

Knox Housing Strategy Monitoring Program

Annual Report for 2019

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1. This document

This is the 12th annual Housing Strategy Monitoring Program report. It presents measures of progress against each of the six objectives of the *Knox Housing Strategy 2015*.

2. Reading this report: a note on net vs. total dwelling change

Approved planning permits are used throughout this report as an indicator of what dwellings are likely to be built, and where, in the short to medium term. Planning permits typically expire after two years, although extensions for an additional two years can be granted. Planning permits often allow for the demolition of an older dwelling or dwellings as well as the construction of a new dwelling or dwellings. Therefore there are two different measures of approved dwellings possible, which are used in different contexts within this report.

“Total dwellings approved” measures all new dwellings possible from approved planning permit applications, and does not account for demolition of existing houses. This gross dwellings measure is used to demonstrate how approved permits align with the objectives of the *Knox Housing Strategy 2015* as it provides the best information about the size and type of individual dwellings approved in 2019.

“Net new dwellings possible” measures the overall increase in dwellings possible from approved planning permit applications, beyond what exists in Knox today. It subtracts out demolitions from the total figure, resulting in a lower figure than total dwellings approved. This net dwellings measure is used to compare change over time, as it provides the best information about the overall diversity and availability of housing across the city.

For example, a planning permit to replace a single house with five new townhouses would be counted as five total new townhouses and an increase of four net new dwellings.

3. Policy context

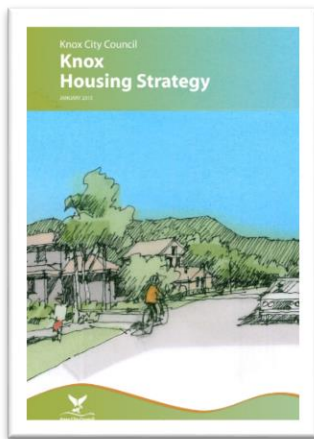
Plan Melbourne 2017-2050 is the Victorian Government’s strategy for supporting jobs, housing and transport, while building on Melbourne's distinctiveness, liveability and sustainability. The underlying goal of this policy is to direct new housing toward areas near existing services, jobs and public transport, including the “Activity Centres” of Boronia, Bayswater, Rowville, and Knox Central.

The *Knox Housing Strategy 2015* builds on this policy by supporting a scaled approach to residential development to accommodate population growth and the community's changing housing needs. This scaled approach recognises that some parts of the municipality will need to accommodate change, and in other areas there will be limited change in order to protect and enhance Knox’s green and leafy character and areas of environmental significance.

The *Knox Housing Strategy 2015* divides Knox into four housing areas (Map 1), each with different levels of change anticipated and different types of dwelling preferred:

- **Bush Suburban** and **Knox Neighbourhood** areas are expected to see less change, preserving areas of environmental significance (including native vegetation and wildlife habitat areas), landscape value and neighbourhood character.
- **Local Living** and **Activity Areas** are expected to see more change, accommodating medium and higher density development to provide additional housing capacity and increased choice to better serve the city's changing needs into the future.

The diagram below shows how the objectives of the *Knox Housing Strategy 2015* align with the strategies of the *Knox Community and Council Plan 2017-2021*.



Objective 1: A diversity of housing is provided in appropriate locations.



Strategy 2.1: Plan for a diversity of housing in appropriate locations.

Objective 2: Residential development better responds to the community's current and future needs, and allows people to 'age-in-place'.



Strategy 2.3: Support the delivery of a range of housing that addresses housing and living affordability needs.

Objective 3: Energy, water, and waste efficient design are increased in residential dwellings.



Strategy 2.2: Encourage high-quality sustainable design.

Objective 4: Quality housing design in Knox is improved to better respond to neighbourhood identity and create a stronger sense of place.



Strategy 1.3: Ensure the Knox local character is protected and enhanced through the design and location of urban development and infrastructure.

Objective 5: Protect and enhance landscape and environmental values of natural areas of significance.



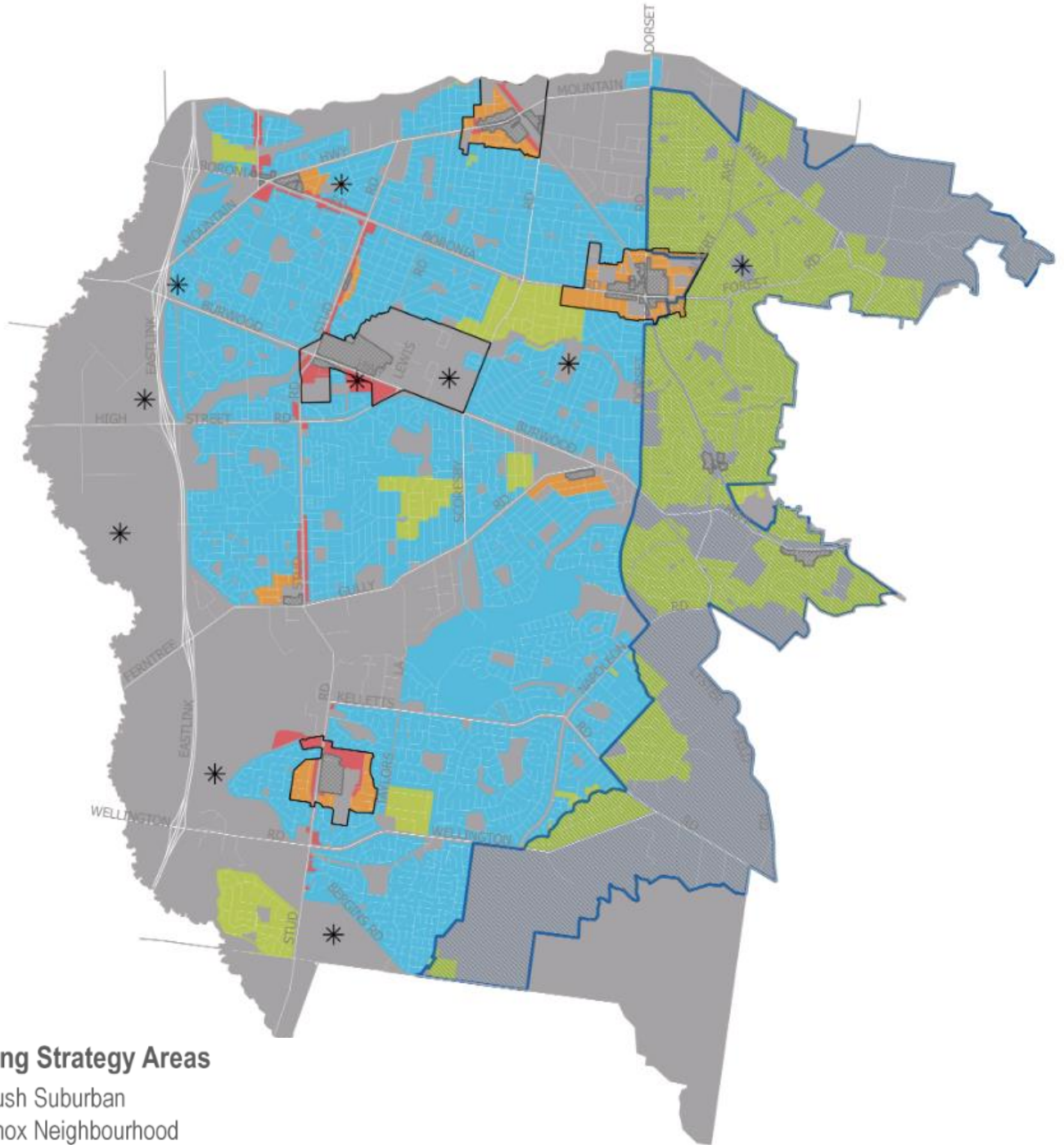
Strategy 1.2: Create a greener city with more large trees, indigenous flora and fauna.

Objective 6: Development responds to neighbourhoods in an integrated and balanced manner.



Strategy 1.3: Ensure the Knox local character is protected and enhanced through the design and location of urban development and infrastructure.

Map 1. Knox Housing Strategy 2015 areas



Housing Strategy Areas

- Bush Suburban
- Knox Neighbourhood
- Local Living
- Activity Area
- Activity Centre boundary
- Activity Areas (retail/commercial/residential)
- Dandenong Foothills Area (separate planning controls apply)
- * Strategic sites for housing

4. Overview: dwelling development possible from permits approved in 2019

234

planning permits resulting in at least one additional dwelling were approved in 2019 (Map 2), down from 288 in 2018.

602

net new dwellings are possible from the planning permits approved in 2019.

231

new rooms in residential aged care facilities were also approved in planning permits in 2019.

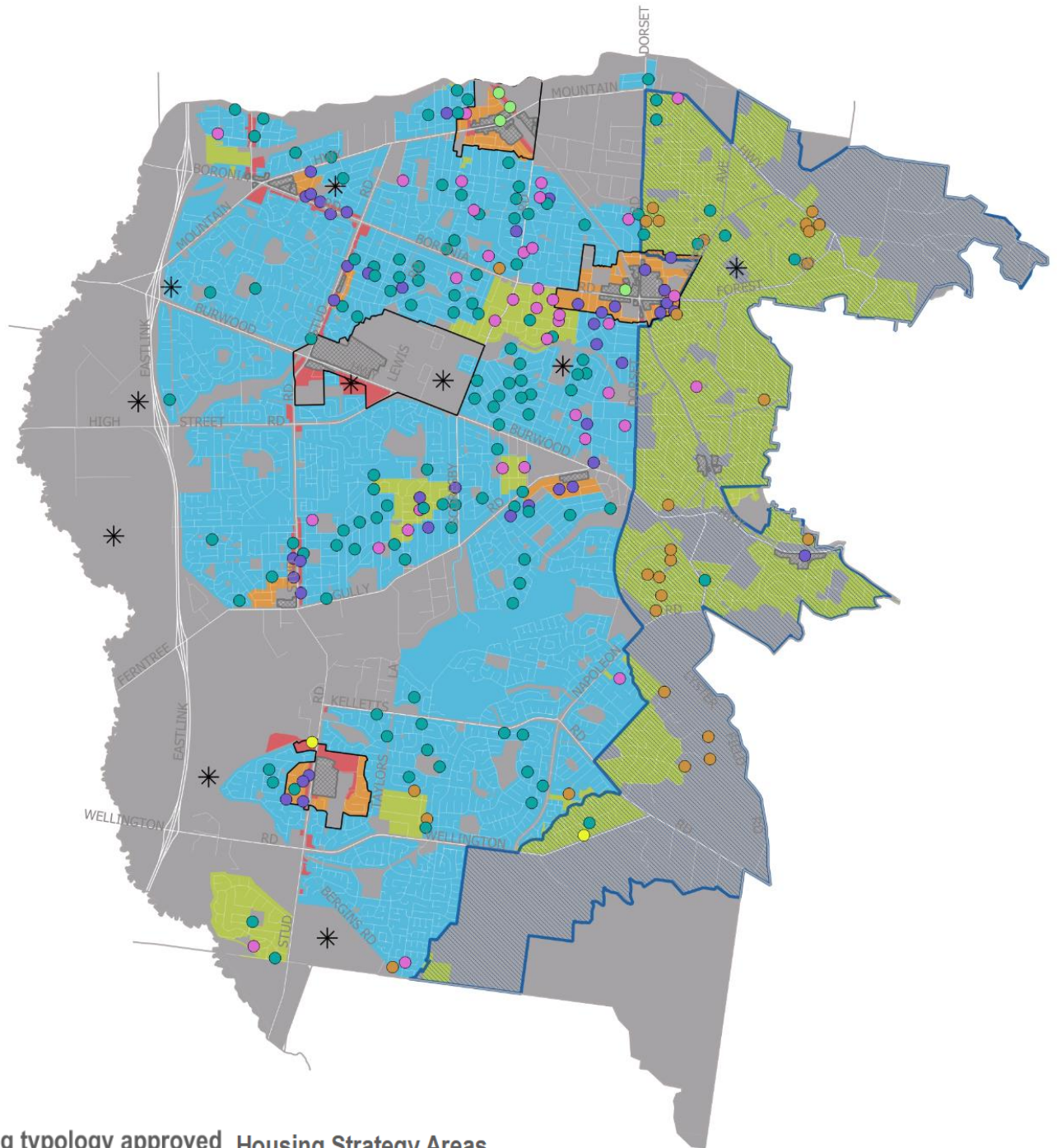
49%

of the net new dwellings possible from planning permits approved in 2019 were in Boronia or Bayswater.

105

(or 17%) of the net new dwellings possible from planning permits approved in 2019 were in two apartment complexes (in Boronia and Bayswater).

