658	991	9,993
Noble Park	1,922	8,452	3,402	13,776
Noble Park North	1,885	986	39	2,910
Springvale	286	6,899	1,945	9,130
Springvale South	323	3,747	318	4,388
CGD	**15,734**	**33,902**	**15,512**	**65,148**

Source: SGS Economics and Planning

Figure 71 combines the results of this analysis by two broad housing types, detached and semi-detached houses and apartments. Under the new zone scenario we see that more of the additional growth is realised through detached and semi-detached housing supply. Under the new zone scenario, CGD would have realised approximately 53 per cent of its detached and semi-detached housing supply (compared to 55 per cent under the base case) and approximately 42 per cent of the apartment supply (compared to 33 per cent under the base case) by 2026.

FIGURE 71. REALISATION OF DWELLING SUPPLY, BASE CASE VS NEW ZONES



Possible redevelopment outcomes

Table 73 and Table 74 show the annual requirement for realised dwellings to 2026 for the base case and proposed zones scenario. Again, as demand is the same for both scenarios, the total annual requirement for the supply of dwellings is the same, with some differences in dwelling type.

TABLE 73. ANNUAL REQUIREMENT FOR REALISED DWELLINGS TO 2026, BASE CASE

Suburb	Separate house	Semi-detached/ row/ terrace/ townhouse	Flat/ unit/ apartment	Total
Bangholme	0	0	0	0
Dandenong South	1	0	0	1
Dandenong	-281	280	443	442
Dandenong North	-120	144	0	25
Keysborough	-91	228	54	191
Noble Park	-321	404	94	177
Noble Park North	-49	53	0	5
Springvale	-337	421	56	140
Springvale South	-201	231	-1	30
CGD	**-1,398**	**1,761**	**647**	**1,010**

Source: SGS Economics and Planning

TABLE 74. ANNUAL REQUIREMENT FOR REALISED DWELLINGS TO 2026, PROPOSED ZONES SCENARIO

Suburb	Separate house	Semi-detached/ row/ terrace/ townhouse	Flat/ unit/ apartment	Total
Bangholme	0	0	0	0
Dandenong South	1	0	0	1
Dandenong	-281	363	356	438
Dandenong North	-120	143	0	24
Keysborough	-91	233	58	200
Noble Park	-320	435	48	162
Noble Park North	-49	53	0	5
Springvale	-337	406	83	152
Springvale South	-201	231	0	30
CGD	**-1,398**	**1,863**	**545**	**1,010**

Source: SGS Economics and Planning

8 CONCLUSION

8.1 Housing demand, capacity and supply

At a municipality-wide level, the number of dwellings demanded is projected to broadly align with supply based on recent trends and capacity. In other words, the municipality currently has the capacity to supply the total number of dwellings demanded in the future.

There does, however, appear to be a mismatch between supply and demand in terms of housing type. As evidenced above, while there is projected to be continued significant demand for separate houses, there are limited development opportunities for this housing type throughout the municipality, especially upon completion of major redevelopment sites such as Metro 3175 and Meridian in Dandenong and Somerfield in Keysborough. Conversely, the supply of semi-detached/ terrace/ townhouses is projected to be significantly greater than demand.

While this may at first appear to be an issue, in reality, people are willing to make a trade-off between location and housing type and between similar development forms. For example, a shortage in the supply of detached houses can realistically be met by provision of more medium density dwellings, such as semi-detached/ terrace/ townhouse dwellings, as they are similar development forms that can accommodate similar household types. On the other hand, a shortage of supply in detached houses is unlikely to be met by apartments.

The projected over supply of semi-detached/ terrace/ townhouse dwellings and under supply of separate houses is not likely to be a significant issue as households can shift between the two dwelling types with relative ease. Furthermore, recent housing trends within the CGD (see Section 2.3) indicate a growing preference for higher density housing.

Current local policy is focussed on directing a significant proportion of future residential growth into activity centres, specifically Central Dandenong. This analysis shows that these planning controls allow for the required level of development to satisfy housing demand to 2026. Furthermore, local policy that advocates for the development of more diverse housing stock - to enable different household types and incomes to live within the municipality – will be realised.

8.2 Feasibility of housing types

Testing a range of housing types showed that higher density developments are generally more feasible throughout CGD. The most feasible types of development – eight storey and five storey apartment developments - are not supported by the planning scheme outside of Springvale activity centre and Central Dandenong. This policy should assist in directing higher density development and population growth into CGD's centres.

The analysis also highlighted that townhouse developments are generally unfeasible across the municipality, unless land costs are excluded. This suggests that existing landowners primarily drive this development type and may increase profitability through owner-builder construction.

The levy applied in Central Dandenong does have an impact on feasibility. The analysis assumes Central Dandenong would achieve the same sale prices as the suburb of Dandenong whilst being subject to higher development costs. As Central Dandenong undergoes further development, the sale values of dwellings may increase relative to other locations, reducing the impact the levy might have on feasibility.

Whilst a range of housing types are feasible, they are not currently present across the municipality. This is primarily due to the depth of the market and development precedence. The current depth of the property market in CGD does not support risk-taking by developers. That is, demand is not high enough across a range of housing types to warrant developers providing new housing products. This is linked to development precedents – the relatively risk averse nature of property developers often do not want to deliver untested housing types.

However, the spectrum of housing types provided in CGD will change over time. Increased sale values, relative to development costs, will support the feasibility of a wider range of housing types.

Property market considerations

The Melbourne housing market is undergoing a cyclical upturn, driven by low interest rates and tightening market fundamentals. Sales market activity is also improving, evidenced by elevated auction sales, higher clearance rates and fewer days on the market. Further to this, housing finance is robust, reflecting renewed buyer and vendor confidence and an improvement in the financial position of households.

The housing market has improved, despite economic challenges such as a high Australian dollar and a peak in mining and resource related construction.

Over September 2013 to September 2014, median house prices grew by eight per cent in Dandenong, 18 per cent in Noble Park and 10 per cent in Springvale, compared to 10 per cent growth for Metropolitan Melbourne.

The likely buyer profile for end products would include owner occupiers and investors. Traditionally, smaller apartments have been purchased by investors which are local to the area. The localities in CGD are older established suburbs and have general been characterised by single level 1950s-1970s detached dwellings, with medium density development limited to villa units and circa 1960s walk up flats in some areas.

Certain suburbs, such as Springvale and Dandenong, are gradually transforming to include new medium to high density development. There are currently apartment developments for sale off the plan around Springvale Railway Station, proximity to the shopping and transport hub. This is similar for the suburb of Dandenong which has been undergoing a revitalisation. More recently, Noble Park has seen some apartment development occur within the main retail precinct.

These overarching property market dynamics suggest that over time, as land values rise, more housing types will be financially feasible in CGD.

Feasibility of housing types

Feasibility testing suggests that, at a broad level:

- Higher yielding (higher density) development throughout CGD is more feasible. This reflects a number of factors, such as land values and development revenues.
- Lower yielding development, such as townhouses, are not feasible in a number of locations based on the assumptions applied in this analysis. However, the relative low risk of this housing type means that it is preferred by landowners seeking to maximise capital value from their land. Typically, this housing type is delivered by local landowners.
- Two and three storey apartments are more feasible on smaller lots, where the density achieved is higher. This is mainly due to land costs being lower. Similarly, on lots over 1,500sqm, development of at least four storeys is necessary to achieve financial feasibility.
- There is no clear impact on feasibility in changing the mix of the number of bedrooms per apartment. Five storey apartments can be delivered with a mix of one and two, or one, two and three bedroom dwellings feasibly.

- Eight storey developments generate the highest returns. However, 10 storey developments are not feasible in a number of suburbs. This is linked to a higher cost of construction for developments greater than nine storeys.

Planning controls and feasibility

Overall, in terms of existing planning controls:

- Townhouses and two storey apartments are largely supported throughout the municipality, suggesting planning is not a barrier to delivering these housing types.
- Three and four storey apartment developments are supported in a number of locations, with over half of available lots of appropriate sizes also being supported by planning.
- Five, eight and 10 storey apartment developments are supported in the least number of locations. While five and eight storey developments are feasible in nearly all locations, Central Dandenong and Springvale activity centre are the only locations with supporting planning controls.

8.3 Scenario testing

High population growth scenario

Scenario 1 (high growth) which examined high growth population projections and existing zones found that an increased rate of population growth will see an additional 14,500 residents to 2026, who will demand an additional 4,400 dwellings compared to the base case. These additional residents will largely form family type households and will demand detached or semi-detached houses. Additional dwellings will largely be located in Dandenong, as well as in Keysborough, Springvale and Noble Park.

