SUBURBAN RAIL LOOP EAST

SRL East Draft Structure Plan | Box Hill

Transport Technical Report

More Homes For Victorians

VICTORIA State Government

Suburban Rail Loop

PREPARED FOR SUBURBAN RAIL LOOP AUTHORITY

SRL EAST DRAFT STRUCTURE PLAN – TRANSPORT TECHNICAL REPORT – BOX HILL

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222 Exhibition Street
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This document is based on the information available, and the assumptions made, as at the date of the document. For further information, please refer to the assumptions, limitations and uncertainties set out in the methodology section of this document.

This document should be read in full and no excerpts are to be taken as representative of the findings.

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Abbreviations and glossary

TERM	DEFINITION
AADT	Annual average daily traffic
ABS	Australian Bureau of Statistics
AJM JV	Aurecon, Jacobs, Mott MacDonald Joint Venture – Technical Advisor to the SRLA
AM peak	The 2-hour peak period between 7am to 9am on a typical weekday
BESS	Built Environment Sustainable Scorecard
BIC	Business and Investment Case
Car free / Car light	Option for a lifestyle that does not require a car to travel in most circumstances
CBD	Central Business District of Greater Melbourne
CASBE	Council of Sustainability in the Built Environment
CoMo UK	Collaborative Mobility UK, A UK charity organisation promoting and advocating for the public benefit of shared transport options
DDA	*Disability Discrimination Act 1992* (Cth)
DTP / DoT	Department of Transport and Planning / Department of Transport (formerly)
EES	Environment Effects Statement for SRL East Rail Project
End-of-trip facilities	Facilities available for people to shower, change clothes or otherwise transition from active transport to work or other activities.
EPR	Environmental Performance Requirements
EV	Electric vehicles
Greater Melbourne	Covers the entirety of suburban Melbourne including as yet unreleased growth areas in outer suburbs, including 31 local government areas.
GTP	Green Travel Plans
IAC	Inquiry and Advisory Committee
LGA	Local government area
LMFP	Last Mile Freight Plan
LUTI	Land Use and Transport Interaction
M&P	Movement and Place – a cross-disciplinary, place-based approach to the planning, design, delivery and operation of transport networks
Micromobility	Transport provided by very light vehicles including bicycles, scooters and skateboards. Often shared and/or electric.
Off-peak	The off-peak period between 6pm to 7am, and the inter-period between the morning and afternoon peaks between 9am to 3pm on a typical weekday
PFN	Principal Freight Network
Planning Area	The Planning Area declared within Box Hill by the SRL Minister under the *Suburban Rail Loop Act 2021* (Vic) on 4 December 2023.
PM peak	The 3-hour peak period between 3 pm to 6 pm on a typical weekday
PPTN	Principal Public Transport Network
PSA	Planning Scheme Amendment
PTV	Public Transport Victoria
PUDO	Pick up / Drop off parking spaces
SA2	Statistical Area Level 2
SCC	Strategic cycling corridor

TERM	DEFINITION
SCO14	Specific Controls Overlay Schedule 14
SRL	Suburban Rail Loop is a new orbital rail line from Cheltenham to Werribee and associated development together with planning for the increased intensification and activation of precincts in areas connected to and around the rail line.
SRLA	Suburban Rail Loop Authority
SRL East	The south-east section of SRL from Cheltenham to Box Hill, together with a series of integrated initiatives to create value and improve the precincts around the new stations
SRL East Planning Areas	The SRL East Planning Areas are Cheltenham (CTM), Clayton (CLA), Monash (MSH), Glen Waverley (GWY), Burwood (BUW) and Box Hill (BOX)
SRL East Rail project	Construction and operation of the SRL East rail connection, including tunnels from Cheltenham to Box Hill, six stations and the Southern Stabling and Maintenance Yard
Structure Plan Area	The extent of land within the Planning Area to which the Box Hill Structure Plan applies.
TAFE	Technical and Further Education
V/C	Volume over capacity ratio
VISTA	Victorian Integrated Survey of Travel and Activity
VITM	Victorian Integrated Transport Model

Executive summary

As part of the Suburban Rail Loop (SRL) East project, Structure Plans are being prepared for the neighbourhoods surrounding the new underground stations at Cheltenham, Clayton, Monash, Glen Waverley, Burwood and Box Hill.

The Structure Plans will set a Vision and framework to guide growth and change in each neighbourhood, while protecting and preserving the character and features people love about them. As the Box Hill Draft Structure Plan (Structure Plan) Area develops it will be important to protect and enhance access to, from and within Box Hill.

Building on the existing Box Hill Central Shopping Centre as the key interchange node for the Belgrave / Lilydale Line, the bus interchange servicing 17 bus routes and 109 tram service along the Whitehorse Road 'boulevard', SRL East will provide high capacity and fast connections to nearby state and regional significant activity centres that are currently difficult to reach by public transport. More active and sustainable transport choices will help improve the amenity and liveability of the Structure Plan Area, and the health and wellbeing of individuals. This will help reduce traffic congestion and adverse environmental impacts and provide for more efficient access to key destinations.

This report sets out transport recommendations to inform the development of the Box Hill Structure Plan. The recommendations consider future land use and associated population and employment growth, with the aim to support and encourage sustainable and active and public transport choices in Box Hill in response to that growth, and to manage car parking, kerbside activities and freight deliveries.

The SRL East Structure Plans will identify how the five key themes of Boosting the Economy, Enriching Community, Better Connections, Enhancing Place and Empowering Sustainability will be delivered in the Structure Plan Area, and will set objectives, strategies and actions to achieve the Vision for the area.

The population, job and traffic growth demands associated with the land use changes as per the Structure Plan will require proactive management to realise the full potential of SRL East. The transport ambition and goals provide the foundations for managing the growth in transport in Box Hill. These ambitions and goals are summarised in the Figure and Table below.

Transport Ambition for Box Hill

Managing the growing number of trips through more people choosing to walk, cycle and catch public transport as Box Hill develops.

GOAL	EXPLANATION
A safe and connected walking and cycling environment	Walking and cycling[1] will serve as the most convenient, safe and enjoyable means of travel in the neighbourhoods around each SRL station.

[1] *Walking and cycling represent the action of moving as a pedestrian or cyclists, whether or not someone is walking or cycling unaided or using any kind of wheeled mobility aid, including cycles, scooters, wheelchairs, mobility scooters, walking frames, prams or buggies.*

GOAL		EXPLANATION
	A revitalised bus experience	In line with Victoria's Bus Plan, help change people's perception of buses. Provide a passenger-focused bus service, making road-based public transport a competitive, attractive and convenient choice.
	An all-inclusive transport network	Ensure transport is accessible to people of all ages, abilities and genders.
	Anchoring sustainable travel services and shared mobility to SRL East	SRL East stations are seamless integrated hubs, allowing quality interchanges between sustainable travel modes.
	Prioritising safe and healthy movement	In line with Victoria's Road Safety Strategy 2021-2030, the transport network becomes safer for all, particularly vulnerable users. Uptake in walking and cycling contributes to an increase in daily physical activity.
	Smart and efficient use of parking	Parking management needs for all users, with a strong emphasis on providing for the needs of bike and micromobility users. Car parking spaces will be managed and used to maximise their effectiveness while considering impacts on the urban realm.
	Enable new and emerging innovative mobility	Neighbourhoods around each SRL station will enable emerging and innovative mobility to provide more and convenient choice, especially for shorter to medium distance trips.

This report is informed by assessing the existing transport conditions in Box Hill and the SRL East Rail Environment Effects Statement (EES) (2021). It sets out recommendations to support and encourage sustainable and active transport choices, and to manage parking, kerbside activities and freight deliveries.

A Precinct Parking Plan for Box Hill is attached as Appendix A to this report. The SRL East Draft Structure Plan – Transport Technical Report – Appendix A – Precinct Parking Plan – Box Hill supports the justification of implementing Parking Overlays in Box Hill.

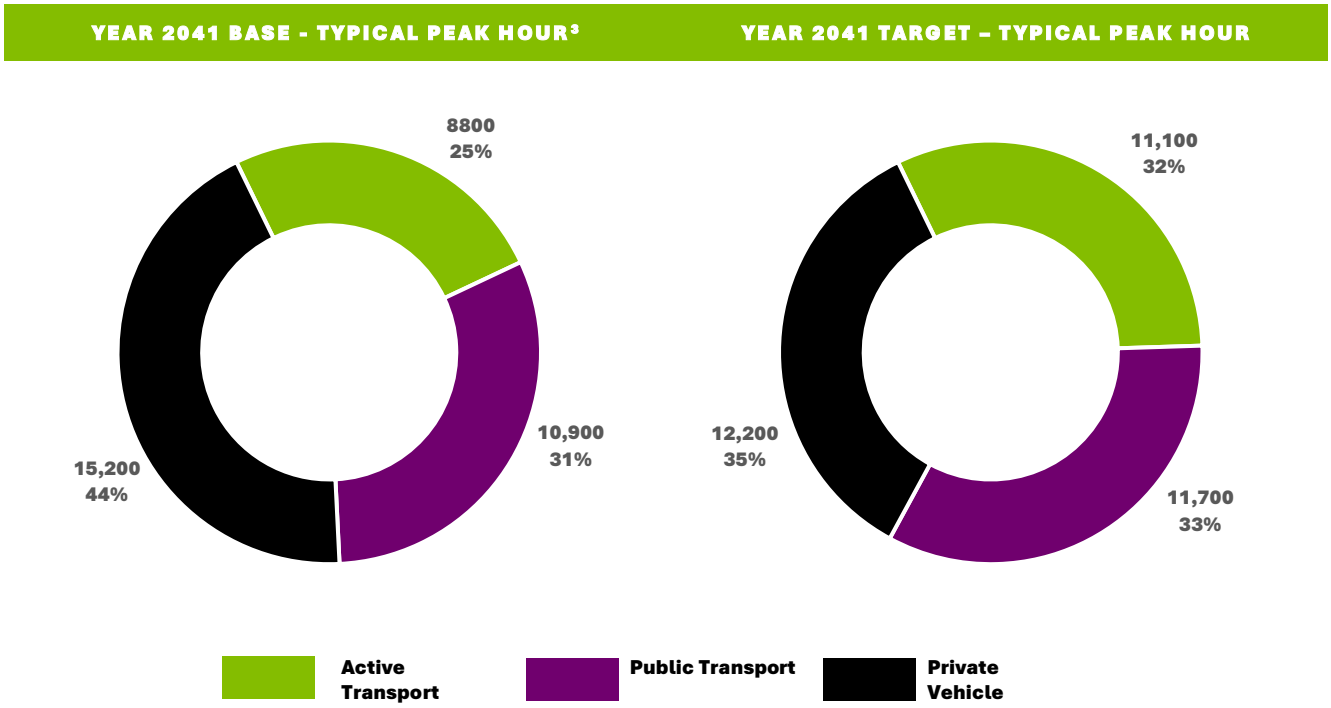
The main transport challenges in Box Hill are:

- The existing rail line, busy arterial roads (such as Elgar Road, Station Street and Whitehorse Road) and medium to large urban blocks are barriers for pedestrians and cyclists
- There is limited cycling infrastructure, with very few separated cycling routes serving Box Hill
- While Box Hill generally has good public transport coverage, connections for interchanging between modes are indirect, requiring passengers to navigate through Box Hill Central Shopping Centre and across arterial roads
- There is an abundance of car parks, but limited parking for cycling and for emerging modes
- The relatively high provision of car parking spaces within Box Hill results in an inefficient use of land in high demand areas and impacting the provision of active transport infrastructure. Car parking provision influences people's decision to own and use a car. High car parking provision can encourage more private vehicle movements through Box Hill, contributing to congestion
- While the current private vehicle mode share is generally within the capacity of the road network other than some periods of congestion during peak hours, maintaining a similar private vehicle mode share into the future will not be sustainable (due to the forecast increase in trips) and will affect the liveability within the Structure Plan Area.

An assessment of how travel patterns within the Box Hill Structure Plan Area will evolve and change was undertaken, which included setting a mode share target that reflects the broader set of transport choices. The assessment identified that, in the future (with SRL), about 65 per cent of Box Hill trips start and/or finish within 5 kilometres of Box Hill or are along a corridor will be served by a direct rail service to Box Hill.

The primary focus of the sustainable transport mode share increase is the growth in active transport trips supported by the future mixed land uses and the potential for improved infrastructure and facilities to support short distance trips.

The Figure below shows the future Baseline Scenario (including SRL East) and target mode shares for a typical peak hour for Box Hill.[2] The target shows an increase in active transport mode share by 26 per cent (an increase of 2300 trips during a typical peak hour) compared to the baseline from 25 per cent to 32 per cent, with public transport mode share increasing by 7 per cent (an increase of 800 trips during a typical peak hour).



Recommendations

Recommendations to improve transport and movement in Box Hill are divided into infrastructure recommendations, and non-infrastructure recommendations:

- **Infrastructure recommendations** focus on improving strategic and local corridors, with a focus on optimising sustainable active and public transport networks to promote walking, cycling and public transport modes

- **Non-infrastructure recommendations** focus on policies, strategies, guidelines and plans to manage parking in the Structure Plan Area to promote sustainable transport choice and manage kerbside activities

[2] *Analysis is based on the primary mode for trips to, from and within Box Hill (through trips are not included).*

[3] *Due to limitations in VITM actual active transport mode share may be higher than the baseline (see Section 3.4) forecast due to mixed-used higher density land uses naturally favouring active transport and active transport initiatives from State Government and Local Councils which may occur from now until commencement of SRL East services.*

and freight delivery. Some recommendations are categorised as ‘other opportunities’ to be considered through other pathways and partnerships.

The Table below summarises the types of recommendations and their alignment with the transport goals. The infrastructure and non-infrastructure recommendations will deliver a more connected network and increased travel choice by building upon existing arterial road and rail access and contributing to a shift towards sustainable travel choices across the Box Hill Structure Plan Area.

TRANSPORT RECOMMENDATIONS	TRANSPORT GOALS						
	A safe and connected walking and cycling environment	A revitalised bus experience	An all-inclusive transport network	Anchoring sustainable travel services and shared mobility to SRL East	Prioritising safe and healthy movement	Smart and efficient use of parking	Enable new and emerging innovative mobility
Infrastructure types							
New and Upgraded Strategic Corridors that enable the Structure Plan with a particular focus on active and public transport upgrades	✓	✓	✓		✓		
Upgraded local Green Streets, with a particular focus on active transport upgrades and support for innovative modes	✓		✓			✓	
New Key Links, focusing on creating active transport permeability and connecting transport corridors	✓		✓	✓			
New and upgraded crossings of busy roads	✓		✓		✓		
Upgrades to public transport interchanges to enhance the services, facilities, and customer experience		✓		✓			
New bicycle hubs to encourage active transport to the SRL station, existing railway station and bus interchange	✓	✓		✓			
Maintaining strategic traffic and freight corridors		✓				✓	
Designating low traffic neighbourhoods	✓		✓		✓		
Non-Infrastructure types							
Development of SRL East Structure Plan Area appropriate parking rates					✓	✓	
Partnering with Council to plan and manage streets through local freight delivery and kerbside management plans						✓	
Supporting travel choices including Green Travel Plans and encourage use of mobility hubs					✓		✓

1 Introduction

This section provides the background to the Suburban Rail Loop (SRL) East project. It sets out the scope and objectives of structure planning, and the purpose and structure of this report. The methodology for the transport technical assessment is explained. Stakeholder consultations undertaken to inform the recommendations in this report are discussed.

1.1 Background

Suburban Rail Loop (SRL) is a transformational project that will help shape Melbourne's growth in the decades ahead. It will better connect Victorians to jobs, retail, education, health services and each other – and help Melbourne evolve into a 'city of centres'.

SRL will deliver a 90-kilometre rail line linking every major train service from the Frankston Line to the Werribee Line via Melbourne Airport.

SRL East from Cheltenham to Box Hill will connect major employment, health, education and retail destinations in Melbourne's east and south east. Twin 26-kilometre tunnels will link priority growth suburbs in the municipalities of Bayside, Kingston, Monash and Whitehorse. The Minister for Planning approved the SRL East rail project in 2022.

SRL East Draft Structure Plan (Structure Plan) Areas will surround the six new underground stations at Cheltenham, Clayton, Monash, Glen Waverley, Burwood and Box Hill.

Construction of the SRL East underground stations is underway at Cheltenham, Clayton, Monash, Glen Waverley, Burwood and Box Hill. SRL East provides an opportunity to enhance the surrounding neighbourhoods.

SRL East will support thriving and sustainable neighbourhoods and communities that offer diverse and affordable housing options, with easy access to jobs, transport networks, open space, and community facilities and services.

A Vision for the Box Hill SRL East neighbourhoods has been developed in consultation with the community and stakeholders that sets out the long-term aspirations for the SRL East Structure Plan Areas.

Figure 1.1 shows SRL East in the context of the entire SRL project and Melbourne's rail network.

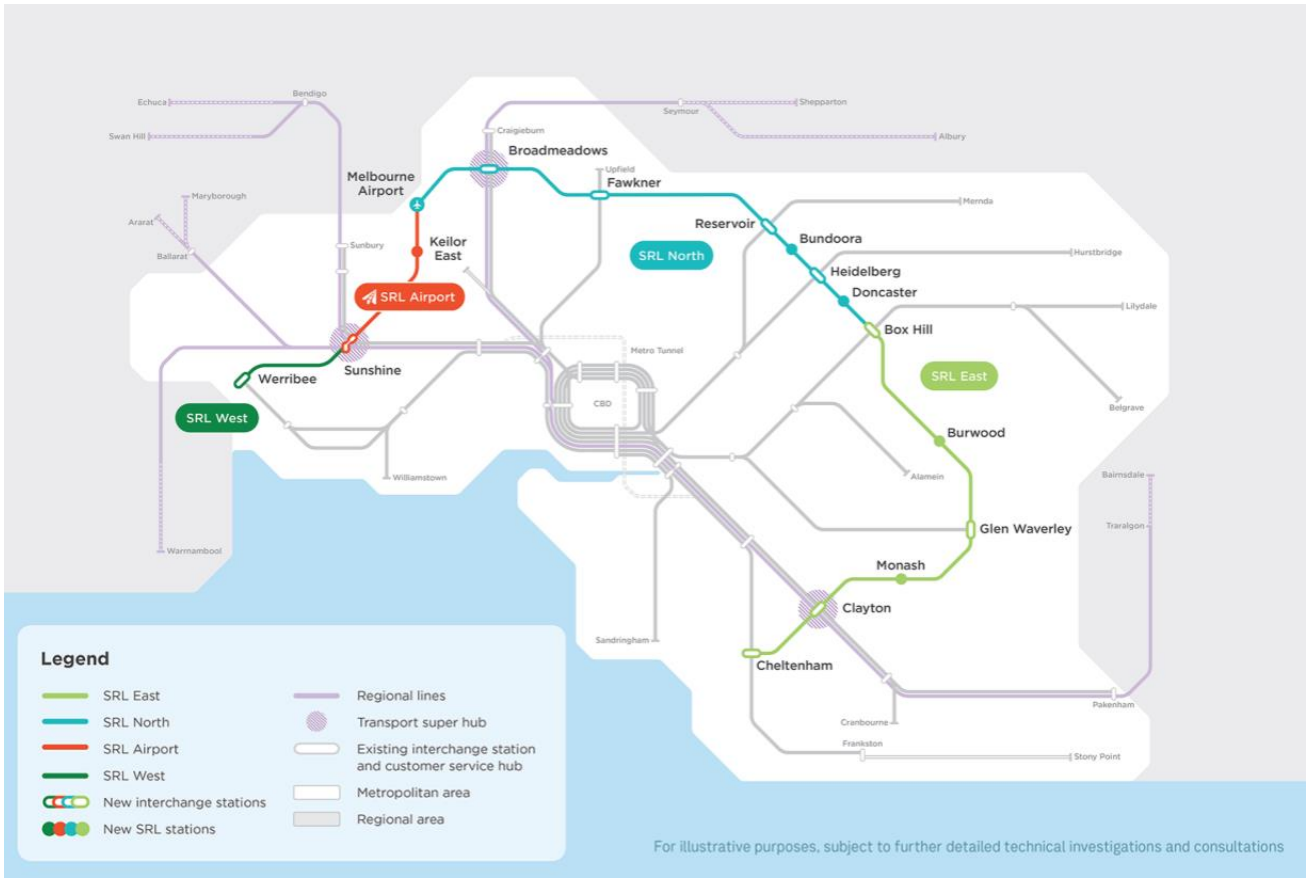


FIGURE 1.1 SRL EAST CONTEXT IN MELBOURNE'S RAIL NETWORK

1.2 Structure planning

Structure Plans are being prepared for defined areas surrounding the SRL East stations to help deliver the vision for each neighbourhood.

The Structure Plans cover defined SRL East Structure Plan Areas. These are the areas immediately surrounding the SRL stations, where the most growth and change will occur. These areas cover a walkable catchment that extends from the SRL station entrances. Additional places are included within the Structure Plan Area as required to make planning guidance more robust and effective, and to align with each community's aspirations and current and future needs.

A Structure Plan is a blueprint to guide how an area develops and changes over time. Structure Plans describe how future growth within the area will be managed in an appropriate and sustainable way to achieve social, economic and environmental objectives. Matters covered in a Structure Plan include transport connections and car parking, housing and commercial development, community infrastructure, urban design, open space, water and energy management, climate resilience and sustainability.

By tailoring planning decisions to reflect the needs of a defined area, Structure Plans give effect to the policies and objectives set for these areas and cater for changing community needs. They also provide certainty for residents, businesses and developers by identifying the preferred locations and timing of future land uses, development and infrastructure provision.

Structure Plans take a flexible and responsive approach that enables places to evolve over time.

Planning scheme amendments will be required to implement the Structure Plans into the planning schemes of the cities of Bayside, Kingston, Monash and Whitehorse across the SRL East Structure Plan Areas.

SRL East is the first stage of the wider SRL project, which is an integrated transport and land use project that will extend over 30 years. By integrating and staging transport, planning and infrastructure initiatives, SRL will support urban centres across Melbourne that offer high quality lifestyles, housing and jobs close to public transport, services and other amenities.

This Structure Plan recognises that key planning approvals for SRL East were informed by the Minister's Assessment of the SRL East Environment Effects Statement (EES) (2021), which was supported by relevant technical documents such the Traffic and Transport Impact Assessment. These approvals, now in place for delivering the rail infrastructure for SRL East, form the foundation for structure planning and this report.

The Structure Plan is the next step towards achieving SRL's integrated transport and land use outcomes and maximising the project's benefits.

1.2.1 PLANNING AREA AND STRUCTURE PLAN AREA

This report also refers to the Planning Area. The Planning Area is a wider area that includes the Structure Plan Area. The Planning Area for Box Hill was declared by the Minister for the SRL under the *Suburban Rail Loop Act 2021* (Vic) in December 2023. The declaration makes the Suburban Rail Loop Authority (SRLA) a planning authority under the *Planning and Environment Act 1987* (Vic) for the land in Box Hill to which the Planning Area applies and has effect.

As transport links connect beyond the Structure Plan Area and people move through it to access activities within the wider Planning Area, this report deliberately discusses transport networks, challenges and trips in the context of the wider Planning Area before focusing in on impacts and actions within the Structure Plan Area.

The Planning Area and the Structure Plan Area for Box Hill are shown in Figure 1.2.

