# Review of Box Hill Netropolitan Activity Centre

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## 3.1 Economic and Demographic Projections

#### 3.1.1 Trends and Drivers of Growth

Box Hill has the unique distinction of being designated as a metropolitan activity centre since 1954. The current structure plan for the activity centre was adopted in 2007 and sought to encourage investment in the centre – in the areas of employment and housing – to underpin future economic growth in Whitehorse.

Over the last 10 years, Box Hill has experienced strong population growth, growing from 3,800 in 2006 to 5,100 in 2016 (an average growth rate of 3.0% per annum). Growth of the working age population and tertiary students has been particularly strong.

In the same period growth in employment has grown at a rate of 2.6% per annum. Growth in the health and education industry sectors was particularly strong. These sectors added an estimated 2,400 and 700 jobs respectively between 2006 and 2016 (average growth rates of 5.2% and 5.0%).

Future employment growth is likely to be influenced by the deepening of the knowledge economy, further strengthening of the health and education specialisations, and opportunities for retail growth. The proposed suburban rail route would result in better connectivity between Box Hill to areas to the north and south and would further increase the attractiveness of the activity centre for firms and households.

#### 3.1.2 Population and Housing Forecasts

The project team has prepared population and employment forecasts for Box Hill, drawing on the Victorian Government's Victoria in the Future (VIF) forecasts. The VIF forecasts are prepared at the SA2 level and are then assigned to smaller geographies ('travel zones'). For population, this assignment process is based on recent trends in housing development and the capacity for dwellings and is derived from a variety of sources (e.g. the Urban Development Program, VPA Precinct Structure Plans, renewal precinct specific information and state and local planning policy documents).

Two population forecasts have been provided. The first is based directly on the VIF forecasts, whilst the second assumes a slightly slower rate of population growth. This second scenario considers the possibility that the high number of recent residential approvals suggests a degree of speculative planning approval activity, which may not be an accurate reflection of the true extent of latent demand.

#### Table 3.1 Population and Housing Forecasts

	2016		Base forecast	ts	<b>Revised forecast</b> (lower population growth than base			
		2036	2016-36 growth	Growth rate	2036	2016-36 growth	Growth rate	
Estimated Resident Population (ERP)	5,100	14,000	8,900	5.2%	12,700	7,600	4.7%	
Structural Private Dwellings (SPD)	2,400	7,000	4,600	5.5%	6,400	4,000	5.0%	

Source: SGS Economics & Planning, derived using VIF 2016.

#### Table 3.2 Comparison of ID population forecasts

		2016	2036	2016-36	Growth rate
ID forecasts	Population	4,728	14,379	9,651	5.7%
	Dwellings	2,395	6,964	4,569	5.5%
SGS forecasts (base)	Population	5,100	14,000	8,900	5.2%
	Dwellings	2,400	7,000	4,600	5.5%

Source: SGS Economics & Planning, ID Consulting, 2017.

Taking these two scenarios as a range, the population of the activity centre is forecast to grow by between 8,400 and 10,100 people between 2016 and 2036. This would translate to demand for 4,200 to 5,000 additional dwellings. Table 3.1 shows the population and dwelling forecasts under both scenarios in 2036.

#### **Comparison to ID Consulting forecasts**

Population projections prepared by ID Consulting (2017) cover a smaller area than the SGS projections and have used a different forecast methodology and assumptions. SGS forecasts are based on the approach outlined in Appendix 1 of our technical report. As a result, there are differences between these two sets of projections. A comparison of the two sets of figures is provided in Table 3.2.

The ID Consulting forecasts estimate an average annual growth rate of 5.7% to 2036 for Box Hill. This is high compared to SGS projections of 5.2%. Both forecasts estimate that there will be an additional 9,000 residents in Box Hill by 2036.

Both the VIF and ID forecasts indicate possible future growth scenarios are reasonable estimates for future planning purposes. The higher rate of residential growth suggested in the ID forecast could have implications for the 'crowding out' of the forecast growth in employment uses. This issue will be explored in the subsequent stage of the study.

#### 3.1.3 Employment Forecasts

Employment forecasts for the activity centre are derived from VIF total labour force growth estimates for the State and Greater Melbourne. This growth is assigned to smaller areas, by industry, using ABS Census Journey to Work data and the ABS Labour Force Survey.

Two employment scenarios were considered. The first is SGS's base employment forecasts for the activity centre, whilst the second assumes a slightly higher rate of growth in office, retail, health and education. This second scenario reflects the findings of early stakeholder consultations which have suggested that there is a significant appetite to grow employment in these sectors.

The resulting employment growth forecasts for the 20 year period to 2036 are in the order of 8,100 to 10,900 additional jobs. Table 3.3 outlines the employment forecasts by broad land use type for each scenario to 2036. The largest employment growth is forecast in the health sector, followed by office-based employment.

#### Table 3.3 Employment Forecasts

	2016	I	Base forecasts		<b>Revised forecast</b> (higher employment growth than base)			
		2036	2016-36 Growth	Growth rate	2036	2016-36 Growth	Growth rate	
Office	7,500	10,000	2,500	1.4%	11,100	3,600	2.0%	
Retail	2,800	3,700	900	1.4%	4,100	1,300	1.9%	
Industrial	100	100	-	0.0%	100	-	0.0%	
Education	1,500	2,400	900	2.4%	2,600	1,100	2.8%	
Health	6,200	9,800	3,600	2.3%	10,800	4,700	2.8%	
Entertainment/Recreation	100	200	100	3.5%	200	100	3.5%	
Construction	300	400	100	1.4%	400	100	1.4%	
Total	18,400	26,500	8,100	1.8%	29,300	10,900	2.4%	

Source: SGS Economics & Planning derived from VIF 2016.

#### 3.1.4 Floorspace Demand

These forecasts for dwelling and employment growth have been converted into floorspace demand to understand the additional floorspace required in the activity centre, see Table 3.4. Employment floorspace requirements have been estimated using floorspace to job ratios by land use type. Residential floorspace requirements have been estimated using an average dwelling size assumption. These floorspace estimates are for the gross floor area of new buildings, excluding areas for parking. Demand for additional employment floorspace is in the order of 257,600 to 340,200 square metres. Over half of this demand is for health floorspace. Demand for office and education floorspace is also forecast to be significant. Demand for additional residential floorspace is in the order of 391,000 to 454,000 square metres.

Combining the VIF forecasts and the revised forecasts (higher employment growth and lower residential growth than the base forecasts) suggests that the total demand for additional floorspace could be between 710,600 and 731,200 square metres. These floorspace forecasts are intended to inform future planning for the activity centre by providing an indication of the quantum of additional floorspace required, the mix of employment and housing, and the mix of different types of employment floorspace.

To facilitate the efficient development of the additional floorspace required to satisfy forecast demand, future planning will need to provide development opportunities that are in excess of the identified floorspace requirements.

	2016	Base F	orecasts	Alternativ (lower population;	e Forecasts higher employment)
		2036	2016-36 Growth	2036	2016-36 Growth
Office	186,400	249,200	62,900	276,900	90,600
Retail	83,800	111,100	27,300	122,100	38,300
Industrial	7,500	8,300	700	8,300	700
Education	91,700	142,800	51,100	157,400	65,800
Health	184,600	294,600	110,000	324,800	140,100
Entertainment / Recreation	8,400	13,000	4,600	13,000	4,600
All Employment Floorspace	562,400	819,000	256,600	902,600	340,200
Residential Floorspace	239,300	693,300	454,000	630,500	391,000
Total Floorspace	801.700	1,512,300	710,600	1,533,100	731,200

Table 3.4 Floorspace Demand Forecasts (square metres)

Source: SGS Economics & Planning, derived from VIF 2016. <u>Note</u>: these figures vary from the *Analysis & Options Report* due to refined boundaries better aligned to the activity centre boundary. <u>Note</u>: The 2016 floorspace estimate is based on job to floorspace ratios applied to employment estimates in 2016, due to data limitations on current floorspace within Box Hill.



## **3.2** Planning and Development

The project team has undertaken an analysis of recent permit applications (both current and approved) and VCAT planning permit decisions. This analysis has focussed on identifying the appropriateness of development outcomes from a planning policy perspective, and the implications for the emerging strategic directions for Box Hill.

This analysis has also sought to Identify relative strengths or weaknesses in the existing planning framework that have resulted in the planning outcomes delivered, including implications for housing and employment diversity.

#### 3.2.1 Review of Development Trends (2003-2018)

Council has provided a consolidated list of the 95 planning permit applications submitted in the last 15 years (Appendix 5). This review has included an analysis of trends relating to:

- 1 The scale of development permitted across categories of:
- Low rise (3-6 storeys)
- Mid rise (7-16 storeys)
- Mid-high rise (17-23 storeys)
- High rise (24+ storeys)
- **2** Development status of permit across permits that were:
- Constructed
- Under construction
- Valid, but not yet activated
- Application under consideration
- **3** Geographic spread of development activity across different activity precincts in the centre, as established in the *2007 Structure Plan.*

#### 3.2.2 Scale of Development

In the last 15 years, 95 planning permit applications have been approved. Of these:

- 74% (3 of 4) of development were between 3-12 storeys
- 82% (4 out of 5) of development was less than 16 storeys
- Only 4% (1 out 25) of development was greater than 30 storeys
- The remaining proportion (about 18%) was distributed roughly evenly between 17-23 storeys (mid-high rise) and 24-30 storey categories (high rise)

Box Hill has received a lot of attention in recent times within the local community around the number and scale of developments occurring in the centre. However, as demonstrated by the review, the vast majority of this development has been low, and mid rise developments. Although it is noteworthy that very few applications for low and mid rise development have been received since 2015.

The larger development proposals, while accounting for a very small proportion of permit activity, by their nature attract a high level of community, media, and development industry interest. It is important to recognise that these high profile, high rise, high density development outcomes have an important catalyst role in driving much needed growth, investment and improvement in the centre, and delivering mixed use development that reflects the status of Box Hill as a major metropolitan centre for the eastern region of Melbourne.

It is equally important to recognise the significant contribution made by low and mid rise development in achieving strategic planning outcomes for the centre and delivering increased housing densities within close proximity to services and facilities.

However, the individual size of the larger development proposals means that they represent a significant proportion of future floorspace growth. Thus while development proposals over 24 storeys represent only 12% of applications they will deliver, if all approved and constructed, more than 50% of the growth in floorspace and approximately 45% of future dwellings. The small number of very large developments have a disproportionate impact on future growth outcomes. The challenge for strategic planning for the future of the centre is to provide a balance of opportunities for significant development and investment in the centre, to ensure residential and economic growth can be accommodated, whilst also ensuring that continued opportunities for low and mid rise development exist to provide diversity of development opportunities. Figure 3.1 Distribution of height of all planning applications



Note: the percentages shown here refer to the full set of permit applications (95 cases).

#### Table 3.5 Proportion of development yield by height of development

Height and Status of Permit	Num	ber of	Estimated m <sup>2</sup> GFA above gr	d Total (inc. ound	Estima Employr Belated n	ted nent- 2 GEA	Resident	ial m²	Total Apartr	No of	Average Estimated GFA per Dwelling*	Max	Min
3-6 Storeys	26	40%	63 984	·9/ 7%	6 669	6%	23 039	6%	937	13%	50	106	13
Constructed or Under Construction	19	29%	49,737	6%	3,706	4%	17,096	4%	823	11%	49	106	17
Approved Permit	7	11%	14,247	2%	2,963	3%	5,943	1%	114	2%	54	78	13
7-12 Storeys	15	23%	83,798	10%	1,952	2%	47,306	12%	1,147	16%	53	61	33
Constructed or Under Construction	10	15%	52,313	6%	568	1%	30,439	8%	847	12%	51	57	33
Approved Permit	5	8%	31,485	4%	1,384	1%	16,867	4%	300	4%	56	61	47
13-16 Storeys	7	11%	111,371	13%	33,144	32%	57,483	14%	823	11%	70	87	57
Approved Permit	5	8%	83,925	10%	33,018	32%	38,557	10%	523	7%	72	87	61
Under Consideration	2	3%	27,446	3%	126	0%	18,926	5%	300	4%	65	72	57
17-23 Storeys	6	9%	163,503	19%	19,770	19%	42,404	10%	1,103	15%	64	87	37
Constructed or Under Construction	2	3%	59,741	7%	18,790	18%	9,848	2%	148	2%	67	67	67
Approved Permit	2	3%	58,288	7%	120	0%	7,402	2%	606	8%	37	37	37
Under Consideration	2	3%	45,474	5%	860	1%	25,154	6%	349	5%	75	87	64
24-30 Storeys	7	11%	198,722	23%	27,811	27%	112,415	28%	1,631	22%	70	81	61
Approved Permit	3	5%	78,137	9%	6,793	7%	45,524	11%	663	9%	69	71	66
Under Consideration	4	6%	120,585	14%	21,018	20%	66,891	16%	968	13%	70	81	61
30+ Storeys	4	6%	245,238	28%	13,878	13%	122,883	30%	1,678	23%	75	87	64
Constructed or Under Construction	2	3%	112,300	13%	4,625	4%	64,667	16%	871	12%	74	76	73
Approved Permit	1	2%	79,238	9%	4,778	5%	32,964	8%	517	7%	64	64	64
Under Consideration	1	2%	53,700	6%	4,475	4%	25,252	6%	290	4%	87	87	87
Grand Total	65	100%	866,616	100%	103,224	100%	405,530	100%	7,319	100%	60	106	13

Source: MGS Analysis of City of Whitehorse Data, VicClue 2011 and PSMA Geoscape.

Note: the lower number of applications identified here (65 out of 95) reflects gaps in the data available for smaller development (less than 6 storeys). Total floor area growth and dwelling numbers is in excess of the total shown here.

\* Note that GFA per Apartment figures were only calculated for 46 cases due to incomplete drawing packages or other gaps in the data.

#### 3.2.3 Status of Development

A review of development status across all of the permits (for all scales of development) indicated that:

- For approximately two-thirds of all permits, development has been constructed or is under construction.
- Approximately one third of all permits hold a valid permit that is yet to be acted upon.