Map 2. Planning permits approved in 2019 that will yield at least one net new dwelling if enacted



Dwelling typology approved

- Detached dwellings
- Dual occupancy
- Villa units
- Townhouses
- Apartments
- Residential aged care

Housing Strategy Areas

- Bush Suburban
- Knox Neighbourhood
- Local Living
- Activity Area
- Activity Centre boundary
- ▨ Activity Areas (retail/commercial/residential)
- ▨ Dandenong Foothills Area (separate planning controls apply)
- * Strategic sites for housing

5. A diversity of housing is provided in appropriate locations

5.1 Why is this important?

While demand for larger separate houses in Knox will continue, having a mix of housing options ensures the city caters to existing and potential residents at all stages of life and of diverse economic means. We also seek to protect and enhance the “green and leafy” character of Knox that is valued by so many in the community. This means encouraging diversity of housing with increased densities in Activity Areas and Local Living areas (close to transport, shops and services) to provide more housing options, while discouraging intensive types of development in Bush Suburban and Knox Neighbourhood areas to preserve these neighbourhoods’ green and leafy character and areas of environmental significance.



Eighty-four per cent of the dwellings in Knox are separate houses, 90% of which have three or more bedrooms.
(2016 Census)

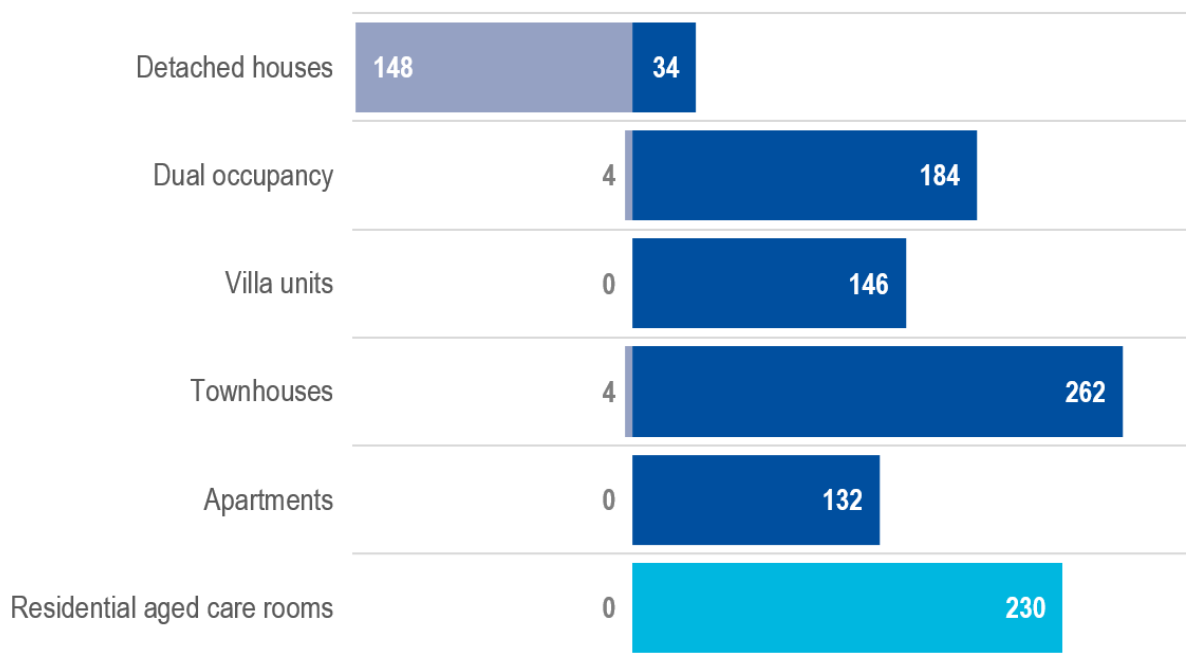
5.2 How are we tracking?

Approximately 65% of net new dwellings approved in 2019 were either townhouses or apartments.

The types of dwelling (see Attachment A for dwelling type definitions) for which planning permits were approved in 2019 are shown in Figure 1.

Fig. 1 In 2019 townhouses accounted for more new dwellings in approved planning permits than any other type of dwelling, and almost all the demolitions in approved planning permits were detached houses.

There were also more than 200 residential aged care rooms in planning permits approved in 2019.



Note: Includes dwellings not in a Housing Strategy area (that is, outside the urban growth boundary and in commercial areas).

Table 1 shows the number of new dwellings in approved planning permits, and the preferred dwelling type for each Knox Housing Strategy area. According to the *Knox Housing Strategy 2015*, planning permit approvals for detached houses and dual occupancies should fall mainly in Bush Suburban and Knox Neighbourhood areas. This was generally the case in 2019, with 98% of the approved detached and dual occupancy dwellings in Knox Housing Strategy areas being located in Bush Suburban or Knox Neighbourhood areas.

Conversely, planning permit approvals for denser housing, like apartments and townhouses, should be concentrated in Local Living and Activity Areas. In 2019, 73% of the townhouses and apartments approved in Knox Housing Strategy areas were in Local Living or Activity Areas. Only seven dwellings (from six approvals) were approved in areas where they were less dense than the preferred type according to the Housing Strategy area.

Figures 2, 3 and 4 show the proportion of approved new dwellings and approved permits that were for the preferred dwelling typology. See Attachment B for net growth in dwellings, by typology, over the past five years.

Table 1: Number of new dwellings by dwelling type and Housing Strategy area type

Area type		Net new dwellings	Total new dwellings	Detached dwellings	Dual occupancy	Villa units	Townhouses	Apartments / Mixed use
Outside the Urban Growth Boundary	All lots - includes rural and other non-residential zones	8	8	8	0	0	0	0
Bush Suburban	All lots - min. subdivision requirements apply	93	126	20	26	51	29	0
Knox Neighbourhood	Lots under 1000m2	131	198	1	150	25	22	0
	Lots over 1000m2	79	101	4	5	66	26	0
Local Living	All lots - additional controls from local plans may apply	76	92	1	1	4	86	0
Activity Areas	All lots - additional controls from local plans may apply	109	127	0	2	0	98	27
Commercial Areas	All lots - additional controls from local plans may apply	106	106	0	0	0	1	105

△ PREFERRED HOUSING TYPE

Fig. 2 Overall, 75% of new dwellings in permits approved in 2019 were the preferred dwelling type for their corresponding Housing Strategy area.

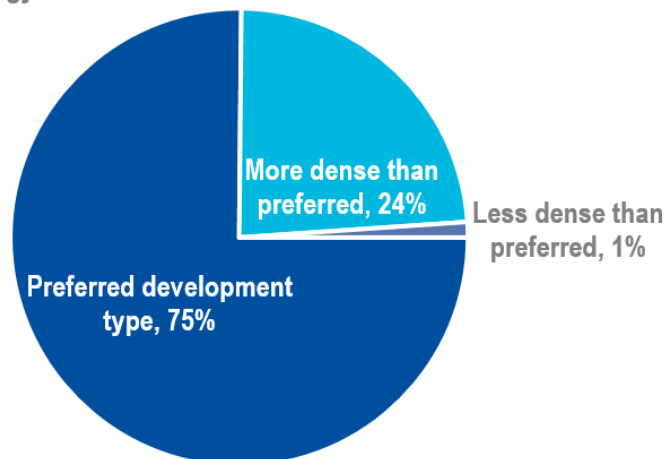


Fig. 3 The majority of the planning permits approved in 2019 were for a dwelling typology preferred within the respective Housing Strategy area.

However, it was a smaller majority for **Bush Suburban** and **large lots in Knox Neighbourhood areas**.

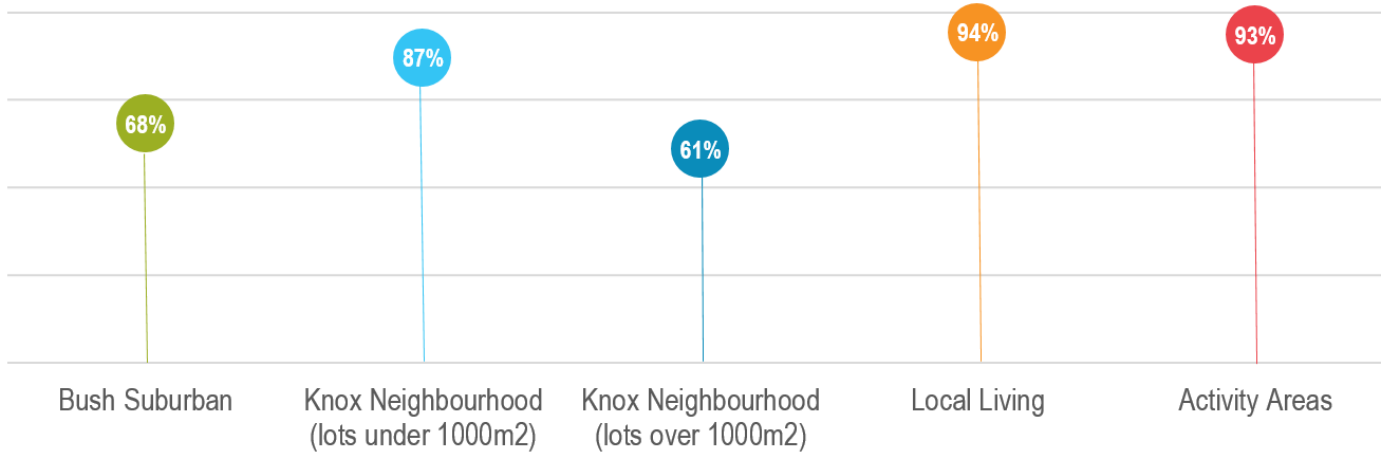
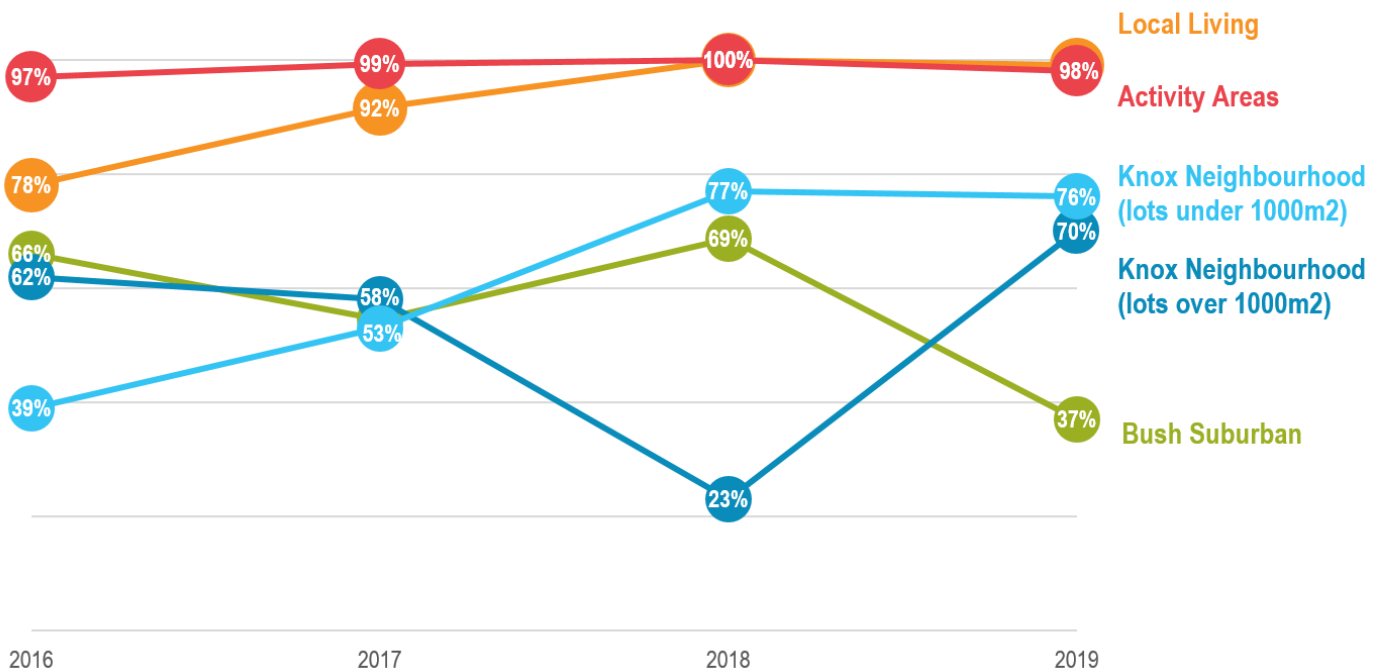


Fig. 4 Almost all new dwellings approved in **Local Living Areas** and **Activity Areas** in 2018 and 2019 were the preferred typology for the Housing Strategy area in which they are located.

Areas where lower densities are preferred tend to perform less well.



5.3 Analysis

- For the fifth year in a row, more new townhouses were approved (262) in 2019 than any other dwelling type.
- Although the approvals data for 2019 suggests that the overall number of detached dwellings in Knox may decline in the short term (as they are replaced with other dwelling typologies), larger development sites, such as Norvel Road Quarry, Kingston Links, and the Boral site on High Street Road, will likely counteract this trend.