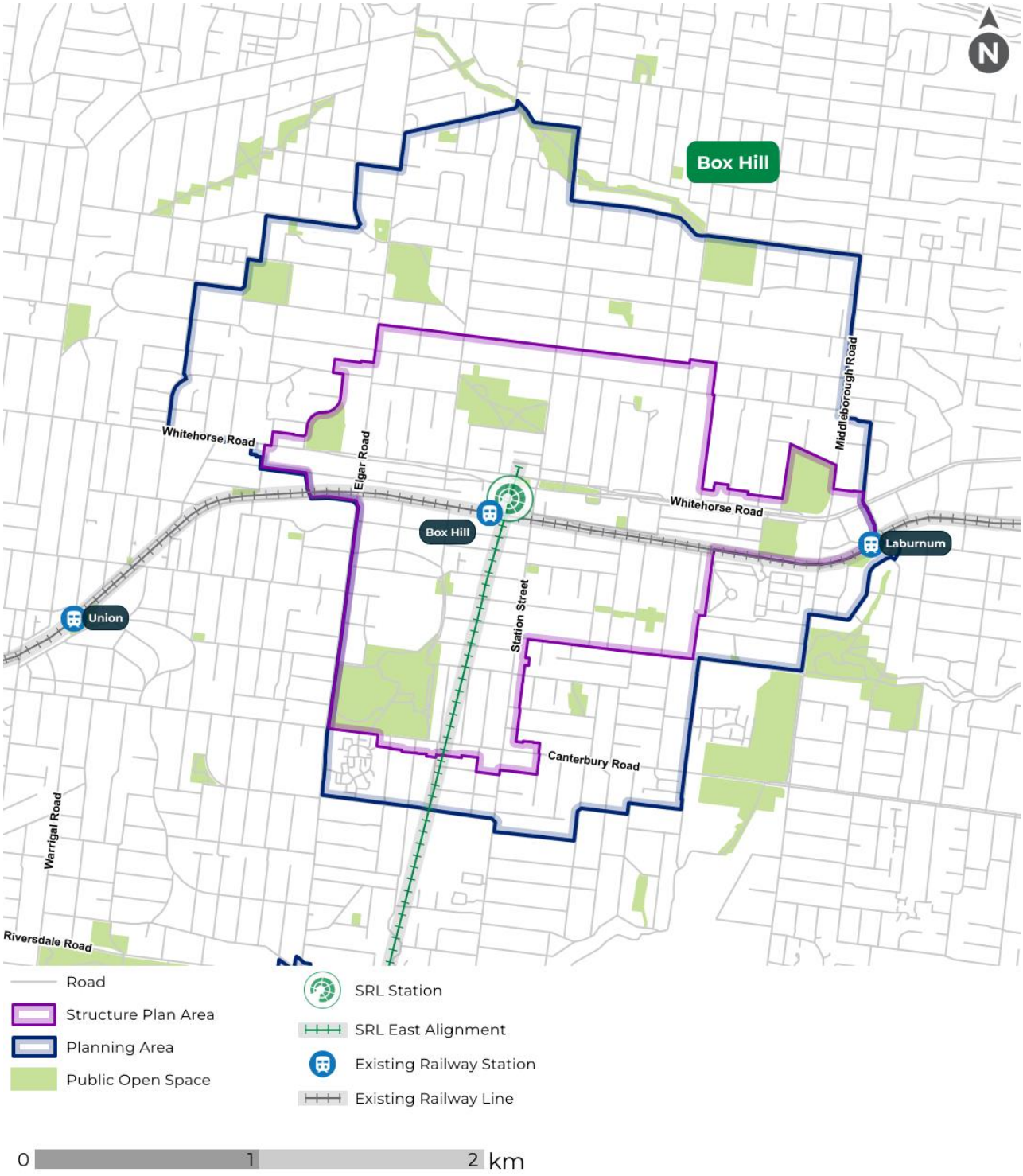


FIGURE 1.2 THE BOX HILL PLANNING AREA AND STRUCTURE PLAN AREA[4]

[4] *The SRL Line ends at Box Hill as part of SRL East, but the SRL Line will continue through to Werribee when the full SRL Line is delivered.*

1.3 Purpose and structure of this report

This report sets out transport recommendations to inform the development of the Structure Plan for Box Hill.

As the Box Hill Structure Plan Area develops it will be important to support and promote more sustainable modes of transport to, from and within Box Hill. This will help reduce traffic congestion and adverse environmental impacts and provide for more efficient use of land (instead of over-providing car parking). More active and sustainable transport choices will help improve the amenity and liveability of the Structure Plan Area, and the health and wellbeing of individuals.

The recommendations aim to support and encourage sustainable and active transport choices in Box Hill, and manage parking, kerbside activities and freight deliveries.

The structure of this report is:

- **Section 1: Introduction** – provides the background and context of the technical assessment
- **Section 2: Existing conditions** – describes the existing transport conditions, gaps and challenges in Box Hill
- **Section 3: The SRL project** – provides an overview of the project and its expected benefits, and sets out relevant aspects of the Traffic and Transport Impact Assessment delivered for the SRL East Environment Effects Statement (EES) (2021) that informed the Planning Approval
- **Section 4: Transport ambition for Box Hill** – sets out the transport ambition for Box Hill and anticipated land use and the implications for transport
- **Section 5: Future transport demands** – discusses travel patterns, including the trips generated and the distribution of where they are going to and from, and presents the target mode shares given the transport ambition
- **Section 6: Infrastructure recommendations** – sets out the aspirational network for each transport mode recommendations to improve transport infrastructure and encourage sustainable travel in the Structure Plan Area
- **Section 7: Non-infrastructure recommendations** – sets out the non-infrastructure recommendations to manage parking, promote active and sustainable transport choices, and manage kerbside activities and local freight deliveries
- **Section 8: Conclusion** – including the considering of the alignment between transport goals and types of recommendations.

The **SRL East Draft Structure Plan – Transport Technical Report – Appendix A – Precinct Parking Plan – Box Hill** attached to Appendix A of this report summarises the context of parking in Box Hill and outlines parking management tools recommended for the Box Hill Structure Plan.

1.4 Methodology

This report demonstrates how transport recommendations will cater for the growth in trips as a result of the land use changes and associated transport demand anticipated from the Box Hill Structure Plan Area.

The Minister's Assessment (discussed further in Section 3.5) supported the finding of the Inquiry and Advisory Committee (IAC) convened to review the environment effects of SRL East; that the transport modelling

completed for the Transport and Traffic Impact Assessment for the SRL East Environment Effects Statement (EES) 2021 was adequate for this phase of the project. This transport modelling underpinned the assessment of operational transport effects and considered land use changes and future travel patterns associated with the operation of the SRL East rail infrastructure and has formed the basis for the preparation of this Transport Technical Report.

A 'vision and validate' approach was applied to respond to the growing transport task to 2041 expected from the land use changes in the Box Hill Structure Plan Area. The 'vision and validate' approach focuses on defining the desired transport network ('vision') to inform and support the Structure Plan and identifies how the transport recommendations will work towards achieving the desired 'outcome for the transport network ('validate').

The transport recommendations respond to the transport ambition and seek to encourage more sustainable transport demand and reduce car reliance and impacts, while more broadly informing the vision for the Box Hill Structure Plan Area.

The steps to plan, develop and validate the transport recommendations were:

- **Step 1: Review existing conditions** involved considering the current transport conditions and identifying strengths, challenges, gaps and opportunities.

- **Step 2: Review the baseline** involved understanding the future set in the SRL East EES, including the land use development uplift and the changes to the network.

- **Step 3: Setting the transport ambition and goals** were determined to inform the Box Hill Vision and the Structure Plan. This forms part of the 'vision' process of the 'vision and validate' approach. The development of the transport goals considered the transport challenges, gaps and opportunities in the Structure Plan Area. Future travel demand was assessed and a mode share target for Box Hill was set and reviewed against the existing mode shares for other Melbourne suburbs.

- **Step 4: Determine the initial movement network and opportunities** to inform the structure planning process. Given the transport ambition for the Structure Plan Area, how these could be achieved beyond what was outlined in the SRL East EES to achieve the ambitions was considered.

    - The aspirational strategic and local movement network for all modes in the Structure Plan Area was developed by SRLA in consultation with the Department of Transport and Planning (DTP) and the City of Whitehorse. The network was developed using DTP's Movement and Place (M&P) Framework and applied SRLA's modal principles in response to land use changes proposed in the Structure Plan.
    - The strategic M&P assessment identified gaps between the current and aspirational performance. Initial transport infrastructure recommendations were developed to address these gaps for consideration during development of the Structure Plan and stakeholder engagement.
    - Initial non-infrastructure recommendations were developed in response to the transport ambition, including to encourage effective parking management and support sustainable travel choices.
- **Step 5: Iterate the development of the Structure Plan with transport.** Transport networks and recommendations were iteratively developed.

- **Step 6: Validate recommendations** involved checking recommendations against the transport challenges and ambition to cater for the projected changes in land use and associated transport demand in the Structure Plan Area.

Implementation of the recommendations contributes to a shift towards sustainable travel choices beyond that forecast in the SRL East EES.

1.4.1 PEER REVIEW

This technical report has been independently peer reviewed by Hilary Marshall of Ratio. The peer review report is attached as Appendix B of this report, which sets out the peer reviewer's opinion on the SRL East Draft Structure Plan –Transport Technical Report – Box Hill.

1.5 Stakeholder consultation

SRLA has developed a comprehensive engagement plan for the overall structure planning program. The engagement plan is shown in Figure 1.3 and includes early engagement to inform the draft Structure Plans through to statutory steps such as exhibition and advisory committee processes. The engagement plan considers both community and stakeholder engagement.

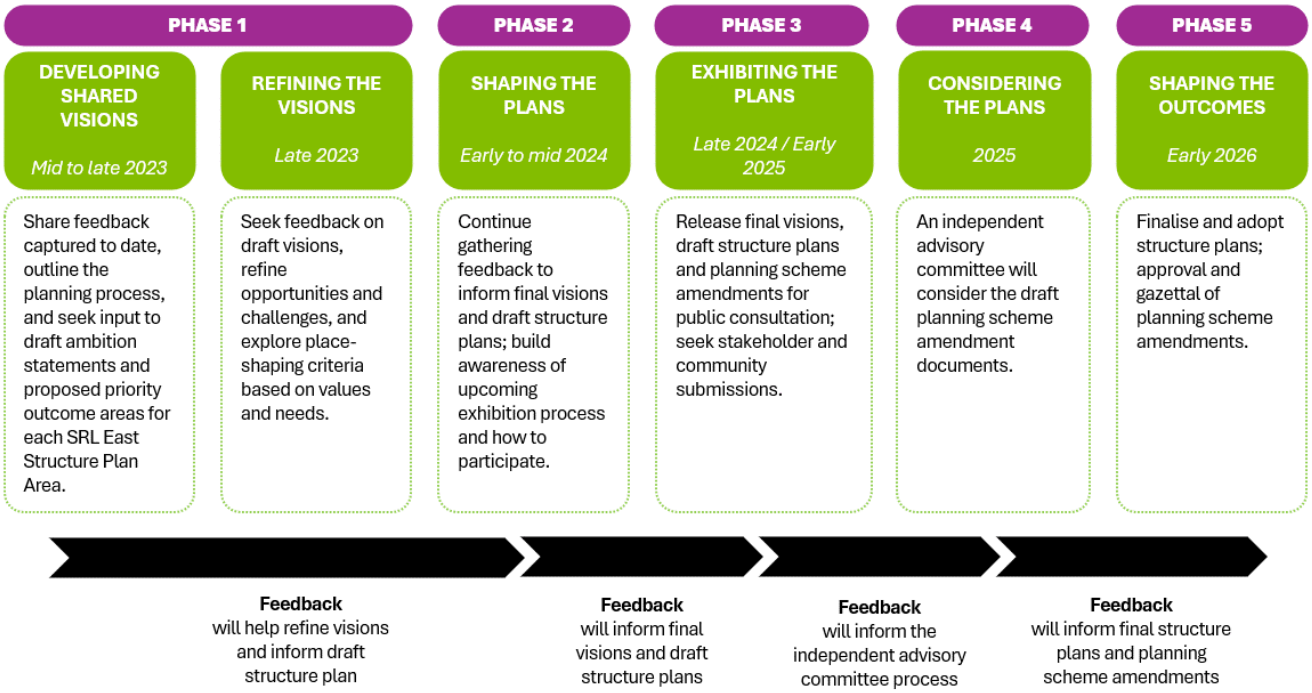


FIGURE 1.3 SRL EAST STRUCTURE PLANNING ENGAGEMENT PLAN

SRL engaged with the Department of Transport and Planning (DTP) and the City of Whitehorse to inform the development of the transport recommendations.

This included working collaboratively with DTP to gain endorsement of the M&P network for the Box Hill structure planning and the changes to the project's reference design (Revision C) provided in the SRL East EES (2021). These changes include a separate right-turn lane on the eastern approach of Whitehorse Road / Nelson Road intersection, moving the tram terminus central platform 600 millimetres to the south, and widening the Whitehorse Road central median at Kangerong Road to stage right-turn movements from the north.

A Better Connections workshop with City of Whitehorse officers focused on addressing the eastern cycle link along Linsley Street as directed by the panel. Several options were investigated, with a 3-metre shared use path on the western side of Linsley Street being adopted as the preferred City of Whitehorse option.

A M&P and parking workshop discussed the M&P transport network (walking, cycling and general traffic classifications) and the parking provision approach.

Feedback from the workshops included:

- Better Connections workshop:
  - The City of Whitehorse advocated for improving the Box Hill bus interchange. This report recommends improvements to the bus interchange and bus facilities on Station Street (discussed in Section 6)
  - It was noted the Nelson Road to Thurston Street active transport link reflected in SRLA's planning is consistent with City of Whitehorse plans.
- M&P and parking workshop:
  - Aligned on the walking hierarchy and strategic cycling corridors
  - Aligned on the provision of an at-grade pedestrian crossing of Station Street at Bank Street
  - Cycling corridor – instead of prioritising local streets south of Whitehorse Road to connect Bank Street to the Thurston – Nelson for the M&P C1 strategic cycling corridor, a City of Whitehorse officer suggested prioritising Whitehorse Road alignment for C1.

More information is provided in the SRL Structure Planning Engagement Reports on the SRL website at https://bigbuild.vic.gov.au/library/suburban-rail-loop/reports/engagement-reports/structure-planning-engagement-report.

Consultation undertaken with the City of Whitehorse to date is summarised in Table 1.1 and Table 1.2.

TABLE 1.1 STAKEHOLDER TRANSPORT CONSULTATIONS AND CONSULTATION TOPICS

STAKEHOLDER	CONSULTATION TOPIC	TRANSPORT CONSULTATIONS
City of Whitehorse	Structure planning program	• Workshop conducted in May 2024 • Workshop conducted in August 2024.
	SRL rail-related works	Ongoing engagement to comply with rail project environmental approvals

TABLE 1.2 CITY OF WHITEHORSE CONSULTATION DISCUSSION POINTS AND RESPONSE

CONSULTATION TOPIC	KEY ISSUES DISCUSSED	STRUCTURE PLAN RESPONSE
Structure planning program	• Precinct key directions • Transport 'Better Connection' themes • M&P classification for the Structure Plan Area (walking, cycling and general traffic classifications) • Development parking provision (suggested zones and rates).	• SRLA has developed infrastructure recommendations to reflect the workshopped 'Better Connection' themes and M&P network classifications • SRLA will continue to work with the City of Whitehorse at project planning and delivery stages to deliver the infrastructure recommendations that reflect the M&P classifications • SRLA has considered the comments received and reviewed and refined the development parking provision, including the Parking Overlay areas and the car parking provision.

2 Existing conditions

This section discusses current transport conditions and challenges in Box Hill, including the context, active transport, public transport, general traffic and freight, road safety and parking. It also outlines the key national, state and local transport policies and strategies relevant to Box Hill.

2.1 Context

2.1.1 KEY DESTINATIONS

The Box Hill Planning Area includes the Box Hill Metropolitan Activity Centre, educational establishments, community and recreation facilities and some industrial uses along the main arterial roads that provide a suburban focal point for services, employment and social interaction. These form key destinations and trip generators in Box Hill.

Box Hill Central Shopping Centre is the retail heart of the Metropolitan Activity Centre. There is increasing demand for high-density living in the central area, with several major residential and mixed-use developments recently completed and planned. Main Street, Market Street and Whitehorse Road are key areas of Box Hill with pedestrian-friendly public spaces, street-based activities and outdoor dining. Outside the centre of Box Hill core, there are lower-density neighbourhoods typically comprising detached dwellings, as well as several large recreational parks.

The Box Hill Structure Plan Area currently supports 18,300 jobs[5] and more than 22,000 tertiary enrolments,[6] generating trips to, from and within Box Hill. Aside from Box Hill Shopping Centre, major destinations include Box Hill Hospital, the Epworth Eastern, Box Hill Gardens and Box Hill Institute, servicing a wide area of Melbourne's eastern suburbs, as shown in Figure 2.1.

[5] *AJM JV, 2025, Economic Profile – Box Hill*

[6] *Australian Bureau of Statistics 2021 Census Data*

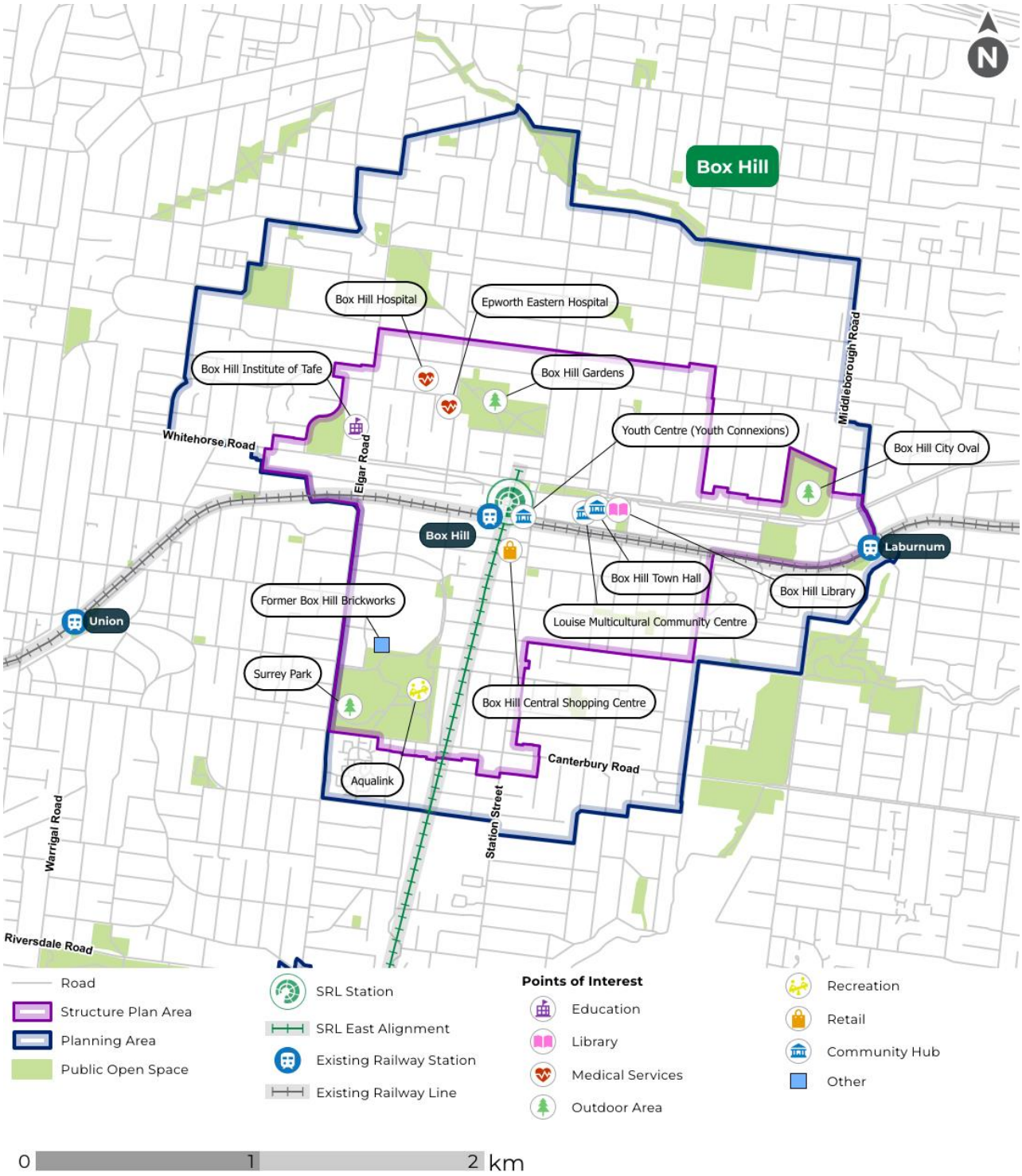


FIGURE 2.1 KEY DESTINATIONS IN BOX HILL

2.1.2 PUBLIC TRANSPORT AND WALKING ACCESSIBILITY

Figure 2.2 shows the average Transit Score against the average Walk Score for the Box Hill Structure Plan Area and the other SRL East Structure Plan Areas. The data included for the Box Hill Structure Plan area include individual location scores (noted within the shaded area), which make up the aggregate score for the Structure Plan Area.

The Transit Score[7] is a 0 to 100 rating tool that measures how well a specific location is serviced by public transport with 0 being poor public transport access and 100 being great access to public transport. Increased access to public transport service routes and service types result in higher scores.

The Walk Score[8] is a 0 to 100 rating that measures how walkable a specific location is and how accessible it is to nearby amenities. Increased density and diversity of nearby amenities and pedestrian friendliness result in higher scores.

The Box Hill Structure Plan Area has moderate to high Walk Scores with an average of 82. The average Transit Score (in the Structure Plan Area) of Box Hill is currently high at 73, which is relatively higher than the other SRL East Structure Plan Areas, and it varies from approximately 63 to 79 depending on the location within the Structure Plan Area.

In the future, increased land use density and diversity is expected to further improve Box Hill's already high Walk Score, whilst the SRL East project and other future public transport upgrades are expected to increase its Transit Score (i.e. shift it to the 'top right' of the figure).

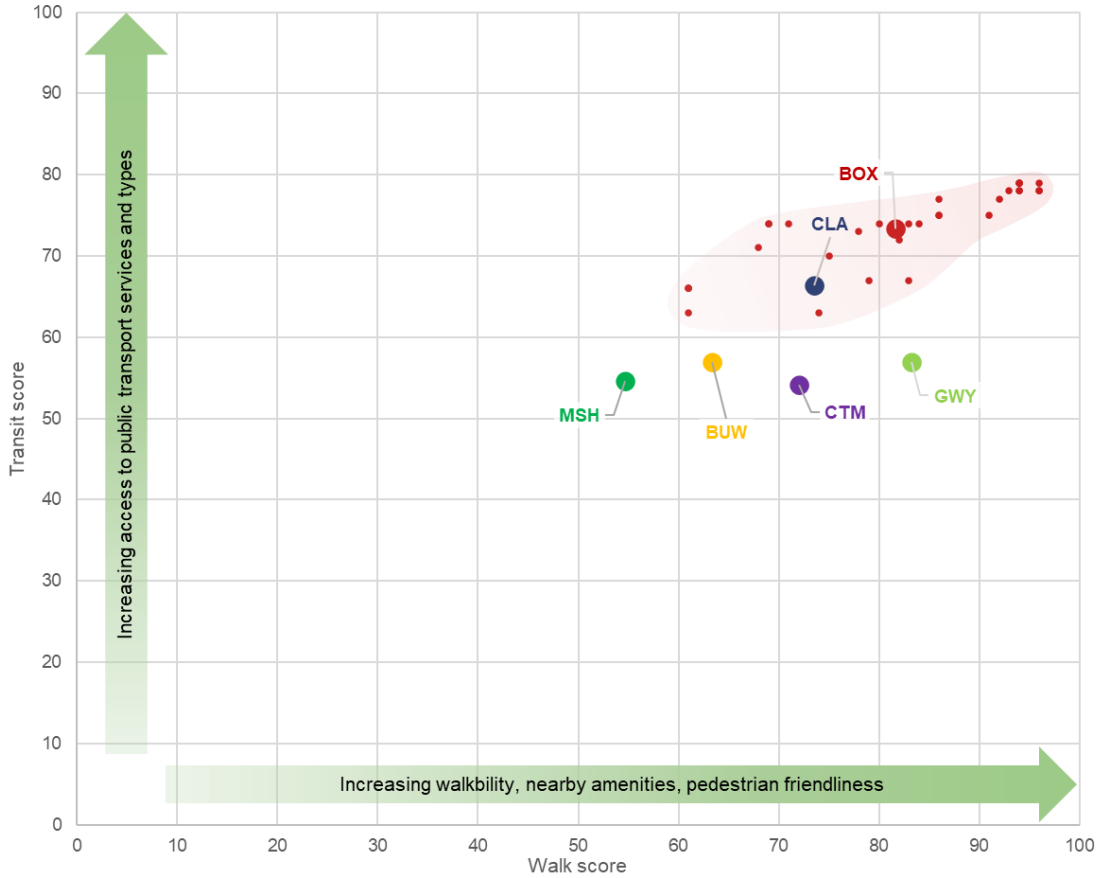


FIGURE 2.2 TRANSIT VS. WALK SCORE FOR THE BOX HILL STRUCTURE PLAN AREA

[7] *Walk Score, 2024, Transit Score® Methodology, <https://www.walkscore.com/transit-score-methodology.shtml>*

8 Walk Score, 2024, Walk Score Methodology, < https://www.walkscore.com/methodology.shtml>

2.1.3 MODE SHARE AND TRAVEL PATTERNS

In 2018, the majority of trips in the Box Hill Structure Plan Area were by private car (60 per cent) followed by active transport (25 per cent) and public transport (15 per cent), as shown in Figure 2.3. Trips are those travelling to, from and within Box Hill, trips passing through Box Hill are excluded.