When this is considered against the development status for taller scale development (mid-high rise and high rise/17-30 storeys), a distinctly different trend is identified, showing:

- Just 16% of permits for taller development have been constructed or are under construction
- Almost half of the permits have not yet been acted upon.
- Approximately two fifths are pending a decision

This confirms that the majority of development activity, in addition to permit activity, has also been focussed on low and mid rise projects (3-16 storeys). Considered another way, of the 23 permits greater than 13 storeys, only 4 developments (less than 20%) have been constructed or are under construction. Of the remaining 19 permits for taller development, around half (10) have not yet been acted upon, and around half (9) are pending a decision, lodged in late 2017 or 2018.

Of the permits for taller development not yet acted upon, the earliest permit dates back to 2011. The majority were received in 2015 or 2016. These permits potentially reflect residential development market conditions that have changed since that time. Further detailed economic and feasibility work will be required to understand the likelihood of these permits progressing or requiring further amendment in order to deliver a viable development project.

Any future amendments or extensions of time for those permits will need to have regard to changes in planning policy amongst other well established tests. Given the disproportionate role of larger developments in meeting future growth outcomes, failure to see these projects realised could have a significant impact on the ability to meet future housing demand.





#### 3.2.4 **Geographic Spread of Development** Activity

An analysis of the geographic spread of development activity reveals:

- A concentration of constructed developments located to the north of Whitehorse Road and around the Box Hill gardens around Elland Avenue, Bruce Street, and Thames St in the current Box Hill Gardens Precinct E and Peripheral Residential Precinct H.
- To a lesser extent, a cluster of constructed developments located in the Southern and Eastern Precinct F around Harrow Street.
- A concentration of valid, not yet activated permits located in the Hospital and Western TAFE Precinct C and Prospect Street Precinct B.

Most of the development activity in the North Precinct and are low or mid rise, predominantly residential development of up to 5–10 storeys. This has established a new built form and land use character for this precinct. Limited development opportunities remain in this precinct.

Similarly, the construction activity occurring in the south east is predominantly new development of 4 and 5 storeys, demonstrating an emerging character that is evolving from the existing low scale character of the area.

The majority of valid permits yet to be acted upon in the Hospital and TAFE Precinct are for development of 13+ storeys. This contrasts with the buildings recently constructed in this precinct which are low or low-mid rise developments of 8 storeys or less. Again, this proposed and constructed development is predominantly residential. The future character and function of this precinct will experience substantial change if these valid, mid-high and higher rise permits are acted upon.

There is also a notable cluster of pending applications for development of 13+ storevs in the Hospital and TAFE Precinct, including 5 applications for development of 20+ storeys. If all of these applications are approved, this will potentially have further impact on the character and function of this precinct with flow on strategic planning considerations.

Figure 3.3 Development status of developments in Box Hill





## Figure 3.4 Status of planning applications

#### Legend

**[**] Structure Plan boundary

Status

- Constructed
- Under construction
  - Not constructed | Valid permit
- Pending | Under consideration
  - by Council

Table 3.6	Status of	development	applications.	by structure	plan precinct
	010103 01	development	applications,	by Structure	plan procinct

Height	Permit Status	<b>Precinct</b> <b>A</b> : Box Hill Transport and Retail Precinct	<b>Precinct B:</b> Prospect Street Precinct	Precinct C: Civic and Eastern TAFE Precinct	<b>Precinct</b> <b>D</b> : Hospital and Western TAFE Precinct	PrecinctE: Box Hill Gardens Precinct	<b>Precinct F:</b> Southern and Eastern Precincts	<b>Precinct H:</b> Residential Precincts
3-6 Storeys	Constructed or Under Construction				17%	30%	57%	81%
	Approved Permit			100%	4%	5%	14%	19%
7-12 Storeys	Constructed or Under Construction				17%	45%		
	Approved Permit				9%	5%	21%	
13-16 Storeys	Approved Permit				22%			
	Under consideration					10%		
17-23 Storeys	Constructed or Under Construction	33%			4%			
	Approved Permit	33%					7%	
	Under consideration				4%	5%		
24-30 Storeys	Approved Permit		60%					
	Under consideration		20%		13%			
30+ Storeys	Constructed or Under Construction	33%	20%					
	Approved Permit				4%			
	Under consideration				4%			
Total		100%	100%	100%	100%	100%	100%	100%

Source: MGS Analysis of City of Whitehorse Data

#### 3.2.5 Detailed Review of Permit Decisions

Of the 95 permits determined, a representative sample of approximately 20% of developments were selected from across 4 different typologies of development, see Table 3.7:

- Low rise (3-6 storeys)
- Low-mid rise (7-16 storeys)
- Mid rise (17-23 storeys)
- High rise (24+ storeys)

Delegate Reports and VCAT decisions (where relevant) were reviewed in detail to identify:

- Consistency with State and Local Policy
- Consistency with strategic directions of the 2007 Structure Plan
- Key planning considerations relating to land use, design, employment, affordable housing, car parking, and delivering public benefit.
- Any key gaps in the planning framework for supporting positive planning and development outcomes for Box Hill

The permit applications were also selected to ensure the findings of different types of decision makers were considered. This included review of:

- Delegate (officer) Issued Permits
- Council Issued Permits
- VCAT Issued Permits (Supported by officers)
- VCAT Issued Permits (Refused by officers)
- VCAT Issued Permits (Mediated)
- Ministerial Permit in conjunction with Planning Scheme Amendment

High rise	845-851 Whitehorse Road (former Spotlight site) - 17, 30 and 37 Storeys (2016)						
(24+ storeys)	836-850 Whitehorse Road "Whitehorse Towers - The Chen" – 26 and 36 storeys (2015)						
	545-563 Station Street ("Sky One" AXF Group) – 36 Storeys (2011)						
	34-36 Prospect Street - 30 Storeys (2018) -						
High - Mid rise	874- 878 Whitehorse Road – 23 Storeys (2016)						
(17-23 storeys)	913 Whitehorse Road (ATO) – 20 Storeys (2011)						
	12-14 Nelson Road - 19 and 20 Storeys (2015)						
	517 Station Street (Golden Age) – 18 Storeys (2016)						
Low-Mid rise	15-17 Irving Avenue - 9 storeys (2015)						
(7-16 Storeys)	16-22 Wellington Street - 14 Storeys (2016)						
	712-714 Station Street - 9 Storeys (2012)						
	19-21 Poplar Street – 8 Storeys (2013)						
	5-7 Bruce Street (2 Archibald St) – 9 storeys (2011)						
	2-4 Elland Street – 98-10 Storeys (2013)						
Low rise	36 Harrow Street – 3 storeys (2014)						
(3-6 storeys)	98-100 Carrington Road – 3 Storeys (2010)						
	490 Elgar Road – 6 storeys (2011)						

Table 3.7 Summary of developments reviewed

#### 3.2.6 Implementation of Broader Strategic Land Use Planning Directions

At a broader strategic level, decision makers consistently found strong strategic support for intensification of development and facilitation of high density residential and mixed use development outcomes, as established by directions in *Plan Melbourne*, and the *2007 Structure Plan* as reference documents within the Whitehorse Planning Scheme. Clear policy support also exists within the Scheme expressed in both State and local policy for urban consolidation and high density development in Box Hill.

In many of the decisions reviewed, this policy support was given substantial weight – however the manner in which it was applied and considered varied. A key issue apparent in many of the decisions was a need to balance the high level strategic and policy objectives to achieve an outcome that was considered appropriate to the site specific context, and to weigh up sometimes competing or contradictory policy directions within the scheme, as further discussed in this chapter.

This high level policy support was a key determining factor in the support of all of the significant strategic redevelopments reviewed, particularly where the site was designated within local policy Clause 22.07 as being within Major Development Precinct F which states 'taller buildings permitted, enabling increased density'. However a key planning policy gap remains for decision makers around questions such as 'how tall?' and 'how dense?' particularly in the absence of specific height limits.

At the other end of the spectrum, a particular tension was also identified in the Peripheral Residential Precinct H with regards to policy directions to promote higher residential densities within Box Hill in areas zoned Residential Growth Zone (RGZ) or Mixed Use Zone, in conjunction with policies for garden character and limited or natural change as identified in the Housing Strategy and Residential Development Policy at Clause 22.03, and in the context of evolving built form character, for example, in relation to building height outcomes. Council did not receive approval from the Minister for the desired residential zoning outcome during the roll out of the reformed residential zones (height outcomes), as a result this tension remains at the periphery of the activity centre. This matter also requires further policy direction to provide greater planning certainty and consistency of decision making.

#### 3.2.7 Strategically Important Land Use Outcomes

The majority of applications reviewed were predominantly residential in nature. This is consistent with policy directions to direct higher density residential development to activity centres well serviced by public transport, and to create more, and diverse opportunities for housing. The trend towards residential uses were also a reflection of the market appetite at the time of these applications. However, it also needs to be considered in the context of the strategic land use directions for each 'activity precinct', as set by the 2007 Structure Plan and local policy, most relevantly, as follows:

- Precinct A Box Hill Transport and Retail Precinct: Retail sustained throughout the area complemented by entertainment, hospitality, commercial and other uses with extended hours of activity creating a central focus for Box Hill.
- **Precinct B Prospect Street:** consolidation as the primary office precinct in the centre.
- Precinct D Hospital and Western TAFE Precinct: Growth and enhancement of education and medical institutions and support for related businesses and services, plus high density residential (including student housing).

The cumulative impact of existing and future approvals for predominantly residential developments within these precincts has the potential to undermine their strategic role within the activity centre – particularly in Precinct B and D where education/medical and related use and office uses are respectively identified as a priority.

Major development applications with significant 'hotel' use have also been approved in each of the above Precincts on sites on Whitehorse Road, including 'The Chen Art Series Hotel'. In each case, the decision maker determined that this use was strategically important to the centre, and/or represented a community benefit, and reflected market need.

In the 'The Chen Art Series Hotel' approval, located in Precinct B, the delegate report acknowledges that it would have been ideal, as a minimum, to achieve a 'no net loss to office floor area'. However, this was not an express policy position and was not supported by planning controls able to enforce this outcome. This may need to be addressed if the future role of Precinct B as 'the primary office precinct in the centre' is to remain a strategic priority. The issue raised is not whether residential or hotel use is appropriate within an activity centre context – it clearly is, but rather:

- What additional planning mechanisms or policy guidance are needed to ensure the underlying strategic role of the individual precinct is implemented?
- How can strategically important priority land use outcomes, such as office or health/ education related uses, be incentivised in preferred locations?

#### 3.2.8 Affordable Housing

A number of the major, more recent permits have included permit conditions requiring the gifting of affordable housing units as a public benefit. This has been relied upon, in part, as justification for additional height.

The VCAT decision *ZL Prospect Pty Ltd v Whitehorse CC [2018] VCAT 750* regarding the application at 34-36 Prospect Street ruled that the inclusion of a condition to this extent was unlawful and should be deleted. The Tribunal acknowledged that high level policy aspirations exist regarding affordable housing, but also identified that there is no policy framework included within the Whitehorse Planning Scheme that would support such a requirement.

Not only must any 'requirement' for affordable housing contribution be underpinned by policy, it must also be implemented within a legislative framework that allows only for 'negotiated agreements' to be made for the provision of affordable housing. There is currently no legislative head of power enabling a 'mandated' approach to affordable housing.

Some of the challenges include:

- Establishment of an appropriate planning policy framework for affordable housing within the scheme. This needs to be underpinned by analysis and understanding of housing need in Box Hill.
- Establishment of a clear policy position in relation to providing incentives for applicants to deliver desired community benefits through negotiation with Council.
- Where affordable housing public benefit is related to development uplift this needs to be unambiguous, transparent, and consistently applied.

Council is currently undertaking work to support a policy on affordable housing in the Planning Scheme and has received a State Government grant towards this end.



## 3.3 Built Form Considerations

Urban design and built form analysis of the 95 permit decisions by the project team has indicated a series of key trends and issues that have emerged over time. The main challenge introduced by the *2007 Structure Plan* was the issue of delivering buildings with global city scale and form into a largely suburban streetscape and arterial road setting. This has involved a substantial change in character and introduced issues that need to be managed in order to support the continuation of the growth of the activity centre.

Council has provided drawings and documentation for approximately 55 of the 95 permit decisions within the broader set of permit decisions. The discussion here primarily refers to projects that have been constructed or permit applications that have been approved. Where there is discussion of projects under consideration this will be highlighted separately.

#### 3.3.1 Guidance on Preferred Built Form Outcomes

Built form issues around height and setbacks were commonly a key planning consideration in the decisions reviewed. This is particularly the case in Precinct F, for which the *2007 Structure Plan* provides limited built form guidance in Section 5.2 and in the Built Form Precinct description as follows:

 Precinct F Major Development Precinct — Taller buildings permitted, enabling increased density. Heights must not cause overshadowing of key open spaces, Residential Precincts A or B or residential areas beyond the study area. Transitional heights to be provided at edges of precinct to respect the scale of neighbouring precincts.

The structure plan has 'reference document' status and cannot be relied upon to enforce planning outcomes, in part due to the nature of Precinct F which is highly accommodating for development. Limited guidance is also provided in Clause 22.07 "Box Hill Metropolitan Activity Centre" which includes policy directions to:

- Create transitional heights around the core of the activity centre to protect amenity in surrounding residential neighbourhoods
- Protect key open spaces form overshadowing (as shown in the public space framework map)

Key planning issues identified in the context of the limited built form guidance available included:

- Is Whitehorse Road the preferred location for the tallest buildings, and does it provide the opportunity for the most substantial built form?
- Is a 'gateway' approach to considering development appropriate, and if so, where?
- Should development height be required to be consistent with surrounding approved development, potential development, or existing development?