- In 2019 the proportion of dwellings approved for large Knox Neighbourhood lots that were of the preferred typology was improved over previous years. The unusually low figure in 2018 was highly influenced by a single application for 294 townhouses at the site of the former Wantirna Caravan Park that was approved at VCAT after being refused by Council.
- Fewer than half of the 126 new dwellings approved in Bush Suburban areas in 2019 were the preferred dwelling types (detached or dual occupancy). This is due in part to the approved expansion of Glengollan Retirement Village in Ferntree Gully that would provide 21 new townhouses across 10 lots. This is a positive outcome from the perspective of providing smaller housing options suitable for older residents. The Glengollan Retirement Village approval aside, the proportion of new dwellings in Bush Suburban areas that are the preferred typology would be 44% instead of 37%.
- Twelve villa units across three sites in Bush Suburban areas were approved after Council's initial refusal was overturned by VCAT. Other approvals in Bush Suburban areas for developments denser than the preferred typology included a range of mitigating factors that played an important role in these decisions by Council:
 - A five villa unit development on a very large Bush Suburban lot on Mountain Highway in Boronia was approved to yield a final average density of one dwelling per 581 square metres. This is a lower density than a dual occupancy on a typically-sized 800 square metre lot in the area.
 - An eight villa unit development on Kathryn Road in Knoxfield was approved after the original plans were amended to reduce the size of the dwellings and increase the size of the private open space.
 - Four villa units were approved on David Street in Knoxfield after the original plans were amended to reduce the building footprint.
 - Six townhouses were approved on Coromandel Crescent in Knoxfield after the original plans were amended to increase setbacks, reduce the size of the dwellings and provide additional space for canopy trees.
 - The remainder were eight smaller (two or three dwelling) villa unit developments and one three dwelling townhouse development (see Map 4).
- Applications for townhouses and villa units in lower density Housing Strategy areas were still considered if they were determined to deliver the open space and vegetation outcomes these policy areas are meant to provide. For example, some corner lots or those that are just under the 1,000m² threshold can accommodate villa units if they also meet the open space and tree canopy requirements in the planning scheme. In addition, smaller townhouse developments of three to four units have become more common over the last few years. These often help deliver better neighbourhood character outcomes than traditional villa units, as their more compact built form can provide larger landscaped areas for trees and open space. In 2019, 21 of the 43 townhouse developments approved were for three or four dwellings.

6. Residential development better responds to the community's needs, and allows people to age-in-place.

6.1 Why is this important?

Knox is forecast to grow by 6,553 households between 2020 and 2031 ([Knox Forecast .id](#)¹). By this time almost one in three residents will be over 55 years of age.

Smaller dwellings tend to be less expensive and easier to maintain, providing an attractive option for first homebuyers, ageing residents looking to downsize, and anyone else keen to reduce their living costs.

6.2 How are we tracking?

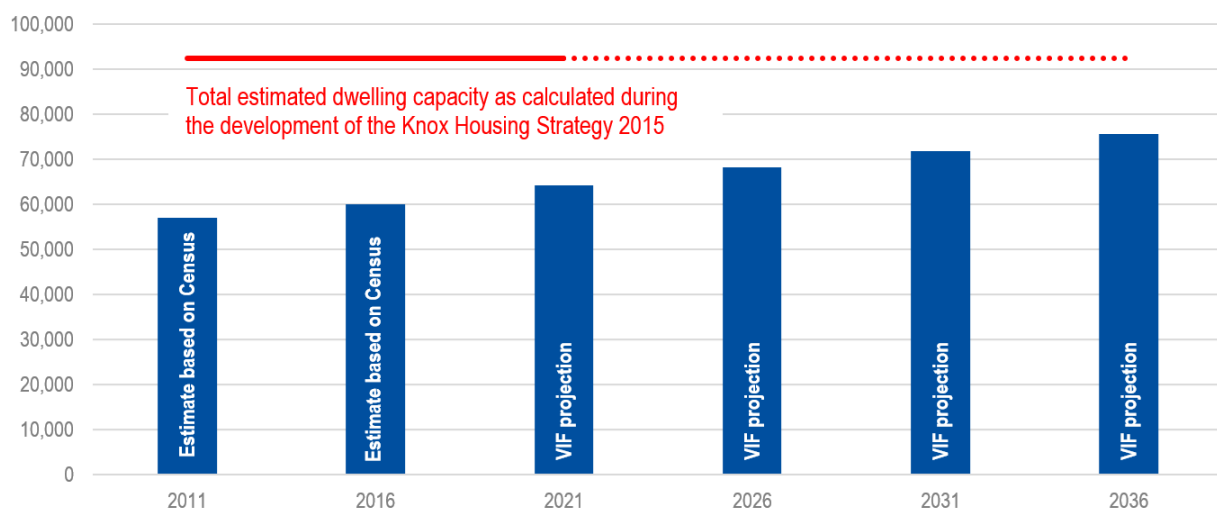
The *Knox Housing Strategy 2015* estimated that Knox had capacity for 36,000 additional dwellings if each lot were developed to its full potential within the constraints of planning provisions. Between 2011 and 2021, the Victorian government's Victoria in Future projections ([DELWP 2019a](#)²) suggest Knox will have grown by approximately 7,200 dwellings. It follows that projected future growth can most likely be accommodated within Knox's estimated capacity until at least 2036 (Figure 5). However, these capacity estimates are based on broad assumptions based on the policy context of the *Knox Housing Strategy 2015*, and were intended to inform the 10-year lifespan of that document. These estimates will be revisited during the development of the next Knox Housing Strategy to provide greater certainty over the longer term.



Average household size in Knox is declining, and the number of one and two person households in Knox is forecast to surpass the number of families with children in 2024.

([Knox Profile .id](#), [Knox Forecast .id](#))

Fig. 5 It appears that forecast dwelling numbers in Knox can be accommodated within applicable planning provisions (estimated capacity) to at least 2036.



¹ Knox Forecast .id is produced on behalf of Council and are based on levels of new residential development and demographic assumptions, such as in and out migration rates from the local areas.

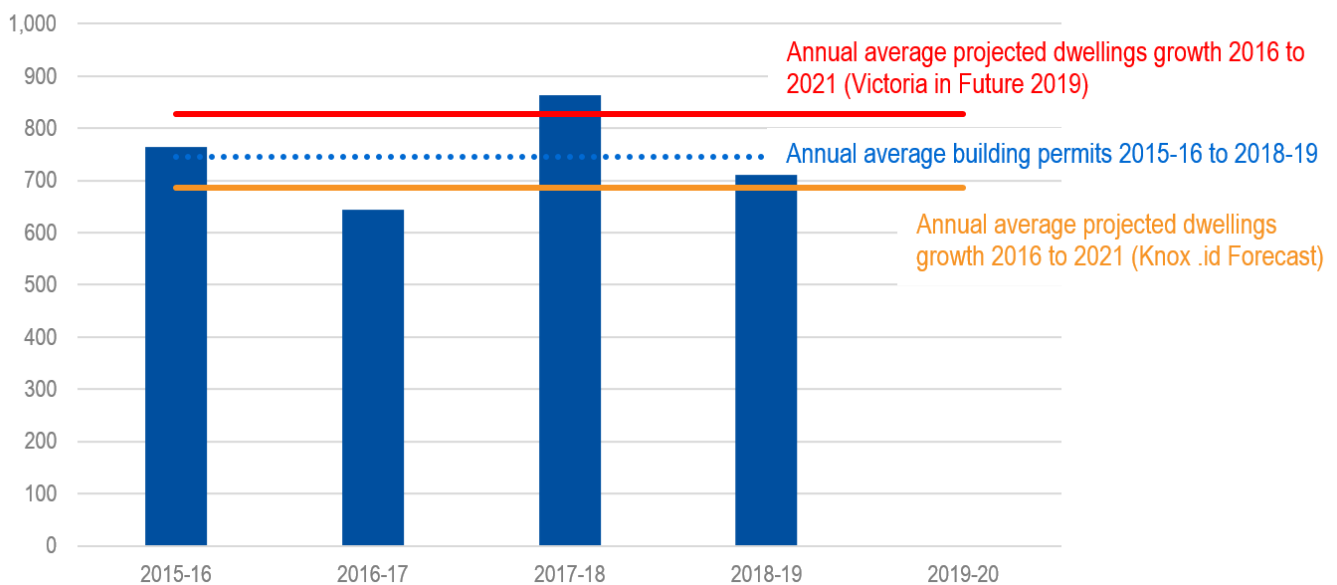
² The DELWP Victoria in Future (VIF) dwelling projections are applied here as they are calculated using a top-down model, which, in contrast to the forecasting method employed by .id on behalf of Council, in which only local factors and trends are taken into account, include assumptions about state level growth and then works to allocate this to smaller areas, including local government areas. VIF forecasts greater dwelling growth for Knox than is forecast by .id, and therefore the VIF forecasts represent a more conservative benchmark for capacity assessment.

One way to assess the actual number of new dwellings built against forecasts over the same period is to look at data on building permits. While planning permits relate to land use decisions for a proposed development and provide insight as to what could be built on a lot in the next two to four years, building permits relate to construction and are therefore a stronger indicator of actual construction on the ground.³ Building permits were granted for 3,552 new dwellings in Knox during the four financial years 2015-16 to 2018-19, equivalent to an annual average of 888 new dwellings constructed.

However, this number overestimates the real increase in dwellings across the city, because building permit data does not take into account demolitions. This is similar to the difference between the number of total new dwellings approved in planning permits and the number of net new dwellings possible from those approvals. In fact, that relationship can be used to adjust the building permits figure to get a more realistic estimate of the increase of dwellings across the city.

In the four years from 2015 to 2019, there was one demolition for every 6.25 dwellings approved in *planning* permits. Applying that same rate to *building* permits gives an annual average of 746 new dwellings built across Knox over a five year period. That estimate is roughly in line with forecasts for Knox between 2016 and 2021, between the State Government’s Victoria in Future estimate of 826 new dwellings per year and the Forecast id estimate of 687 new dwellings per year (Figure 6).⁴

Fig. 6 The number of new dwellings approved in building permits (adjusted for assumptions about demolitions) in Knox is broadly in line with dwelling growth projected by the Victorian Government and that forecast on behalf of Council.

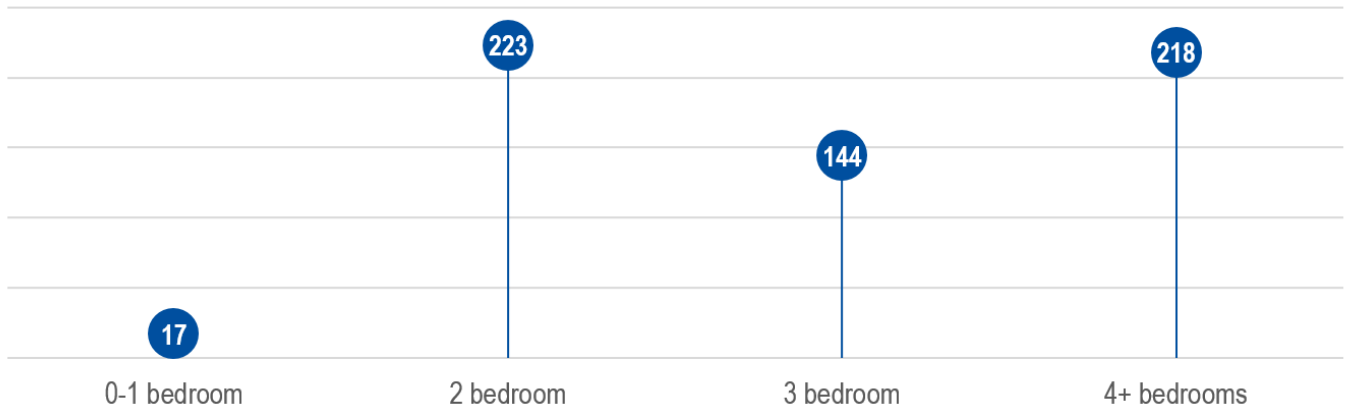


³ The main reason the Housing Monitoring Report uses planning approvals data is that it is available at address level and is a very robust and reliable dataset that is wholly maintained by Council.

⁴ This assumes a lag of one year between the building permit being granted and the building being complete. Building permit data for 2019-20 is not yet available. Alignment between building approvals data and the dwelling forecasts prepared by the Victorian Government and on behalf of Council is expected because building approvals are taken into account in calculating these forecasts.

Net growth from planning permits approved in 2019 was more than one third two-bedroom dwellings and more than one third dwellings of four or more bedrooms (Figure 7).

Fig. 7 The planning permits approved in 2019 would see similar net growth in the number of two and four bedroom dwellings.