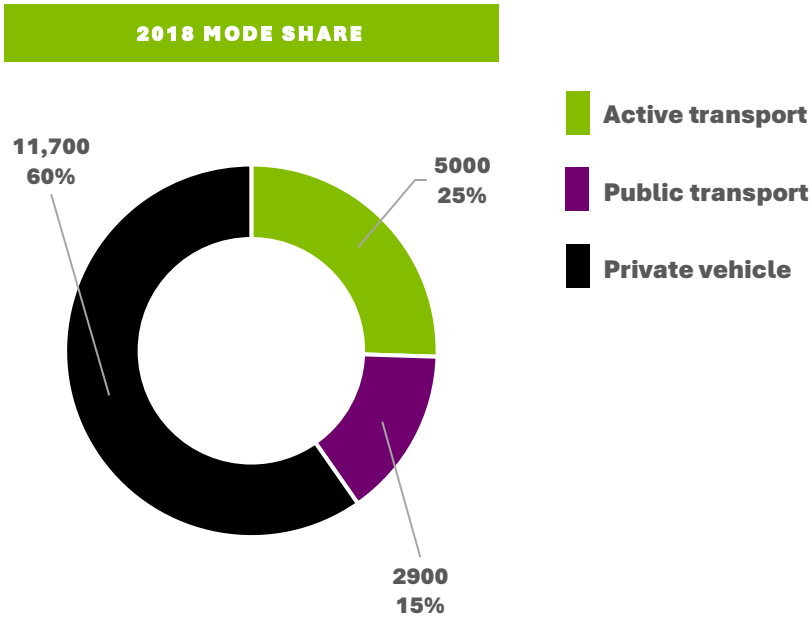


FIGURE 2.3 BOX HILL 2018 PRIMARY MODE SHARE – WEEKDAY TYPICAL PEAK HOUR (SOURCE: DTP VITM 2018)

As indicated by household travel information from the Victorian Integrated Survey of Travel and Activity (VISTA) data, mode share varies by trip purpose.[9] The mode share is influenced by factors including the availability of effective public transport options, access to private vehicles and travel distance.

Based the ABS Statistical Area 2 (SA2) level VISTA data, the main journey purposes for trips to, from and within Box Hill include:[10]

- Shopping (14 per cent)
- Picking up or dropping off someone (13 per cent)
- Recreational (10 per cent)
- Social (10 per cent).

The remaining trips are distributed across other journey purposes such as for education, personal business, accompanying someone, picking-up or delivering something and other purposes.

Work-related trips form the predominant journey purpose to and from Box Hill, accounting for 24 per cent of trips. The most common work destinations from Box Hill are shown in Figure 2.4.[10]

[9] *Includes the Box Hill SA2 boundaries which extend slightly beyond the Planning Area.*

[10] *The VISTA data includes data captured all day on a weekday. The data used is from 2012 – 2020.*

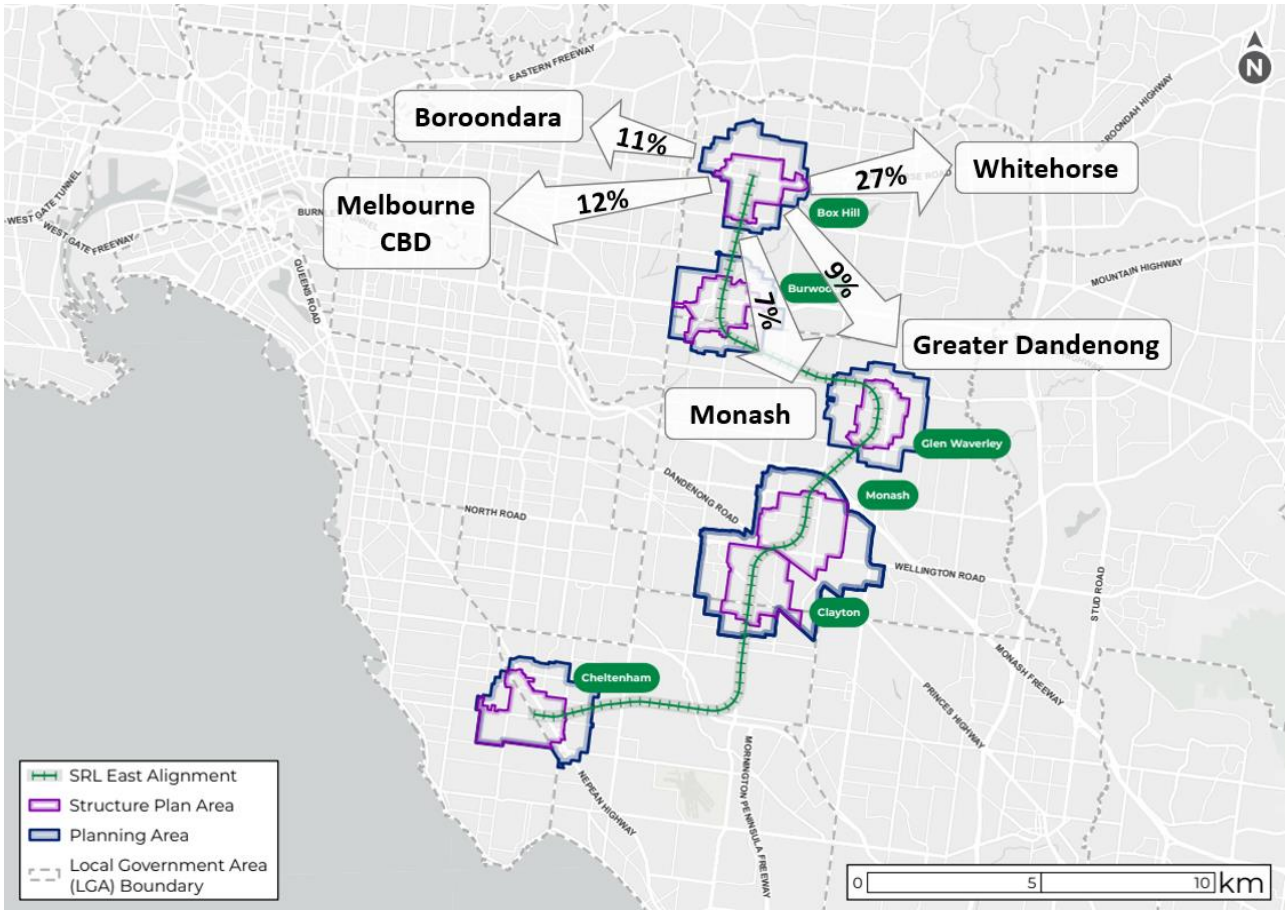


FIGURE 2.4 COMMON WORK DESTINATIONS FROM BOX HILL[11]

For commuter travel, the private vehicle is currently the largest mode share. While there are no direct rail connections to Greater Dandenong or Monash SA2 locations, north-south movements across the municipality and to the adjacent SA2 locations are supported by a network of arterial roads through Box Hill South and Blackburn LGA. Commuter car parks support access by car to the existing Box Hill Station.

Shopping destinations in Box Hill attracts trips from across the eastern suburbs, with the main origins being from across the Whitehorse, Boroondara and Manningham SA2 locations. Shopping-related trips are predominantly by car (63 per cent vehicle driver, 18 per cent vehicle passenger of shopping trips). A similar mode choice occurs for local shopping trips.[11]

Education-based trips are predominantly by vehicle drop-offs (52 per cent), public transport (17 per cent) or on foot (14 per cent).[11]

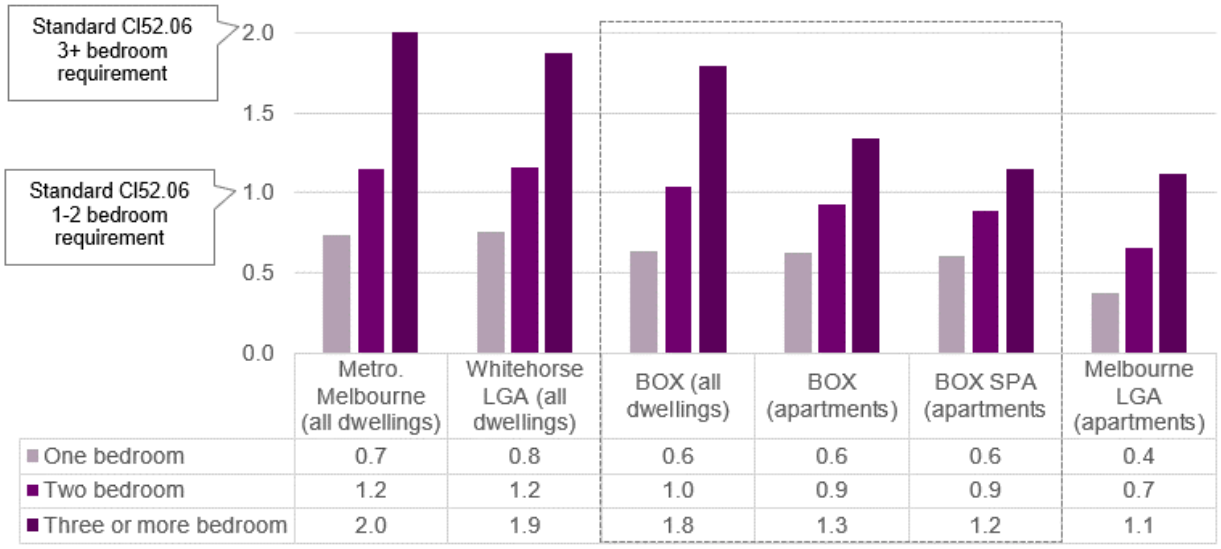
2.1.4 RESIDENTIAL CAR OWNERSHIP

The main household type in Box Hill is detached dwelling. However, there is increasing demand for high-density living with several major residential and mixed-use developments recently completed and planned.

Car ownership levels by household type in the area surrounding the SRL station at Box Hill are shown in Figure 2.5. Comparisons with Metropolitan Melbourne, the Whitehorse LGA and the Melbourne LGA are shown. Car ownership rates for apartments in Box Hill (identified as BOX in Figure 2.5) and all dwelling types are also shown.

[11] *Base map source: SRLA, 2024. Data source: VISTA (2012 – 2020) for the Box Hill ABS SA2 boundaries which extend slightly beyond the Box Hill Planning Area. Common work destinations from Box Hill in the figure are SA2 locations.*

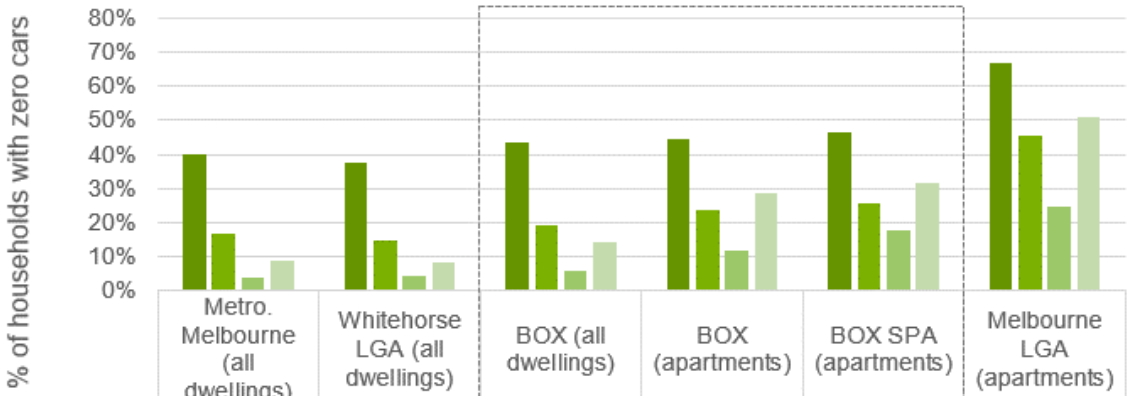
Car ownership varies by dwelling type and size, with slightly lower rates for those living in flats or apartments outside the Box Hill Activity Centre Parking Overlay (PO1), and higher within the parking overlay given the lower parking rates within this area. Car ownership in Box Hill is higher than areas such as the Melbourne LGA, which has significantly higher levels of public transport services and mode share near significant employment, retail and other land uses. Box Hill has slightly lower car ownership levels for all dwelling types compared to all dwellings in Metropolitan Melbourne and the Whitehorse LGA.



	Metro. Melbourne (all dwellings)	Whitehorse LGA (all dwellings)	BOX (all dwellings)	BOX (apartments)	BOX SPA (apartments	Melbourne LGA (apartments)
One bedroom	0.7	0.8	0.6	0.6	0.6	0.4
Two bedroom	1.2	1.2	1.0	0.9	0.9	0.7
Three or more bedroom	2.0	1.9	1.8	1.3	1.2	1.1

FIGURE 2.5 BOX HILL AVERAGE CAR OWNERSHIP COMPARISON BY HOUSEHOLD TYPE (SOURCE: ABS 2021)

The zero car ownership levels by household type in Box Hill are shown in Figure 2.6. This highlights a relatively lower dependence on car ownership and implied use compared to the wider Whitehorse LGA. However, the number of households with no private car is generally lower in Box Hill compared to the Melbourne LGA.



	Metro. Melbourne (all dwellings)	Whitehorse LGA (all dwellings)	BOX (all dwellings)	BOX (apartments)	BOX SPA (apartments)	Melbourne LGA (apartments)
One bedroom	40%	38%	44%	45%	46%	67%
Two bedroom	17%	15%	19%	24%	26%	46%
Three or more bedroom	4%	4%	5%	12%	18%	25%
All dwellings	9%	8%	14%	29%	32%	51%

FIGURE 2.6 BOX HILL – ZERO CAR OWNERSHIP COMPARISON BY HOUSEHOLD TYPE (SOURCE: ABS 2021)

2.1.5 RESIDENTIAL BICYCLE OWNERSHIP

VISTA includes bicycle ownership data for different household types and sizes.[12] While the sample size is small, the VISTA data provides an indication of bicycle ownership in Box Hill Planning Area which is summarised in Figure 2.7 and Figure 2.8.

The data indicates that Box Hill Planning Area currently has relatively low bicycle ownership, particularly for smaller households. However, as household size grows, bicycle ownership increases with two or more people households on average exceeding the bicycle parking requirements suggested by the current Clause 52.34 Planning Scheme rates.

Box Hill's relatively low VISTA bicycle ownership levels align with the relatively low level of cycling movements recorded in Box Hill. Aside from Market Street, Dorking Road and the level crossing between Bank Street and Rutland Road, cycling activity surveyed at key locations surrounding the existing Box Hill Station recorded up to 12 cyclists during the weekday peak period.[13]

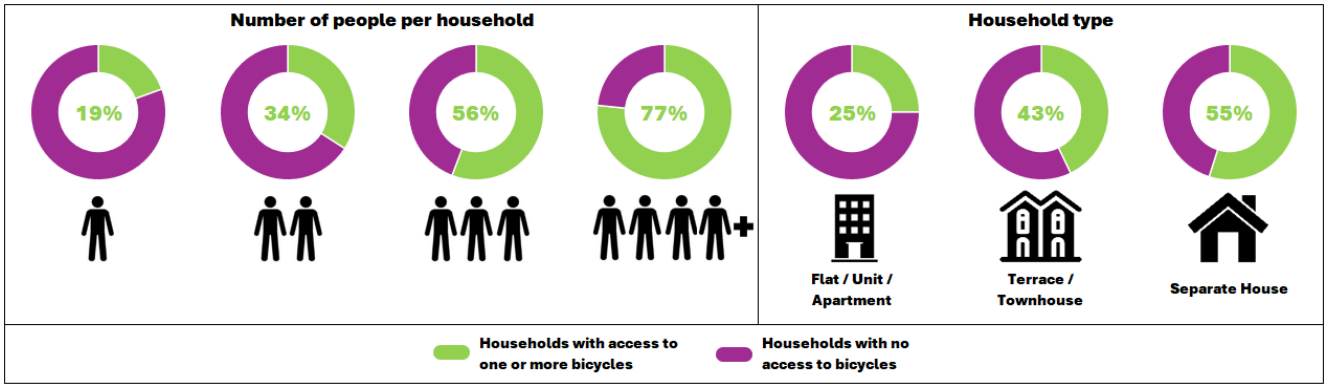


FIGURE 2.7 CURRENT HOUSEHOLDS IN BOX HILL PLANNING AREA WITH ACCESS TO AT LEAST ONE BICYCLE (SOURCE: VISTA 2012-2020 AND 2022)

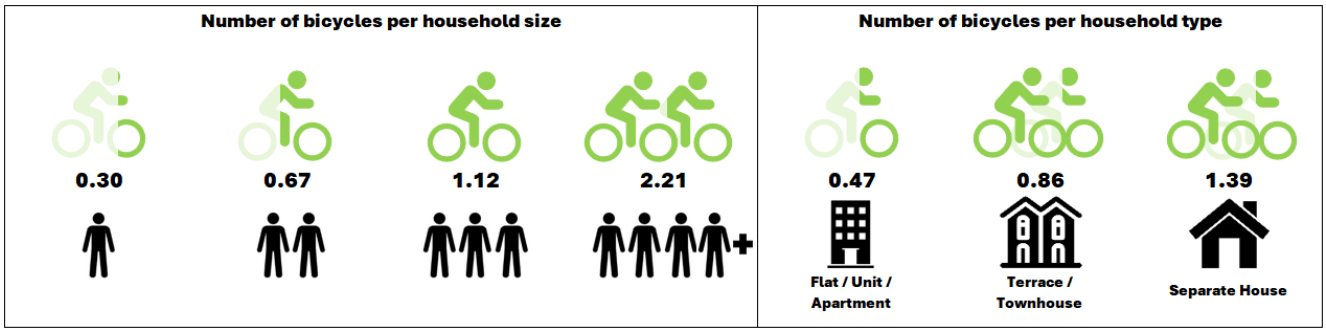


FIGURE 2.8 CURRENT BICYCLE OWNERSHIP PER HOUSEHOLD SIZE AND TYPE IN BOX HILL PLANNING AREA (SOURCE: VISTA 2012-2020 AND 2022)

[12] *The VISTA data used is from 2012 – 2020 and 2022. Note relatively small sample data available for some SRL East Planning Areas and metrics.*

[13] *Source: SRLA, 2023. Recorded weekday peak period between 11am – 12pm.*

2.2 Transport network

2.2.1 WALKING

The pedestrian network of Box Hill is shown in Figure 2.9, where the walkable network shown includes footpaths, shared use paths and trails. Many trips in different parts of Box Hill are by walking. Box Hill includes a dense network of footpaths, with all streets generally providing pedestrian access to dwellings and key destinations such as Box Hill Central Shopping Centre, Box Hill Gardens, Box Hill Hospital, tram / bus stops, train station and local shops and services.

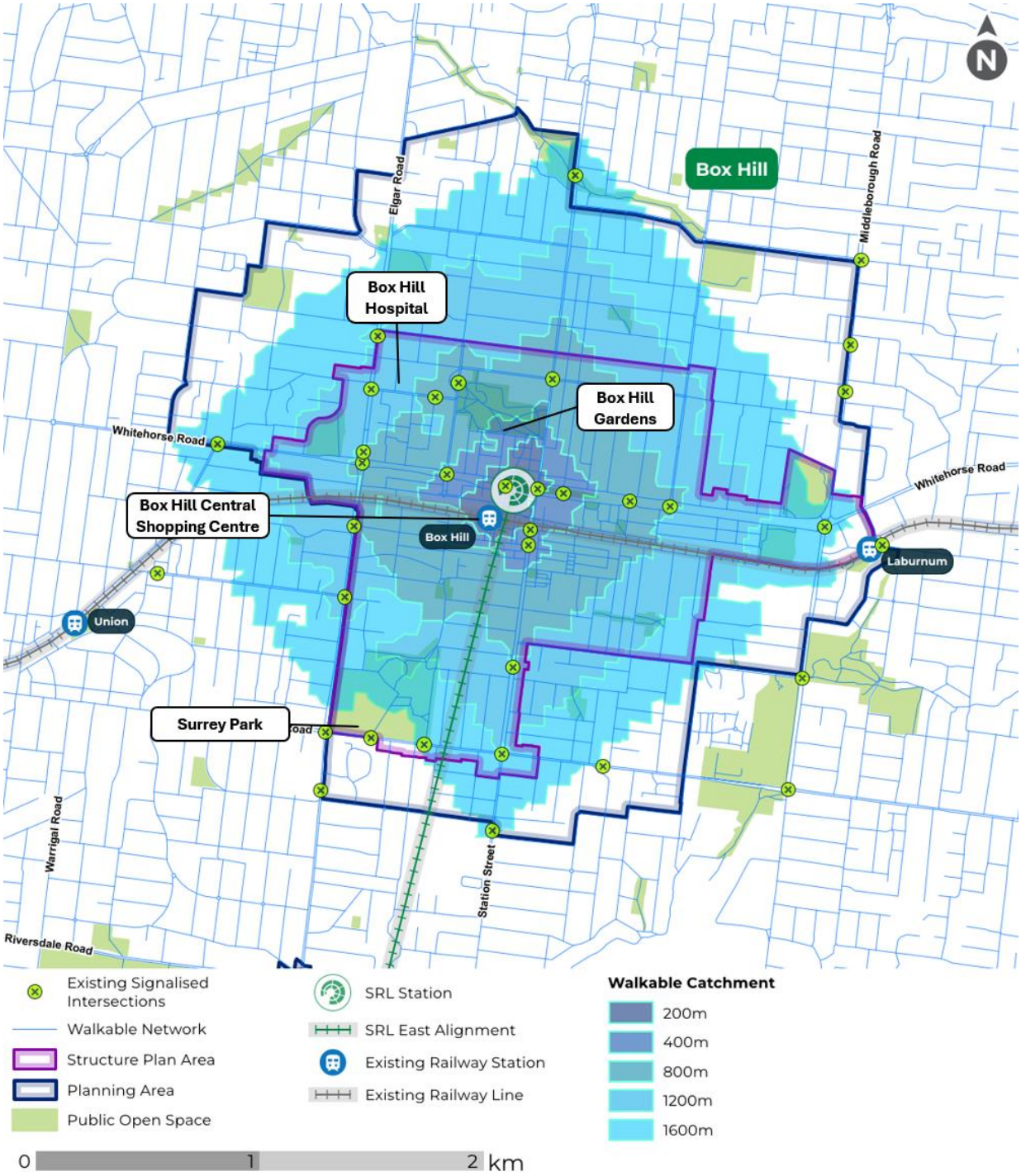


FIGURE 2.9 WALKING CATCHMENT AROUND THE SRL STATION AT BOX HILL (SOURCE: SRLA 2024)

The 800-metre walkable catchment from the SRL station at Box Hill shown in Figure 2.9 indicates the station is within a 10-minute walk to the key activity generators in Box Hill, particularly in the north, south and east including Box Hill Central Shopping Centre, Box Hill Gardens and Box Hill Hospital. The 800-metre walkable catchment does not cover the area directly south-west of the SRL station at Box Hill (and west of Thurston Street). This is due to limited medium to large urban block sizes such as the Old Box Hill Brickworks that limit connections to the west. The 1600-metre walkable (20-minute walk) catchment generally covers the entire Structure Plan Area.

Comfortable and safe walking journeys are catered for in Box Hill by Shared Zones (on Main Street and Market Street and Box Hill Central Shopping Centre) and along shared trails such as Box Hill to Ringwood Shared Use Path and Box Hill Gardens. Pedestrianisation of Main Street and Market Street creates a safe walking opportunity in a busy area, allowing comfortable access to destinations such as Box Hill Central Shopping Centre, the existing Box Hill Station, shops and services. Similarly, Carrington Road, between Thurston Street and Station Street, offers a safe walking environment despite the presence of cars with wide footpaths, a narrow, one-way carriageway and low vehicle speeds. Examples shown in Figure 2.10 and Figure 2.11 show areas where pedestrian amenity is high compared to the rest of Box Hill.