- A desire to achieve a 'transition' in height -
  - What is an appropriate transition in building scale between precincts?
  - Is a transition in height required within a precinct between buildings?
  - Should heights transition down from the core of the activity centre? If so from what to what?
  - What extent of transition is required at the periphery of the centre?
  - What is the policy position regarding a transition in height down towards the gardens?
- How are overshadowing issues considered and enforced? How is discretion to be exercised, noting policy cannot mandate outcomes?
- Is it explicit that a tower podium form is the preferred built form? Does this apply across all precincts? Can other built forms achieve an appropriate outcome?
- How high should streetwalls be? What is the relationship to the road hierarchy? Should streetwall heights respond to existing, emerging or preferred future streetscape character?
- What is considered an appropriate depth of setback above the podium?
- What is considered an appropriate side setback or separation distance between buildings to achieve reasonable amenity outcomes in an activity centre context?
- What is an appropriate level of amenity at the street and in key public places?

Significant work is now required to address these gaps in planning controls and provide the required policy guidance around appropriate built form outcomes. These issues need to be addressed within the context of the forthcoming Urban Design Framework.

#### 3.3.2 Poor Land Use and Built Form Coordination

There has been poor integration of built form outcomes and preferred future land uses due in part to conflicting messages and limited consideration of development economics. As already noted, in some areas, particularly in the Health and Education Precinct as well as parts of Prospect Street Precinct and South and East Precinct, the built form controls have favoured built form that has not delivered the land use outcomes being sought. For example, Rutland Road and Ellingworth Parade have traditionally provided the opportunities for a variety of scales of proprietary businesses to prosper but planning provisions have not precluded residential. Higher and better land value outcomes have been achieved through predominantly residentially focussed towers which in turn out-compete lower rise commercial use for value.

In some areas there is a poor fit between the favoured built form, e.g. residential uses with high capacity car parks, and the existing lot arrangements, leading to large scale built form within street networks that do not support that outcome. Development proposals on modestly scaled sites in hinterland locations are being put forward which rely on exclusive street access for vehicle loading and pedestrian access. The Forrest Hill Precinct in South Yarra is a mature example of the very poor urban outcome arising from such an arrangement.

Clearly there have been insufficient incentives for investment and insufficient clarity in a policy sense to trigger improvements in streetscape interface and quality and capacity of wayfinding between public transport and hinterland street destinations and the core precinct. The existing policies have not delivered the conversion from shopping centre to town centre achieved in other transit rich urban areas such as QV in the Melbourne CBD. It is noted that Council has recently undertaken steps towards addressing these shortfalls, notably the *Box Hill Urban Realm Treatment Guidelines.* 



## Figure 3.5 Height of planning applications

#### Legend



Height (Storeys)

- 3-6 storeys
- 7-12 storeys
- 13-16 storeys
- 17-23 storeys
- 24-30 storeys
- >30 storeys

#### 3.3.3 Heights, Setbacks and Building Separation

The majority of approved development has been located on relatively small sites, either from a single existing lot or a small number of contiguous lots. Approximately two-thirds of approved developments are on sites measuring less than 1500 sqm, which is approximately the equivalent of two standard Box Hill house blocks. This includes eight developments of over 13 storeys, suggesting there is substantial intensification occurring without the need for lot consolidation.

As a positive this has meant that development can occur relatively rapidly without the need for site amalgamation. The negative outcome of these developments from a design perspective is the inconsistent application of equitable development principles, where the development on one lot makes de facto use of some of the development potential of an adjoining site by building close to the boundary. There is also the significantly increased number of inactive sideages where new buildings are constructed up to the lot boundary on all sides. Where habitable rooms face the side boundaries there is an over-reliance on screening to manage privacy and reduce overlooking between developments. Only approximately one third of developments have side setbacks at upper levels of more than 4.5m from the side boundary, which would equitably share a 9m separation providing minimal levels of privacy between habitable rooms. It would be preferable that larger setbacks and coordinated outlooks towards public areas are provided.

On the few sites large enough to contain multiple towers above podium level (5 projects from our sample) the average separation between towers is 11m. This suggests one potential benefit from the development of larger sites – the greater potential for managing access to light and air between taller built forms. This observation is tempered by the fact that each of these 5 examples has side setbacks of less than 4.5m. While there is adequate separation between towers within the sites there is potential for taller towers on adjoining sites to be too close, leading to diminished amenity.

Table 3.8 S	Site size for a	II permit application:	s, by height (	of proposed	development
-------------	-----------------	------------------------	----------------	-------------	-------------

Lot size sqm	3-6 Storeys	7-12 Storeys	13-16 Storeys	17-23 Storeys	24-30 Storeys	30+ Storeys	Total	
0-500	2						2	2%
500-1000	27	8	1	1			37	43%
1000-1500	7	7	3	1	2		20	23%
1500-2000	6	3	1	3	2	1	16	18%
2000-2500	2		1		1	1	5	6%
2500-3000					2		2	2%
3000-3500						1	1	1%
4000-4500						1	1	1%
5000-5500	1						1	1%
7000-7500			1	1			2	2%
Total No of Applications	45	18	7	6	7	4	87	100%

Source: MGS Analysis of City of Whitehorse Data, VicMap Cadastral and PSMA Geoscape

Note: the lower number of applications identified here (87 out of 95) reflects gaps in the available data.

#### Table 3.9 Side setback measurement above podium level, for accommodation use

Side Setbacks at upper levels (above podium)	3-6 Storeys	7-12 Storeys	13-16 Storeys	17-23 Storeys	24-30 Storeys	30+ Storeys	Total	
0	2	2	1	1			6	15%
< 4.5m	5	5	3	1	3	3	20	50%
> 4.5m	1	4	2	2	4	1	14	35%
Total	8	11	6	4	7	4	40	100%

Source: MGS Analysis of City of Whitehorse Data

Note: the lower number of applications identified here (44 out of 95) reflects gaps in the available data.

#### 3.3.4 Integration with the Public Realm

Many new developments in Box Hill demonstrate multiple issues regarding the integration with the adjoining public realm. Development on larger sites would more positively integrate with the surrounding public movement network if 24-hour accessible pedestrian and cycle connections were provided. This can be to either replace existing connections severed by the new development (for example, where development is of an at-grade car park that previously provided a level of informal connectivity) or in order to provide new links within impermeable street blocks.

It is notable that many new developments make very little landscape contribution towards quality urban streetscapes, places and amenity. While there are a small number of developments that provide improved mid-block connectivity, there is more generally an absence of contributions towards upgraded footpath capacity in existing streets and lanes. In some neighbourhoods the magnitude of growth means that more space is needed to enable enhanced interconnection of neighbourhoods and key destinations within the activity centre. While the public realm is a council managed space, there is an absence of substantial public realm improvements for areas immediately adjoining the project site as part of development proposals.

There are many locations where the comfort and amenity of pedestrians at street level is relatively poor. Overshadowing and wind impacts have had a negative impact on the public realm surrounding the development. The consideration of wind effects from taller buildings have in many cases not been demonstrated. The use of canopies and continuous weather protection along active pedestrian-focussed street interfaces is intermittent where provided.

There is inconsistent activation of laneway and street podium interfaces leading to perceived diminished safety and security within the public realm. With respect to building interface arrangements, podium heights appear to be determined more by functional requirements of the internal use than in response to the role of the street and the need for wind mitigation in some locations. The substantial increase in lot coverage in many areas has resulted in a substantial loss of tree canopy cover and shade as sites have been intensified. This is an inevitable outcome from a substantial intensification in use however there has been insufficient provision of landscape within the proposed developments and the contribution back towards the broader neighbourhood. There is a need to consider where the landscape opportunities might be accommodated if not in the site, particularly in locations where substantial trees won't fit into the streetscape due to the narrow width of road reserves. Where the public realm is too narrow the landscape contribution to the streetscape will need to be accommodated within individual private lots.

The Council has recently prepared the 'Box Hill Urban Realm Treatment Guidelines' by Hansen Partnership. This operational document defines a hierarchy of public realm types and promote high quality public realm outcomes through a high-level specification of an improved landscape and materials palette across the centre. These guidelines constitute an important part of a broader overall response that is needed to address these issues.

#### 3.3.5 Cumulative Impacts of Traffic Generation and Parking

In all instances of permit applications we have analysed, the traffic impacts generated by the development were considered acceptable and able to be accommodated within the existing local and arterial road network.

The traffic impacts of these applications were considered on an individual, site by site basis. There was no evidence within the decisions that the potential cumulative impact of traffic generated by other approved but not yet constructed, or proposed development was considered.

Some tribunal decisions highlighted that any permit conditions for traffic impact mitigation works needs to relate to the impacts generated by development, not broader traffic management issues. However, there are also developments that require traffic studies to be carried out in the area to other approved developments and determine if mitigating works are required for that precinct.



Figure 3.6 Site coverage in Box Hill

#### Legend

[]] Structure Plan boundary

Lot coverage

- 0 20%
- 20% 40% 40% - 60%
- 60% 80%
- 80% 100%

To date, Council is yet to receive these studies that are required in accordance with their planning permit. As such, Council has determined the need to carry out the cumulative impact of traffic and parking in the absence of not receiving these studies to date.

The cumulative impact on the form of the public realm caused by the management of loading and parking has also not been adequately considered. Driveways have been positioned in locations that serve the needs of individual lots without the ability to influence the cumulative impact of driveways and crossovers on street landscape and pedestrian amenity. Inactive services at ground level, and the cumulative impact of back of house uses has had a negative impact on place quality and amenity at ground level.

There is a general aversion to building basements in larger developments as preferred in the *2007 Structure Plan.* Whilst the ground conditions are suitable and basements are technically feasible, the additional cost has seen frequent applications for large amounts of above-ground car parking in podiums. Where this has occurred it has had a negative impact on the activation of the street interface within podium levels and an increase in the building bulk needed to supply the parking opportunities.

Clearly controls necessitating a high quality footpath and streetscape arrangement are essential in conjunction with development delivering alternative approaches to car parking provision and minimising of driveways as a consequence. Where there is laneway access this allows for separation of pedestrian active frontages from vehicle servicing zones if the aligned proposal for increasing the laneways for traffic use. Some laneways will need widening into private land to accommodate the future traffic loads.

	Hoight of	Total	Number			L	ot Size f	or Propo	osed Dev	elopme	nt		
Permit Status	Proposed Development	of car spaces	of cases analysed	0-500	500- 1000	- 1000- 1500	1500- 2000	2000- 2500	2500- 3000	3000- 3500	4000- 4500	5000- 5500	7000- 7500
					AVER	AGE CA	R PARKS	SIZE FOF	r INDIVIL	DUAL DE	VELOPN	1ENTS	
Constructed or Under Construction	3-6 Storeys	608	19		12	37	44	104					
	7-12 Storeys	691	10		39	80	85						
	17-23 Storeys	480	2				240						
	30+ Storeys	945	2					390		555			
	Total	2724	33										
Approved Permit	3-6 Storeys	257	7	19	16	44						128	
	7-12 Storeys	282	5		46	100							
	13-16 Storeys	861	5		117	127	145	165					307
	17-23 Storeys	664	2		13								651
	24-30 Storeys	706	3			201	305						
	30+ Storeys	574	1										
	Total	3344	23										
Under consideration	13-16 Storeys	236	2			118							
	17-23 Storeys	333	2			123	210						
	24-30 Storeys	1149	4				199	227	362				
	30+ Storeys	372	1				372						
	Total	2090	9										

Table 3.10 Average number of car spaces per development, for all permit applications, by height of proposed development

Source: MGS Analysis of City of Whitehorse Data

Note: the lower number of applications identified here (65 out of 95) reflects gaps in the available data. This analysis refers to permit data – not all will be approved and not all of the approved developments will be constructed.

There is a need for a precinct parking strategy that better manages car parking as a shared resource rather than on a site by site basis. However the delivery of works required as a result of cumulative, or precinct or centre wide, traffic impacts is unlikely to be able to be implemented by way of permit conditions on individual applications for development. An alternative implementation mechanism, such as an infrastructure contribution plan, would need to be explored.

#### 3.3.6 Car Parking in Permit Applications

The approach to considering car parking has varied amongst the decisions reviewed. Various decisions referenced strong policy support for reduced car parking rates to encourage walking, cycling and public transport. Other permits were approved with parking rates exceeding statutory parking rates established by the Parking Strategy which informed the Parking Overlay.

Where the tribunal was determining a matter involving reduction of car parking, it was generally supported. In *CBD Landcorp Pty Ltd V Whitehorse [2018] VCAT 445* (874-878 Whitehorse Road), the tribunal specifically agreed with evidence that parking rates more consistent with the Central City are more appropriate for Box Hill. This may necessitate the introduction of maximum, rather than minimum, car parking ratios for Box Hill via the Parking Overlay. If supported by clear policy guidance on discretion to exceed the statutory rates, it may be a useful tool in managing overall traffic generation within the activity centre area.

The role of off site parking provision or leasing of spaces within commercial car parks was also a matter of consideration in some decisions. The Tribunal found that there was no statutory reason why this could not be supported. Decision makers would benefit from clear policy direction on this matter. If this was a preferred approach to managing parking demand and traffic impacts, development incentives could be explored to facilitate this outcome.

#### 3.3.7 Built Form and Design Quality

Box Hill lacks clear policy support for design excellence for taller built form defined through quality and durability of materials and finishes and detailing of ground level services. The quality and long term durability of materials is a concern that has been noted during community consultation. New development within the activity centre has delivered city scale buildings but the underlying development economics is pushing preferences for shorter life materials and detailing. For example, painted concrete and lightweight claddings have been specified on prominent buildings. On taller built form commercial glazing systems have been specified that are more appropriate to shorter life commercial buildings. These have been used as longer term solutions for strata titled residential towers without clear consideration about how the maintenance and eventual replacement of these systems will be achieved.

In relation to improved environmental sustainability outcomes, Council has a Environmentally Sustainable Development (ESD) policy through Amendment C130 which was incorporated into the Scheme in November 2015. This policy sets out specific application requirements for different types of development towards incorporating ESD principles in development.