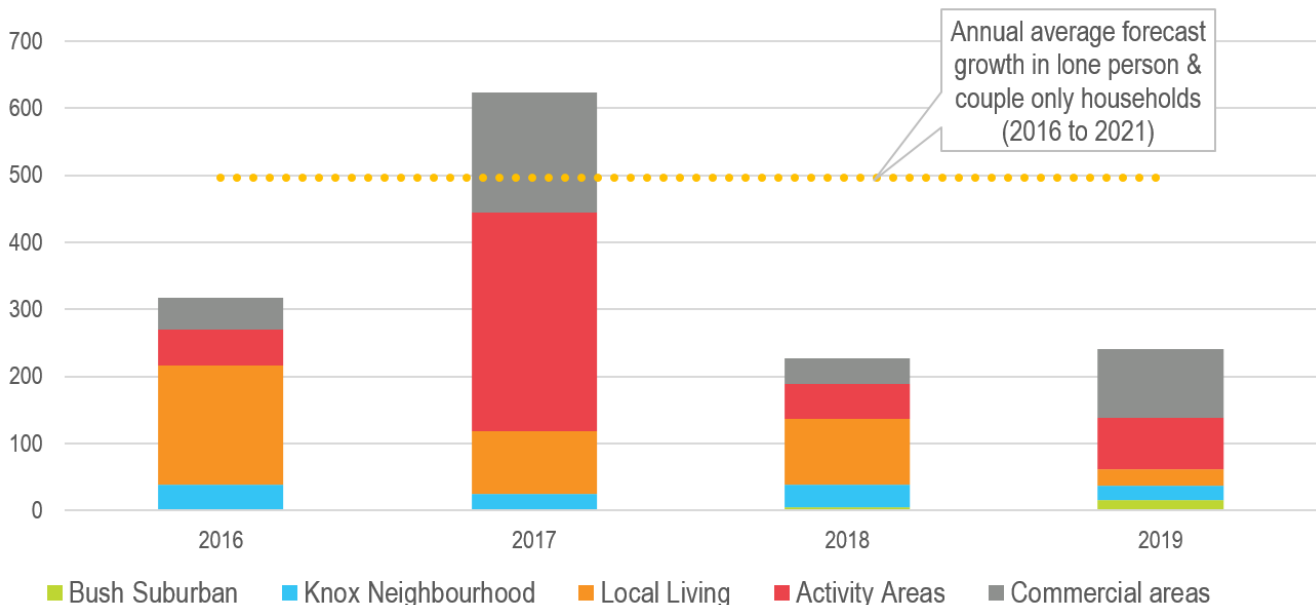


Note: Includes dwellings not in a Housing Strategy area (that is, outside the urban growth boundary and in commercial areas).

A total of 240 new small dwellings⁵ (two bedrooms or fewer) were approved in Knox in 2019, which is comparable to the 2018 figure (227) and lower than previous years (Figure 8). Of the growth in small dwellings in Housing Strategy areas over the past four years, 87% was in Local Living or Activity Areas. There was also an increase in the number of small dwellings in commercial areas between 2018 and 2019.

Fig. 8 Slightly more net new small dwellings (2 bedrooms or fewer) were approved in 2019 than in 2018.

Growth in small dwellings is lower than forecast growth in small households.



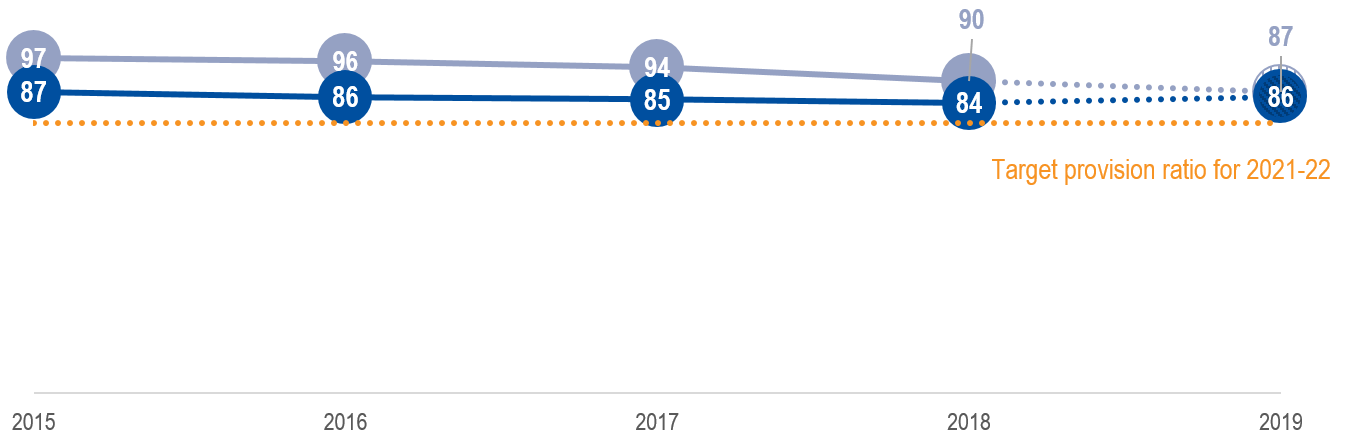
Note: Residents of non-private dwellings, such as residential aged care facilities, are not included in household forecasts.

There were 1,588 places (typically a single room with en suite) in residential aged care facilities in Knox in June 2019 (AIHW 2019a) and an estimated 18,274 residents aged 70 years and over living in Knox at that time (Knox Forecast .id).

⁵ This figure excludes the 231 new rooms in aged care facilities that were also approved in 2019.

This is equivalent to 86 places in residential aged care facilities per 1,000 residents aged 70+ (Figure 9). The Australian Government target provision for residential aged care places was⁶ 78 places per 1,000 residents over the age of 70 by 2021-22 (ACFA 2019), placing Knox above the target provision level.

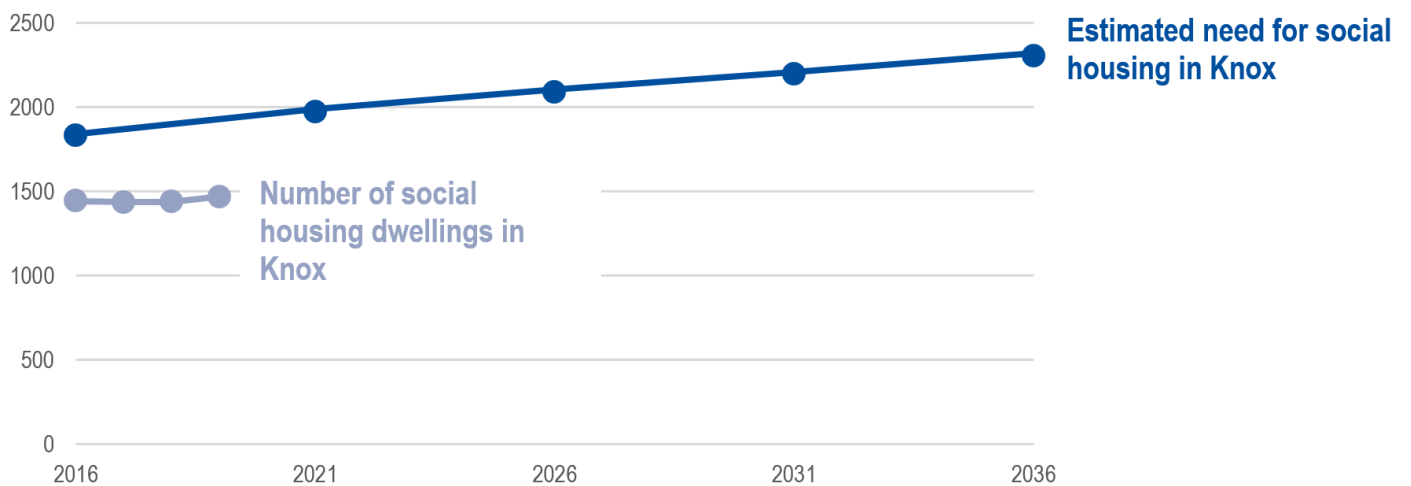
Fig. 9 In 2019 there were approximately 86 residential aged care places in Knox per 1000 residents aged 70+ . This is similar to the ratio across the Eastern Metropolitan Region.



Note: 2019 results are presented as dashed because the ratio is based on population forecasts rather than population estimates.

There were 1,469 social housing dwellings in Knox at June 2019 (DHHS 2019). This is up 29 dwellings from June 2018. There was an estimated shortfall of 390 social housing dwellings in Knox in 2016. Without intervention, this shortfall is projected to increase faster than supply has been increasing (Figure 10).

Fig. 10 There's a gap between supply and estimated demand for social housing in Knox. This gap is increasing.

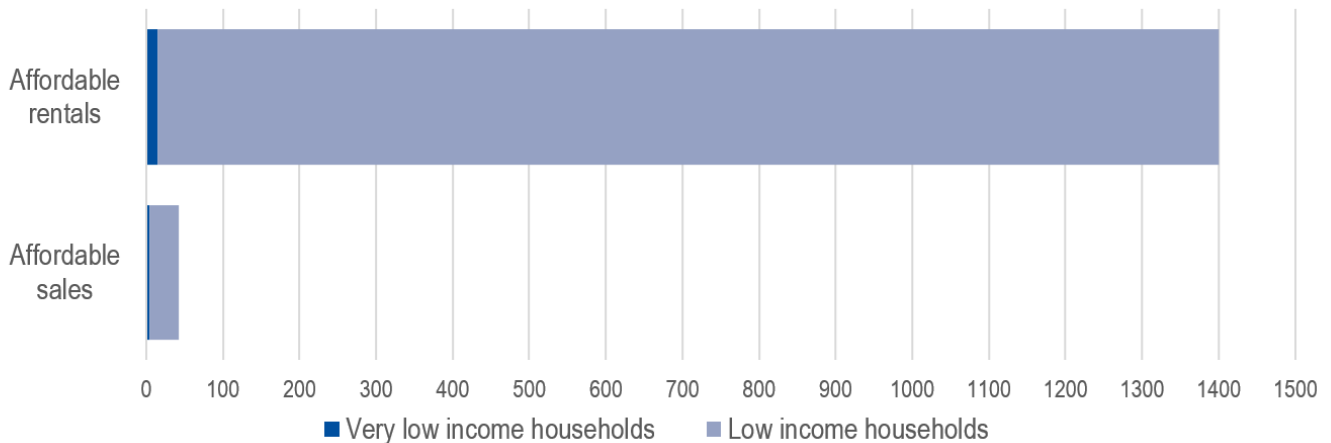


The median house price in Knox increased 6.5% during the five years to December 2019 when it reached \$830K. The median unit price increased 7.2% to \$610K over the same period (Housing .id). Only 42 of the dwellings sold (2.1%) and 1,400 of the rentals let (36.5%) in Knox during 2018-19 were affordable to households on a low income, and only

⁶ There is likely to be a shift away from separate target ratios for residential and home care places to a single "overall" ratio. This is to allow flexibility for the Government to direct funding to home care or residential care in response to consumer preferences (ACFA, 2019).

4 of the dwellings sold (0.2%) and 15 of the rentals let (0.4%) in Knox during 2018-19 were affordable to households on a very low income (Figure 11).

Fig. 11 In the 12 months to June 2019 only 4 sales and 15 rentals were affordable to households on a very low income.



6.3 Analysis

- Knox planning provisions are likely to accommodate growth forecast by the Victorian Government at least until 2036.
- Of the net new dwellings approved in 2019, 40% had two bedrooms or fewer. This represents an increase on the 2018 figure of 19%, and a return closer to earlier figures (44% in 2017 and 37% in 2016). Growth in small dwellings does not appear to be matching likely growth in small households.
- The new one-bedroom dwellings approved in 2019 were limited to two sites, 16 new one-bedroom dwellings in a seven storey apartment complex at 711 Mountain Highway in Bayswater, and two new one-bedroom dwellings in a five storey apartment complex in Erica Avenue, Boronia. No studio apartments were approved.
- The number of residential aged care places per Knox resident aged 70 and over has gradually decreased as the population has grown and the number of residential aged care places has remained static. Nonetheless, the current provision ratio meets the Australian Government target and will increase if either of the two residential aged care facilities approved during 2019 are built.
- There were an estimated 19,479 low or very low income households in Knox at the 2016 Census ([Housing .id](#)). There are very few dwellings (including units) in Knox that a household on a very low income (less than \$42,956 per annum) could afford to buy or rent. Low income (\$42,956 to \$68,708 per annum) households have more rental options but will still find few dwellings affordable for purchase. The “affordable” housing threshold is \$247,000 for very low income households and \$395,000 for low income households. The median unit price in Knox at December 2019 (\$610K) was 1.5 times the low income threshold.
- The number of social housing dwellings in Knox increased between June 2018 and June 2019 due largely to the construction of 24 units in Bayswater that opened early in 2020. In addition, nine social housing dwellings are expected to be provided at Stockland’s Waterlea development in Rowville during 2020 and 2021, and the owners of the former Kingston Links golf course site have an agreement with Council that secures the provision of social housing on the site. There are a number of other Strategic Investigation sites identified in the *Knox Housing Strategy 2015* which could incorporate new social housing. These include the former Boronia Heights School and the former Norvel Road and Boral Quarries. Data from the 2016 Census suggests that 48% of Knox households that are in need of social housing are small households (couple only or lone person) ([Housing .id](#)).

7. Energy, water, and waste efficient design are increased in dwellings

7.1 Why is this important?

Extreme weather events like heatwaves, storms, and floods are becoming more frequent, and the impact of climate change on the Knox community and its infrastructure, economy, and natural systems is a key challenge for Council. Knox residents recognise the importance of sustainability and quality in building design. With energy and water prices and the cost of landfill disposal increasing, efficient use of resources can also help with cost of living pressures.