Even with an increase in future housing supply, the pattern of past growth suggests that it is unlikely that the municipality will experience the high growth projected under the high growth scenario. The analysis has identified that CGD has sufficient dwelling supply to meet future demand, including an increase in the rate of population growth. Should a scenario such as this play out, and higher demand was observed, the housing market would respond to increased demand with higher rates of development.

Proposed zones scenario

Scenario 2 (proposed zones) identified that the proposed changes to existing residential zones will result in an overall reduction of potential housing supply (approximately 9,100 fewer dwellings) within the municipality. The key reason for this is the proposed rezoning of some locations from Residential Growth Zone (RGZ1) to General Residential Zone (GRZ1). Compared to the base case, there are a greater number of semi-detached/ townhouse dwellings supplied under the proposed zones scenario and fewer flats/units/apartments – a result of the proposed rezoning within Dandenong.

As previously identified, this does not present an issue given that, in reality, people will make trade-off's between location and housing types. As the proposed zones reduce the number of locations where apartment development is permitted, and increase the number of locations where medium density development (semi-detached/townhouse) is permitted, this better addresses the identified mismatch for demand between housing types. For example, the shortage in the supply of detached houses can be met by provision of more medium density dwellings, such as semi-detached/ terrace/ townhouse dwellings, as they are similar development forms that can accommodate similar household types.

In summary, the proposed zones continue to support development around the core of the municipality's activity centres and provide good transition between more intense development and lower density residential areas. The key impact of the proposed zones on housing supply will be the decrease in supply as a result of rezoning some locations from RGZ1 to GRZ1, particularly around Central Dandenong.

APPENDIX 1. HOUSING SUPPLY ASSUMPTIONS

The following table includes the assumptions used for determining housing supply within CGD. It shows assumptions regarding:

- **Dwelling type:** the type of dwelling to be supplied (detached, attached, apartments, shoptop or a mix of housing).
- **Height/storeys:** the number of residential storeys permitted by planning controls.
- **Site coverage:** the proportion of a lot/site that a building can cover.
- **Building efficiency:** the proportion of a building dedicated to residential use. For example, apartment buildings will include stair wells, lifts etc – this is excluded.
- **Dwelling size:** assumed size of dwellings.
- **Density:** number of dwellings per hectare.

In some instances, for example with apartments, density has been determined using the number of residential storeys, site coverage, building efficiency and dwelling size. Here, all assumptions are shown.

In some instances, for example the NRZ, a flat density rate has been used therefore no assumptions are provided for other factors (storeys, site coverage etc).

	Dwelling type	Height/Storeys (residential)	Site coverage	Building efficiency	Dwelling size sqm	Density	No. dwellings
Railway Precinct (CDZ1)							
Precinct A	Apartments	4	70%	75%	130	162	
Precinct B*	Apartments	4	70%	75%	130	162	
Precinct C	None	-	-	-	-	0	
Precinct D	Attached	-	-	-	-	50	
Precinct E	None	-	-	-	-	0	
Precinct F	Detached	-	-	-	-	15	
Precinct G	Mixed Range	-	-	-	-	80	
Precinct H	Apartments	4	70%	75%	130	162	
Precinct I	Semi-detached	-	-	-	-	30	
Central Dandenong (CDZ2)							
Precinct A	Apartments	4	70%	75%	130	162	
Precinct B	Apartments	4	70%	75%	130	162	
Precinct C	Apartments	4	70%	75%	130	162	
Precinct D	Apartments	4	70%	75%	130	162	
Precinct E	Apartments	4	70%	75%	130	162	
Precinct E	Apartments	4	70%	75%	130	162	
Precinct E	Apartments	4	70%	75%	130	162	
Precinct F	Apartments	4	70%	75%	130	162	
Noble Park AC							
1	Shoptop	3	70%	75%	130	121	
2	Mixed Range	-	-	-	-	80	
3	Community/ Open space	-	-	-	-	-	
Springvale AC							
1	Mixed Range	-	-	-	-	80	
2	Shoptop	5	70%	75%	130	202	
Development Plan Overlays							
DPO2	-	-	-	-	-	-	2,225[#]
DPO7	Mixed Range	2				80	
DPO9	Mixed Range	2				80	
Zones							
GRZ1	Attached	2	60%	75%		50	

	Dwelling type	Height/Storeys (residential)	Site coverage	Building efficiency	Dwelling size sqm	Density	No. dwellings
GRZ2	Attached	2	60%	75%		50	
RGZ1	Apartments	4	70%	75%	130	162	
RGZ2	Apartments	4	70%	75%	130	162	
NRZ1		-	-	-	-	30	
MUZ	Shoptop	1	70%	75%	130	40	
Proposed zones							
RGZ3	Apartments	3	70%	75%	130	121	

* Given preferred height limits of between 3 and 10 storeys across the Metro3175 precinct, a 'blanket' 4 storeys was applied for this analysis.

As advised by the CGD in correspondence on 29/08/2014

APPENDIX 2. FEASIBILITY ASSUMPTIONS.

Dwelling yield, density, lot size

The following table documents key inputs for each housing type. The number of dwellings for each housing type has been determined via a design method. Each housing type was sketched electronically to inform the number of dwellings that could be accommodated within each particular building height and lot size. These sketches are presented in the following section.

Key results are shown in the table below.

TABLE 75. ASSUMPTIONS FOR DWELLING YIELD, DENSITY AND LOT SIZE

Housing type	Number of new dwellings	Density (dwellings per hectare (dph))	Minimum size (sqm)
Townhouses 2br	Total: 4	57dph	700sqm
Townhouses 3br	Total: 8	53dph	1,500sqm
Apartments 2 storey	1 bed: 2 2 bed: 4 Total: 6	86dph	700sqm
Apartments 2 storey	1 bed: 2 2 bed: 8 3 bed: 2 Total: 12	80dph	1,500sqm
Apartments 3 storey	1 bed: 4 2 bed: 8 Total: 12	171dph	700sqm
Apartments 3 storey	1 bed: 9 2 bed: 12 3 bed: 3 Total: 24	160dph	1,500sqm
Apartments 4 storey	1 bed: 6 2 bed: 12 Total: 18	257dph	700sqm
Apartments 4 storey	1 bed: 12 2 bed: 16 3 bed: 4 Total: 32	213dph	1,500sqm
Apartments 5 storey	1 bed: 12 2 bed: 20 Total: 32	213dph	1,500sqm
Apartments 5 storey	1 bed: 15 2 bed: 20 3 bed: 5 Total: 40	267dph	1,500sqm
Apartments 8 storey	1 bed: 48 2 bed: 16 3 bed: 32	480dph	2,000sqm
Apartments 10 Storey	1 bed: 60 2 bed: 20	600 dph	2,000 sqm

Housing type	Number of new dwellings	Density (dwellings per hectare (dph))	Minimum size (sqm)
	3 bed: 40		

Development costs

Over and above construction costs, a range of development costs apply to residential development. These include professional fees, such as planning, architectural or engineer drawings, external works and services, such as stormwater connection, and providing for a construction contingency to absorb any cost variations. Included in development costs is developer's profit. The rates used come from a variety of sources, including Rawlinsons Australian Construction Handbook (2013), previous residential development and feasibility projects undertaken by SGS, and insights from the finance industry around typical 'benchmarks' that are used in lending criteria.

TABLE 76. DEVELOPMENT COSTS

Cost	Assumption
External works and services	3.0% of building cost
Construction contingency	5.0% of building cost + external works
Professional fees	8.7% of building cost + external works + contingency
Construction GST	10.0% of all construction costs
Development contributions	1.0% of all construction costs
Developers profit	15.0% of all construction costs

Rawlinsons Australian Construction Handbook (2013) has been used to obtain per square metre construction costs. A 'medium' build quality is assumed for the whole municipality which is the average between low and high quality that is reported.

The following table outlines the per square metre costs that are used in the feasibility modelling, comprising of demolition, residential construction and parking costs. Different rates apply to different building types (see next section).