#### 3.3.8 Delivery of Other Public Benefits

Other public benefits that were sought to be delivered through permits included:

- Provision of publicly accessible open space
- Provision of pedestrian link or laneway
- Public art
- Provision of space for community uses

In the cases which successfully negotiated provision of open space and pedestrian links, these were vaguely informed by the Access and Public Space Framework in the local policy. In each case, decision makers would have benefited from greater policy guidance regarding the quality, design, configuration and function of those aspects of the development.

Further, to the extent that Council seeks to encourage the creation of new public spaces and facilities and linkages consistent with the structure plan, a clear policy position is required regarding development uplift for the provision of open space or pedestrian links as a public benefit.

Opportunity may also exist to consider an extended list of eligible public benefits, which could include public art contributions and provision of space for community uses, but note that this will need to be strategically justified.

As was recommended in relation to affordable housing, any public benefit and development uplift regime needs to be unambiguous, transparent, and consistently applied.

## **3.4** Existing urban character

#### 3.4.1 Topography

Box Hill is, as suggested by its name, characterised by its location at a high point in the local topography. The highest point within the activity centre boundary is the rail station site between Main Street and Carrington Road. The land to the north of the railway line slopes down gently to Whitehorse Road, then more steeply further north towards Box Hill Gardens. Whitehorse Road slopes gently as far west as Nelson Road, before falling more steeply between Nelson Road and Elgar Road.



Figure 3.7 Topography of Box Hill

#### Legend



- ▲ High point (98m)
- ▼ Low point (65m)
- |||| Plateau
- Steep street

#### 3.4.2 Street and block characteristics

The streets of Box Hill are distinct from many other centres in Melbourne. Box Hill's street grid is defined by two parallel transport corridors of Whitehorse Road and heavy rail. Box Hill's streets are few, narrow and suburban in character and form comparatively large urban blocks — these are not CBD-type characteristics which typically have smaller urban blocks coupled with an extensive network of streets.

#### Box Hill characteristics include:

- Two large transport corridors Whitehorse Road (60 metres wide) and heavy rail (30 metres wide).
- Narrow suburban streets of 15 and 20 metres wide, including the two major north-south streets of Elgar and Station Streets which are 20 metres wide.
- Large urban blocks with limited permeability with the exception of the traditional town centre and the area bounded by Shipley Street and Station Street north of Whitehorse Road.
- South of Box Hill Central largely consists of horizontal urban blocks 300-400 metres in length. The lack of north-south laneways results in poor levels of permeability.
- North of Whitehorse Road features a mixture of substantially large blocks (except for Shipley and Station Streets) and narrow suburban streets.

Figure 3.9 compares Box Hill with Melbourne's CBD at the same scale, illustrating the clear difference in street and block typology. The street grid of Melbourne's CBD has a clearly defined and legible geometry with generous 30 metre wide streets that are complemented by smaller parallel east-west 10 metre wide streets and an intricate and predominately north-south network of laneways. By contrast, Box Hill's street grid has an irregular geometry with fewer and narrower streets and a comparatively limited network of laneways. These characteristics inevitably create tension for road space allocation between modes of transport and their capacity, the public realm and their amenity. As Box Hill grows, so will this tension, which highlights the need for their deliberate resolution towards achieving the future vision of Box Hill. This underscores the need for an overall strategy for the activity centre's streets and laneways.



Box Hill





#### Figure 3.8 Comparison of streets and blocks of Box Hill and Melbourne CBD (shown to same scale)



Figure 3.9 Street width

#### Legend

[]] Structure Plan boundary

#### Street type & width

- Major arterial road | 60m
- Arterial road | 30m
- Key north-south street | 20m
- Local street | 20m
- Local street | 15m
- Wide laneway | 6 10m
- Laneway | 3 6m Street edge | kerb

#### 3.4.3 Lot size

The total area of all lots (including parks and crown land but excluding road reserves) in the Box Hill activity centre is approximately 100 hectares. A substantial amount of land is held by larger institutions such as Box Hill Institute (approximately 7.8ha) and Box Hill Hospital / Epworth Eastern (5.5 ha). The largest single non-institutional landholder is Vicinity, the owner of Box Hill Central (approximately 3.6ha of leasehold VicTrack land and 1.8ha of freehold).

The fabric of land parcels demonstrates some important characteristics that differ by individual neighbourhood.

- A cluster of lots near to the intersection of Station Street and Whitehorse Road, extending as far west as the Market Street Mall and south to Ellingworth Parade, provide a distinctively narrow width subdivision pattern consistent with this area's original role as the town centre. The average size of lots in this area is 380m<sup>2</sup> but the majority of lots are sized between 200–550m<sup>2</sup>, which is notably different to other parts of Box Hill.
- The commercially zoned land between Rutland Road and Ellingworth Parade provides another cluster of anomalously small lots in a single area. Most lots within this neighbourhood are sized between 450–600m<sup>2</sup>, with quite consistent rhythm of lot dimensions and proportions.
- The subdivision pattern of lots adjoining Prospect Street defines a coherent precinct with consistent lot sizes and depths. The lots in this area are generally a little larger, with a median size of 1200m<sup>2</sup>.
- Apart from the larger institutional landholdings or consolidated sites, most other areas within the activity centre boundary have lot sizes that are typical for suburban house subdivisions across Melbourne, ranging between 700–900m<sup>2</sup>.

#### 3.4.4 Lot access and street frontage width

The type of access to lots has implications on how future development may impact the public realm, streetscapes and the broader movement network. For instance, proposed developments on lots with a narrow single street frontage would necessitate cross over access to car parking within these developments from the street frontage. Wider lots with two or more frontages have increased flexibility in relation to prioritising pedestrian amenity by locating vehicular access away from key pedestrian movements. Figure 3.12 demonstrates how lot access varies across Box Hill due to its street and block characteristics.

#### Lot access characteristics:

- Poplar Street consists predominately of singlefrontage lots. This is similarly reflected in the residential areas south of Cambridge and Harrow Streets.
- Large proportion of lots on Rutland Road,
   Ellingworth Parade and Prospect Street (Fairbank Lane) are serviced by narrow rear laneways.
- The fine grain of the existing laneway network between Nelson and Station Streets results in the majority of lots having two frontages or more. This is similarly reflected along Station Street and part of Thames Street.



#### Figure 3.10 Lot size

#### Legend





Figure 3.11 Street frontage width

#### Legend

[]] Structure Plan boundary

Street frontage width (metres)

	0 - 5
_	6 - 10

- 11 15
- 16 20
- 21 30
- > 30



#### Figure 3.12 Lot access

#### Legend



## Access type

- Single frontage
  Dual frontage
- Corner (dual) frontage
- Three frontages
  - Island site | more than three frontages
- Townhouse or unit lot

#### 3.4.6 Sites available for future development

A substantial degree of change has already occurred within Box Hill. Figure 3.13 illustrates the location of sites within Box Hill that remain available for future change, in comparison to sites that are less likely to change in the near future.

There are a range of reasons that future change might be constrained.

- Where there have been multi-residential developments constructed less than fifteen years ago it is unlikely that these will be redeveloped again within the next ten to fifteen years.
- Strata subdivisions, townhouse, unit and multiparcel lots with shared common property are potentially constrained due to the fragmented ownership of these sites that slow down the process of lot consolidation. Some of these sites may already be in single ownership but many will be owned by multiple parties.
- While sites may appear to be available for development, they may not be developed due to preferences of owner-occupiers, such as longterm residents who desire to age in place and do not wish to relocate. This can slow the process of lot consolidation.
- Land held by larger institutions such as the Box Hill Institute (BHI), Box Hill Hospital, Epworth Eastern and City of Whitehorse is not explicitly encumbered and in some cases is likely to be further developed in the future. In addition, the redevelopment of these sites may be reliant on competitive government funding which may affect the expediency of redevelopment. However, the use of these sites is likely to remain for the purposes of the institution, while the existing uses may be intensified it is less likely that they will be redeveloped for a totally different use.

In general terms it is notable that the area south of Oxford Street and Harrow Street (to the south of the activity centre) and north of Thames Street (in the north of the centre) have a significant number of strata and subdivided parcels. The opportunities for significant change in these areas are modest and will proceed more slowly than on less encumbered sites.



Figure 3.13 Development limitations

#### Legend

523	Structure Plan boundary
Encumbrances & constraints	
	Developed <15 years
	Strata parcels
	Subdivided & unit parcels
	Crown Land
Other development considerations	
	Large institutional sites
////	Approved permit
	Heritage overlay

## **3.5** Built form analysis

## 3.5.1 Urban character and cumulative built form outcomes

Analysis of existing built form demonstrates how Box Hill has inherently distinctive urban 'parts' with each having distinctive strategic land use. While built form character is distinct from land use, it is influenced by the range of uses within. This is particularly evident with institutional buildings such as Box Hill Town Hall, Box Hill Hospital and the Box Hill Institute campuses which have a dominant influence on both land use and character. Similarly, both Box Hill Central sites, together with the traditional fine-grain retail built form have largely established the urban character of Precinct A: Box Hill Transport and Retail Precinct.

However, built from outcomes of recently constructed development have seen the emergence of a new urban character in many precincts with mid- to mid-high rise office and apartment buildings being constructed. Even if the extent of change is fairly minimal, such as in Precincts A and B, the construction of the mid-rise ATO Building and the high-rise Whitehorse Towers have significantly altered the character of precincts. This is also evident in Precinct D with the redevelopment of Box Hill Hospital presenting a taller and contemporary institutional typology in contrast to existing low-mid rise institutional typologies. Precinct E has seen mid-rise apartment buildings replace detached dwellings as the dominant built form typology. This has changed the overall character of the precinct.

This change can be partially attributed to the desired built form outcomes of the *2007 Structure Plan* which has facilitated varying degrees of change in built form in each precinct, supposed by strategic land use directions. The following pages provide an illustration of the cumulative impact on urban character following the construction of approved and pending permits. Figure 3.14 View of cumulative impact of development of valid and pending permits.



### 2019

Constructed & permits under construction

ATO | 913 Whitehorse Road **1** SkyOne | 545 Station Street **2** 

Whitehorse Towers | 850 Whitehorse Road **3** 



Approved & pending permits Figure 3.15 Cumulative impact of development in Precinct A: Box Hill Transport and Retail Precinct



2019 Constructed & permits under construction

ATO | 913 Whitehorse Road **1** SkyOne | 545 Station Street **2** 

## Approved permits

Approved built form

874-878 Whitehorse Road 3

Approved & pending permits Proposed built form
#### 3.5.2 Emerging character: Precinct A

While relatively few major new developments have occurred within this precinct, the ATO Building and 545-563 Station Street "SkyOne" on Station Street present as significant towers in a low-rise precinct. The ATO Building is a simple, singular form with no setbacks whereas the Sky. It is particularly notable that little change has occurred to date within the two shopping centre sites.



ATO (913 Whitehorse Road) Office (and 6 level car park at lower levels) 20 storeys (mid-high rise) Site size 1,775m<sup>2</sup> | GFA 19,350m<sup>2</sup> | FAR 20.0

HIGH RISE RESIDENTIAL



545-563 Station Street Residential 36 storeys Site size 2,417m<sup>2</sup> | GFA 69,880m<sup>2</sup> | FAR 28.9



874-878 Whitehorse Road Residential 23 storeys Site size 662m<sup>2</sup> | GFA 11,948m<sup>2</sup> | FAR **18.0** 

Figure 3.16 Cumulative impact of development in Precinct B: Prospect Street Precinct.



2019 Constructed & permits under construction

Whitehorse Towers | 850 Whitehorse Road 1

# Approved permits

Approved built form

820-824 Whitehorse Road **2** 9-11 Prospect Street **3** 34-36 Prospect Street **4** 

Approved & pending permits Proposed built form

31-35 Prospect Street 5

#### 3.5.3 Emerging character: Precinct B

This precinct has seen the emergence of high-rise residential podium-tower form along Whitehorse Road with Whitehorse Towers (850 Whitehorse Road) presenting two towers over 29 storeys on a single podium form. A 29 storey podium-tower at 820-824 Whitehorse Road is currently under construction in addition to a valid permit for a 25 storey residential tower at 9-11 Prospect Street. This stands in contrast to remnant buildings consist of boxy low-rise office buildings with inconsistent building setbacks and street interfaces.

### HIGH RISE RESIDENTIAL



850 Whitehorse Road Residential and hotel (3000m2) 36 and 29 storeys Site size 3,315m<sup>2</sup> | GFA 42,420m<sup>2</sup> | FAR 12.8



820-824 Whitehorse Road Residential 29 storeys Site size 1,729m<sup>2</sup> | GFA 34,078m<sup>2</sup> | FAR **19.7** 



9-11 Prospect Street Residential 25 storeys Site size 1,497m<sup>2</sup> | GFA 23,330m<sup>2</sup> | FAR **15.6** 



34-36 Prospect Street Residential 30 storeys Site size 1,208m<sup>2</sup> | GFA 20,729m<sup>2</sup> | FAR 17.2

Figure 3.17 Cumulative impact of development in Precinct C: Civic and Eastern TAFE Precinct and Precinct F: Southern & Eastern Precinct



2019

Constructed & permits under construction

990 Whitehorse Road 1 Salvos | 1000 Whitehorse Road 2 31-35 Harrow Street 3

## Approved permits

Approved built form

- 4 Watts Street 4
- 997-1003 Whitehorse Road 5 517 Station Street 6

  - 22 Rutland Road 7 9-11 Ellingworth Parade 8

Approved & pending permits Proposed built form

#### 3.5.4 Emerging character: Precinct C & F

Buildings south of Whitehorse Road precinct primarily consist of detached civic or institutional buildings with generous setbacks, landscaping and at-grade car parking, with the exception of the former ATO building. Development of approved permits north of Whitehorse Road on Watts and Whitehorse Road could see the emergence of mid-rise apartments in the precinct. Box Hill Institute campus has been partially demolished for the approved 3 storey development at 1000 Whitehorse Road. The majority of the development south of the corridor has been along Harrow Street. These new 3-5 storey predominately residential developments provide an appropriate increase in scale from existing residential areas. The recently completed Council multi-deck car park at Harrow Street also includes community facilities and provides an appropriate consolidated parking node at the southern gateway to the activity centre. There is a valid permit for a significant mid-high rise mixed use building at 517 Station Street.