7.2 How are we tracking?

Council requires that any planning permit application for two or more new dwellings be accompanied by an assessment of the sustainability of the development. Included in this must be an assessment of measures for reducing potable water consumption and greenhouse gas emissions. Between 2017-18 and 2018-19, the proportion of endorsed environmentally sustainable design assessments associated with developments that meet best practice for potable water consumption and greenhouse gas emissions increased (Figure 12). Best practice in potable water consumption was very high for assessed developments (at 99%).

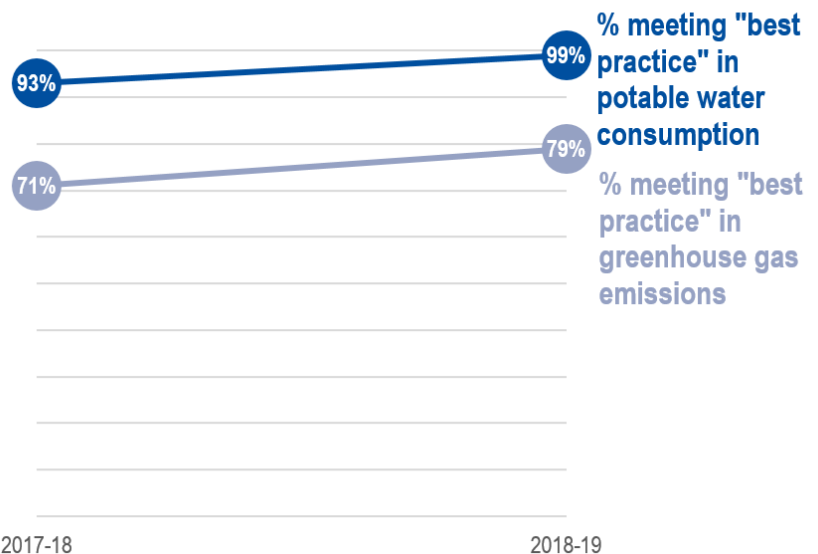
7.3 Analysis

Figure 12 shows improvement in sustainable design practices for proposed residential developments of two or more new additional dwellings. It is important to note that the definition of “best practice” is not fixed, rather, it changes as expectations and standards shift. A proposed development that reflects best practice potable water consumption and greenhouse gas emission standards in 2018-19 may not reflect best practice guidelines in 2020-21. Figure 12 suggests that residential design in Knox is certainly improving in terms of potable water consumption and greenhouse gas emissions, but because the benchmarks change over time, the extent of the improvement in terms of potable water consumption and greenhouse gas emissions cannot be determined using this measure.



An estimated 2.4 million tonnes of CO2 equivalent emissions were generated in Knox in 2017 – 21% from residential energy use
([Snapshot emissions report 2017](#))

Fig. 12 The proportion of applicable* new buildings assessed as meeting sustainability targets is increasing.



Note: Includes permit applications for two or more new dwellings.

8. Housing design is improved to better respond to neighbourhood identity and create a stronger sense of place

8.1 Why is this important?

Knox is known for its green and leafy neighbourhoods, quiet streets, and a mix of city and country feel, which has attracted people to the area for decades. However, this form of development has also led to a dependence on cars, which in turn has resulted in increasing use of resources, air pollution and reduced amenity for Knox residents.

8.2 How are we tracking?

In the 2019 Knox Community Satisfaction Survey 401 Knox residents were asked:

- How important should planning for population growth be as a responsibility for Council? and
- How has Council performed on planning for population growth over the last 12 months?

Of the Council responsibility areas assessed⁷, planning for population growth was one of the areas residents were least satisfied with. Almost three in four residents reported that planning for population was a “very” or “extremely” important Council responsibility (Figure 13).

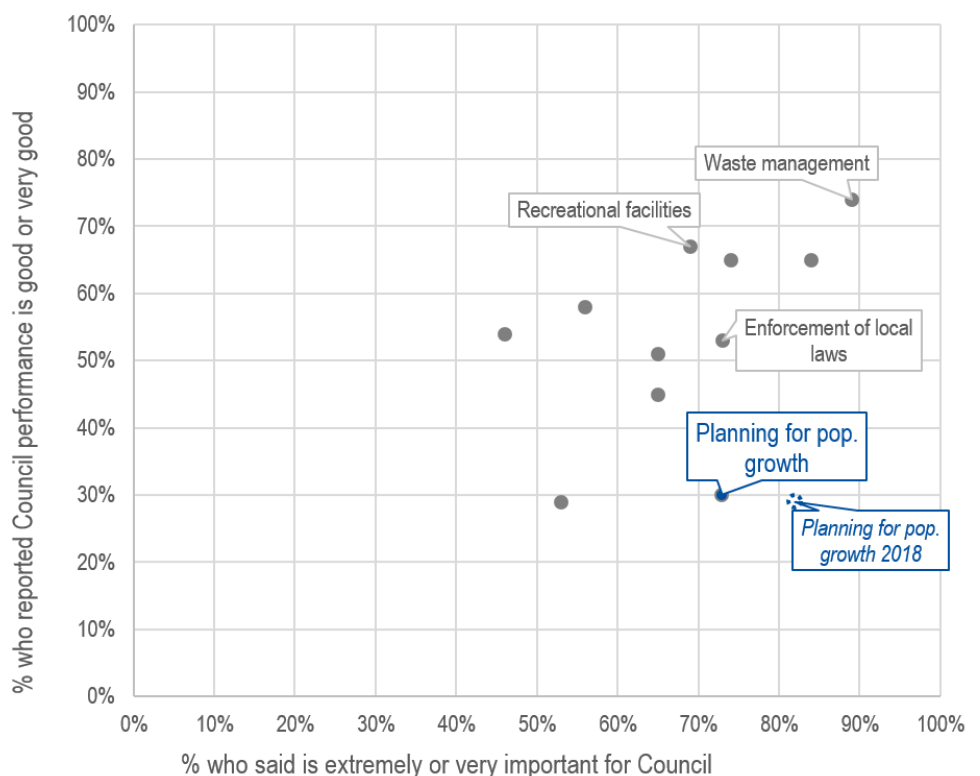
Walk Score is an index which estimates the ‘walkability’ of a place based on its proximity to local shops, services, schools, entertainment, and jobs. On a scale of 1 to 100, areas with a

Walk Score greater than 70 are considered “very walkable” or “walkers’ paradise,” a rating which applies to the location of fewer than half of the new dwellings approved in Knox in 2019 (Figure 14).



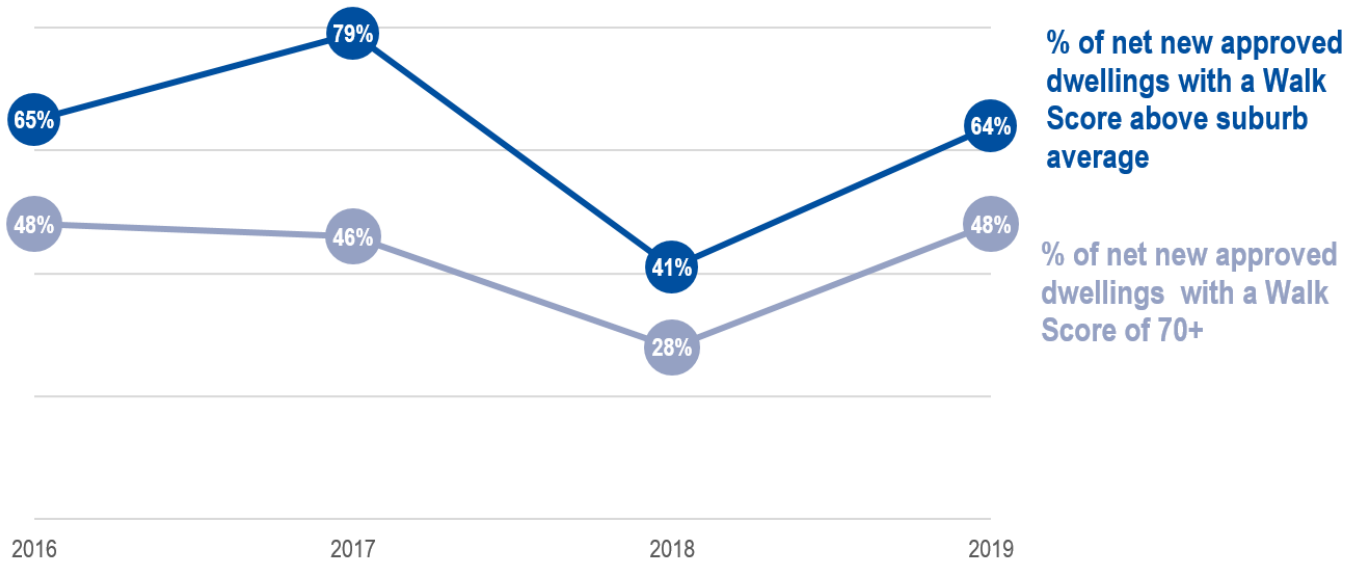
The Knox population increased by almost 21,000 people between 1999 and 2019. ([Knox Profile .id](#) & [ABS 2001](#))

Fig. 13 In 2019 **planning for population growth** was important to most residents but one of Council's lowest performing areas.



⁷ The importance and performance of 11 service areas was assessed. Performance (only) on an additional three service areas (sealed local roads, consultation and engagement, and decisions making) were assessed but these are not represented in Figure 13.

Fig. 14 The proportion of net new dwellings approved in the more walkable areas of Knox increased in 2019 after a 2018 dip.



8.3 Analysis

- Knox residents see planning for population growth as an important responsibility for Council, equivalent in importance to the enforcement of local laws. However, Knox residents are not as satisfied with Council’s efforts in planning for population growth as they are with most other aspects of our role. The Community Satisfaction Survey does not provide insight into what specific aspects of planning for population growth are seen to be less satisfactory. However, it does indicate that residents aged 65 and over are significantly less likely to be satisfied than the population average, and residents 18 to 34 (the youngest cohort surveyed) are statistically significantly more likely to be satisfied than the population average.
- There is a wide range of walkability scores across Knox. The activity centres of Bayswater, Boronia and Ferntree Gully are near to train stations and have main streets lined with shops, and score higher on walkability as a result. In contrast, much of Rowville, Lysterfield, and the upper Dandenong Foothills are classified as “car dependent” (with a Walk Score less than 50). The decline evident in 2018 in the proportion of new dwellings approved within more walkable areas of Knox (Figure 14) reflects the fact that by far the largest development approved in 2018 (the site of the former Wantirna Caravan Park) was in a “somewhat walkable” location. The two largest developments in 2019 (55 apartments at 711 Mountain Highway Bayswater and 50 apartments at 1-13 Erica Avenue in Boronia) were in locations with a Walk Score above 85, placing them in the “very walkable” and “walker’s paradise” categories, respectively.
- Almost two-thirds of net new approved dwellings were in areas more walkable than the respective suburb average. Wantirna South stood out in this respect, with 22 of the 25 (88%) of the net new dwellings in this suburb (88%) having a Walk Score greater than the suburb average of 57. The next highest percentage was Scoresby, with 30 of the 36 net new dwellings approved in this suburb (83%) having a Walk Score greater than the suburb average of 59.

9. Protect and enhance landscape and environmental value of natural areas of significance

9.1 Why is this important?

Knox enjoys a spectacular natural setting, located at the foot of the Dandenong Ranges and crisscrossed by creeks and wetlands that provide habitat for native animals and peaceful respite to residents.

Council has well-established policy and planning controls that aim to protect the landscape and environmental values of the area through constraints on vegetation and residential design. There are also 118 identified Sites of Biological Significance in Knox that include remnant and indigenous vegetation. These areas also have specific planning controls that restrict the removal of vegetation, and residential design guidelines that include higher requirements for new canopy trees.

As the Knox population grows, it will be increasingly important to ensure that new development does not erode Knox's unique sources of environmental value.



In 2012, 4% of the original native vegetation or areas with indigenous tree cover remained within Knox
([Knox Genetic Integrity Policy 2015](#)).

9.2 How are we tracking?

In 2018, 16.3% of Knox's urban area⁸ was covered by tree canopy (trees with an estimated height of three meters or more) (DELWP 2019b). In contrast, 22.6% of the Eastern Region's⁹ urban area was covered by tree canopy (DELWP 2019c).

Trend data shows an overall loss of canopy cover in the order of 120 hectares (or 30 hectares per annum) in Knox's urban areas between 2014 and 2018 (DELWP 2020), which is equivalent to a total reduction of 1.2 percentage points. The urban areas of the Eastern Region saw a loss of 2.3 percentage points over the same period. This study was conducted by DELWP across the Melbourne metropolitan region using automated analysis of aerial imagery.