TABLE 77. CONSTRUCTION COSTS

Construction type	Cost per square metre	Source
Demolition: Single storey house, timer framed with asbestos/timber cladding, metal roof	$36	Rawlinsons
Townhouse, 2 storey	$1,793	Rawlinsons
Apartment, up to 3 stories, no lift	$1,963	Rawlinsons
Apartment, above 3 stories, with lift	$1,963	Rawlinsons
Parking, open on grade	$86	Rawlinsons
Parking undercroft	$598	Rawlinsons
Parking partly underground	$1,225	Rawlinsons
Parking, fully underground	$1,533	Rawlinsons

In some locations in CGD, developer contributions apply to residential development. Specifically, a Development Contributions Plan applies to Keysborough (DCPO1) and, further to this, a State Government levy (Infrastructure Recovery Charge) applies to Central Dandenong. The following table documents these levies.

TABLE 78. DEVELOPER CONTRIBUTION CHARGES

Location	Instrument	Source
Undeveloped residential area of Keysborough	Development Contributions Plan Overlay 1	Community Infrastructure Charge of $387.59 per dwelling, and a development infrastructure charge of $244,825.92 per hectare.
Central Dandenong	Infrastructure Recovery Charge	5% of development value

Source: http://www.places.vic.gov.au/precincts-and-development/revitalising-central-dandenong/infrastructure-recovery-charge; http://www.greaterdandenong.com/document/26082/notice-of-development-contributions-adjustment

To account for these charges, residual land value modelling is undertaken separately for Central Dandenong and DCPO1 charges are applied to all of Keysborough. Whilst DCPO1 applies to only part of Keysborough, highlighting this area separately would not yield different results, as the charges are relatively low given the lot sizes (700sqm and 1500sqm) that are being tested.

Selling costs

The following are the selling cost assumptions that will be used in the feasibility model. Overall, the expense of sales is estimated at four per cent of the total value of sales.

TABLE 79. SELLING COSTS

Cost	Assumption
Commission on sales	3.0%
Legal Fees	0.5%
Marketing	0.5%
Total sales expenses	4.0%

Sales values

m3property were commissioned to provide sales and dwelling size data for suburbs across CGD. Their input is provided as an attachment.

Sales evidence was collated for Dandenong, Noble Park, Keysborough and Springvale. As Bangholme is currently comprised of single lot dwellings and rural residential properties, data could not be obtained for this suburb. Similarly, Dandenong South - a primarily industrial suburb - also had insufficient sales data.

Dandenong North and Noble Park North prices were assumed to be the same as those for Dandenong and Noble Park respectively, based on advice from m3property. Noting this, evidence is concentrated in Central Dandenong, and, apartment development in Dandenong North is less desirable, given its distance from retail and public transport. Similarly, Noble Park North is somewhat removed from retail and the main public transport hub.

Dwelling prices in Springvale South are assumed to be five per cent lower than in Springvale. Springvale South is generally less desirable for higher density development than Springvale given its distance from retail and public transport.

In some cases, no sales data existed for specific dwelling types for certain suburbs. Values were imputed for use in these cases. In general, an average of the upper and lower values for dwelling sizes and sales values was used. Where data was not available, the next closest housing type in that suburb was used and adjusted.

The following table provides a summary of the sales evidence reported by m3property.

TABLE 80. SALES EVIDENCE

Suburb	Housing Type	Size				Off the plan sales			Existing property sales	
		# Bedrooms	Lower Size	Upper Size	Average	Lower Price	Upper Price	Average	Lower Price	Upper Price
Dandenong	Townhouse	2Br	82	123	102.5	$350,000	$400,000	$375,000	$310,100	$380,000
Dandenong	Townhouse	3Br	73	148	110.5	$385,500	$440,000	$412,750	$300,000	$430,000
Dandenong	Apartments	1Br	44	55	49.5	$254,900	$312,500	$283,700	$220,000	$295,000
Dandenong	Apartments	2Br	58	89	73.5	$285,000	$435,000	$360,000	$245,000	$385,000
Dandenong	Apartments	3Br	93	99	96	NA	NA	NA	$310,000	$330,000
Springvale	Townhouse	2Br	NA	NA	NA	NA	NA	NA	NA	NA
Springvale	Townhouse	3Br	127	193	160	$467,000	$585,000	$526,000	NA	NA
Springvale	Apartments	1Br	43	56	49.5	$295,000	$310,000	$302,500	NA	NA
Springvale	Apartments	2Br	58	83	70.5	$350,000	$470,000	$410,000	$320,000	$420,000
Springvale	Apartments	3Br	129		129	$650,000		$650,000	$455,000	NA
Keysborough	Townhouse	2Br	126	150	138	$480,000	$430,000	$455,000	$450,000	NA
Keysborough	Townhouse	3Br	150	179	164.5	$510,000	$550,000	$530,000	$500,000	NA
Keysborough	Apartments	1Br	NA	NA	NA	NA	NA	NA	NA	NA
Keysborough	Apartments	2Br	79	105	92	$379,000	$415,000	$397,000	NA	NA
Keysborough	Apartments	3Br	NA	NA	NA	NA	NA	NA	NA	NA
Noble Park	Townhouse	3Br	123	142	132.5	$325,000	$370,000	$347,500	NA	NA
Noble Park	Townhouse	4Br	NA	NA	NA	$390,000	NA	$390,000	NA	NA
Noble Park	Apartments	1Br	41	68	54.5	$275,000	$335,000	$305,000	$265,000	$340,000
Noble Park	Apartments	2Br	63	94	78.5	$297,000	$360,000	$328,500	NA	NA
Noble Park	Apartments	3Br	NA	NA	NA	NA	NA	NA	NA	NA

Source: m3property 2014

Based on the evidence provided, a range of values were imputed looking at similar products within the suburb or nearby. This enabled an average dwelling size and sale value to be determined for each suburb in CGD. Imputed values are shaded in each table. The Appendix provides further detail on how values were imputed.

TABLE 81. DWELLING SIZE ASSUMPTIONS

	Townhouse 2br	Townhouse 3br	Apartment 1br	Apartment 2br	Apartment 3br
Dandenong	102.5	110.5	49.5	73.5	96
Springvale	148	160	49.5	70.5	109.6
Keysborough	138	164.5	62	92	120
Noble Park	132.5	158	54.5	78.5	103
Average used	124	148	51	79	103

Source: SGS Economics and Planning sing m3property data 2014

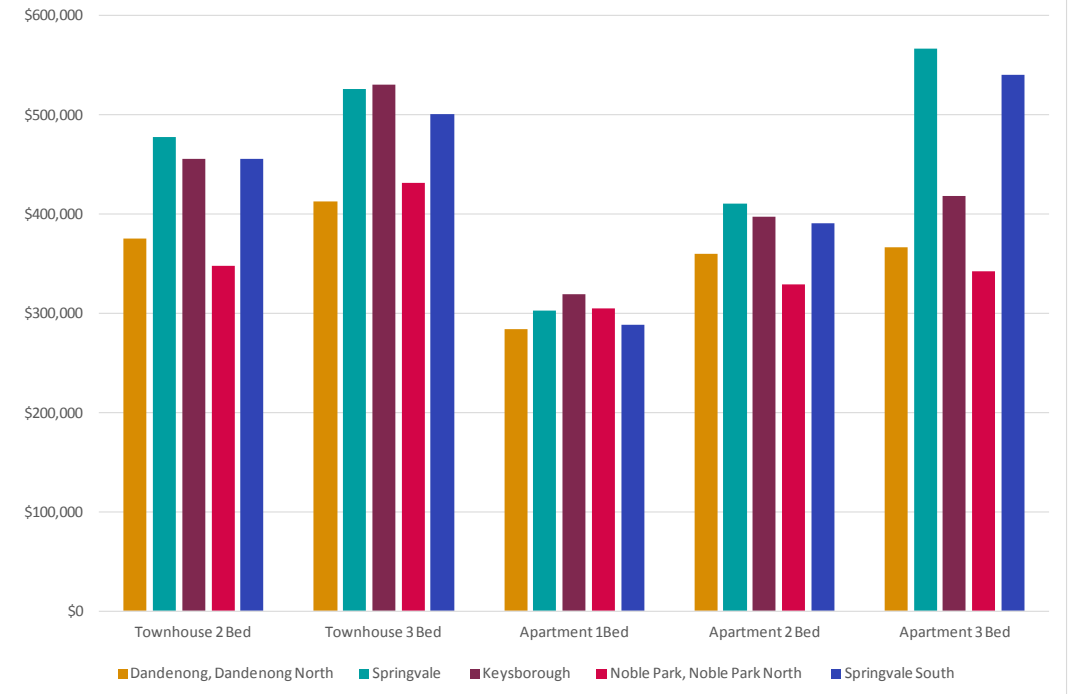
TABLE 82. SALE VALUE ASSUMPTIONS

	Townhouse 2br	Townhouse 3br	Apartment 1br	Apartment 2br	Apartment 3br
Dandenong	$375,000	$412,750	$283,700	$360,000	$366,735
Springvale	$477,906	$526,000	$302,500	$410,000	$567,021
Keysborough	$455,000	$530,000	$318,552	$397,000	$417,633
Noble Park	$347,500	$431,628	$305,000	$328,500	$342,184
Springvale South	$455,150	$500,952	$288,095	$390,476	$540,020

Source: SGS Economics and Planning sing m3property data 2014

The following figure provides an indication of the price variation between different suburbs. As shown, the suburbs of Springvale and Keysborough tend to have higher sale values whereas Noble Park tends to have lower sale values.