FIGURE 2.10 BOX HILL GARDENS FOOTPATH (SOURCE: SRLA 2022)

FIGURE 2.11 MAIN STREET, BOX HILL PEDESTRIAN MALL (SOURCE: SRLA 2022)

The pedestrianised Market Street facilitates the highest pedestrian movement in Box Hill, with Saturday afternoons being the busiest period.

Pedestrian movement volumes along key roads recorded at midblock locations in 2023 for Box Hill are presented in Table 2.1. These key roads are high volume pedestrian streets around Box Hill Central, with peak times corresponding to the surrounding land use attractions including restaurants, cafes and entertainment.

TABLE 2.1 EXISTING PEDESTRIAN MOVEMENT VOLUMES ALONG KEY ROADS IN BOX HILL (SOURCE: SRLA, 2023)

STREET	WEEKDAY PEAK 15:00 – 16:00	WEEKEND PEAK 13:00 – 14:00
Market Street	1150	1310
Main Street	585	560
Station Street (South of Whitehorse Road)	420	910
Carrington Street (between Thurston Street and Station Street)	440	820

WALKING CHALLENGES

The walking challenges in the Structure Plan Area are summarised and shown in Figure 2.12.

Location-specific walking challenges:

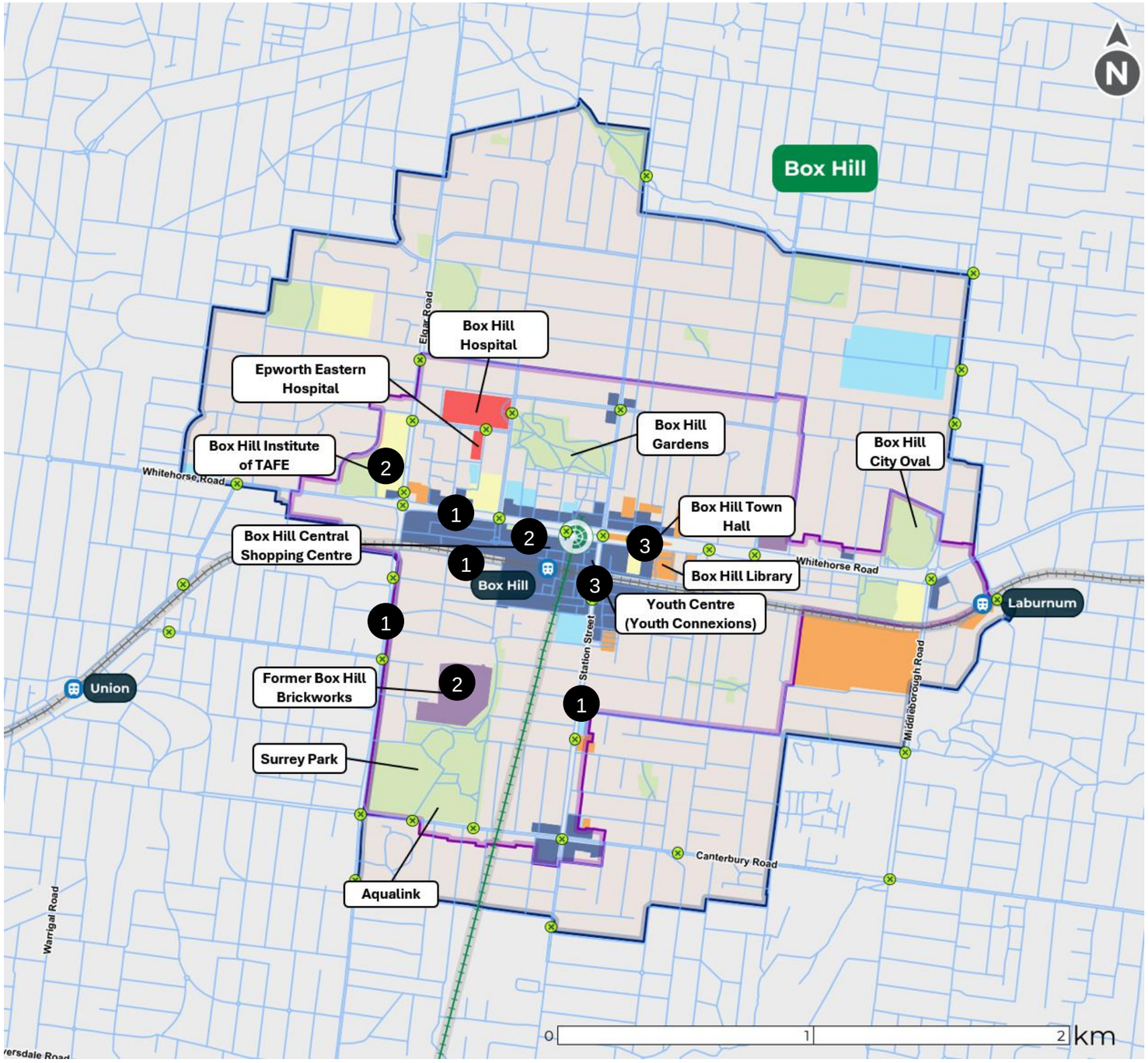
1. The pedestrian walking catchment is interrupted by barriers contributing to a disconnected walking environment. This includes highly trafficked roads (such as Whitehorse Road, Elgar Road, and Station Street) and the Belgrave / Lilydale Line, which have limited crossing opportunities. Similarly, major arterial roads such as Whitehorse Road are generally prioritised for vehicles at signalised crossings / intersections, contributing to pedestrian delay.

2. Medium to large block sizes do not always provide suitable permeability in Box Hill, while cul-de-sacs in the residential area can restrict active transport connections across Box Hill. This creates relatively long detours for pedestrians, reducing permeability and accessibility throughout Box Hill. Examples of medium to large size block locations include Box Hill Central Shopping Centre, Box Hill Institute of TAFE and Old Box Hill Brickworks.

3. Whitehorse Road and Station Street are high incident areas for pedestrian crashes, particularly along Whitehorse Road adjacent to Nelson Road and along Station Street adjacent to Main Street.

Structure Plan Area walking challenges:

- Limited public spaces and poor pedestrian facilities (such as narrow footpaths and poor street lighting) on residential streets outside the centre of Box Hill create a low amenity walking environment, reducing the walking experience through and within Box Hill.



Existing Signalised Intersections
SRL Station
Existing Railway Station
Walkable Network
Structure Plan Area
Planning Area
SRL East Alignment
Existing Railway Line

Existing Land Use

- Health/ Medical
- Residential
- Educational
- Industrial/ Mixed Use
- Commercial
- Open Space
- Public Use
- Other

FIGURE 2.12 WALKING CHALLENGES IN THE BOX HILL STRUCTURE PLAN AREA

2.2.2 CYCLING, INCLUDING MICROMOBILITY

Cycling and micro-mobility in this section refers to bicycles, scooters and skateboards, including shared and/or electric modes. E-bikes and e-scooters (share schemes and private ownership) limited to a maximum speed of 25 km/h are currently permitted on public low-speed roads, shared use paths, bike paths and on-road lanes in Victoria.

Figure 2.13 shows the existing cycling infrastructure and Strategic Cycling Corridors (SCCs) in Glen Waverley. SCCs form part of the DTP aspirational cycling network that aims to support commuter trips and link to destinations that have metropolitan and regional significance such as employment and activity centres. These corridors can be on and off road, on municipal and state roads and should be designed to provide a safe, lower-stress cycling for transport experience. However, not all SCCs currently have adequate cycling infrastructure to support a safe and low-stress cycling environment.

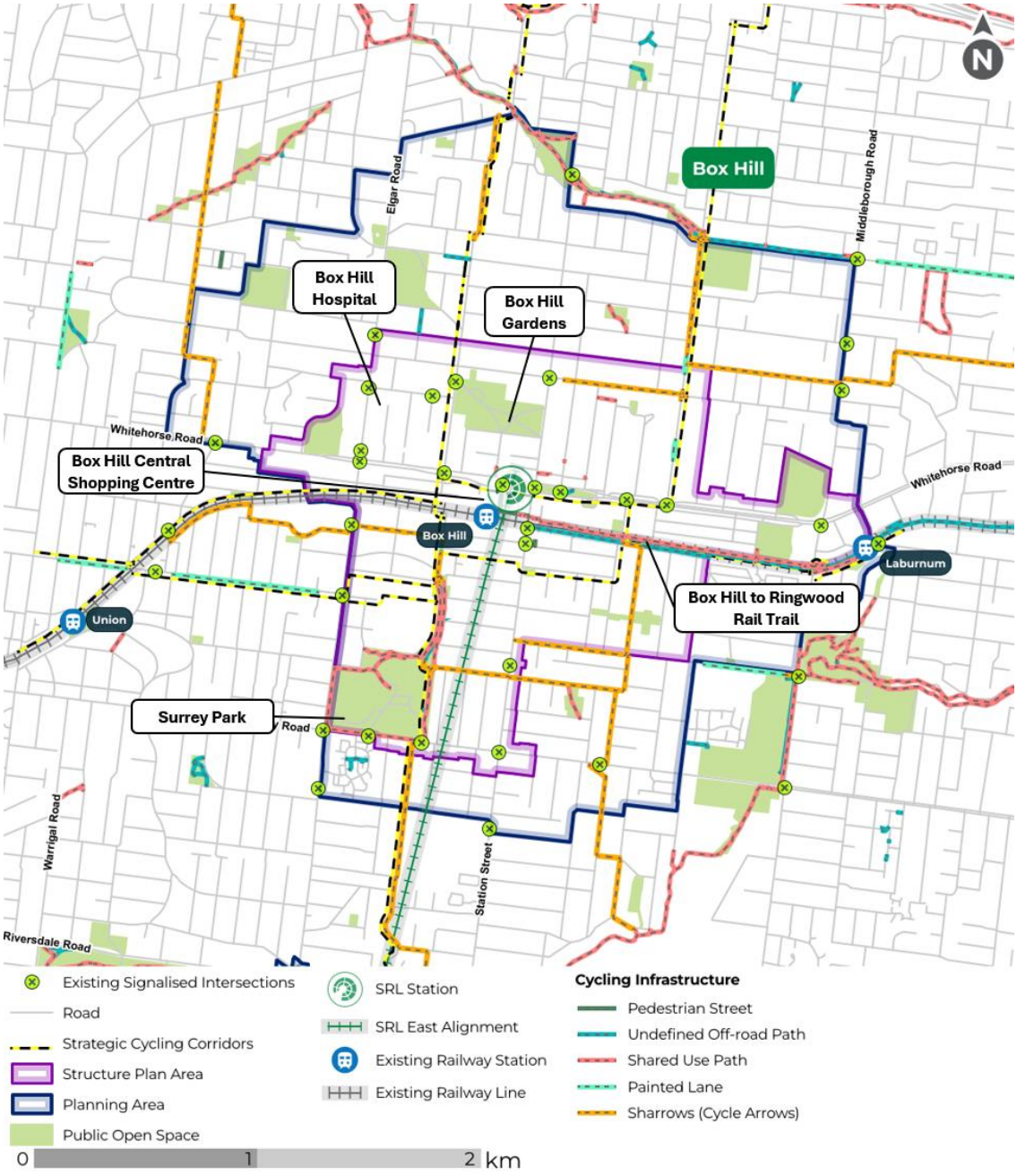


FIGURE 2.13 BOX HILL CYCLING NETWORK (SOURCE: SRLA 2024)

The quality and types of cycling infrastructure available in Box Hill varies. Despite the SCC network shown in Figure 2.13, there are few high-quality, high-priority accessible cycling routes in Box Hill.

The Box Hill to Ringwood Rail Trail is around 10 kilometres in length and runs along the Belgrave / Lilydale Line. The east-west trail is a combination of off-road shared use paths and on-road cycle routes, connecting the suburbs of Box Hill and Ringwood. The off-road shared use path of the trail begins at Bank Street (to the west of Station Street) and runs to the east towards Laburnum Station and beyond the Planning Area.

Outside of the Box Hill to Ringwood Rail Trail, there are some sharrows and delineated cycle lanes provided in Box Hill and mainly provided on streets south of Whitehorse Road. For example, Thurston Street has delineated cycle lanes between Carrington Road and Cambridge Road and sharrows for the remainder of the street. The on-road cycle route along Thurston Street connects into a shared use path that runs along Surrey Drive parallel to the Old Box Hill Brickworks.

The remainder of the road network in Box Hill has no or limited cycling infrastructure.

CYCLING AND MICROMOBILITY CHALLENGES

Given the limited cycling infrastructure in Box Hill, there is opportunity to enhance the cycling and micromobility network for improved safety and better access to key destinations in the Box Hill Structure Plan Area. The cycling and micromobility challenges in the Structure Plan Area are summarised and shown in Figure 2.14.

Location-specific cycling challenges:

1. The lack of dedicated and continuous cycling infrastructure in Box Hill reduces cycling attractiveness and safety. It also channels cyclists onto heavily trafficked roads with no cycling infrastructure such as Elgar Road, Nelson Road and Station Street.

2. Cycling is interrupted by barriers contributing to a disconnected cycling environment. This includes medium to large size urban blocks as well as highly trafficked roads (such as Whitehorse Road, Elgar Road, and Station Street) and the Belgrave / Lilydale Line, which have limited crossing opportunities.

3. The Box Hill to Ringwood Rail Trail shared use path ends prior to Station Street, requiring cyclists accessing Main Street and Box Hill Central Shopping Centre to share the road with traffic via Bank Street or Rutland Street and either cross Station Street at traffic signals or dismount and use the pedestrian underpass.

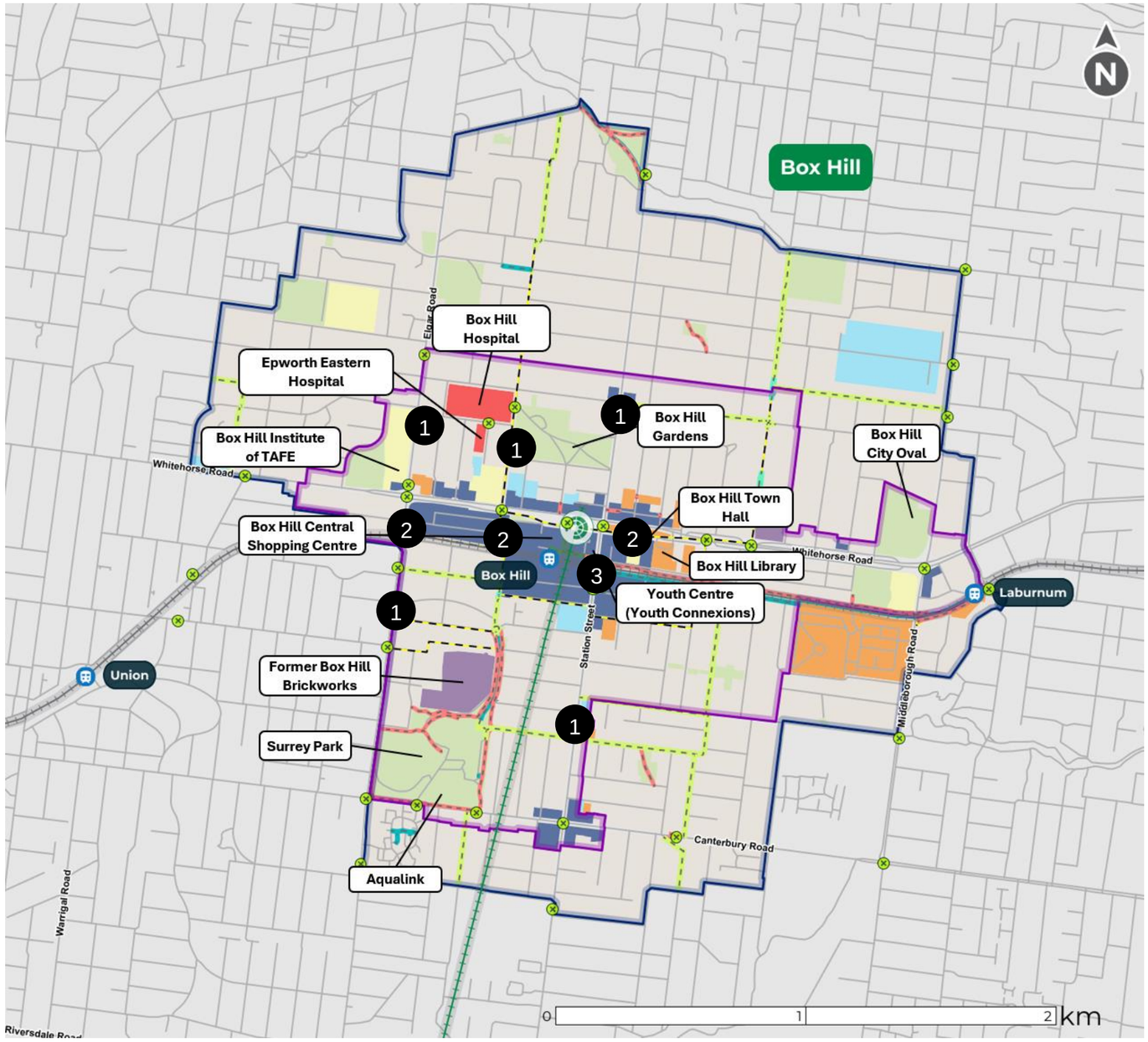
Structure Plan Area cycling challenges:

- Secure bicycle storage facilities are limited. End-of trip facilities including secure parking, showers and lockers are provided only in newer developments and are not typically accessible to the public. This does not support the continued uptake of micromobility as an emerging transport mode.

- Wayfinding for cyclists and micromobility users is limited to basic measures and lacks intuitive customer focused messaging such as inconsistent cycling line marking and directions to parking.

- Informal parking by food delivery services is increasing with limited space allocated to e-bikes commonly used by these services.

- Use of default 50 km/h speed limits is not consistent with ‘quiet street’ cycle facilities on local roads.



Existing Signalised Intersections
SRL Station
Existing Railway Station
Road
Structure Plan Area
Planning Area
SRL East Alignment
Existing Railway Line

Cycling Infrastructure
Pedestrian Street
Undefined Off-road Path
Shared Use Path
Painted Lane
Sharrows (Cycle Arrows)

Existing Land Use
Health/ Medical
Residential
Educational
Industrial/ Mixed Use
Commercial
Open Space
Public Use
Other

FIGURE 2.14 CYCLING CHALLENGES IN THE BOX HILL STRUCTURE PLAN AREA

2.2.3 PUBLIC TRANSPORT

Box Hill is currently served by rail, tram and bus services. The network functions to a relatively high-frequency timetable throughout the day with all services converging at Box Hill Central Shopping Centre where passengers can interchange between modes to access a range of key places of interests, jobs and services.

The existing Box Hill Station is located in Box Hill Central Shopping Centre where services run to and from Melbourne CBD along the Belgrave / Lilydale Line with both express and stopping-all-stations service patterns. This section of line runs parallel to Whitehorse Road and connects with Laburnum Station which is also in the Box Hill Planning Area.

Tram route 109 operates along Whitehorse Road and runs to and from Port Melbourne with A and C class trams. The terminus is currently located in front of Box Hill Central Shopping Centre along Whitehorse Road (and near Market Street).

There are also multiple bus routes that provide extensive coverage throughout Box Hill. This enables highly accessible first and last mile travel options for passengers with buses running along key north, south, east and west corridors including Station Street, Elgar Road, Whitehorse Road and Canterbury Road. Passengers can interchange between bus routes, train services and the 109 tram from the Box Hill bus interchange located at Box Hill Central Shopping Centre.

Figure 2.15 shows the extent of the current Principal Public Transport Network (PPTN) coverage in Box Hill which covers around 83 per cent of the Structure Plan Area. This network identifies high-quality public transport service routes and the land that falls within a 400-metre radius of the route or railway station. It should be noted that the PPTN coverage, as currently outlined in the planning scheme was updated in 2018 and therefore does not include SRL East.

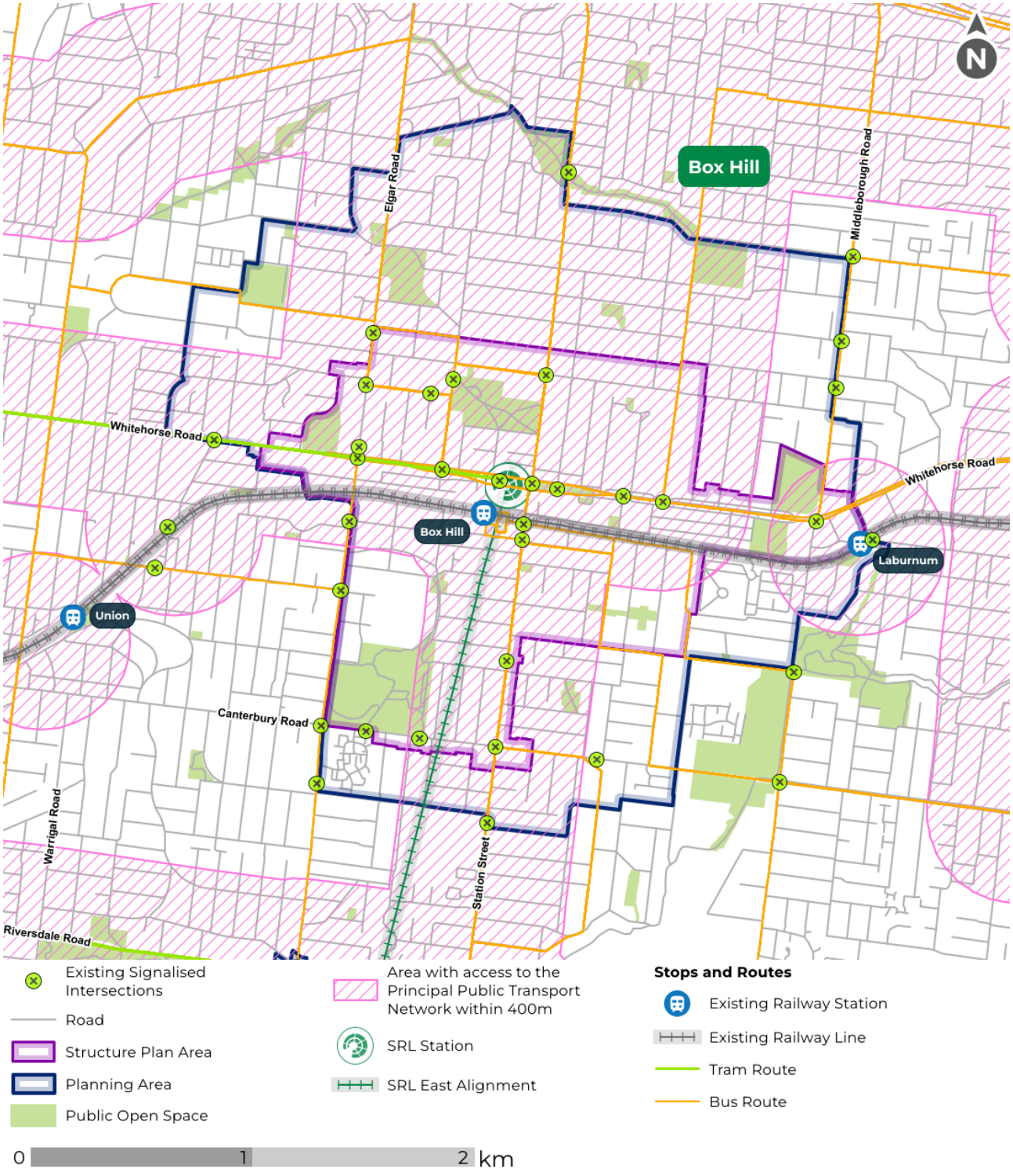


FIGURE 2.15 PUBLIC TRANSPORT NETWORK AND PRINCIPAL PUBLIC TRANSPORT NETWORK COVERAGE (SRLA 2024)

RAIL NETWORK

The existing Box Hill Station is currently serviced by the Belgrave / Lilydale Line and is located on a triplicated section of track which provides access for passengers to express services in the citybound and outbound directions. Services travelling towards Belgrave and Lilydale have both all-station stopping and express services. Weekday services run on turn-up-and-go frequencies in the peak. Belgrave services run every 5 to 15 minutes in the interpeak, and Lilydale services run approximately every 15 minutes in the interpeak. Weekend services for both lines run every 20 to 30 minutes in the morning and night, and every 10 minutes during the day.