Map 3 shows percentage point change in tree canopy for Knox Mesh Blocks¹⁰ defined by the Australian Bureau of Statistics as predominantly 'residential'. These Mesh Blocks include both privately owned and publicly owned land (roads, for example). Of the 1,496 residential mesh blocks in Knox, 1,102 (74%) saw some level of decline in tree canopy between 2014 and 2018.

Areas of declining tree canopy were generally in the northern, central, and eastern parts of Knox, through sections of Wantirna, Bayswater, Boronia, Ferntree Gully, Upper Ferntree Gully, and Knoxfield. Parts of Rowville and Lysterfield, particularly, experienced increases in tree canopy.

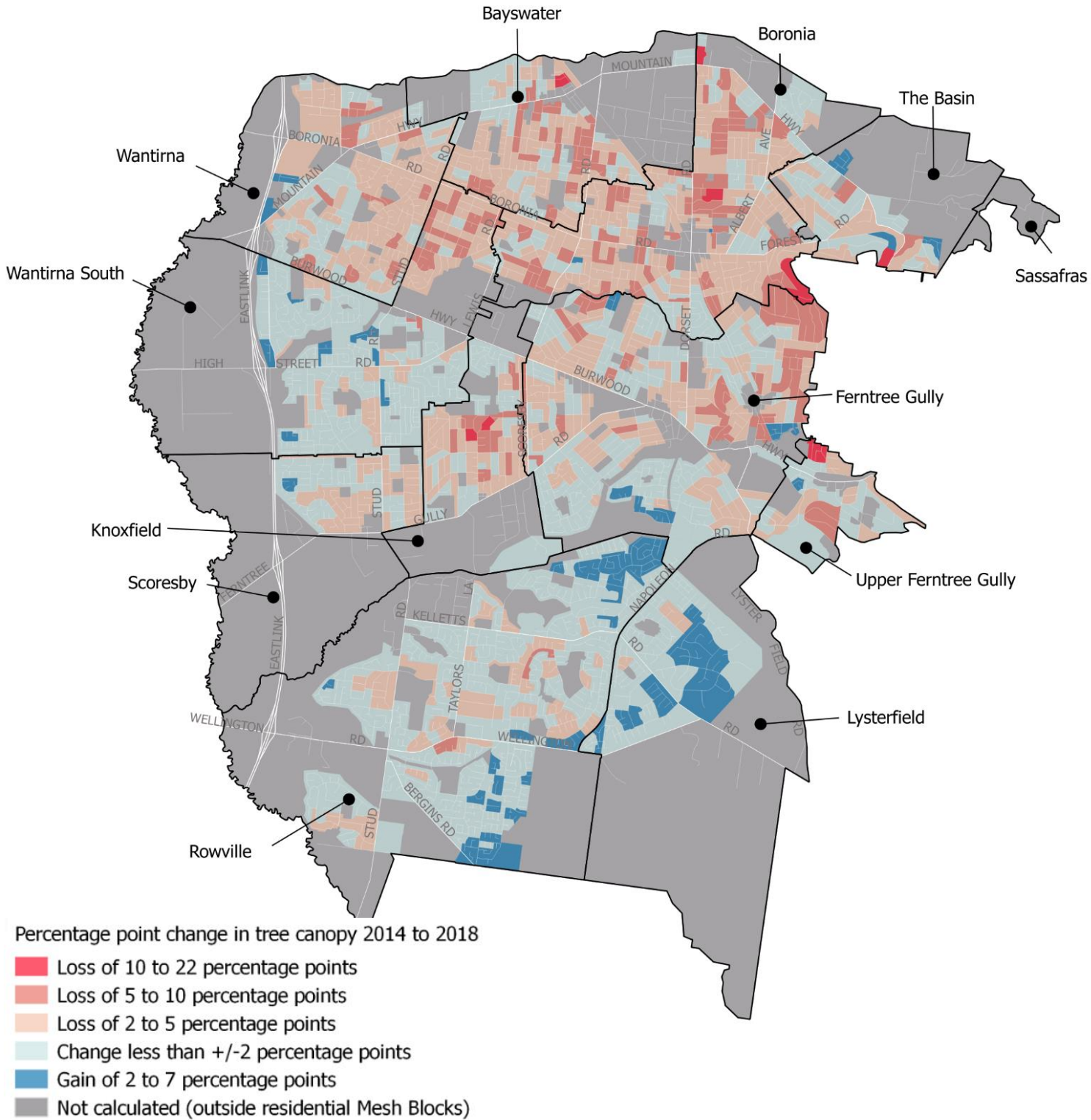
Map 4 shows that approved planning permits allowing dwelling typologies that are denser than preferred were more prevalent in the north of Knox in 2019, although there were few such instances in the Bush Suburban area of the Dandenong Ranges Foothills.

⁸ Excludes some of Rowville and Lysterfield, including Lysterfield Lake Park and Green Wedge Zone along Lysterfield Road.

⁹ Comprised of Knox, Manningham, Maroondah, Monash, Whitehorse and Yarra Ranges.

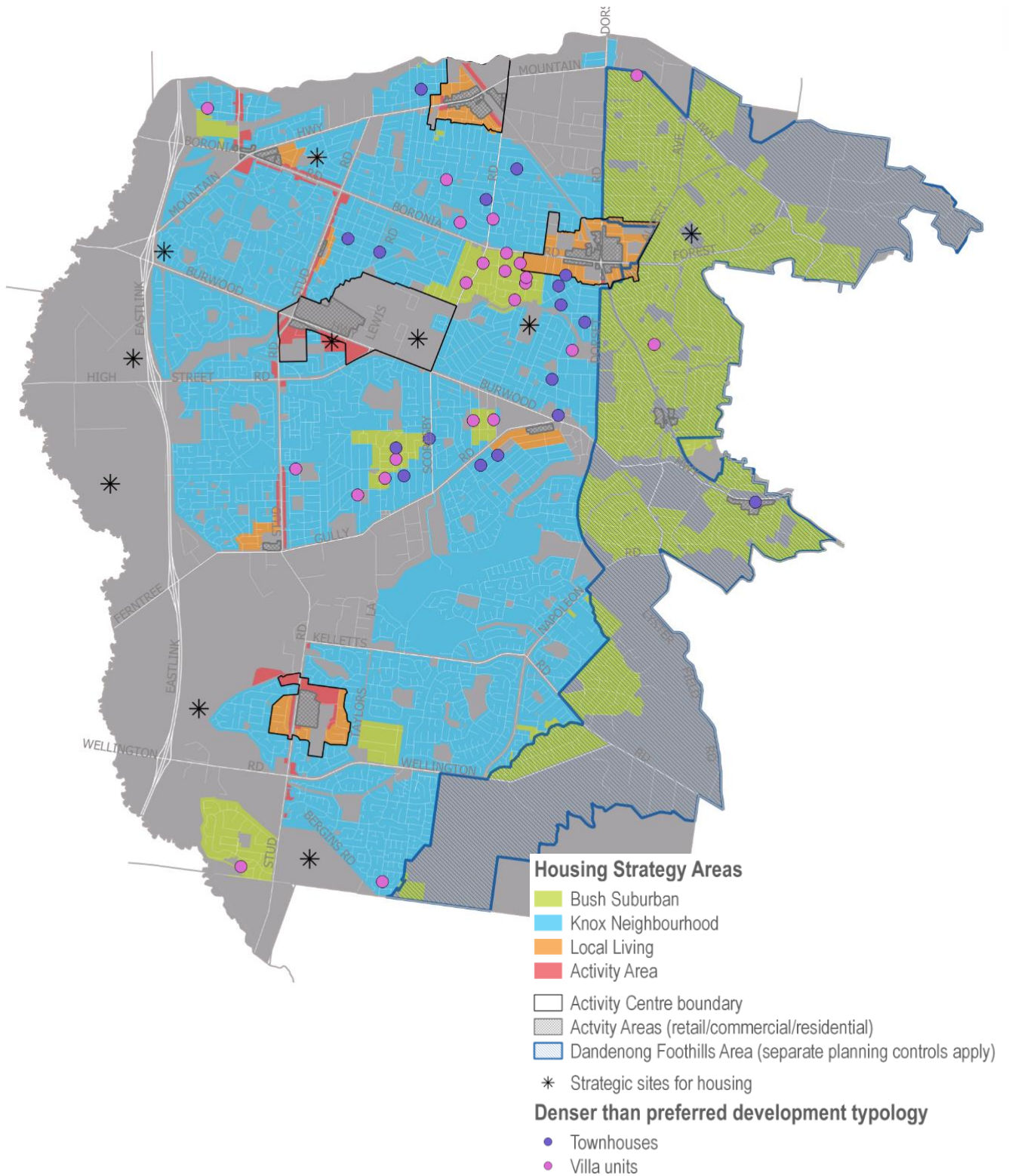
¹⁰ Mesh Blocks are the smallest geographic unit compiled by the Australian Bureau of Statistics as part of the Australian Statistical Geography Standard. Mesh Blocks provide a unit of measurement designed to accommodate approximately 30 to 60 dwelling units. The ABS attributes each Mesh Block a principal land use to indicate the major land use within any given delineated area.

Map 3. Many areas, particularly in the north of Knox, saw a loss in tree canopy between 2014 and 2018.



Source: The presented tree canopy change data is part of the Vegetation and heat datasets for Metropolitan Melbourne provided to Council by the Victorian Department of Environment, Land, Water and Planning in December 2019.

Map 4. Approved development of denser than preferred typologies was more prevalent in the north of Knox.



9.3 Analysis

- DELWP data on canopy tree cover shows that where gains in coverage have occurred, they were modest. The largest recorded increase from 2014 to 2018 was a 6.2 percentage point increase in an area of Lysterfield

between Napoleon Road and Teofilo Drive. This Mesh Block saw tree canopy coverage increase from 15.1% to 21.3%. Aerial imagery suggests this increase was at least partly due to tree plantings on Napoleon Road Linear Reserve. Some larger areas of canopy increase of more than two percentage points were evident in Lysterfield and Rowville, but only relatively small areas of this level of increase were evident in other Knox suburbs.

- Tree canopy cover remained relatively constant in the southern parts of Knox. No Mesh Blocks in Scoresby or Lysterfield, and only two in Rowville, saw canopy loss of greater than two percentage points.
- One challenge for maintaining tree canopy exists within the urban space where larger canopy trees are removed for multi dwelling developments, and limited space remains, providing opportunity for small shrub replacement only. West of Dorset Road, outside the Dandenong Foothills, areas of tree canopy loss appear to coincide with the locations of approved planning permits for new dwellings (see Attachment C).
- Planning permits for additional dwellings do not appear to account for some of the larger areas of canopy loss evident in the Dandenong Foothills (see Attachment C). This loss may be due to tree removal for other purposes. Council issued 980 permits for vegetation removal in Knox between 2014 and 2018 (inclusive) (see Attachment D). Of these, 764 (78%) were within the Dandenong Foothills Area. Of these 764 permits, only 73 were for vegetation removal associated with subdivision or residential building works (for example, the construction or extension of dwellings or outbuildings). Other purposes for vegetation removal permits include clearing because trees are towards the end of their life or at increased risk of dropping limbs. In addition, no planning permit is required to remove some trees¹¹ from around older dwellings (built or approved before 10 September 2009) in Knox’s Bushfire Management Overlay areas. Knox’s Bushfire Management Overlay applies to parts of the Dandenong Foothills, including the Mesh Blocks in Ferntree Gully, Upper Ferntree Gully, and The Basin that had canopy loss greater than 10 percentage points between 2014 and 2018.
- The largest decrease in tree canopy cover was in a Mesh Block east of Ferntree Gully Quarry Recreation Reserve, which saw tree canopy coverage decline 21.7 percentage points, from 46.2% to 24.5%. There were two approvals granted between 2014 and 2018 for vegetation removal (one to remove four unhealthy eucalyptus trees and one for the removal of vegetation associated with the construction of a dwelling). Visual inspection of aerial imagery from 2014 and 2018 shows substantial clearing of vegetation on at least three other private properties within the Mesh Block, which is included in Knox’s Bushfire Management Overlay.
- The currently available tree canopy change data does not distinguish trees on private property from street trees or trees on other publicly owned land. While Knox has implemented several policies and plans to protect the green and leafy character of Knox’s neighbourhoods (including the *Knox Housing Strategy 2015*, the *Dandenong Foothills Policy*, *Sites of Biological Significance*, and others), Council’s ability to control canopy loss through planning controls is only indirect for private property.
- To help ensure future canopy cover, Knox has been undertaking tree planting in line with the *Street Tree Asset Management Plan 2016* (which resulted in the planting of around 9,900 street trees between 2015-16 and 2018-19), and the *Knox Revegetation Plan*, in line with which Council plants between 80,000 and 120,000 local provenance plants (including trees) annually (this does not include street trees). But these programs do not address the loss of canopy trees on privately owned residential land.
- There were no apartments approved in 2019 in Housing Strategy areas where they were not the preferred dwelling type. Villas and townhouses were approved in areas where they are a denser form of development than preferred. Concentrations were evident between Ferntree Gully Road and Burwood Highway and southwest of Boronia Junction.