FIGURE 72. SALE VALUES BY SUBURB AND DWELLING TYPE



Zones

The following table shows the zones within CGD that allow the housing types being tested. It indicates the assumptions made regarding zones for each building type ('YES' indicates that a particular building type is allowed by the planning scheme, while 'NO' indicates that it is not).

TABLE 83. ZONES AND HOUSING TYPES

Housing Type	GRZ1	GRZ2	RGZ1	RGZ2	NRZ1	MUZ	DPO2	DPO7	DPO9*	Central Dandenong	Springvale AC
Townhouses 2br (700sqm)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Townhouses 3br (1,500sqm)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Apartments 2 storey – (700sqm) - combination of 1br & 2br	No	No	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes
Apartments 2 storey – (1,500sqm) - combination of 1br, 2br & 3br	No	No	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes
Apartments 3 storey – (700sqm) - combination of 1br & 2br	No	No	Yes	Yes	No	Yes	No	No	No	Yes	Yes
Apartments 3 storey – (1,500sqm) - combination of 1br, 2br & 3br	No	No	Yes	Yes	No	Yes	No	No	No	Yes	Yes
Apartments 4 storey – (700sqm) - combination of 1br & 2br	No	No	Yes	Yes	No	No	No	No	No	Yes	Yes
Apartments 4 storey – (1,500sqm) -combination of 1br, 2br & 3br	No	No	Yes	Yes	No	No	No	No	No	Yes	Yes
Apartments 5 storey – (1,500sqm) - combination of 1br & 2br	No	No	No	No	No	No	No	No	No	Yes	Yes
Apartments 5 storey – (1,500sqm) - combination of 1br, 2br & 3br	No	No	No	No	No	No	No	No	No	Yes	Yes
Apartments 8 Storey - (2,000sqm) - combination of 1br, 2br & 3br apartments	No	No	No	No	No	No	No	No	No	Yes	Yes
Apartments 10 Storey - (2,000sqm) - combination of 1br, 2br & 3br apartments	No	No	No	No	No	No	No	No	No	Yes	Yes

MUZ – Mixed Use Zone, RGZ – Residential Growth Zone, GRZ – General Residential Zone, NRZ – Neighbourhood residential zone, CDZ1 – Comprehensive Development Zone 1, CDZ2 – Comprehensive Development Zone 2, CZ1 – Commercial Zone 1, DPO (2, 7, 9) – Development Plan Overlays

* Development of up to 4 storeys in the area zoned RGZ is in accordance with the Development Plan (ie 3 and 4 storey apartments are allowed).

Imputed sales values

In a number of cases, sales evidence does not exist for a particular suburb or housing type. To address this data limitation, imputed sales values were used where necessary. The following table outlines imputed sale values used in the analysis.

Suburb	Housing Type	Size				Off the plan			Existing		Comment
		# Bedrooms	Lower Size	Upper Size	Average	Lower Price	Upper Price	Average	Lower Price	Upper Price	
Dandenong	Townhouse	2Br	82	123	102.5	$350,000	$400,000	$375,000	$310,100.0	$380,000.0	
Dandenong	Townhouse	3Br	73	148	110.5	$385,500	$440,000	$412,750	$300,000.0	$430,000.0	
Dandenong	Apartments	1Br	44	55	49.5	$254,900	$312,500	$283,700	$220,000.0	$295,000.0	
Dandenong	Apartments	2Br	58	89	73.5	$285,000	$435,000	$360,000	$245,000.0	$385,000.0	
Dandenong	Apartments	3Br	93	99	96	$360,612	$372,857	$366,735	$310,000.0	$330,000.0	
Springvale	Townhouse	2Br	143	160	148	$423,995	$531,818	$477,906			Size & Price Based on diff between 3Brs in Springvale & Dandenong
Springvale	Townhouse	3Br	127	193	160	$467,000	$585,000	$526,000	NA	NA	
Springvale	Apartments	1Br	43	56	49.5	$295,000	$310,000	$302,500	NA	NA	
Springvale	Apartments	2Br	58	83	70.5	$350,000	$470,000	$410,000	$320,000.0	$420,000.0	
Springvale	Apartments	3Br	90	129	110	$484,043	$650,000	$567,021	$455,000.0	NA	Lower end size estimated on 2Br Range
Keysborough	Townhouse	2Br	126	150	138	$480,000	$430,000	$455,000	$450,000.0	NA	
Keysborough	Townhouse	3Br	150	179	164.5	$510,000	$550,000	$530,000	$500,000.0	NA	
Keysborough	Apartments	1Br	60	65	62	$338,972	$298,132	$318,552			Size & Price Based on diff between 2Brs in Keysborough & Dandenong
Keysborough	Apartments	2Br	79	105	92	$379,000	$415,000	$397,000	NA	NA	
Keysborough	Apartments	3Br	127	117	120	$479,551	$355,714	$417,633			Size & Price Based on diff between 2Brs in Keysborough & Dandenong
Noble Park	Townhouse	2Br	123	142	132.5	$325,000	$370,000	$347,500	NA	NA	
Noble Park	Townhouse	3Br	146	169	158	$390,000	$473,256	$431,628	NA	NA	
Noble Park	Apartments	1Br	41	68	54.5	$275,000	$335,000	$305,000	$265,000.0	$340,000.0	
Noble Park	Apartments	2Br	63	94	78.5	$297,000	$360,000	$328,500	NA	NA	
Noble Park	Apartments	3Br	101	105	103	$375,796	$308,571	$342,184			Size & Price Based on diff between 2Brs in Noble Park & Keysborough

APPENDIX 3. FEASIBILITY RESULTS BY SUBURB

Dandenong

	Rate	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Type 7	Type 8	Type 9	Type 10	Type 11	Type 12
		Townhouses 2br (700sqm)	Townhouses 3br (1500sqm)	Apartments 2 storey – (700sqm) - combination of 1br & 2br apartments	Apartments 2 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 3 storey – (700sqm) - combination of 1br & 2br apartments	Apartments 3 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 4 storey – (700sqm) - combination of 1br & 2br apartments	Apartments 4 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 5 storey – (1500sqm) - combination of 1br & 2br apartments	Apartments 5 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 8 storey – (2000sqm) - combination of 1br, 2br & 3br apartments	Apartments 10 storey – (2000sqm) - combination of 1br, 2br & 3br apartments
Site size		*700*	*1500*	*700*	*1500*	*700*	*1500*	*700*	*1500*	*1500*	*1500*	*2000*	*2000*
COSTS													
Building costs		$895,970	$2,136,380	$1,104,028	$2,465,022	$2,102,605	$4,859,772	$3,061,757	$6,407,391	$7,544,329	$7,946,708	$19,218,496	$27,304,380
External works and services	3%	$26,879	$64,091	$33,121	$73,951	$63,078	$145,793	$91,853	$192,222	$226,330	$238,401	$576,555	$819,131
Construction contingency	5%	$46,142	$110,024	$56,857	$126,949	$108,284	$250,278	$157,680	$329,981	$388,533	$409,255	$989,753	$1,406,176
Professional fees	9%	$84,302	$201,013	$103,879	$231,935	$197,835	$457,258	$288,082	$602,875	$709,850	$747,710	$1,808,278	$2,569,083
Development charge	1%	$10,533	$25,115	$12,979	$28,979	$24,718	$57,131	$35,994	$75,325	$88,690	$93,421	$225,931	$320,988
Construction GST													
Interest													
Council fees													
Profit margin	15%	$157,994	$376,726	$194,683	$434,678	$370,770	$856,965	$539,906	$1,129,870	$1,330,356	$1,401,311	$3,388,962	$4,814,816
Selling costs	4%	$60,000	$132,080	$80,296	$167,235	$160,592	$318,940	$212,088	$425,254	$527,168	$531,567	$1,244,524	$1,555,656
TOTAL COSTS		**$1,281,821**	**$3,045,429**	**$1,585,842**	**$3,528,748**	**$3,027,883**	**$6,946,138**	**$4,387,360**	**$9,162,916**	**$10,815,256**	**$11,368,373**	**$27,452,499**	**$38,790,229**
REVENUE													
Townhouse 2 Bed		$1,500,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Townhouse 3 Bed		$0	$3,302,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Apartment 1Bed		$0	$0	$567,400	$567,400	$1,134,800	$2,553,300	$1,702,200	$3,404,400	$4,539,200	$4,255,500	$13,617,600	$17,022,000
Apartment 2 Bed		$0	$0	$1,440,000	$2,880,000	$2,880,000	$4,320,000	$3,600,000	$5,760,000	$8,640,000	$7,200,000	$5,760,000	$7,200,000
Apartment 3 Bed		$0	$0	$0	$733,469	$0	$1,100,204	$0	$1,466,939	$0	$1,833,673	$11,735,510	$14,669,388
TOTAL REVENUE		**$1,500,000**	**$3,302,000**	**$2,007,400**	**$4,180,869**	**$4,014,800**	**$7,973,504**	**$5,302,200**	**$10,631,339**	**$13,179,200**	**$13,289,173**	**$31,113,110**	**$38,891,388**
RESIDUAL LAND VALUATION													
		$218,179	$256,571	$421,558	$652,121	$986,917	$1,027,366	$914,840	$1,468,422	$2,363,944	$1,920,801	$3,660,611	$101,159
LAND COSTS													
Site Cost (Vacant)	$487	$341,042	$730,803	$341,042	$730,803	$341,042	$730,803	$341,042	$730,803	$730,803	$730,803	$974,404	$974,404
ite Cost (Non-Vacant, incl, demolition costs)	$599	$426,730	$906,216	$426,730	$906,216	$426,730	$906,216	$426,730	$906,216	$906,216	$906,216	$1,205,895	$1,205,895
RLV RATIO													
Vacant lots		0.64	0.35	1.24	0.89	2.89	1.41	2.68	2.01	3.23	2.63	3.76	0.10
Non-Vacant lots		0.51	0.28	0.99	0.72	2.31	1.13	2.14	1.62	2.61	2.12	3.04	0.08