Union Station is located on the southern side of Mont Albert Road just outside Box Hill, around 2 kilometres from the SRL Station at Box Hill.

Average peak period station entries are presented in Figure 2.16. The existing Box Hill Station currently caters for around 2450 boardings in the AM peak. Patronage has not returned to pre-Covid levels, however, has been increasing year on year since 2020-21.

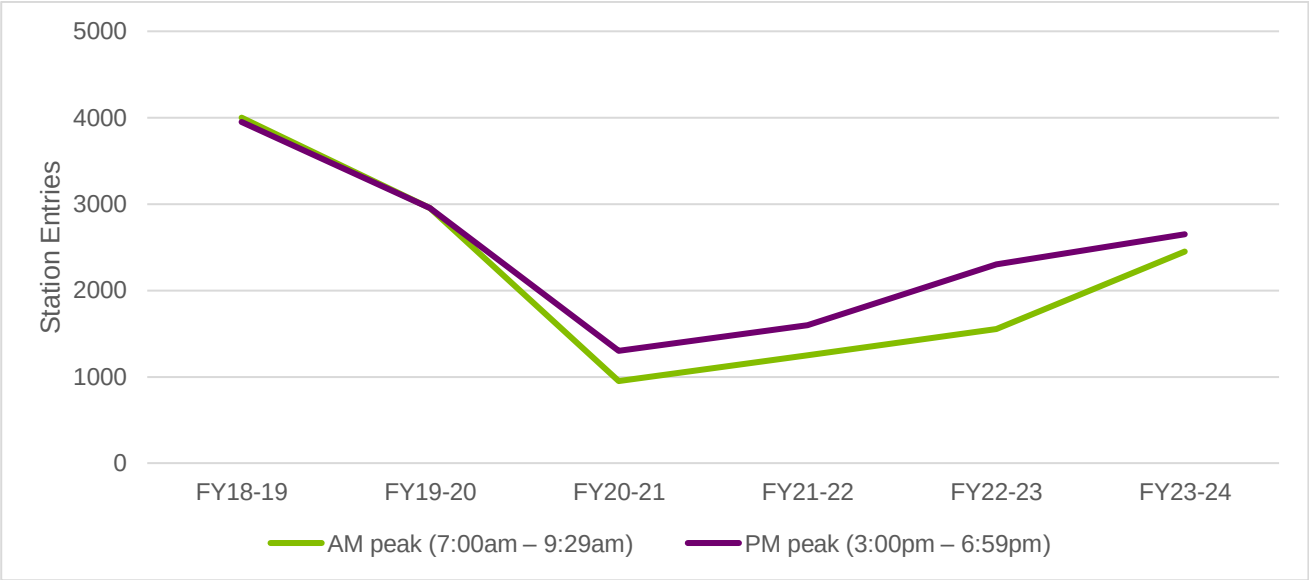


FIGURE 2.16 BOX HILL STATION PEAK PERIOD STATION ENTRIES (SOURCE: DATA VIC)

Modelled peak period boardings and alightings by access mode are summarised in Table 2.2. Most passengers arrive and depart Box Hill Station by bus or on foot. Across the AM peak, 35 per cent arrive by bus, 35 per cent walk all the way to the station, 30 per cent arrive by car, and a minimal per cent of trips are by cycling.

TABLE 2.2 MODELLED PEAK PERIOD BOARDINGS AND ALIGHTINGS (AND ACCESS MODES), 2018 (SOURCE: VITM)

STATION		AM PEAK (7 – 9 AM)				PM PEAK (3 – 6 PM)			
		WALK	DRIVE	BUS	TOTAL	WALK	DRIVE	BUS	TOTAL
Box Hill	Boardings	1200	1000	1200	3400	1600	200	2100	3900
	Alightings	1200	-	1600	2800	1400	1400	1400	4200

The existing Box Hill Station is accessed via the ground floor of Box Hill Central Shopping Centre, with entrances on Main Street and Carrington Road. Box Hill Station does not have a stand-alone entrance from the street. The station precinct includes a bus interchange, tram terminus and at-grade car parking that can be accessed via Carrington Road, Whitehorse Road, Station Street and Prospect Street.

BUS NETWORK

The Box Hill bus interchange serves as a common interchange point, servicing 17 bus routes. Box Hill also has a SmartBus (route 302), a SkyBus (routes 281 and 765) and a night bus (route 207) as shown on Figure 2.17. There is one bus route (V/Line service) that does not use the Box Hill bus interchange and instead stops on Whitehorse Road. The bus network provides access between residential areas, rail stations, activity centres, industrial areas and educational establishments such as Box Hill Hospital, Box Hill Central Shopping Centre and the existing Box Hill Station.

The routes primarily follow the grid of arterial roads, with several more circuitous neighbourhood routes, and are centred around the existing Box Hill Station, Box Hill Central Shopping Centre and Box Hill Hospital. Peak service frequencies range from turn-up-and-go, especially in the centre of Box Hill, to every 10 to 20 minutes outside the core. Station Street, Whitehorse Road and Elgar Road form key bus access routes to the Box Hill bus interchange.

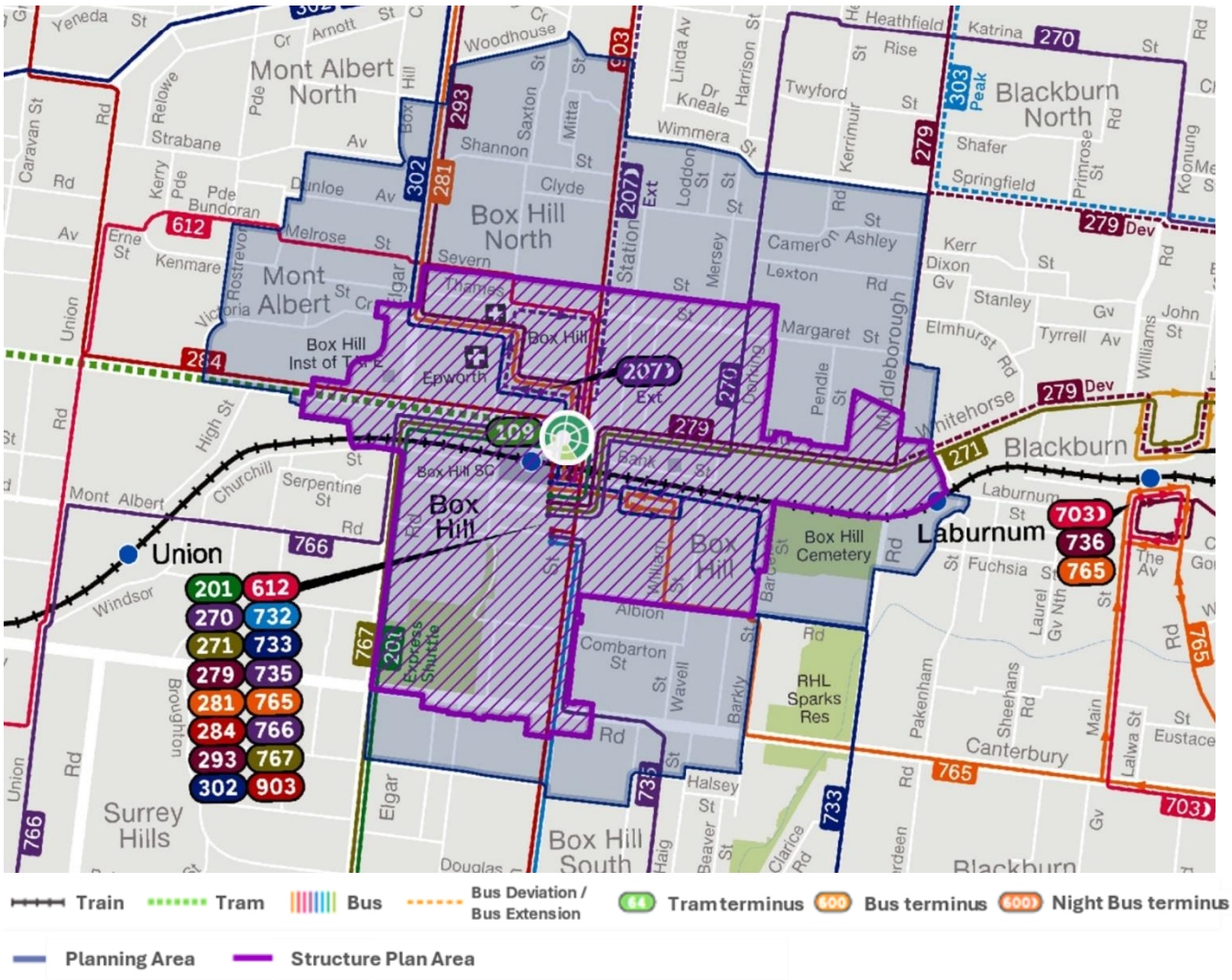


FIGURE 2.17 BUS NETWORK IN THE BOX HILL (BASE MAP SOURCE: PTV 2023)

The Box Hill bus interchange, shown in Figure 2.18, is located on the top floor of Box Hill Central Shopping Centre with bus movements to/from the interchange via Station Street (entry and exit) and Carrington Road (exit only). The bus interchange provides passenger connection through Box Hill Central Shopping Centre to the station platforms via escalators or lifts. The bus interchange is still accessible when the shopping centre is closed with interchanging between bus and train relatively quick and convenient. External passenger access from the interchange to Station Street is via the Market Street pedestrian mall.

FIGURE 2.18 BOX HILL BUS INTERCHANGE

Table 2.3 lists the busiest bus stops in the Box Hill Structure Plan Area. The Box Hill bus interchange is the busiest bus stop in Box Hill Structure Plan Area with a daily average patronage of around 4550 boardings. The Whitehorse Road and Station Street stops attract the highest demand outside of the interchange.

TABLE 2.3 BUS STOP PATRONAGE STATISTICS (SOURCE: TABLEAU PUBLIC - 2018-19 BUS STOP PATRONAGE MELBOURNE)

BUS STOP LOCATION	AVERAGE WEEKDAY BOARDINGS
Box Hill Station Interchange	4550
Station Street / Harrow Street	681
Whitehorse Road / Station Street	276
Whitehorse Road / Watts Street	393
Whitehorse Road / Nelson Road	168
Nelson Road / Box Hill TAFE	279
Rutland Road / Williams Street	268

TRAM NETWORK

Tram route 109 runs along the centre median of Whitehorse Road, terminating on Whitehorse Road to the west of Station Street. Route 109 operates between Box Hill and Port Melbourne via the CBD, with multiple stops located between these points. Peak service frequencies range from turn-up-and-go on weekdays, to every 20 to 30 minutes for early and late services, every 10 to 25 minutes on Saturdays and every 30 minutes on Sundays. The tram terminus is located around 200 metres from the existing Box Hill Station. To access the tram terminus, passengers must cross one of the 3-lane carriageways of Whitehorse Road, where priority is given to vehicle movements at the signalised crossings / intersections adjacent to Market Street and Station Street.

Similarly, the tram terminus is around 180 metres from the Box Hill bus interchange located in Box Hill Central Shopping Centre. Passengers from the bus interchange are required to take the escalators or lifts to the ground floor of the shopping centre and exit via Market Street to the tram terminus on Whitehorse Road.

PUBLIC TRANSPORT CHALLENGES

While public transport coverage is comprehensive in Box Hill, there is opportunity in enhance access to/from the existing Box Hill Station, bus interchange and tram terminus. The public transport challenges in the Structure Plan Area are summarised and shown Figure 2.19.

Location-specific public transport challenges:

1. The experience interchanging between modes is poor with aging infrastructure. The existing interchanges do not have the capacity to accommodate the growth of Box Hill.

2. The wayfinding from the tram terminal and the Box Hill bus interchange is unclear and passenger lifts from the bus interchange is not available late at night,[14] contributing to a poor interchange experience.

3. There is competing road space with private vehicles in the approach from Station Street and at the entrance to the station, adding delay to bus movements.

Structure Plan Area public transport challenges:

- Bus connectivity through Box Hill is poor, with some indirect bus routes or inconvenient transfers within the bus interchange as well as limited bus services north of Box Hill.

- Bus service frequencies vary considerably and are insufficient to meet future needs, with low service frequencies during off-peak periods and away from the centre of Box Hill.

- There is limited infrastructure for bus priority along roads where bus and traffic volumes are high, resulting in higher journey times.

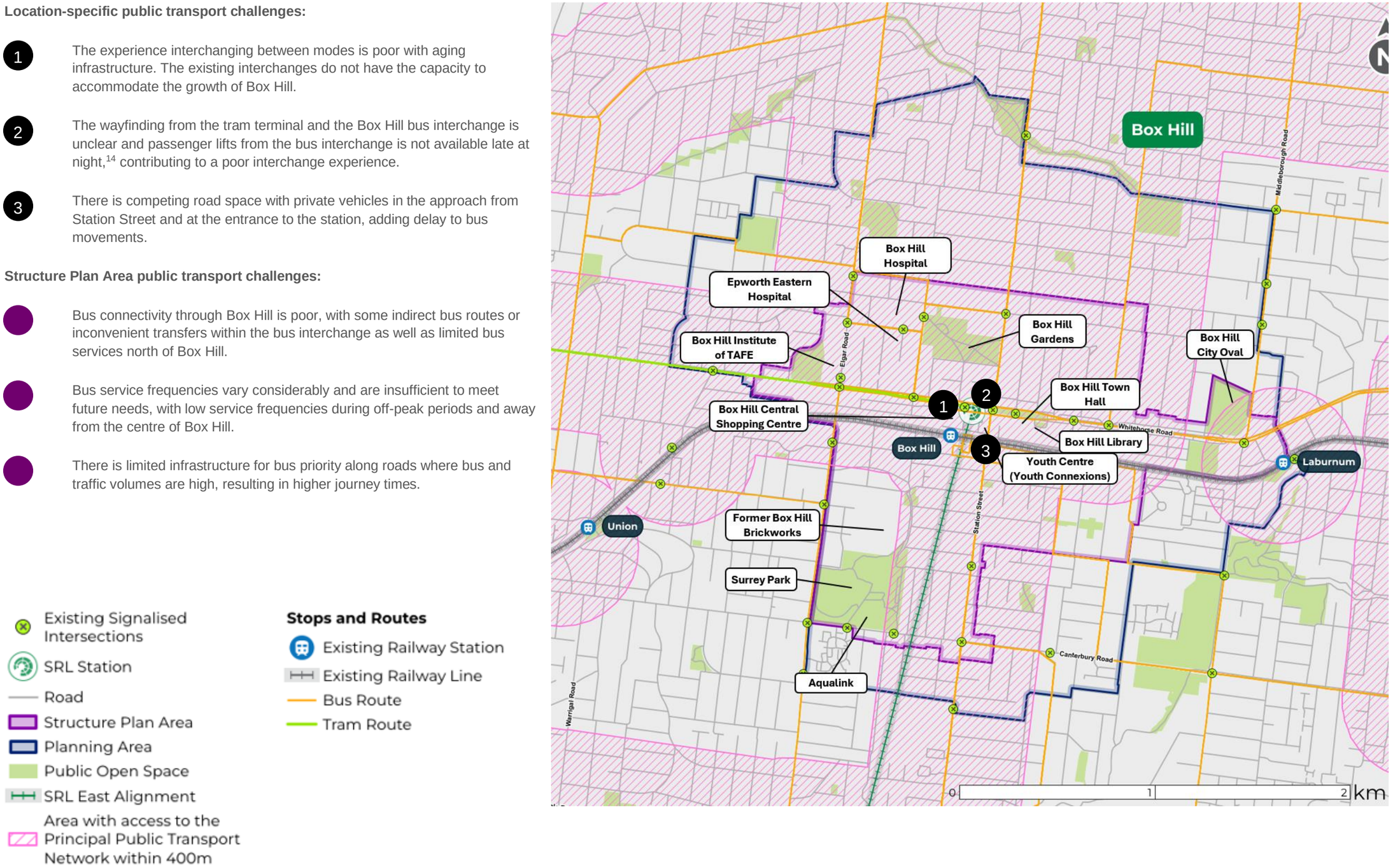


FIGURE 2.19 PUBLIC TRANSPORT CHALLENGES IN THE BOX HILL STRUCTURE PLAN AREA

[14] *Metro Trains Melbourne, 2021, Box Hill Station – Supporting information for virtual tours, <https://ds12k1658w1f2.cloudfront.net/wp-content/uploads/2021/06/Box-Hill-Station-DAT-TOC-version-updated-Jan-21.docx.pdf>*

2.2.4 PRIVATE VEHICLES

ROAD NETWORK CHARACTERISTICS

Vehicle access throughout Box Hill is provided by multi-lane arterial roads and an extensive network of connector and local streets. The road network hierarchy and existing signalised intersections in Box Hill is shown in Figure 2.20.

Whitehorse Road and Canterbury Road are the key east west arterial routes. Elgar Road, Station Street and Middleborough Road are the main north south routes. These provide access to key destinations such as the existing Box Hill Station, Box Hill Central Shopping Centre, Box Hill Hospital, Box Hill Cemetery, and educational establishments including Box Hill TAFE and Box Hill High School.

A high level of priority is provided to vehicles, with Whitehorse Road up to five lanes wide across both directions at intersections.[15] On-street parking is widely available throughout Box Hill on local streets, providing convenient vehicle access.

Elgar Road, Station Street and Middleborough Road connect through to the Eastern Freeway and Doncaster to the north, and Monash, Monash Freeway, significant commercial and light industrial precincts between Notting Hill and Springvale and ultimately Mornington Peninsula Freeway to the south. Whitehorse Road and Canterbury Road provide access to the inner eastern suburbs to the west, and Knox and the Dandenong Ranges recreational areas to the east.

The Eastern Freeway, to the north of the Box Hill Planning Area, is the primary freight route in the area and is an alternative to Whitehorse Road and Canterbury Road. No Principal Freight Network (PFN) routes pass through the Planning Area. However, the arterial roads form part of the B-Double Heavy Vehicle network catering for freight vehicles.

[15] *SRL rail project scope will change this in the centre of Box Hill*

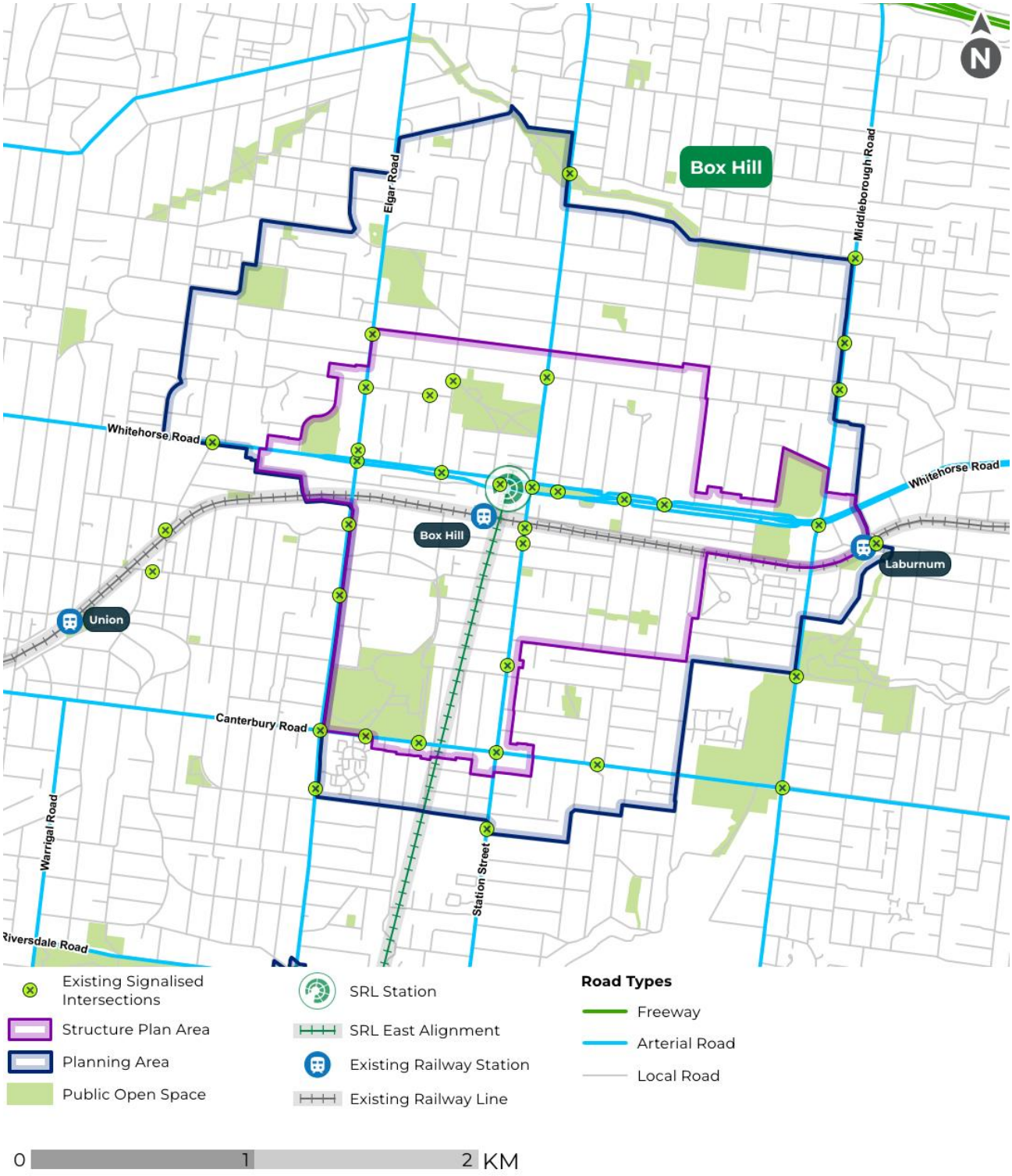


FIGURE 2.20 ROAD NETWORK (SRLA 2024)

ROAD NETWORK CONDITIONS

The traffic volumes for key routes in Box Hill are outlined in Table 2.4.

In Box Hill, freight traffic is relatively low with heavy vehicles making up 3 to 6 per cent of all vehicle volumes on the arterials per direction in the Planning Area. Heavy vehicles make up to 3 to 5 per cent of the total traffic volume on Station Street and Whitehorse Road per direction, as these form key freight delivery route to the Box Hill Central Shopping Centre loading docks.[16]

TABLE 2.4 TRAFFIC VOLUMES (SOURCE: VICROADS OPEN DATA 2023)

ROAD	CLASSIFICATION	SPEED LIMIT	DIRECTION	LANES	AM PEAK 2023 [VEH/H]	PM PEAK 2023 [VEH/H]	AADT	% AADT HEAVY VEHICLE
Whitehorse Road	Arterial Highway	60 km/h	Eastbound:	2	800	5000	8000	5%
			Westbound:	2	800	1200	11,000	5%
Canterbury Road	Arterial Other	60 km/h	Eastbound:	3	1400	600	11,000	6%
			Westbound:	3	900	1400	15,000	6%
Elgar Road	Arterial Other	60 km/h	Southbound:	2	1300	1100	15,000	6%
			Northbound:	2	N/A	N/A	14,000	6%
Station Street	Arterial Other	40 km/h	Southbound:	2	1000	800	11,000	3%
			Northbound:	2	600	1000	11,000	3%
Middleborough Road	Arterial Other	60 km/h	Southbound:	2	900	700	10,000	3%
			Northbound:	2	800	1300	13,000	3%

Notes:

- AM Peak, PM Peak and AADT: A range of traffic volumes have been provided where traffic volumes vary across the road/corridor (where available). Data was last updated on DTP Open Data website on 4/5/2023 at the time of data retrieval but some data may be historic and include traffic conditions during COVID-19 lockdowns.
- 'N/A' – no data available at time of extraction
- Municipal / Local Roads are council owned, supporting slower speeds and lower traffic volumes compared to arterial roads, freeways and highways.
- Arterial Highways and Arterials (other) have similar functions as both are designed for moderate to high traffic volumes. Arterial roads and highways are typically used for inter-suburban or inter-urban journeys, often linking to freeways. Arterial Highways often support more volumes of traffic with more lanes and higher speeds compared to Arterials (other).
- Freeways are designed to move large numbers of vehicles and freight at higher speeds than arterial roads and are strategic corridors connecting state significant regions.