990 Whitehorse Road (former ATO) Office 5 storeys Refurbished

MID RISE APARTMENT



1000 Whitehorse Road Place of worship 3 storeys Site size 5,323m<sup>2</sup> | GFA 3,150m<sup>2</sup> | FAR **0.6** 



MID RISE APARTMENT

**31-35 Harrow Street** Residential 5 storeys Site size 1,682m<sup>2</sup> | GFA 5,072m<sup>2</sup> | FAR **3.0** 



4 Watts Street Residential 9 storeys Site size 718m<sup>2</sup> | GFA 4,806m<sup>2</sup> | FAR **6.7** 



997-1003 Whitehorse Road Residential 12 storeys Site size 1,227m<sup>2</sup> | GFA 8,964m<sup>2</sup> | FAR **7.3** 

MID-HIGH MIXED USE



517 Station Street (former council carpark) Mixed use (retail, office and residential) 18 storeys Site size 7,374m<sup>2</sup> | GFA 46,340m<sup>2</sup> | FAR 6.3

Figure 3.18 Cumulative impact of development in Precinct D: Hospital and Western TAFE Precinct.



2019 Constructed & permits under construction

Box Hill Hospital Redevelopment 1

# Approved permits

Approved built form

Epworth Hospital Redevelopment 2

- 845-851 Whitehorse Road 3
  - 17-19 Arnold Street 4
  - 486-488 Elgar Road 5
- 5-9 Wellington & 7 Poplar 6
- 16-22 Wellington Road **7** 813-823 Whitehorse Road **8**

## Approved & pending permits

Proposed built form

16 Spring Street 26-28 Wellington Road 843 Whitehorse Road 3-5 Poplar Street & 837 Whitehorse Road

#### 3.5.5 Emerging character: Precinct D

Expansion of Box Hill Hospital has delivered a new institutional typology in built form that is taller than the original hospital wings. Epworth Hospital's redevelopment proposal consists of a 15 storey tower on the southern end. This precinct is particularly notable for the high number of valid and pending permits for predominately high-rise residential towers. This will substantially alter the character of the southern portion of the precinct if approved and constructed. There is a clustering of lots containing detached housing or units on Poplar Street and Wellington Road. There are underutilised sites with at-grade car parking (indicating development opportunities) near to the Box Hill Institute.

HIGH RISE INSTITUTIONAL



Box Hill Hospital Redevelopment Health 10 storeys + 55,000m<sup>2</sup> to existing



Epworth Hospital Redevelopment Health 15 storeys Site size 7,172m<sup>2</sup> | GFA 32,097m<sup>2</sup>





**845-851 Whitehorse Road** Residential and hotel 37, 30 & 18 storeys Site size 4,287m<sup>2</sup> | GFA 79,238m<sup>2</sup> | FAR **18.5** 

Figure 3.19 Cumulative impact of development in Precinct E: Box Hill Gardens Precinct



2019 Constructed & permits under construction

5-7 Bruce Street (2 Archibald Street) **1** 712-714 Station Street **2** 12-14 Nelson Road **3** 

# Approved permits

Approved built form

722 Station Street **4** 9-11 Bruce Street **5** 6 Nelson Road **6** 

Approved & pending permits Proposed built form

> 702-706 Station Street 7 2-4 Bruce Street 8

21-23 Irving Avenue 9

#### 3.5.6 Emerging character: Precinct E

Low to mid-high rise apartments south of Irving Avenue generally 10-12 storeys, with limited examples of up to 20 storeys. Emergence of threestorey apartment developments on Thames Street and four-storey developments surrounding the intersection of Station Street and Thames Street. Cluster of industrial buildings on Nelson Road and Shipley Streets are likely subject to redevelopment. Similarly, remnant detached dwellings and unit subdivisions likely subject to redevelopment for midrise apartments.

#### MID RISE APARTMENT



5-7 Bruce Street (2 Archibald Street) Residential 9 storeys (mid-rise) Site size 909m<sup>2</sup> | GFA 4095m<sup>2</sup> | FAR **4.5** 



712-714 Station Street Residential 9 storeys (mid-rise) Site size 1,757m<sup>2</sup> | GFA 7,900m<sup>2</sup> | FAR **4.5** 



12-14 Nelson Road Residential 20 storeys (mid-high rise) Site size 1,610m<sup>2</sup> | GFA 24,300m<sup>2</sup> | FAR 15.0

### 3.4.5 Density and floor area

Since 2007, Box Hill has experienced an increase in density and floorspace with recent development providing employment and residential uses at significantly higher densities (see Table 3.11). Table 3.12 outlines five major developments since 2015, demonstrating how a substantial amount of floorspace has been delivered on relatively small sites, with the exception of Box Hill Hospital.

However, Figure 3.20 on page 91shows how this significant increase in density and floorspace has been unevenly scattered across the activity centre with the majority of the increase located on and north of Whitehorse Road on relatively few sites, with the exception of the area between Shipley Street and Station Street which has seen a clustering of low to mid-rise residential developments. Other areas in Box Hill has seen smaller and gradual increases in density, particularly in transitionary residential where low-rise (3-4 storeys) multi-residential developments have occurred along streets such as Thames Street. Figure 3.20 Estimated FAR of development of valid & pending permits.



Legend []] Structure Plan boundary Floor Area Ratio (FAR) 0 - 1 1 - 2 2 - 4



#### Table 3.11 Area Ratios and Heights of Proposed Development

	Permit Status	Precinct A* Box Hill Transport and Retail Precinct	Precinct B Prospect Street Precinct	Precinct C* Civic and Eastern TAFE Precinct	Precinct D Hospital and Western TAFE Precinct	Precinct E Box Hill Gardens Precinct	Precinct F Southern and Eastern Precincts	<b>Precinct H</b> Residential Precincts	All Precincts
Average Floor Area Ratio	Constructed or Under Construction	24.4	12.8		4.5	3.6	2.9	1.8	3.9
	Approved Permit	18.0	17.5	0.6	9.0	4.6	6.0	0.5	8.2
	Under consideration		14.0		15.6	11.5			14.1
Maximum Floor Area Ratio	Constructed or Under Construction	28.9	12.8		15.1	6.4	3.5	2.9	28.9
	Approved Permit	18.0	19.7	0.6	18.5	5.3	7.3	1.1	19.7
	Under consideration		14.0		27.2	13.8			27.2
Average Height of Proposals	Constructed or Under Construction	28 storeys	36 storeys		8 storeys	7 storeys	4 storeys	3 storeys	7 storeys
	Approved Permit	23 storeys	28 storeys	3 storeys	15 storeys	7 storeys	10 storeys	4 storeys	13 storeys
	Under consideration		25 storeys		29 storeys	16 storeys			24 storeys
Maximum Height of Proposals	Constructed or Under Construction	36 storeys	36 storeys		20 storeys	10 storeys	5 storeys	6 storeys	36 storeys
	Approved Permit	23 storeys	30 storeys	3 storeys	37 storeys	9 storeys	18 storeys	5 storeys	37 storeys
	Under consideration		25 storeys		37 storeys	19 storeys			37 storeys
Number of cases analysed	Constructed or Under Construction	2	1		9	15	8	22	57
	Approved Permit	1	3	1	9	2	6	5	27
	Under consideration		1		5	3			9
	Overall total cases	3	5	1	23	20	14	27	93

\* This analysis of Precinct A & C, and to a lesser extent Precinct B, is inherently limited by small sample sizes for each precinct.

Source: MGS Analysis of City of Whitehorse Data, PSMA Geoscape

Note: the lower number of applications identified here (93 out of 95) reflects gaps in the available data.

Note on methodology used to estimate FAR:

Unless otherwise noted, all Floor Area Ratio (FAR) calculations use the same broad approach as used in the Central City Built Form Guidelines (C270). Importantly, these gross figures include all built form above ground level, including for example car parking. The actual 'habitable' or "saleable' gross floor area (GFA as defined by the Property Council of Australia) will be lower than this planning related figure.

Floor Area Ratio estimates were based on three separate datasets. Firstly, VicCLUE data from 2011 containing floorspace and lot size were used to generate a baseline FAR for Box Hill in 2011. Secondly, planning approvals data from 2003 supplied by the City of Whitehorse was cross-checked with architectural plan drawings from planning permit applications to gather data on land use, Gross Floor Area (GFA), number of dwellings and car park spaces. This data was integrated to provide a base dataset on what has changed since 2011. Thirdly, Geoscape (PSMA) building dataset was used to partially validate both datasets to identify outliers and errors - however, this dataset has the following limitations: the capture date is 2016/2017 and GFA is calculated crudely from LiDAR-derived height data and building footprints. As a result, the FAR estimate has inherent limitations that rely on a degree of manual coding and analysis.

Table 3.12 Selected major developments constructed since 2007 or currently under construction

	Completion date	Predominant land use	Total GFA	Maximum storeys	Site size	FAR
ATO (913 Whitehorse Road)	2015	Commercial	35,440m <sup>2</sup>	19	1,775m <sup>2</sup>	20
Box Hill Hospital redevelopment	2015	Health	approx. 55,000m² GFA added	10	28,440m <sup>2</sup>	3.8*
Whitehorse Towers (850 Whitehorse Road)	2017	Hotel and Residential	42,420m <sup>2</sup>	36 and 29	3,315m <sup>2</sup>	12.8
SkyOne Box Hill (545 Station Street)	Late 2019	Residential	69,880m <sup>2</sup>	36	2,435m <sup>2</sup>	28.9
12-14 Nelson Street	Late 2019	Residential	24,300m <sup>2</sup>	20	3,315m <sup>2</sup>	15.1

Source: MGS Analysis of City of Whitehorse Data

\* Total site density including both new and old buildings

## **3.6** Key institutions and strategic sites

## 3.6.1 Whitehorse City Council

Whitehorse City Council is the largest land owner within the activity centre, having responsibility for the local roads, public parking and public spaces. Council also controls multiple key sites across the centre, including:

- Box Hill Town Hall is the largest single council building and contains the primary civic presence in Box Hill. In addition to customer service, the Town Hall has meeting and function rooms, an art gallery, and provides space for community groups. The major heritage asset remains a key strategic site due to its civic purpose.
- Box Hill Library is a large two storey building located to the east of the Town Hall. This building provides library services and runs programs for the community.
- Council controls multiple car parks across the centre. Some have been redeveloped (see key changes below), others retain their car parking use for now.
- Ellingworth Parade Carpark (111 car park spaces) was identified within the 2007 structure plan as an opportunity for a new public park with activated public spaces but this has not occurred.
- Council retains an interest in the Prospect Street car park adjoining Nelson Road. The use of this site should be reconsidered as part of any redevelopment and masterplanning for the Box Hill Central site.
- Whitehorse City Council retains ownership of the former Box Hill Bowls Club land, at 835 Whitehorse Road. This site is not actively used at the moment.
- Box Hill Community Arts Centre is located outside of the activity centre boundary, approximately 150m to the south on Station Street. The well-used facility is housed in a single storey building with adjacent community gardens.
- Surrey Park and Aqualink Box Hill provide a major sports and recreation resource for the region. The Council-owned facility is located just to the south of the activity centre boundary.

Key changes since 2007 include:

- Cambridge Street Carpark and Children's Service Centre: Sold by Council in August 2016. There is a Ministerial issued permit for a 18 storey development at 517 and 519-521 Station Street (Golden Age). This outcome is consistent with the vision and objectives contained within the 2007 Structure Plan which resulted in the rezoning of previously PUZ6 land to MUZ.
- Harrow Street Carpark: Currently under development by Council to transform an old atgrade carpark to a multi-deck carpark comprising of 562 car spaces, bicycle parking, a cafe and an indoor community meeting space adjoining the existing Pioneer Park.
- Bruce Street Carpark (adjacent to ATO building to the north): Sold by Council in late 2017.
  A permit has been granted for the use and development of the land for a 10 & 19 storey development at 2-4 Bruce Street (WH/2018/193) incorporating an affordable housing component. Elland Avenue and the former Bruce Street is in an area identified as a "Priority Pedestrian Corridor". It is noted that the current application makes provision for a public pedestrian link, in its current form it is partially enclosed and has a width of 2.4 metres for the majority of its length.

## 3.6.2 Box Hill Institute

Box Hill Institute has two of its largest campuses within Box Hill, on Elgar Road and Nelson Road. Each has had investment over recent years to enhance the facilities and increase the floor area available for the organisation.

Key recent changes include:

The land at 1000 Whitehorse Road was sold by Box Hill Institute (BHI) to the Salvation Army for the use and construction of land for a 3 storey Salivation Army facility (Amendment C197). Presently, the heritage-listed Former Girls Technical School remains on the existing site fronting Whitehorse Road but the remainder of buildings on the site have been demolished. The future role of BHI at this remaining portion of land is still to be determined.



#### Figure 3.21 Strategic sites

#### Legend

[] Structure Plan boundary

Strategic sites

- Whitehorse City Council
- 💓 Box Hill Institute
- Contres Vicinity Centres
- Box Hill Health Precinct
- ere Box Hill Transport Interchange
- 01 Ellingworth Parade Carpark
- 02 Box Hill Town Hall
- **03** Box Hill Library
- 04 Cambridge St Carpark | sold

- **06** Bruce St Carpark | sold
- 07 Ace Parking | 31-35 Prospect Street
- 08 BHI | Elgar Rd Campus
- **09** BHI | Nelson Campus
- 10 BHI | Former Whitehorse Campus
- 11 16 Spring Street
- 12 The Salvation Army Box Hill Corps
- 13 Box Hill Central
- 14 Box Hill Transport Interchange
- **15** Box Hill Hospital
- 16 Epworth Eastern
- 17 Box Hill Bowls Club
- **18** Uniting AgeWell Box Hill Community

 In a land swap, land at 16-18 Spring Street was sold by Salvation Army to Epworth Eastern who now seek use and development of the land for a 29 & 24 storey building containing a nurse training facility and complementary land uses in partnership with BHI.