Central Dandenong

	Rate	Type 1 Townhouses 2br (700sqm)	Type 2 Townhouses 3br (1500sqm)	Type 3 Apartments 2 storey – (700sqm) - combination of 1br & 2br apartments	Type 4 Apartments 2 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Type 5 Apartments 3 storey – (700sqm) - combination of 1br & 2br apartments	Type 6 Apartments 3 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Type 7 Apartments 4 storey – (700sqm) - combination of 1br & 2br apartments	Type 8 Apartments 4 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Type 9 Apartments 5 storey – (1500sqm) - combination of 1br & 2br apartments	Type 10 Apartments 5 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Type 11 Apartments 8 storey – (2000sqm) - combination of 1br, 2br & 3br apartments	Type 12 Apartments 10 storey – (2000sqm) - combination of 1br, 2br & 3br apartments
Site size		*700*	*1500*	*700*	*1500*	*700*	*1500*	*700*	*1500*	*1500*	*1500*	*2000*	*2000*
COSTS													
Building costs		$895,970	$2,136,380	$1,104,028	$2,465,022	$2,102,605	$4,859,772	$3,061,757	$6,407,391	$7,544,329	$7,946,708	$19,218,496	$27,304,380
External works and services	3%	$26,879	$64,091	$33,121	$73,951	$63,078	$145,793	$91,853	$192,222	$226,330	$238,401	$576,555	$819,131
Construction contingency	5%	$46,142	$110,024	$56,857	$126,949	$108,284	$250,278	$157,680	$329,981	$388,533	$409,255	$989,753	$1,406,176
Professional fees	9%	$84,302	$201,013	$103,879	$231,935	$197,835	$457,258	$288,082	$602,875	$709,850	$747,710	$1,808,278	$2,569,083
Development charge	1%	$10,533	$25,115	$12,979	$28,979	$24,718	$57,131	$35,994	$75,325	$88,690	$93,421	$225,931	$320,988
Construction GST													
Interest													
Council fees	5%	$53,191.34	$126,831.16	$65,543.18	$146,341.75	$124,826.02	$288,511.64	$181,768.31	$380,389.63	$447,886.60	$471,774.73	##########	##########
Profit margin	15%	$157,994	$376,726	$194,683	$434,678	$370,770	$856,965	$539,906	$1,129,870	$1,330,356	$1,401,311	$3,388,962	$4,814,816
Selling costs	4%	$60,000	$132,080	$80,296	$167,235	$160,592	$318,940	$212,088	$425,254	$527,168	$531,567	$1,244,524	$1,555,656
TOTAL COSTS		**$1,335,012**	**$3,172,260**	**$1,651,386**	**$3,675,090**	**$3,152,709**	**$7,234,650**	**$4,569,128**	**$9,543,306**	**$11,263,143**	**$11,840,147**	**$28,593,449**	**$40,411,217**
REVENUE				0									
Townhouse 2 Bed		$1,500,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Townhouse 3 Bed		$0	$3,302,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Apartment 1Bed		$0	$0	$567,400	$567,400	$1,134,800	$2,553,300	$1,702,200	$3,404,400	$4,539,200	$4,255,500	$13,617,600	$17,022,000
Apartment 2 Bed		$0	$0	$1,440,000	$2,880,000	$2,880,000	$4,320,000	$3,600,000	$5,760,000	$8,640,000	$7,200,000	$5,760,000	$7,200,000
Apartment 3 Bed		$0	$0	$0	$733,469	$0	$1,100,204	$0	$1,466,939	$0	$1,833,673	$11,735,510	$14,669,388
TOTAL REVENUE		**$1,500,000**	**$3,302,000**	**$2,007,400**	**$4,180,869**	**$4,014,800**	**$7,973,504**	**$5,302,200**	**$10,631,339**	**$13,179,200**	**$13,289,173**	**$31,113,110**	**$38,891,388**
RESIDUAL LAND VALUATION													
		$164,988	$129,740	$356,014	$505,779	$862,091	$738,854	$733,072	$1,088,033	$1,916,057	$1,449,026	$3,660,611	$101,159
LAND COSTS													
Site Cost (Vacant)	$487	$341,042	$730,803	$341,042	$730,803	$341,042	$730,803	$341,042	$730,803	$730,803	$730,803	$974,404	$974,404
ite Cost (Non-Vacant, incl, demolition costs)	$599	$426,730	$906,216	$426,730	$906,216	$426,730	$906,216	$426,730	$906,216	$906,216	$906,216	$1,205,895	$1,205,895
RLV RATIO													
Vacant lots		0.48	0.18	1.04	0.69	2.53	1.01	2.15	1.49	2.62	1.98	3.76	0.10
Non-Vacant lots		0.39	0.14	0.83	0.56	2.02	0.82	1.72	1.20	2.11	1.60	3.04	0.08