¹¹ For homes in an area covered by a Bushfire Management Overlay (BMO) the Planning Scheme allows residents to clear certain vegetation that poses a bushfire hazard without a planning permit. This rule (known as the 10/50 rule) allows the clearing of any vegetation (including trees) within 10 metres of a dwelling built before 10 September 2009 and vegetation (including trees) for a combined maximum width of 4 metres on either side of an existing boundary fence.

10. Development responds to neighbourhoods in an integrated and balanced manner

10.1 Why is this important?

Planning for the future housing needs of Knox is a complicated process that requires input from the community, policy experts, design professionals, and local landowners. The Knox Planning Scheme outlines Council’s goals and policies for the planning and development of the city. It is the official reference for all decisions related to planning made by Council, planning officers, and VCAT. Consistency between Council policy, the Knox Planning Scheme, and Council decision-making process is critical for the efficiency of Council’s planning decisions and the quality of the outcomes these decisions deliver.



VCAT decided 32 Knox residential planning applications in 2019, down from 42 in 2018, but higher than earlier years (e.g. 24 in 2017 and 24 in 2016).

10.2 Indicator results

Planning applications that are decided by Council can be appealed to VCAT, which hears the case and makes a final ruling on whether to issue a permit based on the Knox Planning Scheme. The number of cases decided by VCAT and the proportion of Council decisions that are overturned are an indicator of the consistency between Council policy, the Knox Planning Scheme, and Council decision-making processes.

Fig. 15 In 2019 VCAT overturned more Council decisions than it upheld.
All overturned decisions had been Council refusals.

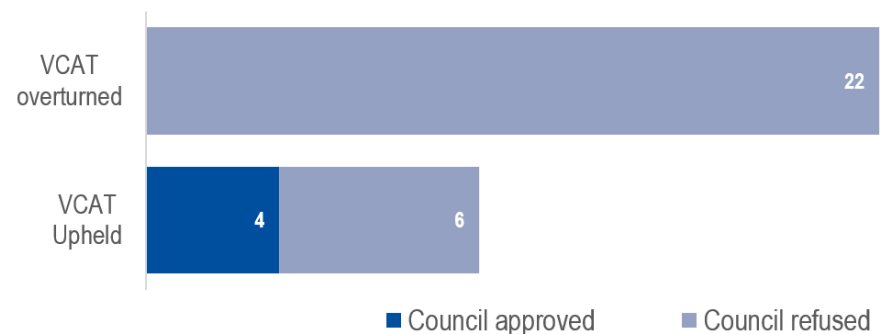
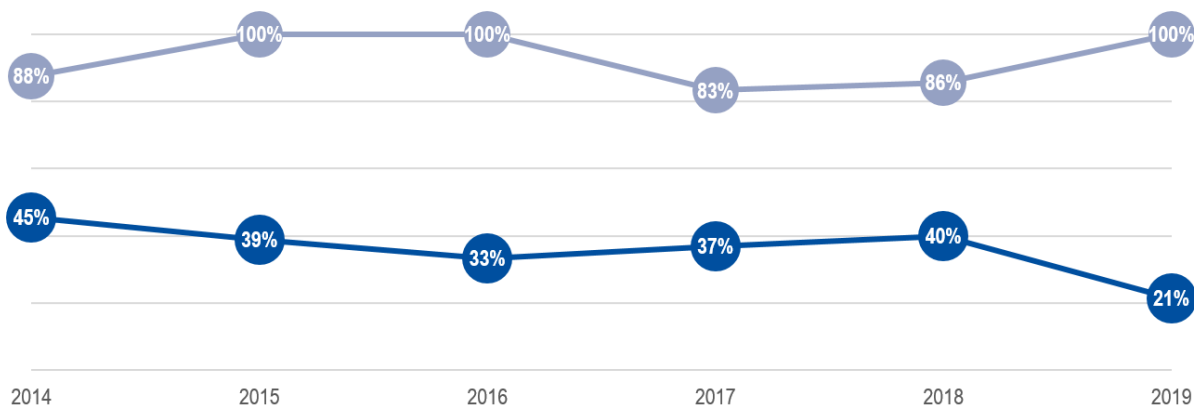


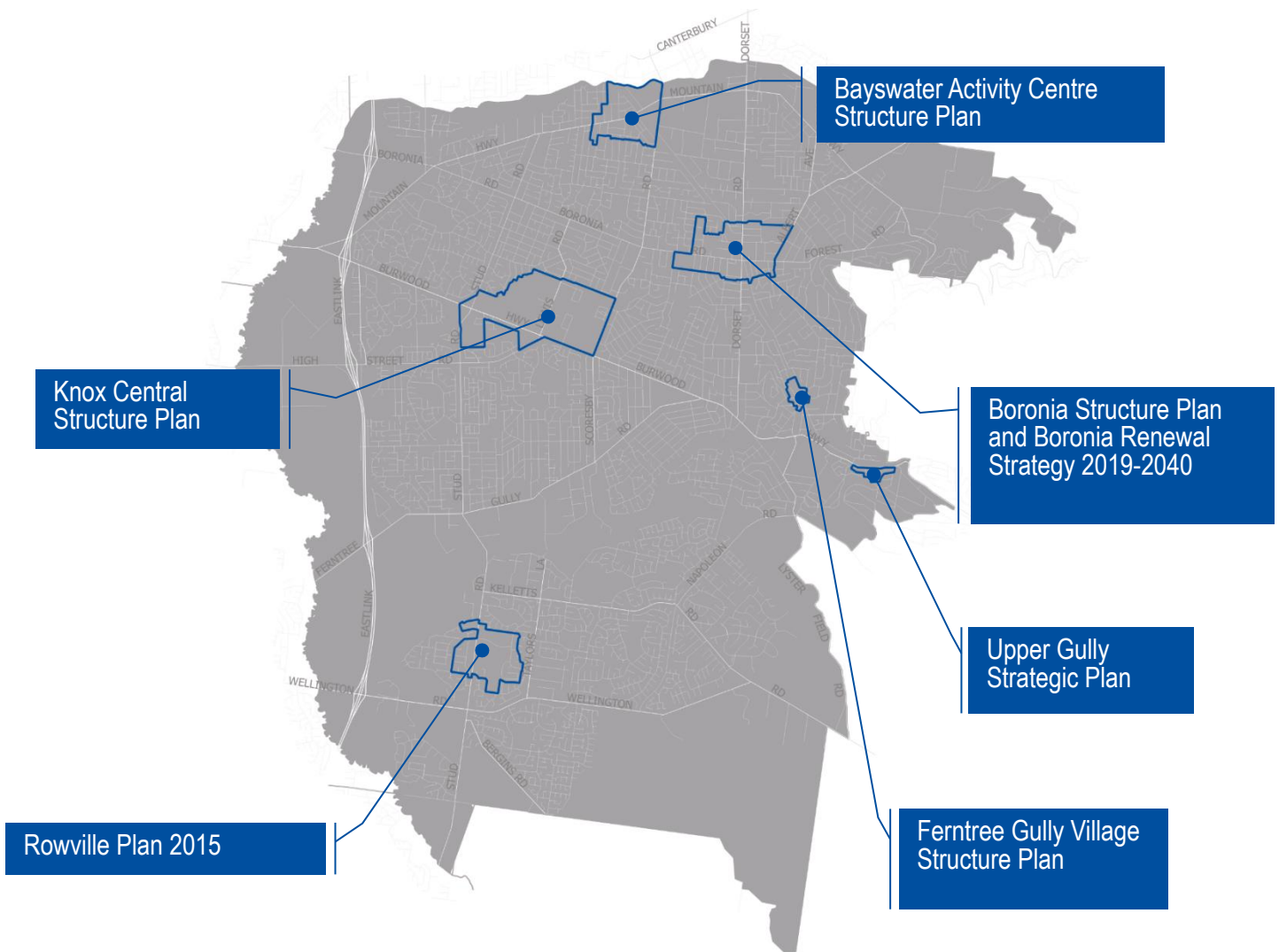
Figure 15 and Figure 16, which relate to VCAT decisions on planning permits that would yield at least one additional dwelling in Knox, show that for the third time in the past six years, VCAT upheld fewer Council decisions than it overturned in 2019.

Fig. 16 VCAT upheld at least 83% of Council approvals, and no more than 45% of Council refusals over the past 6 years.



In addition to the *Knox Housing Strategy 2015*, Council has developed a number of structure plans and other strategic plans that support place-specific planning controls and rezoning, and provide guidance for decisions on infrastructure and community services (Map 5).

Map 5 Plans and strategies that support place-specific planning controls.



10.3 Analysis

- Across the past six years VCAT have been much more likely to overturn a Council refusal than a Council approval.
- In 2019, VCAT decided 28 planning applications that were initially refused by Council (either directly or by officers under delegation). VCAT set aside the Council decision in 22 of these cases (79%), resulting in permits for 132 net new dwellings and a residential aged care facility on Wellington Road in Lysterfield. The 132 net new dwellings approved by VCAT included:
 - 55 net new dwellings in a seven storey mixed use building at 711 Mountain Highway in Bayswater, a Commercial Area. Council initially refused the permit (in part) because the proposed development exceeded the suggested height limit for the site (five storeys) and because the design failed to

demonstrate that it would not adversely impact the amenity of adjoining residential areas or key views to the Dandenong Ranges. This development was approved by VCAT with no changes to the building footprint or height.

- 13 net new dwellings in a townhouse complex at 1118 Stud Road in Rowville, an Activity Area defined by the Knox Housing Strategy. This development was refused by Council (in part) because the design outcome was not considered to be appropriate for the preferred neighbourhood character, due to scale and siting of the buildings. This development was approved by VCAT with a large number of amendments, including increased setbacks.
- 15 net new dwellings in a villa unit complex at 24 Rathgar Road in Lysterfield. This development is on a large Knox Neighbourhood lot, where villa units are a preferred typology. Council initially refused the permit because the development did not provide for an appropriate balance between the need for additional housing, the amenity of occupants and adjoining residents, and the landscape character of the area. This development was approved by VCAT with amendments that included tree protection measures.
- Seven net new dwellings within a villa unit complex at 11 and 13 Gibbs Road in Ferntree Gully. This development spans two large Knox Neighbourhood lots (approximately 1,200 square metres each), where villa units are a preferred typology. Council initially refused a permit (in part) because the proposal failed to satisfy relevant Local Planning Policy Framework objectives and strategies and was not appropriate for the neighbourhood character of the area.
- There were four VCAT decisions for applications that were initially approved by Council or given a Notice of Decision to issue a permit in 2019. This type of VCAT referral is often the result of an appeal by neighbouring residents. VCAT affirmed the Council decision in all four of these cases. While all four VCAT decisions required some variation to the original application (for example, increased setbacks), none of them required variations which altered the number of new dwellings yielded.
- The rate at which Council refusals are upheld by VCAT saw a noticeable decline in 2019, after five years of relatively little change.
- Three cases not included in the information presented in 10.2 were referred to VCAT but withdrawn or struck out, dismissed by VCAT without a final hearing. This included a proposal to develop the land at 750 Boronia Road in Wantirna for 84 dwellings, which was referred to VCAT when Council did not determine an outcome within the prescribed timeframe. This proposal would have been refused by Council, and received 424 written submissions before being withdrawn. Ultimately, no permit was issued. It also included a Council Notice of Decision to approve an amended permit for 50 dwellings, basement parking and retail premises in a five storey building at Erica Avenue, Boronia which was referred to VCAT but ultimately struck out. Lastly, Council's refusal of a permit to build seven double storey dwellings and one single storey dwelling at 19 and 21 Iris Crescent in Boronia was referred to VCAT but later withdrawn by the applicant.

11. Future program development

The Housing Monitoring Report will continue to be published annually. The following are two potential future indicators that are currently under development.

11.1 Residential construction activity

One of the longstanding goals of the Knox Housing Monitoring Program has been to monitor new building construction in addition to new planning permit approvals. Planning permits are important milestones in the process of delivering new housing, and can provide important information about the type, size, and location of future housing in Knox. Residential planning permits are valid for two years and can be extended to four. But the decision to build under a permit is made by the landowner and developer. Not all planning permits result in new housing. Looking at planning approvals suggests what might be built, not what has been, or necessarily will be, built.

The Victorian Government presented information about new constructions in the Housing Development Data (HDD) program that has helped to close that gap. The HDD is based on automated analysis of aerial photography to determine where new construction and demolitions are happening across the Melbourne. So far, the HDD covers 2005 to 2016.

While it is not as up to date as planning approvals, Knox City Council has compared HDD data with planning approvals data to learn more about which permits are likely to lead to new construction. From 2008 to 2014 roughly 75% of planning permits led to new construction within the four-year permit window. If that percentage holds for permits issued in 2019, the 602 possible net new dwellings would lead to 452 new dwellings.

Building permit data (collated by the Victorian Building Authority) is another potential source of information on residential construction activity. It is limited mainly in that it is not currently available by address, meaning that permits cannot accurately be allocated to Housing Strategy areas.

HDD and building permit data will continue to be monitored to ascertain their potential contribution to the Knox Housing Monitoring Program.