### 3.6.3 Box Hill Health Precinct

The Box Hill Health Precinct formally consists of Box Hill Hospital (part of Eastern Health) and Epworth Eastern, which collectively provides a very broad range of clinical and research health services including both publicly funded and private health providers. Collectively the Box Hill Precinct represents the largest grouping of tertiary health and research facilities in the City of Whitehorse and serves a very wide catchment extending far across the Eastern Metropolitan Region.

Key Changes:

- Box Hill Hospital underwent a major redevelopment in 2015, funded by the Victorian State Government (\$447.5m), which delivered a new ten-storey (52,000m<sup>2</sup> approx.) building with a two level basement carpark alongside the refurbishment of the existing adjoining building. This increased the number of beds from 400 to 621. The building was configured to allow for further extensions in the future.
- In addition, Eastern Health and Monash University is undertaking planning for a new Eastern Clinical Trails and Research Centre at Box Hill Hospital which would accommodate over 600 staff.
- Epworth Eastern has grown to provide 223 existing beds within its facilities in Arnold Street. In 2016 the hospital received planning approval for a 15 storey (32,000m<sup>2</sup> approx.) extension at 25 Nelson Road, providing at least another 52 beds plus new operating theatres and consulting suites.
- Epworth Eastern has indicated an interest in further expansions in the future. The operating model for all extensions is to ensure that new buildings are interconnected with existing facilities through bridge connections. There is a desire to allow for similar bridge connections with Box Hill Hospital.

 Eastern Health, Epworth Eastern and Box Hill Institute signed a memorandum of understanding in 2016 to develop partnership projects, providing opportunities for growth in training and shared facilities within the precinct.

### 3.6.4 Vicinity Centres

Box Hill Central was constructed in the early 1980s as part of the Box Hill Transport Interchange (discussed below). It performs particularly well in the fresh food sector and counts over 60-80,000 visitors per day, this figure includes 5,200 passengers accessing the station by foot per day according to 2013-2014 Transport for Victoria data. However, 56% of visitors come from over 10km away and relatively fewer come from between 2 to 10km away. The food court area, supermarket and other speciality stores form more of a supporting role to the fresh food market. Immediately to the north is a second retail mall, constructed in the 1990s but now in need of renewal. While functionally independent, both centres are now owned by a single landowner, Vicinity Centres

Vicinity Centres has publicly declared an interest in better leveraging the potential of its key sites in its portfolio in Victoria, which includes Box Hill as one of 3 identified for major redevelopment. Vicinity's mission is "enriching community experiences" and supports mixed-use redevelopment of its centres, but with a primary focus on supporting the performance of the core retail operations. The Glen (Glen Waverley) forms a precedent for this kind of redevelopment, integrating housing and accommodation while supporting the further growth of retail floorspace.

The current built form arrangement of the Vicinity landholding represents a large low-rise "pancake" amongst emerging taller built form that surrounds it. Early investigations suggest there is an undersupply of retail floor area within the wider area. In the context of redevelopment, Vicinity Centres would look to substantially increase the current gross leasable retail floor area with space for further growth within the planning envelope available in the longer term. This would be complimented by substantial expansion of supporting uses in a mixed use precinct. The key issue to resolve is the complex land tenure arrangement with VicTrack in the southern site (currently leasehold). Additionally, the separation of the two existing shopping centre parcels and the topographic differences between the north and south of the rail line are major technical issues to resolve in an integrated masterplan. Clearly this would need to resolve the long term operations of the interchange at the same time.

The long term operations are constrained in the short term by uncertainty surrounding public transport arrangements and major changes such as the proposed Suburban Rail Loop. An opportunity exists to leverage uplift from the redevelopment of Box Hill Central and increase in jobs towards building the case for transport upgrades.

## 3.6.5 Box Hill Transport Interchange

Box Hill Transit Interchange (BHTI) was designed in the 1970's when parcel delivery by train was a key role for V/Line. Accordingly, there are four bays for V/Line parcel delivery vans. It is unlikely that all have been used at once. These have a direct elevator connection to platforms 2 and 3.

The interchange was designed with a clear emphasis on operational efficiency, as a result there was minimal attention to customer needs. It was then considered then the placement of the bus deck on top of the shopping centre would be better than other alternative options. There has been numerous complaints from passengers regarding the interchange since its opening in 1983. The BHTI quickly became dated and serves its purpose only in an utilitarian manner.

Over the past decade, there have been multiple reviews of the Box Hill Transit Interchange, most of which have recommended short term minor improvements while a longer-term full rebuild option can be developed. In May 2018, the Victorian Government established the Box Hill Transit Interchange Steering Committee which will continue the work on the Ministerial Advisory Group to improve the interchange.

On-going and continued growth in population and employment in Box Hill has raised questions on the suitability of a single interchange location for all transit routes into Box Hill. The first transit route to depart from this notion of a singular interchange location was Tram Route 109 in 2003. The "Box Hill Transit Interchange" now technically spreads over a 250 metre distance from Whitehorse Road to Carrington Road. Bus Route 966 is the second route to move to the Whitehorse Road section of the interchange as it operates over night on weekends and Whitehorse Road is regarded as a safer place for people to wait at that time.

It should be noted that the current situation represents an improvement on how the interchange operated in 1980, with buses dominating the streetscape on both the northern and southern sides of the railway station and occupied large areas of premium space in Carrington Road and Main Street.

This Structure Plan update will not attempt to solve the Box Hill Transit Interchange situation, but it does recognise that with the development of the strategic role of the centre and the Suburban Rail Loop (SRL) there will be a need to rethink how buses operate through Box Hill to meet the needs of customers, particularly those whose destination is Box Hill (rather than the train station).

## 3.6.6 Uniting Church

The Uniting Church has a significant parcel of land (1.2 hectares) which is currently occupied by 120bed aged care facility, Uniting AgeWell, contained in eight single-story buildings. The location of this site has particular interface sensitivities that require a carefully considered response for its redevelopment. The interface to the Box Hill Gardens requires sensitive consideration, allowing for an active address to the open space as well as ensuring new built form does not excessively overshadow the northern side of the park. The prominent frontage to Station Street, near the corner of Thames Street, warrants further strategic consideration as to interface with a key street within the activity centre and the 5 storey childcare centre under construction to the north at 757 Station Street. Furthermore, there is potential for future redevelopment to reconfigure public access to the park by providing new paths or laneways.

## **3.7** Strategic Transport context and issues

The 2007 Structure Plan access framework is focussed on the need to:

- Improve pedestrian amenity and safety
- Make riding a bicycle a viable transport option
- Prioritise public transport
- Manage traffic to minimise negative impacts
- Reduce parking and support walking as the primary means of access in and around Box Hill
- Encouraging most trips of 1km or less to be made on foot

It is notable that the 2007 Structure Plan emphasises the importance of the shift to pedestrian priority and provides a plan to guide this shift. With respect to the dominance of private vehicles, through traffic and parking, the structure plan also states that this dominance needs to be reduced, but it does not provide a robust plan to manage the issues. There is reference to reducing parking requirements, and reducing lanes of traffic. However, the actions are relatively broad and are focused on encouragement and deferred action through a series of investigations.

For the most part the rhetoric, the objectives and strategies related to the transport network discussed in the *2007 Structure Plan* are commendable, but very little change has occurred over the past decade.

The future transport vision should therefore build on Box Hill's strengths and focus on a high-amenity centre with high quality pedestrian spaces, excellent active transport links and efficient public transport. Car parking will be required, but should be provided carefully so as to minimise the negative impacts that large parking areas have on centres (effectively creating large dead-zones of reduced or no economic activity). There is a need to reallocate space to more efficient modes or suffer very significant increases in traffic and pedestrian congestion. In addition to this, projected growth in population and employment will place significant pressure on open spaces and raise the need for improved linkages to Box Hill Gardens, Kingsley Gardens, Surrey Park and new open space areas in the heart.

From a range of incomplete data sources it is roughly estimated\* that on each average weekday:

- There are around 100,000 people in Box Hill
- Around 13,000 people arrive in Box Hill by train
- Around 6,000 people arrive at Box Hill by bus
- Around 1,500 people arrive at Box Hill by tram
- Around 1,000 people ride a bicycle to Box Hill
- Around 30-35,000 people arrive at Box Hill by car
- Around 40-45,000 people walk to Box Hill

Of course, once inside the activity centre itself, all people are pedestrians when moving between various destinations within Box Hill. The pedestrian network needs to be proportioned to accommodate significant numbers at peak periods.

A total of 68,700 vehicles are driven into Box Hill each day (including buses, trams, cars and trucks). Whitehorse Road carries 20,000 vehicles per day. Elgar Road carries over 30,000 per day. Considering the number of people accessing the centre itself (set out above), this means that around half the cars on the road in Box Hill are through traffic. Through traffic makes no contribution to the economic vibrancy or function of the activity centre and would be better diverted elsewhere.

\* <u>Note:</u> These figures are rough estimates due to lack of data availability. For instance, data is available for total traffic volume, however, no data is available from VicRoads on through traffic. An accurate figure would require further data collection and it is recommended that this exercise is undertaken as part of any current or future transport study.



Figure 3.22 'Access Framework' | Reproduced from 2007 Structure Plan, pg.15

- Priority Pedestrian Corridors
- Proposed or significantly improved pedestrian and cycle links
- Proposed public Transit Priority streets (with peak-period bus lanes) + Principal Bicycle Network
- ••• Existing local bicycle routes (on- and off-street)

#### Railway

- Train / bus station and transit interchange
- Existing pedestrian overpass
- ) Existing pedestrian level crossing

## 3.7.1 Transport Capacity

The transport network in Box Hill has limited capacity across all modes. The total capacity of the road network to provide for access to Box Hill is limited by the lane and intersection capacity around the centre. In total there are six road entry points to Box Hill (Whitehorse Road, Elgar Road and Station Street) each with a maximum peak period capacity of two lanes in either direction. As an initial estimate from first principles this road network cannot cater for more than 9,700 vehicle movements in any given hour.

In comparison, the bus network provides capacity for 5,000 passenger movements in the peak hour and the railway line provides capacity for up to 50,000 passenger movements in the peak hour into Box Hill.

Actual capacity of all modes depends on the ratio of visitors to through movements on each mode. For example, the trains are used by a high proportion of people travelling through Box Hill to reach Melbourne CBD, and these absorb capacity that could otherwise be used by people getting off (and other people getting on) at Box Hill. In a similar way, through movements on the road network take up capacity that could otherwise be used by people for whom Box Hill is their destination.

There is no scope for increasing road space to provide significant additional capacity for cars, as the road network is already maximising car throughput in the morning and afternoon peak periods. The Eastern Freeway widening will make getting to Box Hill by car even easier than it is today. Key to reducing traffic congestion levels will be encouraging future residents and visitors to arrive in Box Hill using space efficient modes such as walking, bicycle riding and public transport. Active transport demand will increase as the population in Box Hill grows. There are two different factors that will cause this:

- Local residents (particularly those in apartments) will walk more.
- As traffic congestion increases, some local and regional residents will switch to bicycle riding for transport (as the travel time by bicycle is more reliable).

To achieve this transition and provide a safe environment for the additional pedestrians and bicycle riders, there will need to be a reallocation of road space – specifically wider footpaths and more protected bicycle lanes. This is very similar to what has occurred in the Melbourne CBD over the past two decades. As the population has grown, economic activity needs to be supported by increased space and infrastructure for active transport modes.

There is significant spare capacity in the public transport network in Box Hill, however, there is a need for greater priority for public transport through congestion and traffic signals to improve the effectiveness of the public transport network.

There is a need for the Council to ensure that efficient transport modes are given priority over through movement of private vehicles that do not stop at Box Hill. The State Government, and particularly VicRoads, has a key role with respect to providing greater priority to active and public transport modes on the arterial road network such as Whitehorse Road, Station Street and Elgar Road. In this context, Council has a important advocacy role to play. There is a risk that as more development occurs, traffic congestion will get progressively worse and the community could become less inclined to see changes occur.

While policies such as congestion pricing and broader PTV infrastructure are implemented at a State level (and under statutory authorities such as VicRoads and VicTrack), local councils has an important role in ensuring priority for pedestrian access within and between local neighbourhoods.

1970s	1980s	1990s	2000s	1970s
<b>1971:</b> Elgar Road level crossing removed	<b>1983:</b> Station Street level crossing removed Main & Market St Mall opens	<b>1997:</b> Eastern Freeway extension from Doncaster Road to Springvale Road opened	2003 Route 109 extended from Mont Albert to Box Hill 2007 Middleborough Road level crossing removed	2016 Route 109 & trains start operating all night on weekends (Sat & Sun mornings)
			2008	

Eastlink opened from Springvale Rd to Frankston

2009 Bus Route 903 commenced operating through Box Hill

Image: EIntersection of Main & Market Streets | Today

Image: Intersection of Main & Market Streets | 1970s

Images: Digging the trench for Box Hill Station (1982)



Images: Box Hill Transit Interchange



## 3.7.2 Pedestrians

Currently, pedestrians in Box Hill are provided for well in some areas, whilst in other areas they are treated indifferently; there are minimal spaces to congregate and make connections within and between neighbourhoods. Only in the very core of the centre (Main and Market Streets) is the pedestrian space really dominant, and even then, it rapidly changes within a 100-metre walk in any direction.

The pedestrian spaces are either high quality (malls) or very low quality. The low quality areas have inadequate width for pedestrian movement, inappropriate surfaces, lack of pedestrian priority, minimal shade and a lack of intuitive wayfinding and directness.

Significant improvement is required to make Box Hill a nice place to visit and linger. The only public areas that any significant number of people linger in is the pedestrian mall at Main & Market Streets and Box Hill Gardens. As the population increases, a new set of more urbane public spaces will be required. This will need to include spaces in each neighbourhood and will also require strengthened links to green spaces that are a short distance from the activity centre.