Figure 2.21 and Figure 2.22 illustrate the road network conditions in the AM and PM peaks at a strategic level. VITM modelling of Box Hill indicated indicates that much of the local road network operates at an acceptable level of service, being either at or below a volume over capacity ratio (V/C) of 0.8. Major arterial roads, particularly along Station Street, Whitehorse Road, Middleborough Road and Canterbury Road have a volume to capacity ratio of greater than 0.85. This indicates these roads are nearing capacity. In addition, Elgar Road is nearing capacity particularly north and south of Whitehorse Road. However, it should be noted that VITM is coarse and strategic in nature and the signalisation or any detailed operational parameters of intersections that would ordinarily serve to manage traffic flows are not explicitly coded in the model. As such, actual delays experienced along some roads may differ to what is shown here. The focus of the strategic model is to provide network context.

[16] *VicRoads Open Data, 2023*

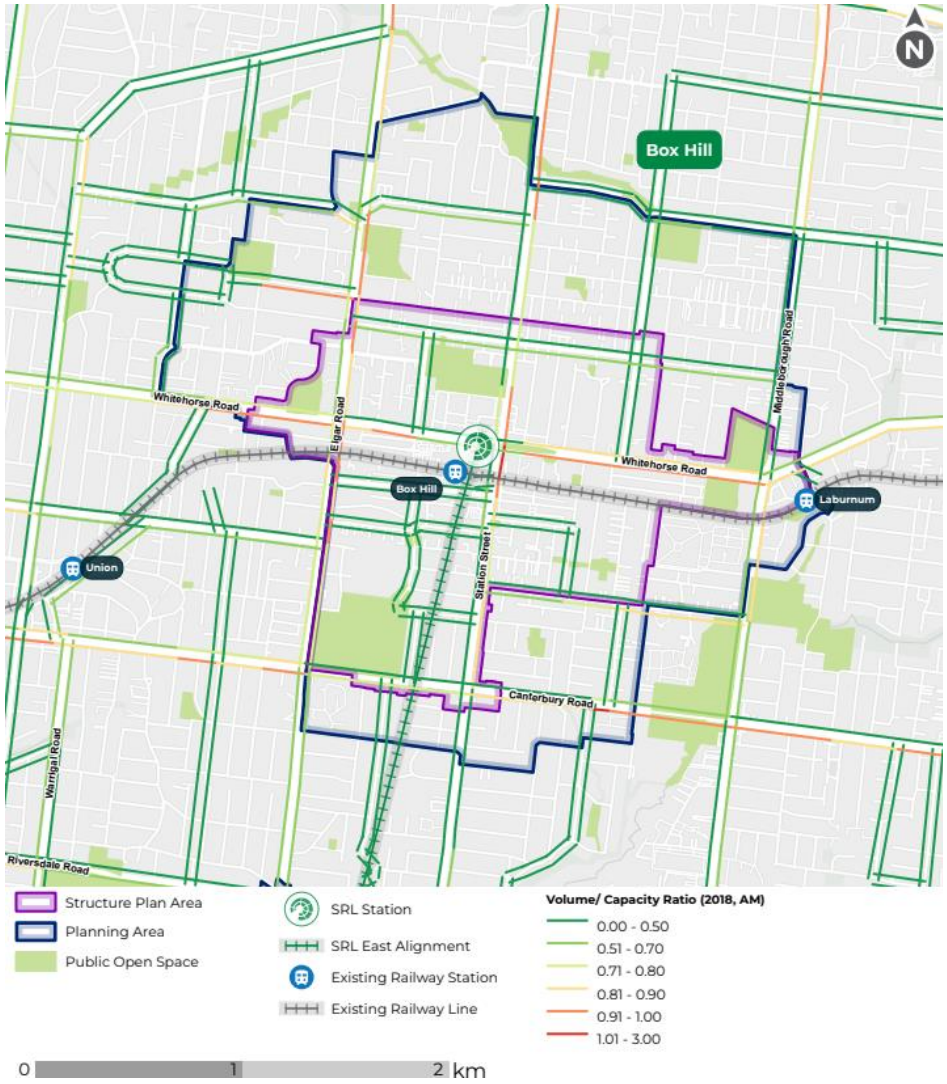


FIGURE 2.21 2018 AM PEAK VOLUME CAPACITY RATIO (7–9 AM) (SOURCE: VITM)

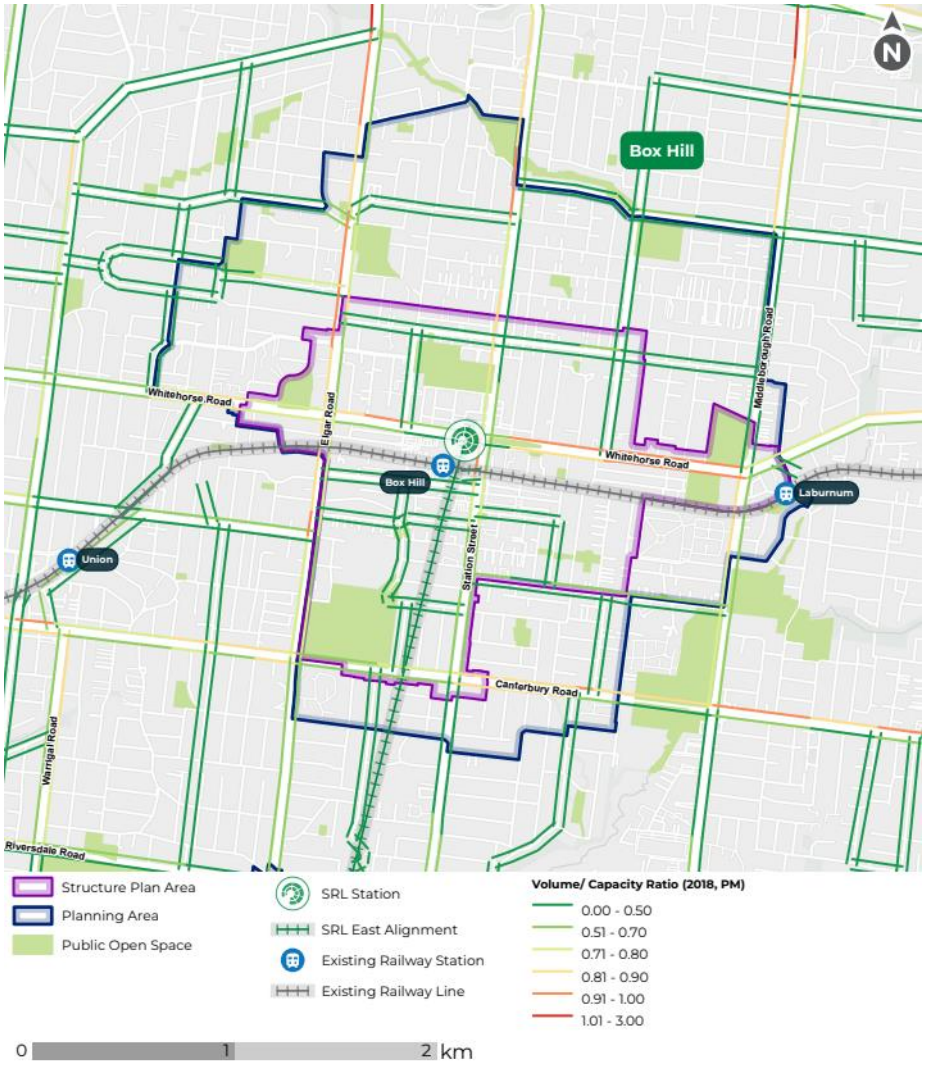


FIGURE 2.22 2018 PM PEAK VOLUME CAPACITY RATIO (3–6 PM) (SOURCE: VITM)

ROAD SAFETY

Crash statistics from January 2019 to January 2024 there were 159 crashes in the Box Hill Structure Plan Area. Around 24 per cent of the accidents resulted in severe injuries or fatality to road users, with the rest classified as 'other injury' accidents. There was one fatal crash recorded at the corner of Hopetoun Parade and Thurston Street during this time.

Figure 2.23 shows the crash locations across the Structure Plan Area, where locations with a high crash density experienced more than 10 crashes, and low crash density locations are where less than five crashes occurred.

Pedestrians were involved in around 19 per cent of crashes, motorcycles were involved in around 15 per cent of crashes and heavy vehicles were involved in 2 per cent of crashes.

Rear-end vehicles (vehicles in same lane) and right through collisions were the most common incidents, causing around 19 per cent and 12 per cent of the crashes respectively.

Crashes occurred 11 per cent more often at non-intersections compared to intersections and around 73 per cent of crashes occurred during the day. Intersections and road segments identified as accident hotspots are highlighted in Figure 2.23. The crash hot spots in Box Hill with the highest number of crashes and associated injury severity are listed in Table 2.5.

TABLE 2.5 CRASH HOT SPOT STATISTICS BETWEEN JANUARY 2019 – JANUARY 2024 (SOURCE: DATA VIC)

INTERSECTION / LOCATION	OTHER INJURY	SERIOUS INJURY	FATAL	TOTAL
Canterbury Road / Station Street	13	3	0	16
Canterbury Road / Elgar Road	14	4	0	18
Elgar Road / Whitehorse Road	14	2	0	16
Station Street / Whitehorse Road	5	3	0	8
Whitehorse Road / Middleborough Road	8	0	0	8

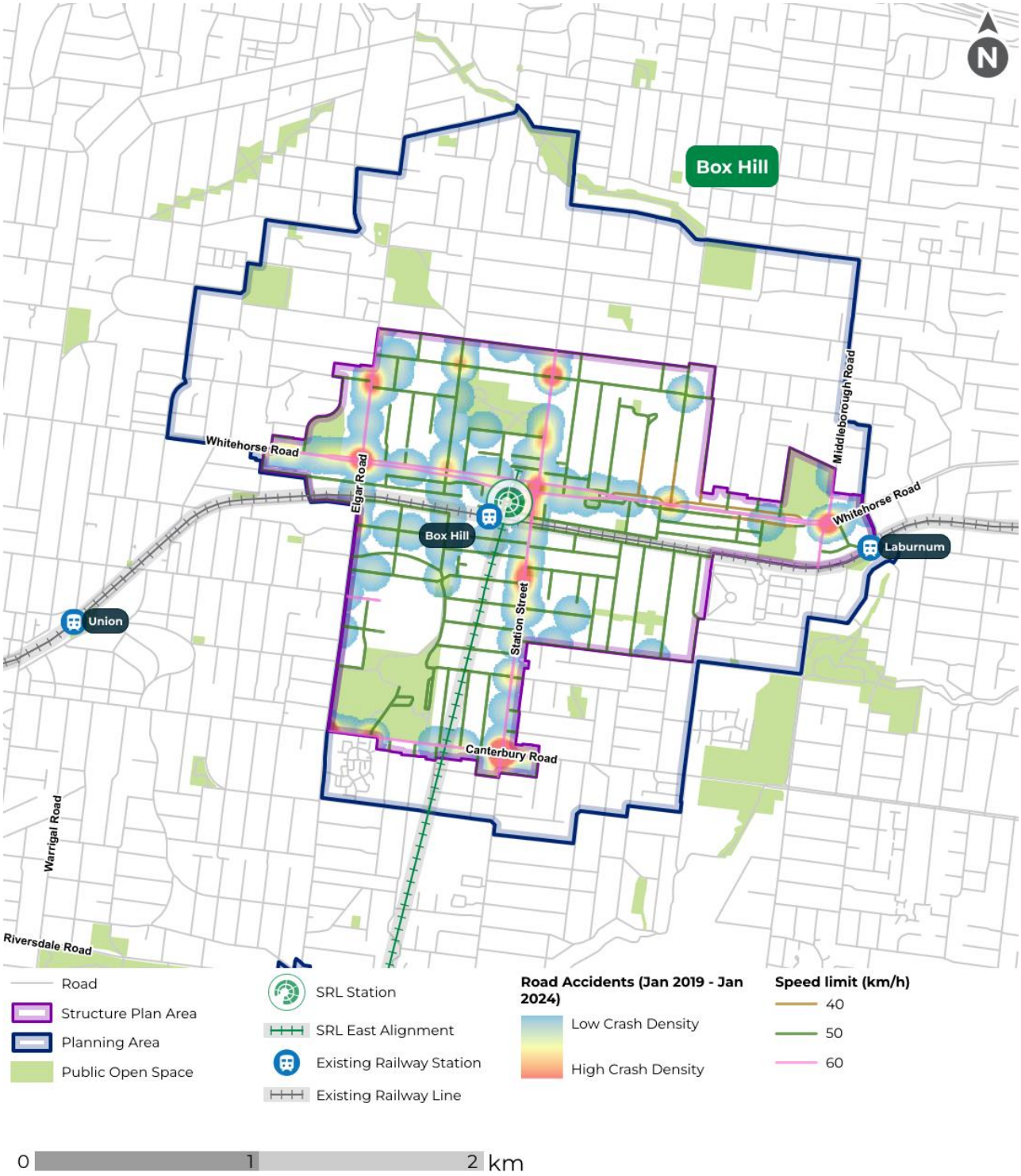


FIGURE 2.23 BOX HILL CRASH LOCATIONS AND CLUSTERS JANUARY 2018 – JUNE 2023 (SOURCE: DATA VIC 2023)

GENERAL TRAFFIC AND FREIGHT CHALLENGES

The general traffic and freight challenges in the Structure Plan Area are summarised and shown in Figure 2.24.

Location-specific general traffic and freight challenges:

1. There is heavy reliance on private vehicles for access within, to and through Box Hill due to the arterial road network that passes through it and the availability of car parks. This leads to a congested road network (particularly during the peak periods), impacting travel times and the performance of buses. It also places pressure on the local access roads and strategic routes such as Whitehorse Road, Station Street and Elgar Road.

2. The provision of on-street parking on strategic routes such as Station Street and Whitehorse Road reduces the road network capacity.

3. Box Hill caters for relatively high through traffic volumes particularly along Whitehorse Road and Station Street. This can contribute to congestion on the road network, particularly during the peak periods and impact on trips within Box Hill.

4. There is competition for the use of limited road space between transport modes and urban design outcomes.

   For example, on Station Street there is a challenge to balance the general traffic function whilst prioritising road space for other uses. Also in the hospital precinct, there is a challenge to maintain the traffic and emergency access, while catering for improved active transport.

Structure Plan general traffic and freight challenges:

- Increasing levels of congestion, particularly during the peak periods and complex multi-leg intersections increase the risk of collisions and impact the capacity and reliability of the road network.

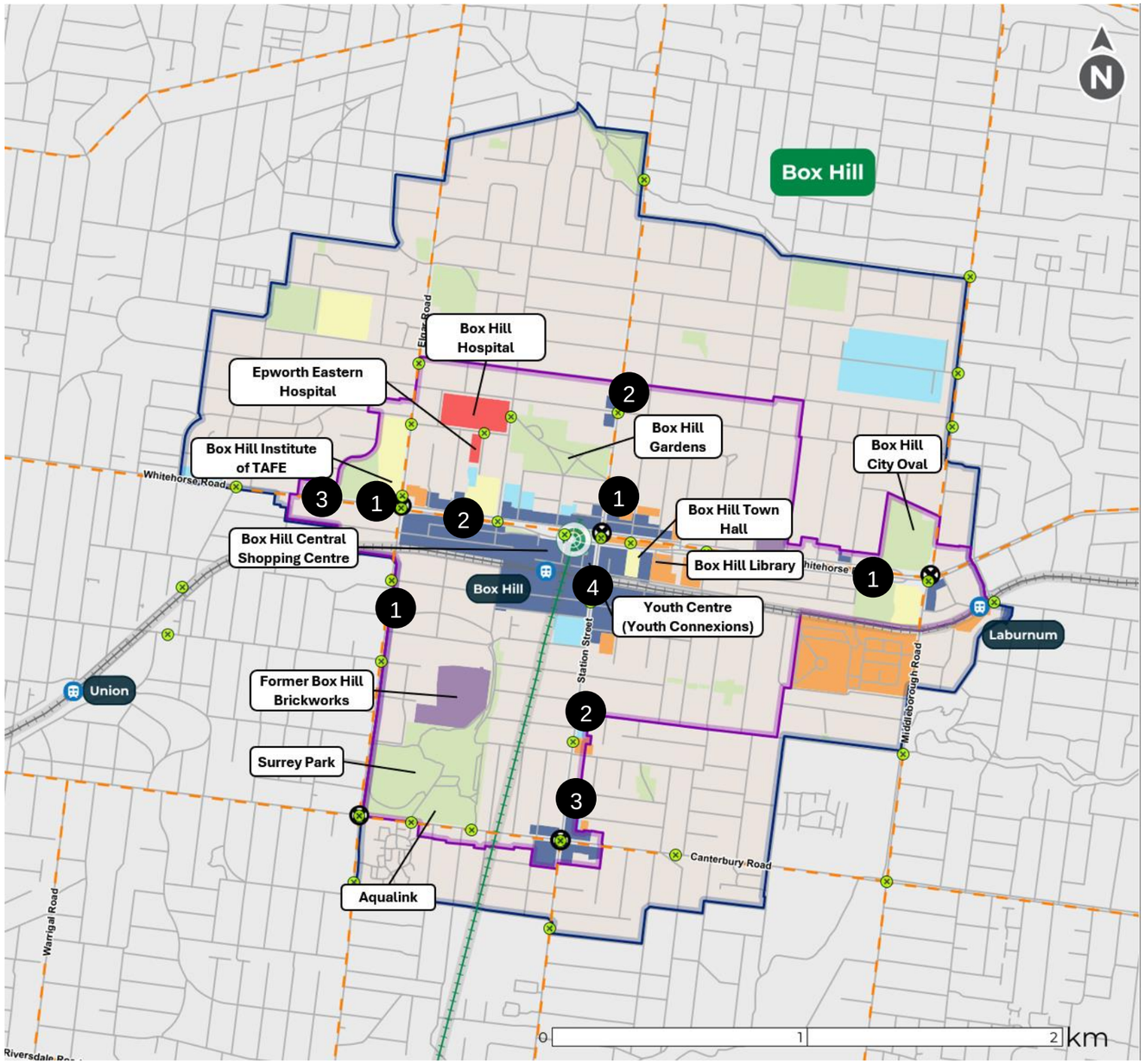


FIGURE 2.24 GENERAL TRAFFIC AND FREIGHT CHALLENGES IN THE BOX HILL STRUCTURE PLAN AREA

2.2.5 INTEGRATED PARKING

Car parking in the Box Hill Structure Plan Area is abundant with on and off-street parking, including multi-level parking facilities. Parking is generally controlled by some form of restriction such as various time limits, permit / commuter zones, loading zones, taxi zones or disabled parking.

OFF-STREET PARKING

There are approximately 6,560 off-street parking spaces in the Box Hill Structure Plan Area, as shown in Figure 2.25.

Box Hill Central Shopping Centre has two large car parks on either side of the railway line with a total of around 2,000 spaces,[17] where ticketed parking applies. Box Hill Central Shopping Centre car parks have multiple access points to the street network close to the SRL station site, which include:

- Box Hill Central heavy vehicle delivery access, located on Clisby Court off Whitehorse Road
- Box Hill bus interchange access for buses, located on Station Street
- Multi deck car park access located on Prospect Street, Carrington Road, Bruce Street and Watts Street.

More information about off-street car parking supply and demand is provided in Section 2.2.2 of SRL East Draft Structure Plan – Transport Technical Report – Appendix A – Precinct Parking Plan – Box Hill.

[17] *https://www.boxhillcentral.com.au/directions/parking*

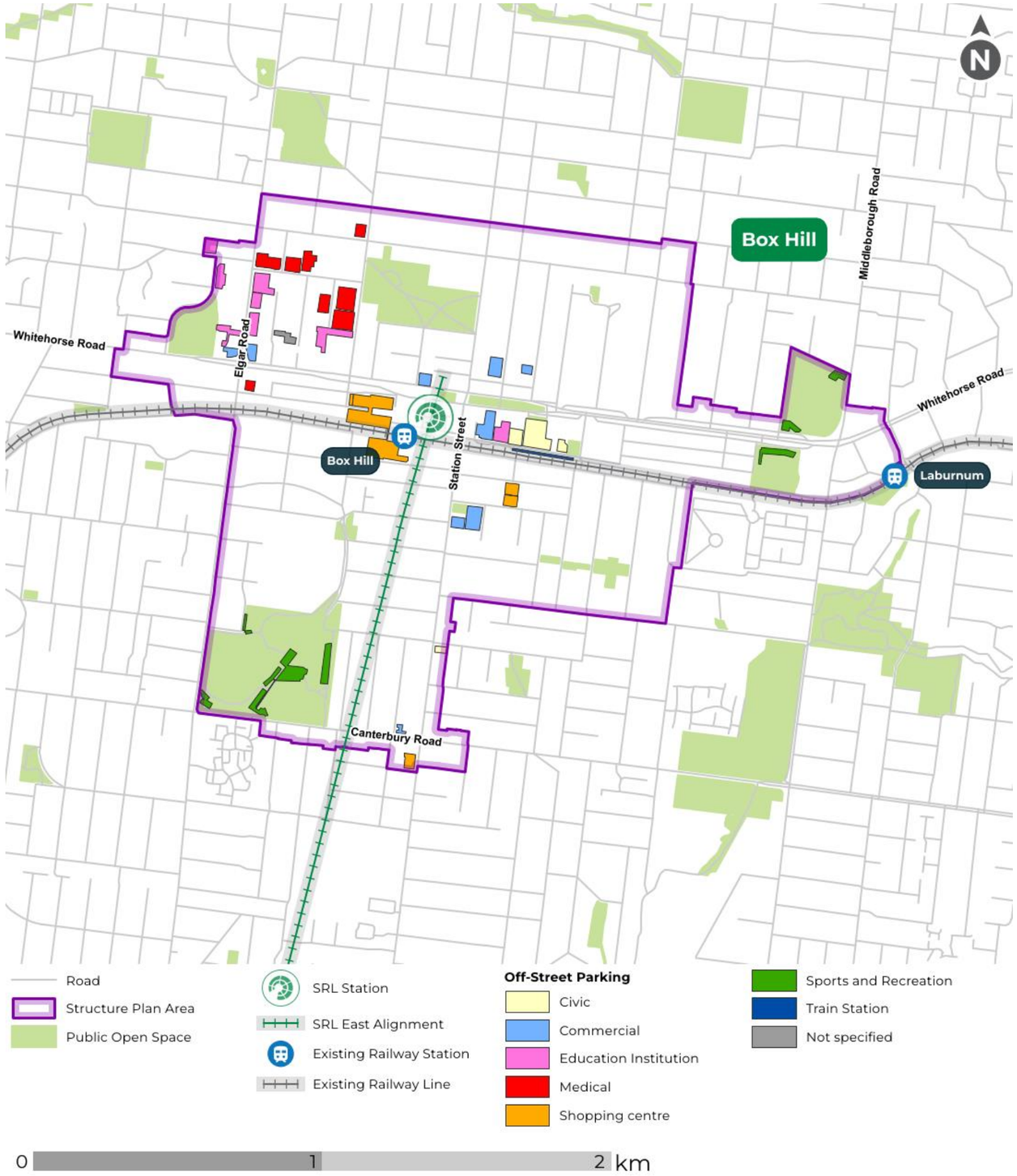


FIGURE 2.25 BOX HILL OFF-STREET CAR PARKING (SOURCE: AJM JV PARKING INVENTORY)

Off-Street Parking	Count	Restriction Type	Paid Parking?
Civic	**267**		
Box Hill Community Arts Centre car park	28	<1P	N
Box Hill Library	34	1P	N
Box Hill Town Hall	73	Permit Zone & 1/2P	N
Salvation Army Carpark	90	>4P	N
Box Hill Library, Bank St Parking	42	1P	N
Commercial	**1559**		
Ace Parking 990 Whitehorse Rd	100	>4P	Y
Ace Parking Elgar Road	30	>4P	Y
Care Park 5 Watts St	468	Unrestricted	Y
Care Park 913 Whitehorse Rd	240	>4P	Y
Court Street Parking Area	37	>4P	Y
Harrow Street Car Park	562	>4P	Y
Harrow Street Parking Area	52	>4P	Y
450 Elgar Road Parking Area	70	>4P	Y
Education Institution	**624**		
Banks St Parking Area	70	>4P	Y
Box Hill Institute - Elgar East Parking Area	96	>4P	Y
Box Hill Institute of TAFE Gate E1 Elgar Rd Parking Area	55	>4P	N
Box Hill Institute of TAFE Harriett Crescent Car Park	56	>4P	Y
Box Hill TAFE Institute Building 10 Car Park	124	Permit and Ticket	Y
Box Hill TAFE Institute Building 8 Car Park	153	Permit and Ticket	Y
7 Poplar St and Wellington Rd)	70	Permit and Ticket	Y
Medical	**673**		
Box Hill Hospital Car Parking	223	>4P	Y
Box Hill Hospital Emergency Car Parking	25	1P-2P	N
Box Hill Superclinic Parking	50	Unknown	N
Ekera Medical Centre car parking	55	>4P	Y
Elgar Hill Medical Suites Public Parking	85	>4P	Y
Spring Street Hospital Staff Car Parking	235	>4P	Y
Shopping centre	**2293**		
Aldi car park	100	1P-4P	N
Box Hill Ace Parking - 8a Prospect Street	12	>4P	Y
Box Hill Central Car Park	2071	>4P	Y
Ellingworth Parade Harrow Street Parking Area	110	>4P	N
Sports and Recreation	**652**		
Aqualink Box Hill Car Park	100	1P-4P	N
Box Hill City Oval Bolton Park Car Park	45	Unrestricted	N
Box Hill City Oval Pavilion Car Parking	45	Unrestricted	N
Surrey Park Car Park	280	Unrestricted	N
Surrey Park Football Club	47	Unrestricted	N
Surrey Park Playground car park	25	Unrestricted	N
Whitehorse Reserve Car Park	110	Unrestricted	N
Train Station	**122**		
Box Hill Station Parking	80	Unrestricted	N
Laburnum MTM Commuter Parking	42	Unrestricted	N

ON-STREET PARKING

A parking inventory of the on-street parking was completed for the Box Hill Structure Plan Area. Figure 2.26 shows the on-street parking locations and corresponding parking restrictions within the Structure Plan Area.