11.2 Neighbourhood character and urban design

Neighbourhood character is an important part of community identity in Knox. Community engagement for Knox@50, the *Knox Housing Strategy 2015*, and the Knox Community and Council Plan 2017-2021 highlighted concern in some parts of Knox that the city is at risk of losing its identity due to rapid changes in the look and feel of neighbourhoods. The 2019 Community Satisfaction Survey showed a low proportion of Knox residents are satisfied with Council's performance in terms of planning for population growth, but does not provide further insights into what aspects of population growth are seen to be unsatisfactory.

The quality of urban design and the look and feel of streets are difficult to quantify, since they are aesthetic judgements and not everyone has the same needs, tastes and sensibilities. Knox Council obtains professional urban design advice for some important planning applications, but even the advice of third-party experts is ultimately subjective.

One way to measure issues related to identity and change is to measure perceptions and preferences related to neighbourhood character and urban design. Community engagement activities related to specific issues, such as housing and development, could help address questions about how people view the changes happening across Knox and how well Council's housing policy is aligned with community identity and perceptions.

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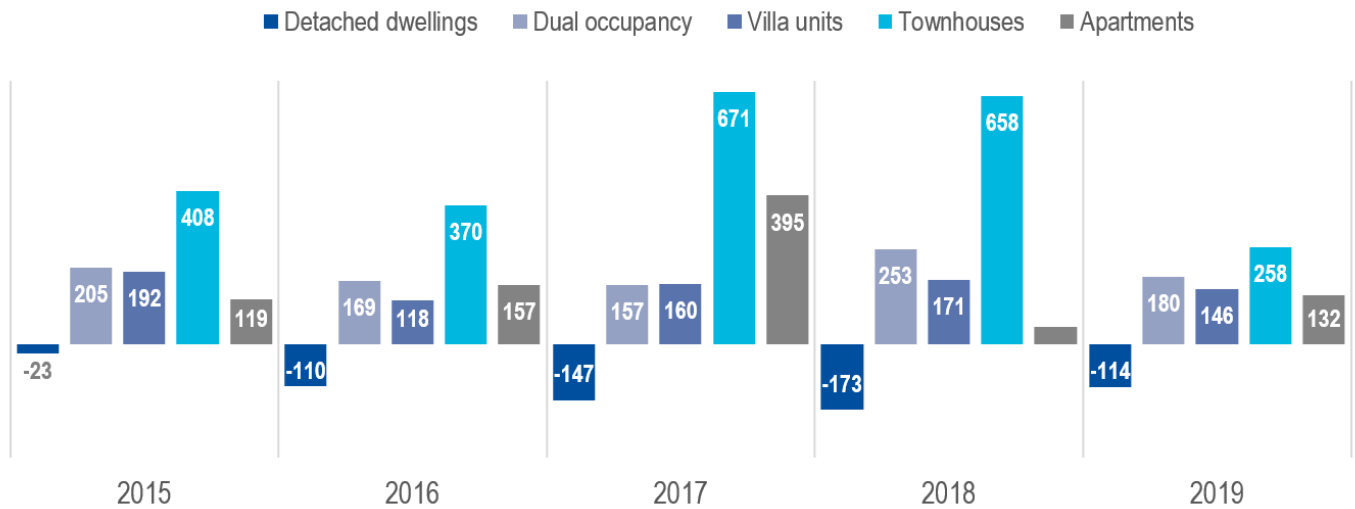
Attachment A – dwelling type definitions

Housing types define in the *Knox Housing Strategy 2015*:

- Detached dwelling: one dwelling on a lot.
- Dual occupancy: two dwellings on a lot (can include retention of an existing dwelling).
- Villa units: three or more dwellings on a lot with no shared walls.
- Townhouses: three or more dwellings on a lot sharing a wall or roof.
- Apartments: development of three or more stories in a single mass or multi-unit dwelling, usually with a common entrance.

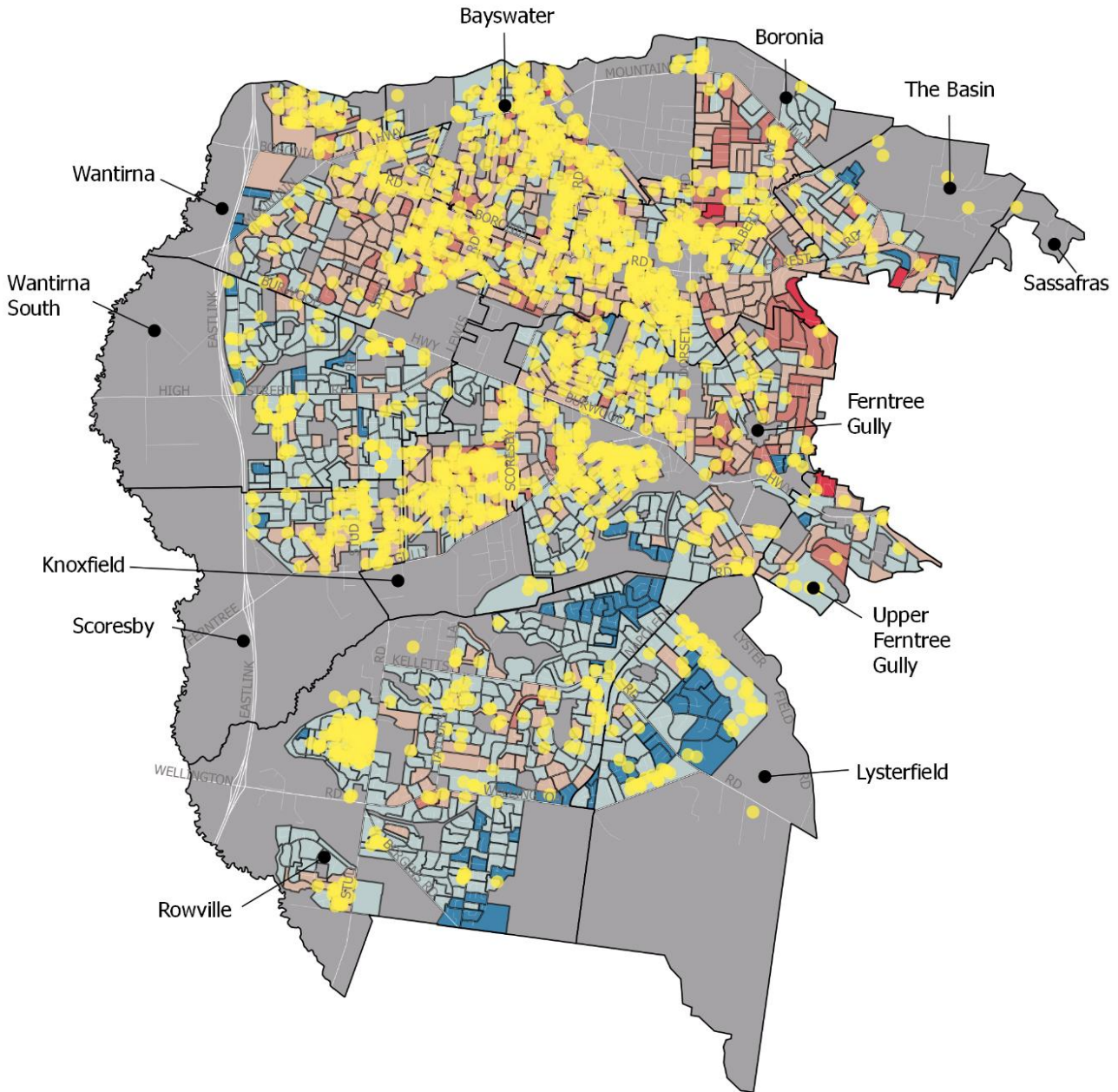
Attachment B – net growth in dwellings by typology 2015 to 2019

Fig. 17 **Townhouses** have been the predominant dwelling typology in terms of net growth between 2015 and 2019.



Note: For 2015 to 2018 calculations of net growth by typology are based on an assumption that all demolished dwellings were detached dwellings. Analysis of demolitions information for 2019 indicates that this was true of 95% of demolitions approved in planning permits in 2019. This chart includes dwellings not in a Housing Strategy area (that is, outside the urban growth boundary and in commercial areas).

Attachment C – Approved planning permits for new dwellings 2012 to 2017, and tree canopy change 2014 to 2018



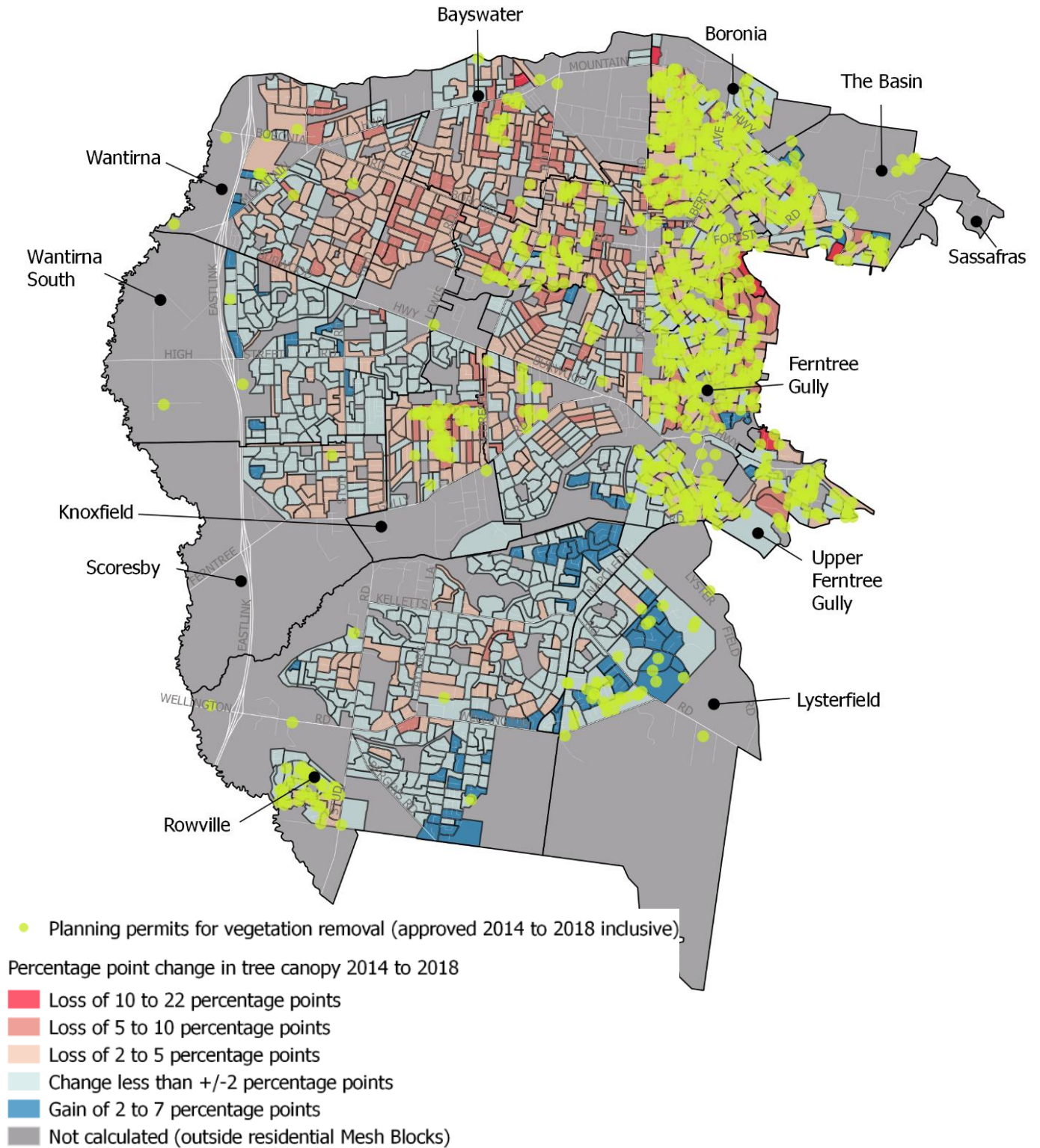
● Approved planning permit with yield at least 1 net new dwelling (approved 2012 to 2017 inclusive)

Percentage point change in tree canopy 2014 to 2018

- Loss of 10 to 22 percentage points
- Loss of 5 to 10 percentage points
- Loss of 2 to 5 percentage points
- Change less than +/-2 percentage points
- Gain of 2 to 7 percentage points
- Not calculated (outside residential Mesh Blocks)

Source: The presented tree canopy change data is part of the Vegetation and heat datasets for Metropolitan Melbourne provided to Council by the Victorian Department of Environment, Land, Water and Planning in December 2019.

Attachment D – Approved planning permits for vegetation removal 2014 to 2018 and tree canopy change 2014 to 2018



Source: The presented tree canopy change data is part of the Vegetation and heat datasets for Metropolitan Melbourne provided to Council by the Victorian Department of Environment, Land, Water and Planning in December 2019. Planning permit data was extracted from DELWP’s Planning Permit Activity Reporting System (PPARS) in May 2020.