Pedestrian connections into the hinterland are a mix of new high-quality shared paths and low quality, disconnected links that lack the amenity required to encourage walking for transport to Box Hill. Opportunities to link into green space have been explored but not acted upon with enough vigour.

Pedestrian links connecting the neighbourhoods within the activity centre also need significant improvement. This is partly due to the significant barriers that are presented by the railway line, Whitehorse Road and Station Street. Narrowing these barriers, through the provision of additional pedestrian crossings or physically reducing the width of the arterial road could significantly improve the potential for agglomeration to occur in the activity centre.

## 3.7.3 Cyclists

Bicycle riders tend to emerge when congestion and parking prices cause car drivers to consider alternative options. The conditions in Box Hill are perfect for more bicycle riders to emerge if appropriate infrastructure is provided for them and marketed appropriately.

Bicycle riding offers the greatest potential to reduce traffic congestion, because bicycle riders:

- Have a longer range than pedestrians
- Tend not get impeded by traffic congestion like buses do
- Cost less to establish than rail-based modes.

Less confident bicycle riders (those yet to switch from driving a car to Box Hill) need two key things to make the trip possible:

- Safe bicycle riding infrastructure (such as bicycle priority traffic signals, on-street bicycle lanes, offstreet dedicated paths and off-street shared user paths)
- High quality end of trip facilities (such as showers and lockers at offices, well-lit bicycle parking areas)
- On-street bicycle parking (such as adequate provision of bicycle hoops and bicycle commuter parking garage. Another consideration is the update of e-bikes and delivery bikes that are increasing the need for more dedicated bicycle parking infrastructure)

Box Hill has some safe bicycle riding infrastructure including new paths along the railway line and bicycle lanes along Thurston Street. There is significant scope for more paths linking to key destinations.

Some buildings and institutions in Box Hill have end of trip facilities for bicycle riders, but few of them are high quality and many are restricted to specific institutional users.



Figure 3.23 Peak Hour Network Capacity by mode

The railway station is one particular destination with significant demand for bicycle parking. Improving bicycle parking facilities at the station could significantly reduce traffic congestion around the activity centre. Research shows that high quality bicycle parking facilities and separated bicycle paths both increase the likelihood of people riding a bicycle to the station. Across Melbourne, the Department of Transport (DOT) are planning for an increase in this mode of access to stations, also due in part to local congestion and car parking constraints. Box Hill should be planning for 8% of train passengers to arrive by bicycle by 2030. There are around 13,000 people using the station each weekday. At 8%, this would equate to a demand for over 1,000 bicycle parking spaces in proximity to the station. Even more bicycle parking will be required across the entire centre.

The Box Hill-Ringwood shared use path is a key piece of new infrastructure that will encourage more people to cycle to Box Hill. It will ease traffic congestion and make parking more available for other visitors. However, it needs to be supported with end of trip facilities for employees and the public.

Additional on & off-road lanes will also be required – a bike superhighway model should be explored. The first bicycle superhighway serving Box Hill utilises the railway corridor. This is currently part of the Box Hill-Ringwood Trail but the trail lacks connectivity through Box Hill, terminating at Station Street. A second bike superhighway link should be investigated between Bushy Creek Reserve Trail in Box Hill North and Gardiners Creek Trail in Box Hill South in addition to Whitehorse Road. The *Whitehorse Cycling Strategy 2016* (pg.8) present a compelling economic case on the value of cycling and the need to increase the uptake of cycling.

Key destinations should also be a focus of infrastructure links. These include Box Hill Institute, the Hospitals and major office and residential buildings.

## 3.7.4 Public Transport

The train line provides mass transit to and through Box Hill from three directions (Belgrave, Lilydale and Melbourne CBD). It provides the greatest potential capacity to bring visitors to Box Hill and it provides swift access for Box Hill residents to Melbourne CBD. In the weekday peak it takes just 16 minutes to travel between Box Hill and Melbourne CBD by express train. During the inter-peak and on weekends the travel time increases by 60% to 26 minutes each way (stopping all stations).

The train station is not compliant with the *Disability Discrimination Act 1992* (DDA), by virtue of a range of factors, but most significantly the access to Platform 4. The elevator to Platforms 2 and 3 is aging and has been known to fail on occasions. Access to the station needs to be made DDA compliant by 31 December 2022. It is not clear whether or not this milestone will be achieved.

Tram Route 109 provides a connection to Box Hill from the west (Balwyn and Kew) along Whitehorse Road. It takes around 45 minutes to travel between Box Hill and Melbourne CBD by tram. Most people on the tram are taking shorter journeys from suburbs close to Box Hill such as Balwyn (9 minutes away), Deepdene (14 minutes away) or Kew (24 minutes away).

Before the tram was extended to Box Hill there was no viable way to reach Box Hill by public transport from Kew or Balwyn. After 15 years of service the tram is carrying about 300 people in the peak hour from these locations, reducing the car parking demand and local congestion by around 250 vehicles (in the peak hour alone).

The tram was extended from Mont Albert to Box Hill in 2003 and reduced Whitehorse Road to one lane of through traffic past each set of tram stops. The reduction in lane capacity of Whitehorse Road between Elgar Road and Union Road was forecast to increase the average delay for each private vehicle by 7 seconds per trip. There are a significant number of commuters to Box Hill from Blackburn and only 14% of them take public transport which is much lower than Balwyn where 23% take public transport. Extending the tram to Box Hill High School or Blackburn is worth investigating, as it would further reduce car dependent travel in the corridor.



Figure 3.24 Movement Network

#### Legend

[]] Structure Plan boundary

#### Vehicular movement

- Arterial or key road
- $\rightarrow \rightarrow$  One way road
- Signalised intersection
- O Roundabout
- Hove grade crossing | bridge

#### Pedestrian movement

- Pedestrian mall
- ---- Pedestrian pathway
- Signalised crossing
- Proposed signalised crossing
- Zebra crossing
- I←-· Pedestrian underpass

#### Cycling movement

Bicycle route

The tram stops in this section of Whitehorse Road are amongst the best in Melbourne for passenger convenience, though access across Whitehorse Road is constrained by multiple road lanes on either side. However, the interchange could be further improved by locating the bus stops immediately adjacent to the tram platforms (as is the case in Queensbridge Street, Southbank).

There are 18 bus routes that serve Box Hill. Just two of these routes provide for travel through Box Hill, the other 16 terminate at Box Hill and do not provide seamless access across the activity centre. The table below shows all the public transport services in Box Hill and the number of services per hour, weekday and week. The bus network design causes two significant issues for the activity centre:

- Passengers cannot get to their destination easily
- Significant space within the activity centre is dedicated to laying over buses in the core

As the majority of local bus routes terminate on the bus deck in Box Hill, it is almost impossible to make local journeys to Box Hill by bus unless your destination is the very heart of the activity centre. A student trying to get from Mont Albert to Box Hill High School needs to take two 7 minute bus trips, but the total travel time is between 30-35 minutes due to the need to interchange at Box Hill between different routes. This interchange more than doubles the journey time for short trips and also creates a time delay during the journey. Similarly, people trying to get from the east of Box Hill to Box Hill Institute or the Hospital precinct either have to transfer between buses at the interchange or walk.

Route	Description	Services per		
		Weekday peak hour (one way)	Weekday (Both Ways)	Week
201	Box Hill – Deakin University (Express Shuttle)	3	91	455
270	Box Hill – Mitcham via Blackburn North	6	111	625
271	Box Hill – Ringwood via Park Orchards	3	77	435
279	Box Hill – Templestowe via Blackburn North	6	127	706
281	Templestowe – Deakin University via Box Hill	3	42	232
284	Box Hill – Doncaster P&R	2	40	222
293	Box Hill – Greensborough via Doncaster	3	64	356
302	Box Hill – Melbourne CBD	5	83	504
612	Box Hill – Chadstone via Camberwell	3	58	313
732	Box Hill – Upper Fern Tree Gully	3	85	493
733	Box Hill – Oakleigh via Monash Uni	4	88	518
735	Box Hill – Nunawading via Burwood East	2	59	349
765	Box Hill – Mitcham via Forest Hill	3	67	394
766	Box Hill – Burwood via Surrey Hills	2	47	265
767	Box Hill – Southland via Chadstone	4	79	483
768	Box Hill – Deakin University via Canterbury Rd	2	29	145
903	Altona – Mordialloc via Box Hill	7	184	1,073
966	Box Hill – Melbourne CBD (Night Bus)	0	0	32
Tram 109	Box Hill – Port Melbourne	11	229	1,489
Train	Belgrave & Lilydale – Melbourne via Box Hill	20	278	1,551
Total				10.640



Figure 3.25 Public Transport services during on-peak times (only inbound services are displayed for simplicity)

#### Legend

[]] Structure Plan boundary

#### Public Transport

- (10) Number of services / hr
- -- Route | thickness indicates services / hr

In addition, people wanting to reach local destinations in Box Hill quickly may need to remain on the bus and walk back from the bus interchange to their final destination. This is the case for passengers on Routes 281 and 767 trying to access the new buildings on Whitehorse Road. Currently to access their destination they need to walk over 500 metres from the bus stop, despite the bus travelling straight past their building. An additional bus stop on Whitehorse Road level with Market Street would resolve this issue.

The current network and focus on train interchange above local access results in many local visitors to Box Hill opting to drive their car.

The bus network has not been simplified since well before 1980. The bus service reviews conducted in 2010 recommended a range of changes to the bus network, few of which have been implemented. Two that have been involve providing a greater level of service to Deakin University. Three new bus connections have been provided between Box Hill and Deakin University since 2010. Each of these routes are slightly different in terms of travel times and operating alignments. The differences create confusion for little benefit.

There needs to be a dramatic change to the bus network in order to achieve customer objectives in Box Hill. Simplification of the network will increase legibility of the network and lead to increased use and reduced traffic congestion.

High quality, fast connection to the station platforms is essential for some bus routes (that are serving as railway feeders) but other routes (operating as feeders to Box Hill activity centre) are less dependent on the connection to train services.

## 3.7.5 Vehicle Traffic

The amount of space available for private vehicles to use getting to, and travelling through, Box Hill is not increasing. The number of car spaces is increasing and the amount of freight deliveries to Box Hill is also increasing. These two factors are the main reason why traffic congestion on the road network will rise in the future.

However, as the residential, student and employee populations all increase in Box Hill, there will also be greater need to increase the allocation of space to pedestrian areas. In particular, Station Street and Whitehorse Road do not have adequate space for pedestrians in the street. This is causing an unsafe situation with large groups of people waiting at pedestrian crossings regularly throughout the day.

Whitehorse Road is not a traffic priority route between Dorking Road and Elgar Road. The Movement & Place classification for general traffic is "Encourage local access only". As Whitehorse Road is a traffic route (not a priority traffic route) through a Metropolitan Activity Centre, this stretch of road should prioritise pedestrians, public transport, bicycle riders, local freight and local access.

The significant spare lane capacity in Whitehorse Road could be contributing to traffic congestion on nearby roads as people are attracted to use Whitehorse Road as a link between north-south arterials.

The speed zone in Whitehorse Road (60km/h) is currently inappropriate for the Movement & Place classification of the street, while in Station Street the speed zone is 40km/h from 8am-7pm Monday to Saturday. Consideration should be given to applying 40km/h speed zones across the entire activity centre during business hours including weekend business hours. This would make Box Hill more pedestrian centric and provide safer conditions for pedestrians and discourage through traffic.

Clearways and parking may need to be replaced with wider footpaths and bicycle lanes in some places. Temporary closures of lanes or carriageways should be tested on Sundays to gauge the reaction from all road users (including pedestrians walking around Box Hill). This could be trialled with events taking over the southern carriageway of Whitehorse Road such as an Ice Rink or Farmers Market. Many roads in Box Hill are severely restricted due to their narrow width (one-way operation is used in some of them). Carrington Road is almost perpetually congested due to the Vicinity car park and Station Street is regularly congested due to the complexity of the car park and bus deck traffic signals.

Improving the car movement within the centre could be achieved by providing parking areas on the outer edges of the activity centre, getting some cars out of the traffic stream before they reach the congested core of the network.

This approach would divert drivers to car parking located on the side of Box Hill that they are coming from – reducing the need for them to drive through the centre just to get to parking. This approach provides a better balance of parking demand by providing cheaper and higher quality parking for those drivers willing to accept the trade-off between lower cost parking and a slightly longer walk to their destination. This approach is routinely applied in CBD environments and already exists in Box Hill through informal provision of long-stay on-street car parking (storage) at no charge in locations distant from the core activity centre area.

## 3.7.6 Car Parking

Car parking is abundant within Box Hill but it is not well distributed across the centre or utilised efficiently. Box Hill currently has over 13,000 car parking spaces including over 4,000 on-street spaces. The majority of these are used for car storage (meaning for longer than 4 hours). Importantly, only 3,000 are dedicated to short term parking supply, which provides for the needs of approximately 15,000 visitors each day.

A significant weakness in the overall parking supply results from 30% of the spaces being unavailable to the public. This is generally because these spaces are located on private property and hence locked away for private use. This is a highly inefficient use of land, given that very few people have a car in Box Hill 24 hours a day, seven days per week.

Car parking provision is a key factor that influences people's decision to own and use a car. The provision of more car parking in Box Hill will increase local congestion. Car parking is near fully occupied in some areas such as commuter storage spaces at the station, near hospitals and in key employment areas. However in other areas or at other times of the week, there is significant availability of parking meaning that there is not enough demand in those locations and in those times. For example, car parking in Rutland Road, Bank Street, Watts Street car park, Cambridge Street, Whitehorse Road and many other areas of the CBD are not full for any significant part of the day. The ITS has indicated that mid-week peak utilisation of current off street car parking is currently 71% (p.50).

Parking around the hospital is a particular issue that impacts on irregular visitors' perception of Box Hill and also makes being employed at the hospital and Box Hill Institute difficult. Most people much prefer to pay money in return for certainty and ease of finding a car space. A small number of people prefer to pay by walking longer distances from free parking.