There are around 4711 on-street parking spaces in the Box Hill Structure Plan Area, with the majority of these spaces imposing short-term and ticketed parking restrictions. Commuter and long-term parking are available on Bank Street and on the first floor of the Box Hill Central Shopping Centre south carpark. All-day ticketed parking is also provided on Irving Avenue, with time-restricted ticketed parking along key nearby roads such as Whitehorse Road, Carrington Road, Cambridge Street and Rutland Road.

More information about on-street car parking supply and demand is provided in Section 2.2.2 of SRL East Draft Structure Plan – Transport Technical Report – Appendix A – Precinct Parking Plan – Box Hill.

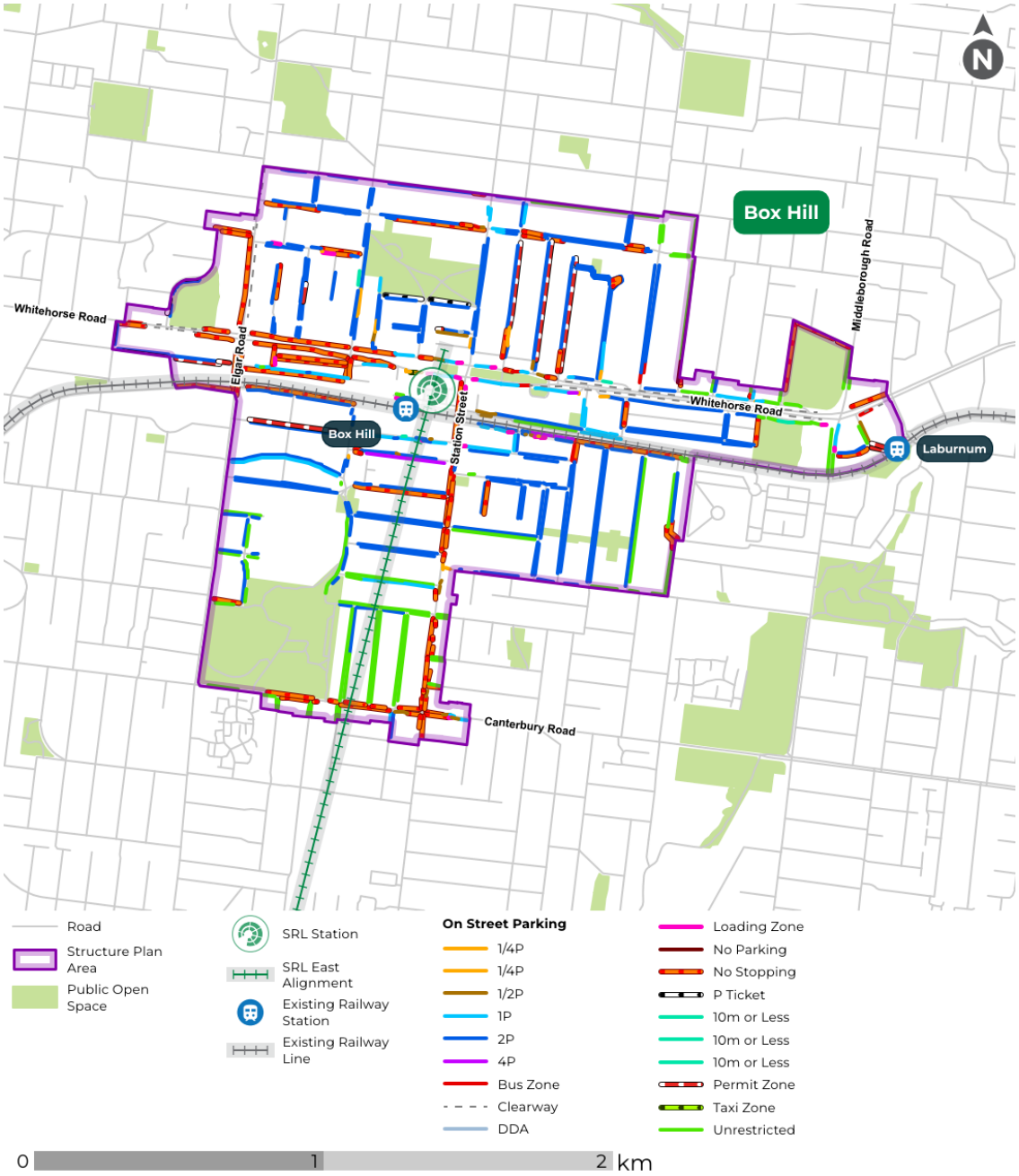


FIGURE 2.26 ON-STREET PARKING RESTRICTIONS – BOX HILL (SOURCE: AJM JV PARKING INVENTORY)

BICYCLE AND MICROMOBILITY PARKING

Public bicycle parking (including micro-mobility) is limited in the Structure Plan Area with bicycle parking located at:

- Box Hill Gardens (six hoops)
- Box Hill Central Shopping Centre (19 hoops)
- In the existing Box Hill Station area (15 hoops)
- Aqualink Box Hill (25 hoops)
- Along Carrington Road (9 hoops).[18]

More information on bicycle parking space locations is provided in Section 2.3 of SRL East Draft Structure Plan – Transport Technical Report – Appendix A – Precinct Parking Plan – Box Hill.

End-of-trip facilities in Box Hill, including secure parking, showers and lockers, are provided only in newer developments which are not typically accessible to the public.

INTEGRATED PARKING CHALLENGES

The parking challenges in Box Hill are summarised and shown Figure 2.27.

[18] *AJM JV parking inventory*

Location-specific integrated parking challenges:

1. A significant number of on- and off-street car parking spaces are provided throughout Box Hill, with a high concentration in high demand areas including Box Hill Shopping Centre and the existing Box Hill Station. This reduces opportunities in Box Hill for other uses (such as provision of active transport infrastructure) that could provide increased economic and social benefits.

2. A large number of on-street car parking spaces are short-term restricted spaces (2P or less), including on-street parking in non-residential areas. This implies a level of parking demand intrusion from non-residential land uses into residential areas (which is not uncommon in large activity centres).

Structure Plan Area integrated parking challenges:

- The current level of private vehicle use and associated private car parking provision are not sustainable with the projected growth in Box Hill.
- The relatively high provision of car parking spaces within Box Hill results in an inefficient use of land in high demand areas and impacting the provision of active transport infrastructure. Car parking provision influences people's decision to own and use a car. High car parking provision can encourage more private vehicle movements through Box Hill, contributing to congestion.
- Limited *Disability Discrimination Act 1992* (Cth) (DDA Act)-compliant on-street car parking is provided.
- End-of-trip facilities including secure parking, showers and lockers are provided only in newer developments and are not typically accessible to the public. This does not support the continued uptake of micromobility as an emerging transport mode.
- There is limited public bicycle and micromobility parking in Box Hill and it is generally 'low' quality in uncovered areas with varying levels of perceived security and safety. This does not support and encourage active and sustainable transport trips.
- Site observations indicate a high degree of vehicle circulation associated with visitor and customer car parking demands, implying high levels of car parking demand and occupancy in the Box Hill Metropolitan Activity Centre.
- There is a significant level of ground-level parking provided to service existing commuter, commercial, retail and employment parking demands.
- Based on site observations, some multi-storey parking facilities across Box Hill appear to have low occupancy levels outside peak recreation, shopping and dining periods (Thursday to Saturday evenings).
- High parking occupancy levels were observed in several parking areas (off-street and on-street) which included ticketed (paid parking) and/or some form of short-term restriction (2P or less).
- Given the Box Hill Metropolitan Activity Centre's significant commercial, restaurant, and entertainment uses, there is a high amount of loading and freight movements which require considerable on-street and on-site management.

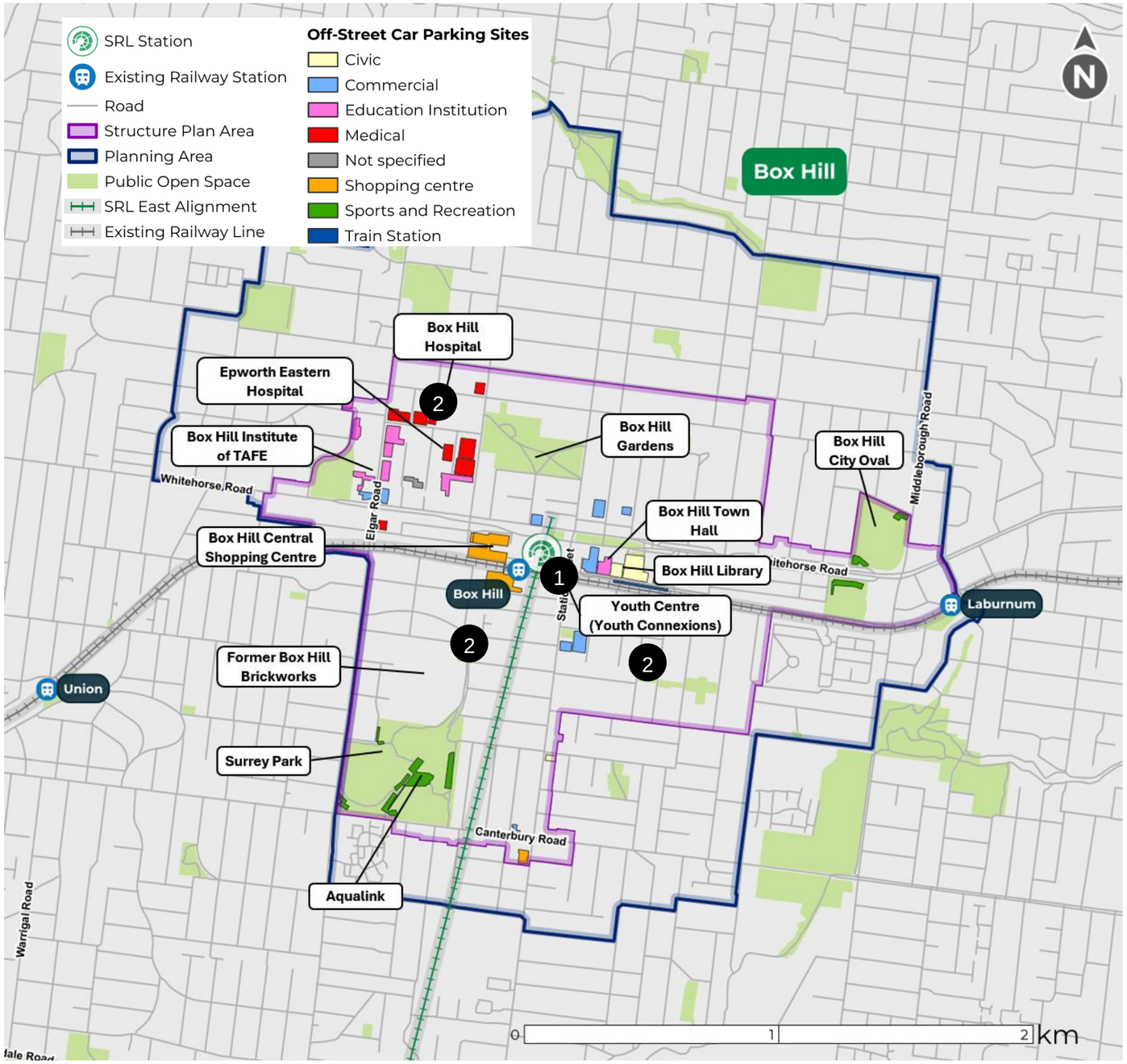


FIGURE 2.27 INTEGRATED PARKING CHALLENGES IN THE BOX HILL STRUCTURE PLAN AREA

2.3 Relevant policies and strategies

2.3.1 OVERVIEW

Victoria's legislative and policy framework sets a vision for an integrated transport system that is accessible, inclusive and safe for all Victorians.

A primary aim of the framework is to promote economic, environmental and social prosperity with integrated land use and transport networks. These networks should provide efficient and effective movement of people and goods and minimise transport costs with greater use of active and public transport modes.

2.3.2 LEGISLATION

The legislation that provides the framework for the development of the Box Hill and other SRL East Planning Areas is summarised in Table 2.6.

TABLE 2.6 TRANSPORT LEGISLATION

LEGISLATION	DESCRIPTION
Planning and Environment Act 1987 (Vic)	This Act establishes Victoria's framework for land use planning, development, and protection in the present and future interests of all Victorians. Planning schemes are subordinate instruments under the Act that apply to local government areas and set out how land may be used and developed.
Transport Integration Act 2010 (Vic)	This Act recognises that land use and transport planning are integrated and sets a vision for an integrated and sustainable transport system that contributes to an inclusive, prosperous, and environmentally responsible Victoria. The Act obligates transport planners and strategic land-use planners to have regard to the land-use impacts of decisions.
Road Safety Act 1986 (Vic)	This Act provides for safe, efficient and equitable road use.
Road Management Act 2004 (Vic)	This Act establishes a statutory framework for the management of the road network which facilitates the coordination of the various uses of road reserves for roadways, pathways, infrastructure and similar purposes.
Local Government Act 2020 (Vic)	This Act gives legislative force to local government powers, including in respect or roads.
Suburban Rail Loop Act 2021 (Vic)	This Act recognises the scale and complexity of planning and delivering a project that encompasses multiple municipalities. The Act establishes the SRLA and provides it with the power to plan, deliver and manage the operation of SRL and development associated with SRL.

2.3.3 POLICIES, STRATEGIES AND PLANS

The evolution of Melbourne from a mono-centric to a poly-centric city has been at the heart of state policy for many years. Strategies such as Plan Melbourne and DTP's Strategic Plans have been pursuing the need to consider development growth and supporting infrastructure more efficiently.

More recently, recognition of climate change and the harm of private car travel to the environment and the health of our communities has led to plans and policies such as the National Electric Vehicle Strategy and Victoria's Road Map to Zero Emissions.

Policies, strategies and plans that informed the transport ambition for Box Hill are summarised in Table 2.7.

TABLE 2.7 NATIONAL AND STATE POLICIES THAT INFORM THE TRANSPORT AMBITION FOR BOX HILL

PLANS AND POLICIES	DESCRIPTION
Plan Melbourne 2017–2050 and Plan Melbourne addendum 2019 (DTP, 2017 and 2019)	Sets out a long-term strategic vision for land-use and development in Victoria. Its policies include Melbourne becoming a polycentric city which is sustainable and resilient and which supports vibrant and healthy neighbourhoods where people can meet most daily needs within a 20-minute active or public transport trip from home.
Victoria Infrastructure Strategy 2021—2051 (Infrastructure Victoria, 2021) and Victorian Infrastructure Plan 2021 (Victorian State Government, 2021)	Victoria's Infrastructure Strategy 2021–2051 provides recommendations to the Victorian Government for planned infrastructure in Victoria. The 30-year strategy seeks to address existing infrastructure pressures, demand on existing infrastructure, and assist in planning the timing and location of required and necessary new infrastructure. The Infrastructure Strategy includes strategic opportunities to improve the Victorian rail network, including SRL as an intended rail project. The Victorian Government has responded to the Strategy with the Victorian Infrastructure Plan 2021 that provides government's response to the Strategy.
Public Transport Guidelines for Land Use Development (DTP, 2008)	The Public Transport Guidelines for Land Use and Development aim to assist decision-making on statutory and strategic planning proposals for land use developments that affect public transport planning and delivery. It is intended the Guidelines will assist with site design to facilitate the delivery and use of public transport services. Good design for public transport helps ensure the provision of a sustainable transport network now and for future. The Guidelines assist in addressing the public transport aspects of structure plans and other strategic planning documents for SRL East.
Strategic Plan 2024–28 Thriving Places and Connected Communities (DTP, 2023)	The Strategic Plan sets out the visions for integrating transport and land use to create thriving places and connected communities. Key focus areas of the Strategic Plan relevant to transport and SRL include: • Improving integration across transport, land and planning systems • Setting and implementing a strategy for support jobs, housing, and transport while building on Melbourne's distinctiveness, liveability, and sustainability • Enhancing environmental sustainability through initiatives that create healthy and liveable communities and places • Support access to lower emission modes of transport • Improving social outcomes and liveability for all Victorians • Giving Victorians more transport options and improve access to essential services.
Future Directions (DTP, Nov 2023)	Sets out the six strategic directions that will establish long-term objectives for movement. Directions considered key to SRL East structure planning include: • Enable new travel patterns – planning transport to facilitate new travel patterns that connect more people to more jobs through local movements, public and active transport and increasing vehicle occupancy • Promote transition to environmentally sustainable transport – supports pledges and targets set out Victoria's Climate Change Strategy • Maximise opportunities created by new and evolving technologies – micromobility and new forms of managing travel • Support the many different journeys people take every day and meet a diverse range of needs.
Movement and Place in Victoria (DTP, February 2019)	The Movement and Place (M&P) Framework brings to life the strategic objectives of transport and land use planning in Victoria in the context of road safety and environmental outcomes. The Framework provides a tool to translate the broad transport outcomes the *Transport Integration Act 2010* (Vic) aims to achieve into priority changes to improve link and place performance for communities. The M&P Framework supports how DTP plans the road and transport network, while acknowledging that each street and road will have different roles in supporting place and movement. It translates the broader transport network into a series of aspirations for individual roads, streets and interchanges based on their desired functions in the network as well as balancing the needs of people and communities.
National Electric Vehicle Strategy (Department of Climate Change, Energy, the Environment and Water, 2023	The Electric Vehicle Strategy sets out national aims to increase electric vehicle (EV) demand through affordability and increasing infrastructure.
Victoria's Climate Change Strategy (Department of Climate Change, Energy, the Environment and Water, 2021)	The Climate Change Strategy recognises that transport is the state's second-biggest contributor to greenhouse gas and minimising this will be key to meeting emission targets. The Strategy recognises the role of SRL in increasing 'clean' public transport. It commits to 100% of all Victoria's new buses to be zero emission from 2025; a 25% active transport mode share by 2030; and 50% of all light vehicle sales to be zero emission by 2030.

PLANS AND POLICIES	DESCRIPTION
Victoria's Zero Emissions Vehicle Road Map (Department of Environment, Land, Water and Planning, 2021)	The Zero Emissions Vehicle Road Map signals an intent for the state to transition to net zero emission in road transport by 2050, noting that it will take around 25 years to manage the transition, with a target for half of all new vehicle sales to be zero emissions by 2030.

SRL East will be crucial to achieving the objectives of these plans and strategies. It will address the imbalance between travel choices for suburb to central city trips and getting from one suburban hub to another, providing true modal choice for middle to outer Melbourne orbital movements. SRL East structure planning will adopt a 'live locally' approach based on the *Plan Melbourne* 20-minute neighbourhood principle, where every day needs can be met within a short walk, cycle, or local public transport trip from home. Residents should be able to access local facilities, learning institutions, green spaces, housing, transport interchanges, and job opportunities through a 20-minute journey. This aims to facilitate people living and working with less need to travel by private car.

It is expected that appropriate structure planning and the delivery of SRL East will:

- Provide a more efficient public transport network as passengers would not need to travel into the city and then out to their ultimate destination
- Encourage local trips to be made by active and public transport, reducing reliance on private car trips
- Improve the viability of living in the outer and middle suburbs and drive growth and community around the new infrastructure
- Reduce middle to outer Melbourne orbital movements made by private car
- Enable more people to live in the SRL East Structure Plan Areas closer to jobs and activity reducing personal time spent travelling.

2.3.4 LOCAL PLANS AND POLICIES

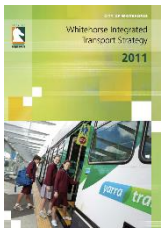
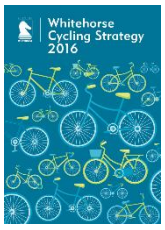
The Box Hill Planning Area and Structure Plan Area are located in the City of Whitehorse. The statutory framework for the Planning Area will be covered in the Whitehorse Planning Scheme.

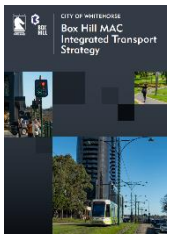
The recommendations for the Box Hill Structure Plan Area are influenced by and will support Whitehorse City Council transport policies and will seek to maintain effective transport networks in Box Hill and the municipality. The key transport themes in Whitehorse City Council policies include:

- The need to move away from private car travel to more sustainable modes of transport, with a road user hierarchy that reflects this shift
- Walking and cycling as the preferred transport choice, particularly for short local trips
- Potential for reducing car parking rates in major activity centres.

Local policies and strategies that informed this report are summarised in Table 2.8. The directions and actions that informed specific Box Hill recommendations for the Structure Plan Area are identified in the relevant areas of this report.

TABLE 2.8 LOCAL PLANS AND POLICIES CONSIDERED FOR BOX HILL

DOCUMENT	DESCRIPTION	RELEVANT INSIGHTS
Whitehorse Planning Scheme (last updated Jan 2024)	Establishes the statutory framework for land use and development in Whitehorse. Clause 22.07 sets out the vision for the Box Hill Metropolitan Activity Centre. *Was SRL considered? No*	• Desire to prioritise transfers on foot between the rail services, buses and trams • Motor vehicle access (taxis, deliveries etc) will have a lower priority than active and public transport, and short and long term parking the lowest priority • Support strong active transport networks. Conditions should ensure that most trips up to 1 kilometre are on foot and many trips under 5 kilometres are by bicycle or micro-mobility devices.
Whitehorse Integrated Transport Strategy 2011 	Provides strategic direction to facilitate travel that is sustainable, convenient, accessible and safe. *Was SRL considered? No*	• Desire to improve pedestrian facilities in activity centres to encourage walking • Desire to improve the cycling network • Encouraging increased uptake of public transport.
Whitehorse Cycling Strategy 2016 	Identifies actions aimed at increasing cycling participation across user groups of all abilities by creating a low stress network. *Was SRL considered? No*	• Provide a low stress cycling network • Increase cycling ridership across user groups of all abilities • Link the off-road cycling network.
Whitehorse Community Road Safety Strategy 2013 	Identifies actions to reduce road safety risk in Whitehorse, especially for vulnerable road users, such as pedestrians, bicycle riders and people with limited mobility. Highlights that the intersection of Whitehorse Road and Station Street is the site of many pedestrian injuries and fatalities. *Was SRL considered? No*	• Improve safety for pedestrians and cyclists of all abilities • Reduce vehicle speeds, especially in areas with higher pedestrian volumes, and high-risk areas.
Box Hill Activity Centre to 2036 Draft Structure Plan (2020) 	Aligns development and land use controls with population and employment forecasts, and the vision for Box Hill Activity Centre as eastern Melbourne's CBD and major public transport interchange. *Was SRL considered? Yes*	• Reinforcing Box Hill's status as a regionally significant health, education and employment hub • Encouraging well-designed medium to high-density mixed-use development in the centre of Box Hill • Reducing the impact of vehicle access / loading on the public realm.