Dandenong North

	Rate	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Type 7	Type 8	Type 9	Type 10	Type 11	Type 12
		Townhouses 2br (700sqm)	Townhouses 3br (1500sqm)	Apartments 2 storey – (700sqm) - combination of 1br & 2br apartments	Apartments 2 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 3 storey – (700sqm) - combination of 1br & 2br apartments	Apartments 3 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 4 storey – (700sqm) - combination of 1br & 2br apartments	Apartments 4 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 5 storey – (1500sqm) - combination of 1br & 2br apartments	Apartments 5 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 8 storey – (2000sqm) - combination of 1br, 2br & 3br apartments	Apartments 10 storey – (2000sqm) - combination of 1br, 2br & 3br apartments
Site size		*700*	*1500*	*700*	*1500*	*700*	*1500*	*700*	*1500*	*1500*	*1500*	*2000*	*2000*
COSTS													
Building costs		$895,970	$2,136,380	$1,104,028	$2,465,022	$2,102,605	$4,859,772	$3,061,757	$6,407,391	$7,544,329	$7,946,708	$19,218,496	$27,304,380
External works and services	3%	$26,879	$64,091	$33,121	$73,951	$63,078	$145,793	$91,853	$192,222	$226,330	$238,401	$576,555	$819,131
Construction contingency	5%	$46,142	$110,024	$56,857	$126,949	$108,284	$250,278	$157,680	$329,981	$388,533	$409,255	$989,753	$1,406,176
Professional fees	9%	$84,302	$201,013	$103,879	$231,935	$197,835	$457,258	$288,082	$602,875	$709,850	$747,710	$1,808,278	$2,569,083
Development charge	1%	$10,533	$25,115	$12,979	$28,979	$24,718	$57,131	$35,994	$75,325	$88,690	$93,421	$225,931	$320,988
Construction GST													
Interest													
Council fees													
Profit margin	15%	$157,994	$376,726	$194,683	$434,678	$370,770	$856,965	$539,906	$1,129,870	$1,330,356	$1,401,311	$3,388,962	$4,814,816
Selling costs	4%	$60,000	$132,080	$80,296	$167,235	$160,592	$318,940	$212,088	$425,254	$527,168	$531,567	$1,244,524	$1,555,656
TOTAL COSTS		**$1,281,821**	**$3,045,429**	**$1,585,842**	**$3,528,748**	**$3,027,883**	**$6,946,138**	**$4,387,360**	**$9,162,916**	**$10,815,256**	**$11,368,373**	**$27,452,499**	**$38,790,229**
REVENUE													
Townhouse 2 Bed		$1,500,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Townhouse 3 Bed		$0	$3,302,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Apartment 1Bed		$0	$0	$567,400	$567,400	$1,134,800	$2,553,300	$1,702,200	$3,404,400	$4,539,200	$4,255,500	$13,617,600	$17,022,000
Apartment 2 Bed		$0	$0	$1,440,000	$2,880,000	$2,880,000	$4,320,000	$3,600,000	$5,760,000	$8,640,000	$7,200,000	$5,760,000	$7,200,000
Apartment 3 Bed		$0	$0	$0	$733,469	$0	$1,100,204	$0	$1,466,939	$0	$1,833,673	$11,735,510	$14,669,388
TOTAL REVENUE		**$1,500,000**	**$3,302,000**	**$2,007,400**	**$4,180,869**	**$4,014,800**	**$7,973,504**	**$5,302,200**	**$10,631,339**	**$13,179,200**	**$13,289,173**	**$31,113,110**	**$38,891,388**
RESIDUAL LAND VALUATION													
		$218,179	$256,571	$421,558	$652,121	$986,917	$1,027,366	$914,840	$1,468,422	$2,363,944	$1,920,801	$3,660,611	$101,159
LAND COSTS													
Site Cost (Vacant)	$446	$311,935	$668,432	$311,935	$668,432	$311,935	$668,432	$311,935	$668,432	$668,432	$668,432	$891,242	$891,242
Site Cost (Non-Vacant, incl, demolition costs)	$446	$319,115	$675,612	$319,115	$675,612	$319,115	$675,612	$319,115	$675,612	$675,612	$675,612	$898,422	$898,422
RLV RATIO													
Vacant lots		0.70	0.38	1.35	0.98	3.16	1.54	2.93	2.20	3.54	2.87	4.11	0.11
Non-Vacant lots		0.68	0.38	1.32	0.97	3.09	1.52	2.87	2.17	3.50	2.84	4.07	0.11

Keysborough

	Rate	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Type 7	Type 8	Type 9	Type 10	Type 11	Type 12
		Townhouses 2br (700sqm)	Townhouses 3br (1500sqm)	Apartments 2 storey – (700sqm) - combination of 1br & 2br apartments	Apartments 2 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 3 storey – (700sqm) - combination of 1br & 2br apartments	Apartments 3 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 4 storey – (700sqm) - combination of 1br & 2br apartments	Apartments 4 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 5 storey – (1500sqm) - combination of 1br & 2br apartments	Apartments 5 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 8 storey – (2000sqm) - combination of 1br, 2br & 3br apartments	Apartments 10 storey – (2000sqm) - combination of 1br, 2br & 3br apartments
Site size		*700*	*1500*	*700*	*1500*	*700*	*1500*	*700*	*1500*	*1500*	*1500*	*2000*	*2000*
COSTS													
Building costs		$895,970	$2,136,380	$1,104,028	$2,465,022	$2,102,605	$4,859,772	$3,061,757	$6,407,391	$7,544,329	$7,946,708	$19,218,496	$27,304,380
External works and services	3%	$26,879	$64,091	$33,121	$73,951	$63,078	$145,793	$91,853	$192,222	$226,330	$238,401	$576,555	$819,131
Construction contingency	5%	$46,142	$110,024	$56,857	$126,949	$108,284	$250,278	$157,680	$329,981	$388,533	$409,255	$989,753	$1,406,176
Professional fees	9%	$84,302	$201,013	$103,879	$231,935	$197,835	$457,258	$288,082	$602,875	$709,850	$747,710	$1,808,278	$2,569,083
Development charge	1%	$10,533	$25,115	$12,979	$28,979	$24,718	$57,131	$35,994	$75,325	$88,690	$93,421	$225,931	$320,988
Construction GST													
Interest													
Council fees	$387.59	$1,550	$3,101	$2,326	$4,651	$4,651	$9,302	$6,201	$12,403	$15,504	$15,504		
	$244,825.92	17,137.81	36,723.89	17,137.81	36,723.89	17,137.81	36,723.89	17,137.81	36,723.89	36,723.89	36,723.89		
Profit margin	15%	$157,994	$376,726	$194,683	$434,678	$370,770	$856,965	$539,906	$1,129,870	$1,330,356	$1,401,311	$3,388,962	$4,814,816
Selling costs	4%	$72,800	$169,600	$89,004	$185,935	$178,008	$355,355	$235,253	$473,806	$584,993	$592,258	$1,400,270	$1,750,338
TOTAL COSTS		**$1,313,309**	**$3,122,774**	**$1,614,014**	**$3,588,823**	**$3,067,088**	**$7,028,579**	**$4,433,864**	**$9,260,596**	**$10,925,309**	**$11,481,291**	**$27,608,244**	**$38,984,911**
REVENUE													
Townhouse 2 Bed		$1,820,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Townhouse 3 Bed		$0	$4,240,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Apartment 1Bed		$0	$0	$637,104	$637,104	$1,274,209	$2,866,970	$1,911,313	$3,822,627	$5,096,836	$4,778,283	$15,290,507	$19,113,134
Apartment 2 Bed		$0	$0	$1,588,000	$3,176,000	$3,176,000	$4,764,000	$3,970,000	$6,352,000	$9,528,000	$7,940,000	$6,352,000	$7,940,000
Apartment 3 Bed		$0	$0	$0	$835,265	$0	$1,252,898	$0	$1,670,531	$0	$2,088,163	$13,364,245	$16,705,306
TOTAL REVENUE		**$1,820,000**	**$4,240,000**	**$2,225,104**	**$4,648,370**	**$4,450,209**	**$8,883,868**	**$5,881,313**	**$11,845,157**	**$14,624,836**	**$14,806,447**	**$35,006,752**	**$43,758,440**
RESIDUAL LAND VALUATION													
		$506,691	$1,117,226	$611,091	$1,059,547	$1,383,121	$1,855,289	$1,447,450	$2,584,561	$3,699,527	$3,325,156	$7,398,508	$4,773,529
LAND COSTS													
Site Cost (Vacant)	$326	$228,428	$489,489	$228,428	$489,489	$228,428	$489,489	$228,428	$489,489	$489,489	$489,489	$652,653	$652,653
ite Cost (Non-Vacant, incl, demolition costs)	$503	$359,230	$761,573	$359,230	$761,573	$359,230	$761,573	$359,230	$761,573	$761,573	$761,573	$1,013,037	$1,013,037
RLV RATIO													
Vacant lots		2.22	2.28	2.68	2.16	6.05	3.79	6.34	5.28	7.56	6.79	11.34	7.31
Non-Vacant lots		1.41	1.47	1.70	1.39	3.85	2.44	4.03	3.39	4.86	4.37	7.30	4.71