Figure 3.26 Major existing parking nodes

#### Legend

[]] Structure Plan boundary

Major car parking nodes

- 🜔 Council car park
- 🕐 Council car park | sold
- (P) Council car park | under construction
- Publicly accessible car park

#### 3.7.7 Freight Deliveries and Waste

Loading areas in Box Hill are relatively concealed but typically difficult to get to. There is a wide range of loading needs across the centre and these needs are further diversifying with the rapid growth of apartment buildings. There are currently at least six loading areas for the north and south Vicinity Centre Malls.

The existing loading areas are also being intruded upon due to increases in construction and pedestrian activity. Left in their current locations, the loading areas will cause increasing congestion and safety issues. Consolidation of deliveries and waste removal will be essential to reducing congestion and negative impacts of waste removal.

In each neighbourhood of the activity centre, consideration must be given to the types and amount of deliveries and waste that will be required to move to and from the neighbourhood each day. A series of consolidated delivery and waste collection locations should be established across the activity centre. This could apply best practice approaches used by the City of Melbourne in Caledonian Lane, where restaurant waste is consolidated and dried out prior to removal (resulting in many fewer truck movements to and from the site).

Electric cargo bicycles are already being used by some businesses such as food delivery services. Shared electric cargo bikes could make local businesses more competitive and productive. These should be investigated as part of a package to make it easier for businesses to deliver goods across the activity centre and the wider area.

Car share vehicles could also improve efficiency for some businesses, such as those sharing office space in one of the many serviced office premises. Council should support fixed-base shared transport service providers (cars and electric bicycles) by allocating on-street parking spaces for storing the vehicles.

## 3.8 Public Realm

As cities increase in density, providing access to high quality and useable open space, safe and inviting streets and public spaces becomes increasingly important. However, strategies to support urban planning that is resilient to climate change and enhances comfort for people as well as increasing opportunities for biodiversity have become increasingly challenging for city leaders.

Increasingly, the public realm within Box Hill does not meet the needs of an emerging higher-density environment, due in part to the domination of private motor vehicles over everything else. The amenity and useability of the public realm is often directly impacted by buildings including by articulation, depth, separation, overshadowing, landscape treatments and pedestrian and vehicle access. Council has recently prepared an operational document, 'Box Hill Urban Realm *Treatment Guidelines'* by Hansen Partnership, which contains the specification of an improved landscape and material palette throughout the activity centre. These guidelines, yet to be realised, are relevant and its implementation should be complimentary to future public realm enhancements outside its scope, for example, new public spaces and potential reconfiguration of streets.

Box Hill's centre comprises a number of existing public realm typologies as follows:

- Arterial road streetscapes including Whitehorse Road which (east of Nelson Road), features a wide, vegetated median, tram terminus and treed service lanes.
- Well used main streets on Whitehorse Road, Station and Carrington Streets featuring City of Whitehorse paving and furniture palette
- The Box Hill pedestrian mall with a bespoke landscape palette
- Residential streetscapes featuring predominantly established avenue plantings of both native and exotic tree species
- Public open space in the form of parks and gardens, road reserves and closures and linear open spaces

### **Public Realm Analysis**

- Traditional Residential Streets. Generally good quality, with mix of exotic and native canopy trees, some quite established. New developments are changing established rhythm of garden frontages.
- **2** Two 'disconnected' sides of Whitehorse Road. Limited pedestrian crossing opportunities.
- **3** Underutilised central median and garden space features established tree specimens. Can be better utilised for the creation of a new civic space.
- **4** Pedestrian shopping Mall lacks 'civic' presence. Link to Train Station is underplayed.
- 5 Inconsistent streetscape treatments and poor integration of Shopping Centre
- 6 Generous setbacks and established landscapes are currently underutilised.
- 7 Poor street interface with rail. Precinct would benefit from streetscape upgrade to improve pedestrian connectivity.
- 8 Public realm treatment of laneways used by pedestrians need improvement.
- **9** Existing public open space is a valuable passive space and needs improvement.
- **10** Traffic volumes and narrow footpaths make Station Street unattractive for pedestrians. Opportunities for improvement of presentation and removal of pedestrian underpass.
- 11 Valuable public open space at Kingsley Gardens, with established tree canopy and playground. Some intensification of use may be appropriate as well as improved pedestrian connectivity through to Elgar Road.
- 12 Valuable public open space at Box Hill Gardens, with established tree canopy, playground, multi-use ball court, pond and circuit path. Poor interface with rear of residences to north. This area would benefit from introduction of mid block connections and improved streetscapes to encourage north-south pedestrian circulation.
- **13** Established streets trees and good quality streetscape to Nelson Road.
- **14** 'Institutional' uses with forecourts and gardens but little activation of street frontages.
- **15** Little mid-block connectivity between institutions and between buildings.
- **16** Traffic volumes and narrow footpaths result in constrained public realm to Elgar Road.
- **17** Poor landscape treatment to Whitehorse Road. Potential for streetscape improvement.



Figure 3.27 Existing Public Realm

#### 3.8.1 Key public open spaces

Box Hill's centre features a number of municipal, neighbourhood, local, small local and linear public open spaces as classified in the Whitehorse Open Space Strategy (WOSS) 2007.

Box Hill Gardens: a municipal open space asset featuring botanical style tree plantings. Tree species are native and exotic, evergreen and deciduous, with limited understorey vegetation. A small lake, a new regional children's playground and circuit path. Also recently completed is a multi-purpose hard court and barbecue area adjacent to the playground. Streets mark almost the full length of the Garden's edge. The rear of residential properties including a right of way access to garages forms the northern boundary. A single link through to Thames Street provides connection to residential streets to the north. Box Hill Gardens is a valuable public open space asset used for both passive and active recreation. The landscape uses could be intensified in pockets to support the varied needs of a growing population, without impacting its expansive landscape character.

**Kingsley Gardens:** a neighbourhood open space asset featuring botanical style tree plantings. Tree species are native and exotic, evergreen and deciduous, with limited understorey vegetation. A children's playground and barbeque area are present. To the north and west, Kingsley Crescent marks the edge of the Gardens. At the eastern boundary, the ground rises to interface with the Box Hill Institute from which there are a number of pedestrian connections. Whitehorse Road forms the southern edge. The landscape uses could be intensified in pockets to support the varied needs of a growing population, without impacting its expansive landscape character. **Pioneer Park (Harrow Street Park):** a small local open space asset featuring established, exotic deciduous trees and ornamental garden beds. Seating and commemorative plaques recognising pioneering members of the Box Hill community are present. The Harrow Street multi level carpark currently under construction will enhance the Park's eastern frontage where a welcoming plaza including bike parking forms part of the new development.

**Ashted Road and Linsley Street Reserves:** small local reserves currently functioning as linking spaces. These reserves are informal and underdeveloped in character and could be more intensively programmed (landscape uses) to support the recreation needs of a growing population.

Whitehorse Road Central Median: classified as a small local open space asset, this significant road reserve comprises tram terminal, food and beverage tenancy and outdoor dining space and seating areas. It also incorporates the main pedestrian crossing point for north south movement over Whitehorse Road. Established native and exotic, deciduous and evergreen trees are a feature of the space. The presence of car parking undermines the integrity and purpose of the median Reserve. Developed over time, the landscape treatment is not cohesive and requires upgrade to provide a landmark space of appropriate quality, and useability.

**Street Closures:** A number of street closures including at Young Street, Zetland Road and Bruce Street have created linking spaces for improved pedestrian connectivity. These could be treated as small local spaces, cleverly designed to support the recreation needs of a growing population.

**Box Hill Mall:** Bespoke design and public realm palettes have been installed on Market and Main Streets to denote their significant shopping function and to identify the extent of the pedestrian area. As their street-like character has effectively been retained, a valuable opportunity to create a true civic space supporting community needs has been missed. Additionally, the space is compromised by activities at loading bay located at the western end of Market Street. The connection between the tram terminus within the Whitehorse Road median, and the train station could be amplified for better legibility.





Whitehorse Road Central Median



Box Hill Mall | Main Street towards the east



Pioneer Park



Kingsley Gardens



Improved shared pathway alongside partial closure of Bruce Street

## 3.8.2 Access to open space, including outside of the centre

The WOSS identified 'gap' areas within Box Hill's centre — along Prospect Street at the southern end of Nelson Road, in the centre near Station Street, and south of the rail line between Rutland Road and Ellingworth Parade to the east of Station Street.

Surrey Park and the Aqualink Aquatic Centre are an important 'municipal' open space assets, located to the south of Box Hill's centre. Improving access to Surrey Park will help to address the 'gaps' in public open space access identified by the WOSS.

East-west connectivity and access to Surrey Park could be enhanced by the provision of safe crossing points for pedestrians and cyclists over Station Street at Ellingworth Parade and Harrow Street. Streetscape improvements to Carrington Road and Cambridge Streets could improve connection to Thurston Street linear reserve linking to Surrey Park. Improvements to Howard and Ashted Streets would further enhance pedestrian connection from the Victoria / Glenmore chain of parks to the east.

North-south connectivity and access to Surrey Park could be enhanced by streetscape improvements to Thurston Street and connections through the Thurston Street linear reserve. A crossing point for pedestrians and cyclists over the rail line at the southern end of Nelson Street should be considered.

Victoria / Glenmore Chain: a 'linear' public open space, Victoria / Glenmore chain of parks provides an open space connection across three street blocks. Streetscape improvements to Ashted Street, across Station Street and along Howard Street would provide improved access to public open space for pedestrians and cyclists, including to Surrey Park.



**Figure 3.28** Public open space network within MAC and broader surrounding area (~1km)

#### Legend

[]] Structure Plan boundary

#### Public Transport

- Open space
- Box Hill Mall
- Active recreation
- Lots without access to open space (Box Hill Bowls Club exempted due to limited public accessibility)
- 🔵 200m buffer

- 01 Box Hill Gardens
- 02 Aqualink Aquatic Centre
- 03 Kingsley Gardens
- 04 Pioneer Park (Harrow Street Park)
- 05 Ashted Road Reserve
- 06 Whitehorse Road Central Median
- 07 Street Closures
- 08 Box Hill Mall
- 09 Linsley Street Reserve
- 10 Surrey Park







Whitehorse Road



Railway reserve (Bank Street)



Elgar Road



Prospect Street



Station Street (south)



Railway reserve (Rutland Road)



Station Street (north)



Carrington Road
## 3.8.3 Streetscape quality

Box Hill's centre comprises streetscapes that vary in character and quality.

**Residential streets:** Box Hill's centre features many good quality residential streetscapes. These are generally broad, linear streets with boulevard tree plantings and grassed nature strips. Both native and exotic trees are present, although there is a predominance of exotic, deciduous species.

Whitehorse Road (general): Established evergreen and deciduous median and edge plantings east of Nelson Road contrast with the weak visual impact made by immature plantings to the west where the public realm is constrained. The overall streetscape quality does not adequately embody the importance of Whitehorse Road as arrival threshold, transport interchange and people space. This streetscape could be redeveloped to create a significant new city space. Changes to vehicular movement, space allocation and speed will be key to this and should be explored.

Whitehorse Road (east of Nelson): Plantings of Oak (*Quercus*), Brush Box (Lophostemon) and Plane (*Platanus sp.*) characterise the central median with Plane (*Platanus sp.*) to the service roads. Between Nelson and Station streets, City of Whitehorse paving and street furniture have been used to denote this portion of Whitehorse Road as the centre's 'main street'. The same treatment also extends for a short distance to the east of the Station Street intersection.

Whitehorse Road (west of Nelson Road) Immature plantings of Oak (Quercus sp.) make a limited contribution to street presentation and quality of the pedestrian experience.

**Railway reserve:** Poor quality interface with rail reserve compromises Bank Street and Rutland Road. Upgrade to streetscape is required to improve these streets and create comfortable and attractive pedestrian spaces. At Hopetoun Parade a wider planting zone has allowed for the establishment of trees that improve the interface with rail.

**Elgar Road:** Overall poor quality with constrained public realm, particularly north of Whitehorse Road creating an uncomfortable street environment for pedestrians. A fastigiate (narrow and vertical) tree form rather than a spreading canopy tree has been selected.

**Station Street (general):** Lack of consistency of treatment and overall poor quality of streetscape.

**Station Street (north of Whitehorse Road):** Paving materials vary and include concrete and asphalt sections. Tree species are a combination of native Brush Box *(Lophostemon sp.)* and exotic Plane *(Platanus sp)*. The interface with Box Hill Gardens could be highlighted and improved.

Station Street (South of Whitehorse Road): the City of Whitehorse paving palette has been installed immediately south of Whitehorse Road. Public realm is constrained here with narrow, cluttered footpaths. High traffic volumes and concerns about pedestrian safety have led to the installation of pedestrian safety barriers. A pedestrian underpass provides an east-west connection to Main Street. This part of Station Street is dominated by car traffic, and is a poor quality environment for pedestrians.

**Kintore Crescent:** features very established exotic Plane (Platanus sp.) street trees.

**Prospect Street:** features established exotic Plane *(Platanus Sp.)* street trees.

**John Street:** the carpark between John Street and Station Street features established native Eucalyptus *(Eucalyptus sp.)* trees.

**Nelson Road:** This streetscape is of good quality with consistent street tree planting of Oak (Quercus sp.) and presents a high quality approach to the hospital precinct. As a key connector, however, the footpaths could be wider.

**Carrington Road:** The streetscape treatment is not consistent across both sides of the street. The City of Whitehorse paving palette has been installed on the south side of the street only. The Box Hill central brick paving remains on the north side of the street and undermines the cohesiveness of this street and the centre more generally. It is noted that on the north side of Carrington Road, approximately 1.5 metres from the kerb is owned by the Council, whereas the rest to the north is owned by Vicinity Centres. To date, Vicinity has not considered it a priority to upgrade the streetscape as it will be considered as part of the master plan for the centre.