Springvale

	Rate	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Type 7	Type 8	Type 9	Type 10	Type 11	Type 12
		Townhouses 2br (700sqm)	Townhouses 3br (1500sqm)	Apartments 2 storey – (700sqm) - combination of 1br & 2br apartments	Apartments 2 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 3 storey – (700sqm) - combination of 1br & 2br apartments	Apartments 3 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 4 storey – (700sqm) - combination of 1br & 2br apartments	Apartments 4 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 5 storey – (1500sqm) - combination of 1br & 2br apartments	Apartments 5 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 8 storey – (2000sqm) - combination of 1br, 2br & 3br apartments	Apartments 10 storey – (2000sqm) - combination of 1br, 2br & 3br apartments
Site size		*700*	*1500*	*700*	*1500*	*700*	*1500*	*700*	*1500*	*1500*	*1500*	*2000*	*2000*
COSTS													
Building costs		$895,970	$2,136,380	$1,104,028	$2,465,022	$2,102,605	$4,859,772	$3,061,757	$6,407,391	$7,544,329	$7,946,708	$19,218,496	$27,304,380
External works and services	3%	$26,879	$64,091	$33,121	$73,951	$63,078	$145,793	$91,853	$192,222	$226,330	$238,401	$576,555	$819,131
Construction contingency	5%	$46,142	$110,024	$56,857	$126,949	$108,284	$250,278	$157,680	$329,981	$388,533	$409,255	$989,753	$1,406,176
Professional fees	9%	$84,302	$201,013	$103,879	$231,935	$197,835	$457,258	$288,082	$602,875	$709,850	$747,710	$1,808,278	$2,569,083
Development charge	1%	$10,533	$25,115	$12,979	$28,979	$24,718	$57,131	$35,994	$75,325	$88,690	$93,421	$225,931	$320,988
Construction GST													
Interest													
Council fees													
Profit margin	15%	$157,994	$376,726	$194,683	$434,678	$370,770	$856,965	$539,906	$1,129,870	$1,330,356	$1,401,311	$3,388,962	$4,814,816
Selling costs	4%	$76,465	$168,320	$89,800	$200,762	$179,600	$373,743	$236,600	$498,323	$587,200	$622,904	$1,568,987	$1,961,234
TOTAL COSTS		**$1,298,286**	**$3,081,669**	**$1,595,346**	**$3,562,275**	**$3,046,891**	**$7,000,941**	**$4,411,872**	**$9,235,986**	**$10,875,288**	**$11,459,710**	**$27,776,962**	**$39,195,808**
REVENUE													
Townhouse 2 Bed		$1,911,626	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Townhouse 3 Bed		$0	$4,208,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Apartment 1Bed		$0	$0	$605,000	$605,000	$1,210,000	$2,722,500	$1,815,000	$3,630,000	$4,840,000	$4,537,500	$14,520,000	$18,150,000
Apartment 2 Bed		$0	$0	$1,640,000	$3,280,000	$3,280,000	$4,920,000	$4,100,000	$6,560,000	$9,840,000	$8,200,000	$6,560,000	$8,200,000
Apartment 3 Bed		$0	$0	$0	$1,134,043	$0	$1,701,064	$0	$2,268,085	$0	$2,835,106	$18,144,681	$22,680,851
TOTAL REVENUE		**$1,911,626**	**$4,208,000**	**$2,245,000**	**$5,019,043**	**$4,490,000**	**$9,343,564**	**$5,915,000**	**$12,458,085**	**$14,680,000**	**$15,572,606**	**$39,224,681**	**$49,030,851**
RESIDUAL LAND VALUATION													
		$613,340	$1,126,331	$649,654	$1,456,767	$1,443,109	$2,342,623	$1,503,128	$3,222,099	$3,804,712	$4,112,896	$11,447,719	$9,835,043
LAND COSTS													
ite Cost (Non-Vacant, incl, demolition costs)	$782	$554,394	$1,179,782	$554,394	$1,179,782	$554,394	$1,179,782	$554,394	$1,179,782	$1,179,782	$1,179,782	$1,570,650	$1,570,650
RLV RATIO													
Vacant lots		1.52	1.30	1.61	1.68	3.57	2.70	3.72	3.72	4.39	4.75	9.91	8.51
Non-Vacant lots		1.11	0.95	1.17	1.23	2.60	1.99	2.71	2.73	3.22	3.49	7.29	6.26

Springvale South

	Rate	Type 1 Townhouses 2br (700sqm)	Type 2 Townhouses 3br (1500sqm)	Type 3 Apartments 2 storey – (700sqm) - combination of 1br & 2br apartments	Type 4 Apartments 2 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Type 5 Apartments 3 storey – (700sqm) - combination of 1br & 2br apartments	Type 6 Apartments 3 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Type 7 Apartments 4 storey – (700sqm) - combination of 1br & 2br apartments	Type 8 Apartments 4 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Type 9 Apartments 5 storey – (1500sqm) - combination of 1br & 2br apartments	Type 10 Apartments 5 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Type 11 Apartments 8 storey – (2000sqm) - combination of 1br, 2br & 3br apartments	Type 12 Apartments 10 storey – (2000sqm) - combination of 1br, 2br & 3br apartments
Site size		*700*	*1500*	*700*	*1500*	*700*	*1500*	*700*	*1500*	*1500*	*1500*	*2000*	*2000*
COSTS													
Building costs		$895,970	$2,136,380	$1,104,028	$2,465,022	$2,102,605	$4,859,772	$3,061,757	$6,407,391	$7,544,329	$7,946,708	$19,218,496	$27,304,380
External works and services	3%	$26,879	$64,091	$33,121	$73,951	$63,078	$145,793	$91,853	$192,222	$226,330	$238,401	$576,555	$819,131
Construction contingency	5%	$46,142	$110,024	$56,857	$126,949	$108,284	$250,278	$157,680	$329,981	$388,533	$409,255	$989,753	$1,406,176
Professional fees	9%	$84,302	$201,013	$103,879	$231,935	$197,835	$457,258	$288,082	$602,875	$709,850	$747,710	$1,808,278	$2,569,083
Development charge	1%	$10,533	$25,115	$12,979	$28,979	$24,718	$57,131	$35,994	$75,325	$88,690	$93,421	$225,931	$320,988
Construction GST													
Interest													
Council fees													
Profit margin	15%	$157,994	$376,726	$194,683	$434,678	$370,770	$856,965	$539,906	$1,129,870	$1,330,356	$1,401,311	$3,388,962	$4,814,816
Selling costs	4%	$72,824	$160,305	$85,524	$191,202	$171,048	$355,945	$225,333	$474,594	$559,238	$593,242	$1,494,274	$1,867,842
TOTAL COSTS		**$1,294,645**	**$3,073,654**	**$1,591,070**	**$3,552,715**	**$3,038,338**	**$6,983,143**	**$4,400,605**	**$9,212,257**	**$10,847,326**	**$11,430,048**	**$27,702,248**	**$39,102,415**
REVENUE													
Townhouse 2 Bed		$1,820,596	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Townhouse 3 Bed		$0	$4,007,619	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Apartment 1Bed		$0	$0	$576,190	$576,190	$1,152,381	$2,592,857	$1,728,571	$3,457,143	$4,609,524	$4,321,429	$13,828,571	$17,285,714
Apartment 2 Bed		$0	$0	$1,561,905	$3,123,810	$3,123,810	$4,685,714	$3,904,762	$6,247,619	$9,371,429	$7,809,524	$6,247,619	$7,809,524
Apartment 3 Bed		$0	$0	$0	$1,080,041	$0	$1,620,061	$0	$2,160,081	$0	$2,700,101	$17,280,648	$21,600,811
TOTAL REVENUE		**$1,820,596**	**$4,007,619**	**$2,138,095**	**$4,780,041**	**$4,276,190**	**$8,898,632**	**$5,633,333**	**$11,864,843**	**$13,980,952**	**$14,831,054**	**$37,356,839**	**$46,696,049**
RESIDUAL LAND VALUATION													
		$525,951	$933,965	$547,025	$1,227,325	$1,237,852	$1,915,489	$1,232,728	$2,652,586	$3,133,626	$3,401,006	$9,654,591	$7,593,633
LAND COSTS													
Site Cost (Vacant)	$535	$374,200	$801,857	$374,200	$801,857	$374,200	$801,857	$374,200	$801,857	$801,857	$801,857	$1,069,142	$1,069,142
ite Cost (Non-Vacant, incl, demolition costs)	$799	$566,147	$1,204,966	$566,147	$1,204,966	$566,147	$1,204,966	$566,147	$1,204,966	$1,204,966	$1,204,966	$1,604,229	$1,604,229
RLV RATIO													
Vacant lots		1.41	1.16	1.46	1.53	3.31	2.39	3.29	3.31	3.91	4.24	9.03	7.10
Non-Vacant lots		0.93	0.78	0.97	1.02	2.19	1.59	2.18	2.20	2.60	2.82	6.02	4.73

Noble Park

	Rate	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Type 7	Type 8	Type 9	Type 10	Type 11	Type 12
		Townhouses 2br (700sqm)	Townhouses 3br (1500sqm)	Apartments 2 storey – (700sqm) - combination of 1br & 2br apartments	Apartments 2 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 3 storey – (700sqm) - combination of 1br & 2br apartments	Apartments 3 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 4 storey – (700sqm) - combination of 1br & 2br apartments	Apartments 4 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 5 storey – (1500sqm) - combination of 1br & 2br apartments	Apartments 5 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 8 storey – (2000sqm) - combination of 1br, 2br & 3br apartments	Apartments 10 storey – (2000sqm) - combination of 1br, 2br & 3br apartments
Site size		*700*	*1500*	*700*	*1500*	*700*	*1500*	*700*	*1500*	*1500*	*1500*	*2000*	*2000*
COSTS													
Building costs		$895,970	$2,136,380	$1,104,028	$2,465,022	$2,102,605	$4,859,772	$3,061,757	$6,407,391	$7,544,329	$7,946,708	$19,218,496	$27,304,380
External works and services	3%	$26,879	$64,091	$33,121	$73,951	$63,078	$145,793	$91,853	$192,222	$226,330	$238,401	$576,555	$819,131
Construction contingency	5%	$46,142	$110,024	$56,857	$126,949	$108,284	$250,278	$157,680	$329,981	$388,533	$409,255	$989,753	$1,406,176
Professional fees	9%	$84,302	$201,013	$103,879	$231,935	$197,835	$457,258	$288,082	$602,875	$709,850	$747,710	$1,808,278	$2,569,083
Development charge	1%	$10,533	$25,115	$12,979	$28,979	$24,718	$57,131	$35,994	$75,325	$88,690	$93,421	$225,931	$320,988
Construction GST													
Interest													
Council fees													
Profit margin	15%	$157,994	$376,726	$194,683	$434,678	$370,770	$856,965	$539,906	$1,129,870	$1,330,356	$1,401,311	$3,388,962	$4,814,816
Selling costs	4%	$55,600	$138,121	$76,960	$156,895	$153,920	$308,542	$204,600	$411,389	$510,560	$514,237	$1,233,835	$1,542,294
TOTAL COSTS		**$1,277,421**	**$3,051,470**	**$1,582,506**	**$3,518,408**	**$3,021,211**	**$6,935,740**	**$4,379,872**	**$9,149,052**	**$10,798,648**	**$11,351,042**	**$27,441,809**	**$38,776,867**
REVENUE													
Townhouse 2 Bed		$1,390,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Townhouse 3 Bed		$0	$3,453,023	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Apartment 1Bed		$0	$0	$610,000	$610,000	$1,220,000	$2,745,000	$1,830,000	$3,660,000	$4,880,000	$4,575,000	$14,640,000	$18,300,000
Apartment 2 Bed		$0	$0	$1,314,000	$2,628,000	$2,628,000	$3,942,000	$3,285,000	$5,256,000	$7,884,000	$6,570,000	$5,256,000	$6,570,000
Apartment 3 Bed		$0	$0	$0	$684,367	$0	$1,026,551	$0	$1,368,735	$0	$1,710,918	$10,949,878	$13,687,347
TOTAL REVENUE		**$1,390,000**	**$3,453,023**	**$1,924,000**	**$3,922,367**	**$3,848,000**	**$7,713,551**	**$5,115,000**	**$10,284,735**	**$12,764,000**	**$12,855,918**	**$30,845,878**	**$38,557,347**
RESIDUAL LAND VALUATION													
		$112,579	$401,553	$341,494	$403,959	$826,789	$777,811	$735,128	$1,135,682	$1,965,352	$1,504,876	$3,404,068	-$219,520
LAND COSTS													
ite Cost (Non-Vacant, incl, demolition costs)	$756	$536,202	$1,140,798	$536,202	$1,140,798	$536,202	$1,140,798	$536,202	$1,140,798	$1,140,798	$1,140,798	$1,518,670	$1,518,670
RLV RATIO													
Vacant lots		0.32	0.54	0.98	0.54	2.38	1.04	2.11	1.52	2.63	2.02	3.42	-0.22
Non-Vacant lots		0.21	0.35	0.64	0.35	1.54	0.68	1.37	1.00	1.72	1.32	2.24	-0.14

Noble Park North

	Rate	Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Type 7	Type 8	Type 9	Type 10	Type 11	Type 12
		Townhouses 2br (700sqm)	Townhouses 3br (1500sqm)	Apartments 2 storey – (700sqm) - combination of 1br & 2br apartments	Apartments 2 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 3 storey – (700sqm) - combination of 1br & 2br apartments	Apartments 3 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 4 storey – (700sqm) - combination of 1br & 2br apartments	Apartments 4 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 5 storey – (1500sqm) - combination of 1br & 2br apartments	Apartments 5 storey – (1500sqm) - combination of 1br, 2br & 3br apartments	Apartments 8 storey – (2000sqm) - combination of 1br, 2br & 3br apartments	Apartments 10 storey – (2000sqm) - combination of 1br, 2br & 3br apartments
Site size		*700*	*1500*	*700*	*1500*	*700*	*1500*	*700*	*1500*	*1500*	*1500*	*2000*	*2000*
COSTS													
Building costs		$895,970	$2,136,380	$1,104,028	$2,465,022	$2,102,605	$4,859,772	$3,061,757	$6,407,391	$7,544,329	$7,946,708	$19,218,496	$27,304,380
External works and services	3%	$26,879	$64,091	$33,121	$73,951	$63,078	$145,793	$91,853	$192,222	$226,330	$238,401	$576,555	$819,131
Construction contingency	5%	$46,142	$110,024	$56,857	$126,949	$108,284	$250,278	$157,680	$329,981	$388,533	$409,255	$989,753	$1,406,176
Professional fees	9%	$84,302	$201,013	$103,879	$231,935	$197,835	$457,258	$288,082	$602,875	$709,850	$747,710	$1,808,278	$2,569,083
Development charge	1%	$10,533	$25,115	$12,979	$28,979	$24,718	$57,131	$35,994	$75,325	$88,690	$93,421	$225,931	$320,988
Construction GST													
Interest													
Council fees													
Profit margin	15%	$157,994	$376,726	$194,683	$434,678	$370,770	$856,965	$539,906	$1,129,870	$1,330,356	$1,401,311	$3,388,962	$4,814,816
Selling costs	4%	$55,600	$138,121	$76,960	$156,895	$153,920	$308,542	$204,600	$411,389	$510,560	$514,237	$1,233,835	$1,542,294
TOTAL COSTS		**$1,277,421**	**$3,051,470**	**$1,582,506**	**$3,518,408**	**$3,021,211**	**$6,935,740**	**$4,379,872**	**$9,149,052**	**$10,798,648**	**$11,351,042**	**$27,441,809**	**$38,776,867**
REVENUE													
Townhouse 2 Bed		$1,390,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Townhouse 3 Bed		$0	$3,453,023	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Apartment 1Bed		$0	$0	$610,000	$610,000	$1,220,000	$2,745,000	$1,830,000	$3,660,000	$4,880,000	$4,575,000	$14,640,000	$18,300,000
Apartment 2 Bed		$0	$0	$1,314,000	$2,628,000	$2,628,000	$3,942,000	$3,285,000	$5,256,000	$7,884,000	$6,570,000	$5,256,000	$6,570,000
Apartment 3 Bed		$0	$0	$0	$684,367	$0	$1,026,551	$0	$1,368,735	$0	$1,710,918	$10,949,878	$13,687,347
TOTAL REVENUE		**$1,390,000**	**$3,453,023**	**$1,924,000**	**$3,922,367**	**$3,848,000**	**$7,713,551**	**$5,115,000**	**$10,284,735**	**$12,764,000**	**$12,855,918**	**$30,845,878**	**$38,557,347**
RESIDUAL LAND VALUATION													
		$112,579	$401,553	$341,494	$403,959	$826,789	$777,811	$735,128	$1,135,682	$1,965,352	$1,504,876	$3,404,068	-$219,520
LAND COSTS													
Site Cost (Vacant)	$470	$328,778	$704,525	$328,778	$704,525	$328,778	$704,525	$328,778	$704,525	$704,525	$704,525	$939,366	$939,366
Site Cost (Non-Vacant, incl, demolition costs)	$683	$485,201	$1,031,510	$485,201	$1,031,510	$485,201	$1,031,510	$485,201	$1,031,510	$1,031,510	$1,031,510	$1,372,953	$1,372,953
RLV RATIO													
Vacant lots		0.34	0.57	1.04	0.57	2.51	1.10	2.24	1.61	2.79	2.14	3.62	-0.23
Non-Vacant lots		0.23	0.39	0.70	0.39	1.70	0.75	1.52	1.10	1.91	1.46	2.48	-0.16

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