DOCUMENT	DESCRIPTION	RELEVANT INSIGHTS
Box Hill Activity Centre Integrated Transport Strategy 2020 	Articulates a transport vision for Box Hill which is integrated, safe and accessible, and reduces reliance on private motor vehicles. *Was SRL considered? Yes*	• Provide additional and improved crossings • Provide new active transport bridge over the rail tracks • Upgrade Box Hill Interchange • Reduce through traffic on Whitehorse Road and Station Street • Repurpose space allocated to vehicles and enhance public space.

2.4 Summary

Table 2.9 summarises the key findings of the existing conditions assessment.

The review of key national, state and local transport polices and strategies relevant to Box Hill informs the development of recommendations for the Box Hill Structure Plan Area. The recommendations will support key transport policies and strategies and seek to maintain effective transport networks in Box Hill and the municipality.

TABLE 2.9 EXISTING CONDITIONS SUMMARY BY MODE

MODE	SUMMARY
Active transport	• Box Hill includes a dense network of footpaths, with all streets generally providing pedestrian access to dwellings and key destinations • Comfortable and safe walking journeys are catered for in Box Hill by shared zones (on Main Street and Market Street and Box Hill Central Shopping Centre) and along shared trails such as Box Hill to Ringwood Shared Use Path and Box Hill Gardens • There are a few high-quality cycle routes serving Box Hill, specifically along Thurston Street, Surrey Drive and the Box Hill to Ringwood Shared Use Path. The remainder of the road network in Box Hill has no or limited cycling infrastructure • The existing rail line, busy arterial roads (such as Elgar Road, Station Street and Whitehorse Road) and medium to large urban blocks are barriers for pedestrians and cyclists • Streetscape amenity is generally poor on residential streets outside of the centre of Box Hill, with narrow footpaths and poor street lighting.
Public transport	• Box Hill is currently served by all modes of public transport, including the Belgrave / Lilydale Line, 109-tram, and 17 bus routes • The existing Box Hill Station is located in Box Hill Central Shopping Centre with train services connecting to the City Loop on the Belgrave / Lilydale Line. The 109-tram terminates on Whitehorse Road in the heart of Box Hill, travelling from Port Melbourne via the CBD. The Box Hill bus interchange, located on the top floor of Box Hill Central Shopping Centre serves as a common interchange point, servicing 17 bus routes in Box Hill • While Box Hill generally has good public transport coverage, connections for interchanging between modes are indirect, requiring passengers to navigate through Box Hill Central Shopping Centre and across the arterial road network • The car dominated street network and lack of on-road priority for buses and trams can lead to congestion for these services during peak periods, increasing journey times.

MODE	SUMMARY
Private vehicles	• Vehicle access throughout Box Hill is provided by multi-lane arterial roads and an extensive network of connector and local streets • No Principal Freight Network (PFN) routes pass through the Planning Area. However, the arterial roads in Box Hill form part of the B-Double Heavy Vehicle network catering for freight vehicles • Significant provision of on-street car parking encourages private vehicle use • While the current private vehicle mode share is generally within the capacity of the road network other than some peak hour congestion points, maintaining a similar private vehicle mode share into the future will not be sustainable and will be detrimental to the liveability within the Structure Plan Area • Box Hill caters for relatively high through traffic volumes particularly along Whitehorse Road and Station Street. This can contribute to congestion on the road network and impact on trips within Box Hill.
Integrated parking	• There are approximately 6560 off-street parking spaces in the Box Hill Structure Plan Area with 2000 off-street car parking spaces provided in Box Hill Central Shopping Centre • There are around 4711 on-street parking spaces in the Box Hill Structure Plan Area, with the majority of these spaces imposing short-term and ticketed parking restrictions • Public bicycle parking is limited and primarily provided in the existing Box Hill Gardens, Box Hill Central Shopping Centre, in the existing Box Hill Station area, Aqualink Box Hill and along Carrington Road • End-of-trip facilities in Box Hill, including secure parking, showers and lockers, are provided only in newer developments which are not typically accessible to the public • The relatively high provision of car parking spaces within Box Hill results in an inefficient use of land in high demand areas and impacting the provision of active transport infrastructure. Car parking provision influences people's decision to own and use a car. High car parking provision can encourage more private vehicle movements through Box Hill, contributing to congestion.

3 The SRL project

3.1 Overview

The Box Hill Planning Area is one of six precincts that form part of SRL East – the first stage of the 90-kilometre orbital loop linking every major rail line between Cheltenham, Melbourne Airport and SRL West (to Werribee) as shown in Figure 3.1. The six stations include **Cheltenham** (located near Southland, between Cheltenham and Highett), **Clayton**, **Monash** (located in Notting Hill, between Clayton and Glen Waverley), **Glen Waverley**, **Burwood** (located between Box Hill South and Ashwood), and **Box Hill**.

SRL will connect major employment, health and education centres in the city's middle suburbs and provide highly accessible nodes that can be used to support Melbourne's growing housing and employment needs in a sustainable manner. To do this, more than just the SRL stations are required. The SRL Precincts will need to foster a new approach to travel and living in these areas.

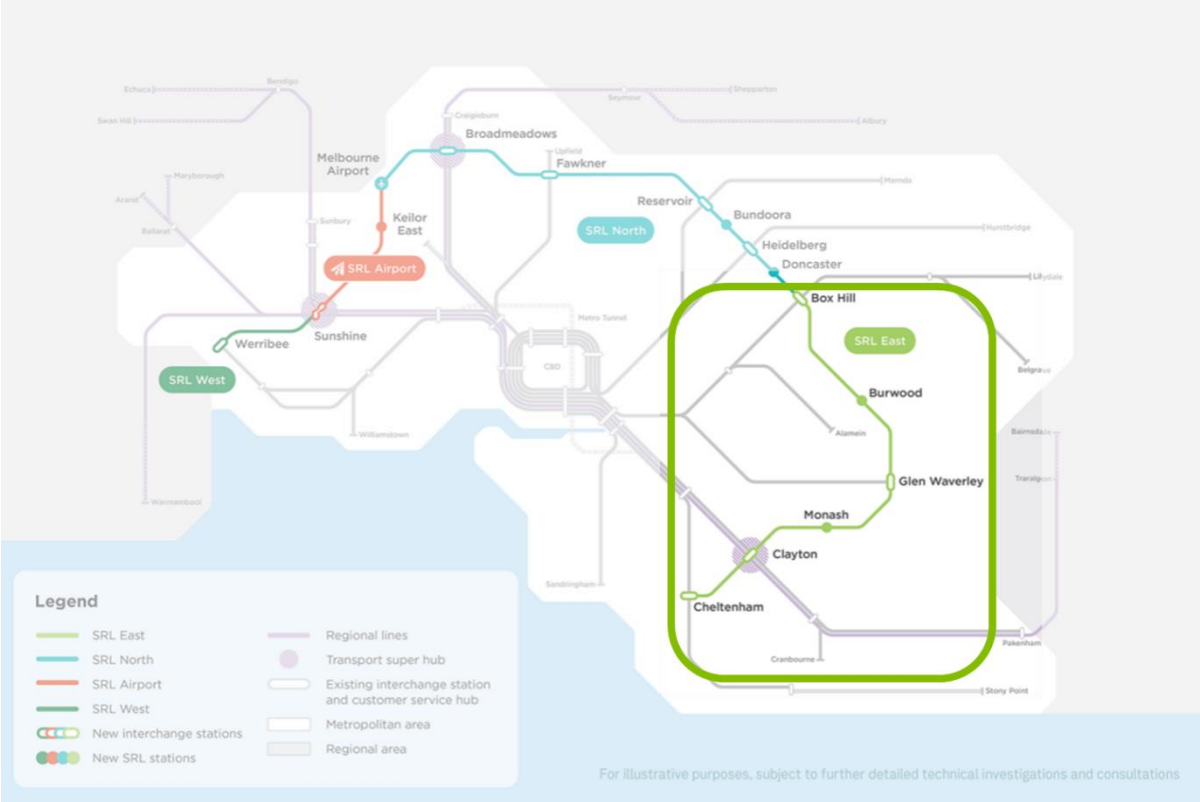


FIGURE 3.1 SRL EAST IN THE CONTEXT OF THE WIDER SRL PROJECT

High population growth on Greater Melbourne's expanding urban fringe has been driving many households further from employment centres, leading to longer commutes, increased congestion and more crowded public transport. This pattern of growth risks entrenching disadvantage, with inequitable access to good jobs, services, affordable housing, amenities and recreational opportunities. There is already significant demand for orbital travel around Melbourne, with many people travelling to work and other destinations by car because there isn't a fast rail option.

SRL addresses these challenges by delivering important cross-suburb travel connections between major employment centres, hospitals, universities and retail, shortening commutes and improving cross-suburb connectivity. While growth in SRL Precincts will give more Victorians access to employment opportunities, affordable housing and services – all within a short walk from a station.

Construction of SRL East from Cheltenham to Box Hill began in June 2022, and SRL East is expected to start operating by 2036.

3.2 SRL East Project Environment Effects Statement and planning approvals

The SRL East Project's Environment Effects Statement (EES) was released in 2021. The EES identified the benefits and potential impacts of the SRL East Project on people and places during its construction and operation and proposed ways to avoid, minimise, offset or manage any effects.

Planning approvals for the SRL East Project were informed by the EES and were granted following the Minister's Assessment in late 2022. These approvals included Planning Scheme Amendment (PSA) GC197 that introduced an Incorporated Document under Specific Controls Overlay Schedule 14 (SCO14) to facilitate delivery of SRL East. Amendment GC197 came into force on 30 September 2022.

A key condition of the Incorporated Document is an Environmental Management Framework containing Environmental Performance Requirements (EPRs) managing the project's design, construction and operation impacts. These included EPRs specifically managing traffic and transport impacts associated with the SRL East Project, some of which refer to impacts on the wider precincts. The Environmental Management Framework was approved by the Minister for Planning on 17 October 2022.

The EES nominated Environmental Performance Requirements (EPR's) were contained within the SRL East Project Environmental Management Framework as approval requirements for the project. There are eight transport EPR's, EPR's T1-T5 relate to detailed project construction and delivery issues (traffic management and coordination, road reinstatement etc) and are not the focus of this section or the TTR. Rather Table 3.1 below highlights sections of EPR's T6-T8 which in addition to actions delivered by the SRL East Project could benefit from relevant commentary and actions within the TTR. The Minister's Assessment of the EES also identified some issues for further assessment which are discussed in Section 3.5 of this report.

TABLE 3.1 EPRS ADDESSED IN THIS REPORT[19]

TRANSPORT BASED EPR	TRANSPORT TECHNICAL REPORT CONSIDERATION
T6. Road transport design and operation	
T6-2. Develop and implement street network designs for each affected street within the Project Land in consultation with the relevant road management authorities that includes:	
a) The design of the road network should reflect the aspirational Movement and Place outcomes for each precinct as well as changed demands as a result of the Project	Movement and Place classification reviews and existing level of service gap assessments, and Recommendation to safeguard the M&P modal priorities
b) Maintaining safe operations through the precincts.	Pedestrian and cyclist safety considered in network upgrade recommendations including strategic corridors, green streets and new and upgraded signal crossings
T6-3. Develop and implement a plan for each precinct to manage reinstated parking within the Project Land, in consultation with relevant road management authorities, that:	
a) Minimises the permanent loss of parking where possible and determine the optimal parking provision in the area, including prioritising	The Parking Precinct Plan provides recommendations with respect to parking that may be relevant in responding to this

[19] *bigbuild.vic.gov.au/__data/assets/pdf_file/0003/717645/SRL-East-Environmental-Management-Framework.pdf*

TRANSPORT BASED EPR	TRANSPORT TECHNICAL REPORT CONSIDERATION
meeting specialised parking needs within the precinct such as emergency services, loading and DDA compliant parking.	EPR requirement, however the focus of the EPR is reinstatement of parking impacted by the SRL project and will be addressed as a project not structure planning issue.
b) Reduces the risk of overflow parking in local streets	
c) Provides alternative locations for station commuter parking impacted during construction identified in consultation with relevant stakeholders. If needed this may be provided outside the Project Land.	
d) Includes recommended Pick Up / Drop Off (PuDo) locations following further assessment during the design phase.	
T6-5 Collaborate with DoT and Councils to manage the operation of the road network in the vicinity of SRL precincts for all road users. This would encourage appropriate mode of access to the station precincts and to discourage through traffic. This should include reviewing the performance of the wider network so that opportunities to re-distribute through traffic away from station precincts can be pursued and sensitivity testing of different precinct development scenarios.	The TTR seeks to address transport movements to, from and within the Structure Plan Area with Section 5.4 explaining the target mode share for the precinct and actions to achieve that mode share explained in Section 6 and 7.
T7. Public transport design and operation	
T7-1. Design the SRL stations and new bus interchanges to ensure integration with existing and planned future uses so they provide connections to key destinations and existing railway stations and bus interchanges and be in accordance with the Urban Design Strategy (UDS). The design should also provide adequate wayfinding to facilitate passenger transfers.	Infrastructure recommendation supporting the planning for new or upgraded bus interchanges
T7-2. Implement measures to address pedestrian congestion at and around station entrances where they interface with the precincts, to the extent practicable, in consultation with relevant road management authorities.	Considered in upgraded strategic corridors providing access to station entrances, to be addressed in design scope beyond the precinct Transport Technical Reports
T8. Active transport design and operation	
T8-3. Provide wayfinding information to enhance connectivity for pedestrians, cyclists and public transport users to move to, from, through and within the interchanges and precincts.	Considered in the SRL East Structure Plan - Urban Design Report - Cheltenham

The remaining transport EPRs are considered to relate specifically to the construction of the SRL East Project and contractors are responsible for the implementation of the measures to address these.

3.3 SRL Box Hill rail and infrastructure works

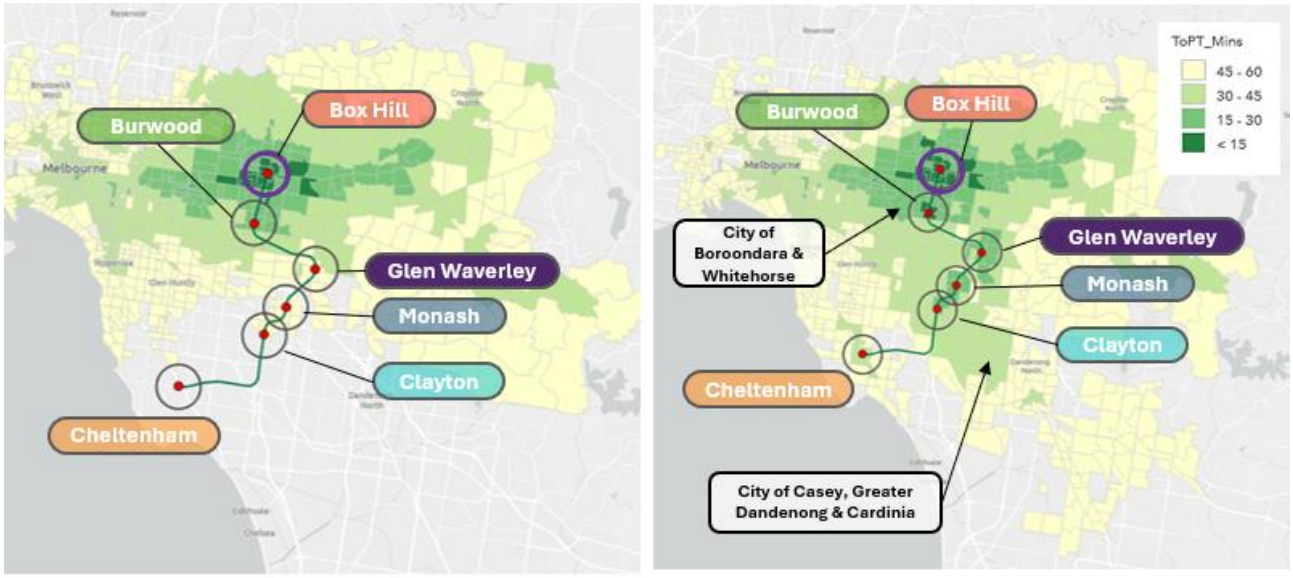
This section summarises the SRL East Project's scope being delivered under the SCO14 Incorporated Document and outlined in the Surface and Tunnel Plans approved by the Minister for Planning on 18 October 2022.

The SRL station at Box Hill will be located in the heart of Box Hill, with station entrances at Market Street and north of Whitehorse Road. The SRL station will provide a connection to the existing Box Hill Station on the Belgrave / Lilydale Line and convenient links to local tram and bus services to significantly increase public transport accessibility to Box Hill via public transport. The SRL station at Box Hill is expected to cater for around 19,000 passenger boardings from Box Hill per weekday by 2041.[20]

The increasing public transport accessibility of Box Hill is shown in Figure 3.2. Box Hill residents will be able to access education, work and services near all SRL East stations within 30-minutes. Travel times between Box Hill and many suburbs in the municipalities of Whitehorse, Boroondara, Greater Dandenong, Casey and Cardinia will reduce by 15 to 30 minutes.

[20] *SRL East – Traffic and Transport Impact Assessment. TA R.2 Transport IA Revision 01, October 2021 (Table 5.4)*

Future SRL stages will connect to SRL East at Box Hill.



2041 Base Case without SRL - AM Peak PT Travel Time to Box Hill

2041 Project Case with SRL - AM Peak PT Travel Time to Box Hill

FIGURE 3.2 INCREASED PUBLIC TRANSPORT ACCESSIBILITY OF BOX HILL WITH THE SRL EAST PROJECT[21]

The SRL station at Box Hill will be one of the busiest and most well-connected stations on the metropolitan network, forecast to cater for around **19,000 passenger boardings per day by 2041**.

Source: Victorian Integrated Transport Model

Improvements to walking and cycling, public transport and road connections and infrastructure around the SRL station will provide an accessible, safe and integrated network for travel through and within Box Hill.

The SRL East Project scope is generally in accordance with the project's reference design, which will be subject to minor changes during the detailed design phase.

The SRL East station at Box Hill and associated surface transport infrastructure works are summarised and shown in Figure 3.3.

[21] *SRL East – Traffic and Transport Impact Assessment. TA R.2 Transport IA Revision 01, October 2021 (Section 8.2.3)*

1. SRL station at Box Hill, with two station entrances located north and south of Whitehorse Road.
2. A high-quality continuous cycle path along Whitehorse Road.
3. A new shared path along Linsley Street connecting Whitehorse Road with the Box Hill to Ringwood Trail.
4. Upgraded central pedestrian and cycle crossing of Whitehorse Road connecting Main Street.
5. A realignment of the tram corridor south of Whitehorse Road creating a new continuous linear open space public realm.
6. A new north-south pedestrian promenade connecting Box Hill Gardens to the SRL station, Whitehorse Road and the centre of Box Hill.
7. Dedicated priority bus lanes along Station Street and at Whitehorse Road to improve service quality.
8. Parking for specific station access with a focus on accessibility needs.
9. Cycle parking within the public realm and in a cycle hub integrated with the SRL station providing 500 spaces and *Disability Discrimination Act 1992* (Cth) (DDA)-compliant 'accessible' pick-up / drop-off areas and taxi bays adjacent to the SRL station entrance.

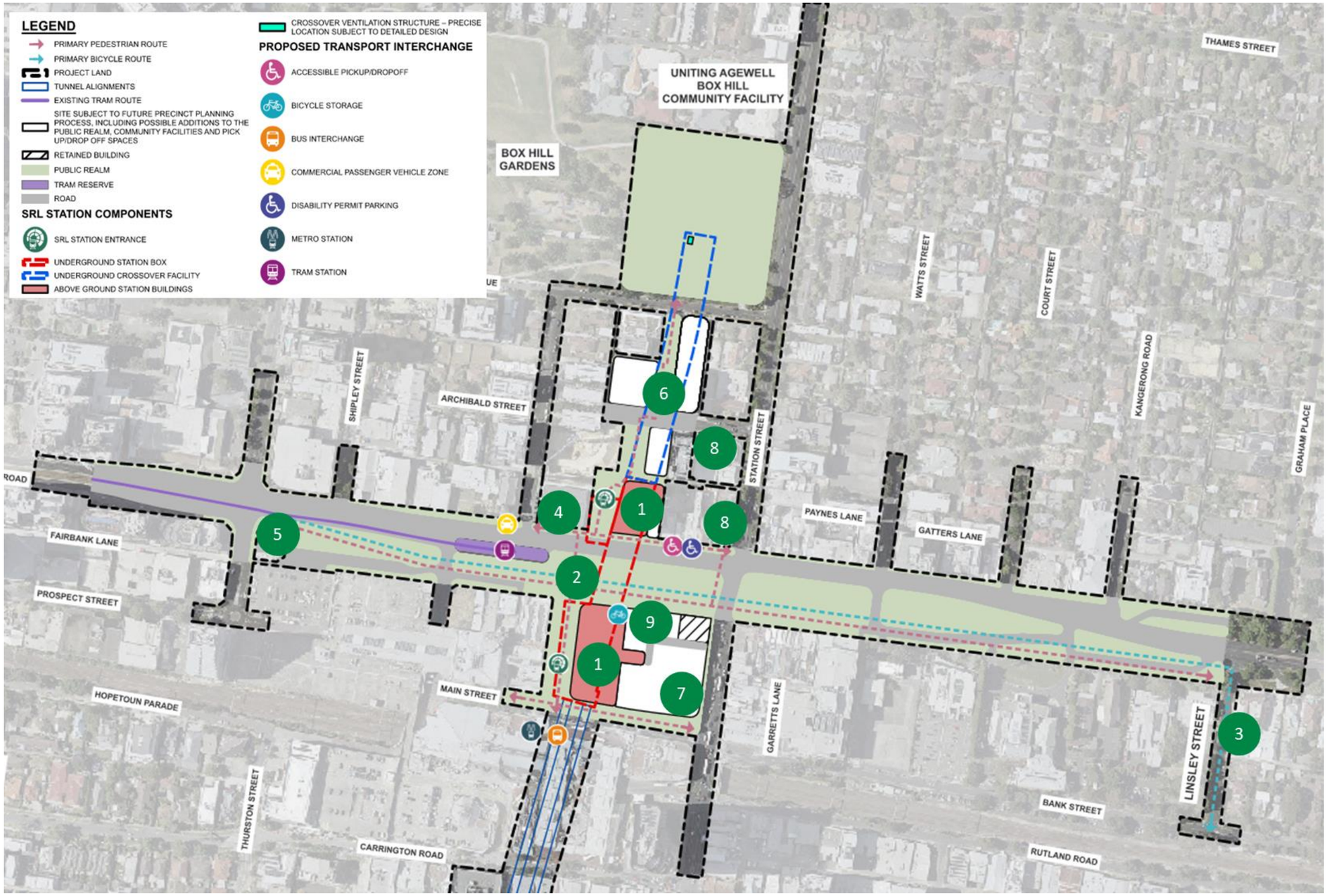


FIGURE 3.3 MAIN SRL EAST AND ASSOCIATE SURFACE TRANSPORT INFRASTRUCTURE IN BOX HILL (BACKGROUND MAP SOURCE: SURFACE AND TUNNEL PLANS ENDORSED APRIL 2024)

3.4 EES traffic and transport assessment

A Traffic and Transport Impact Assessment was prepared for the SRL East Environment Effects Statement (EES) (2021). The impact assessment outlined the proposed infrastructure to be provided as part of the SRL East station works and evaluated the associated traffic impacts and benefits on the transport network for stakeholders and the broader community.

In Box Hill, the impact assessment focused on the impacts associated with construction and operation of the SRL east station Box Hill. While the physical impacts were localised within the 'SRL project land' affected by the project works (see Figure 3.3), the transport assessment considered the wider implications on the transport network from the localised works. Figure 3.4 shows an extract of the broader traffic network assessed as part of the EES Traffic and Transport Impact Assessment, which includes the Box Hill Structure Plan Area.

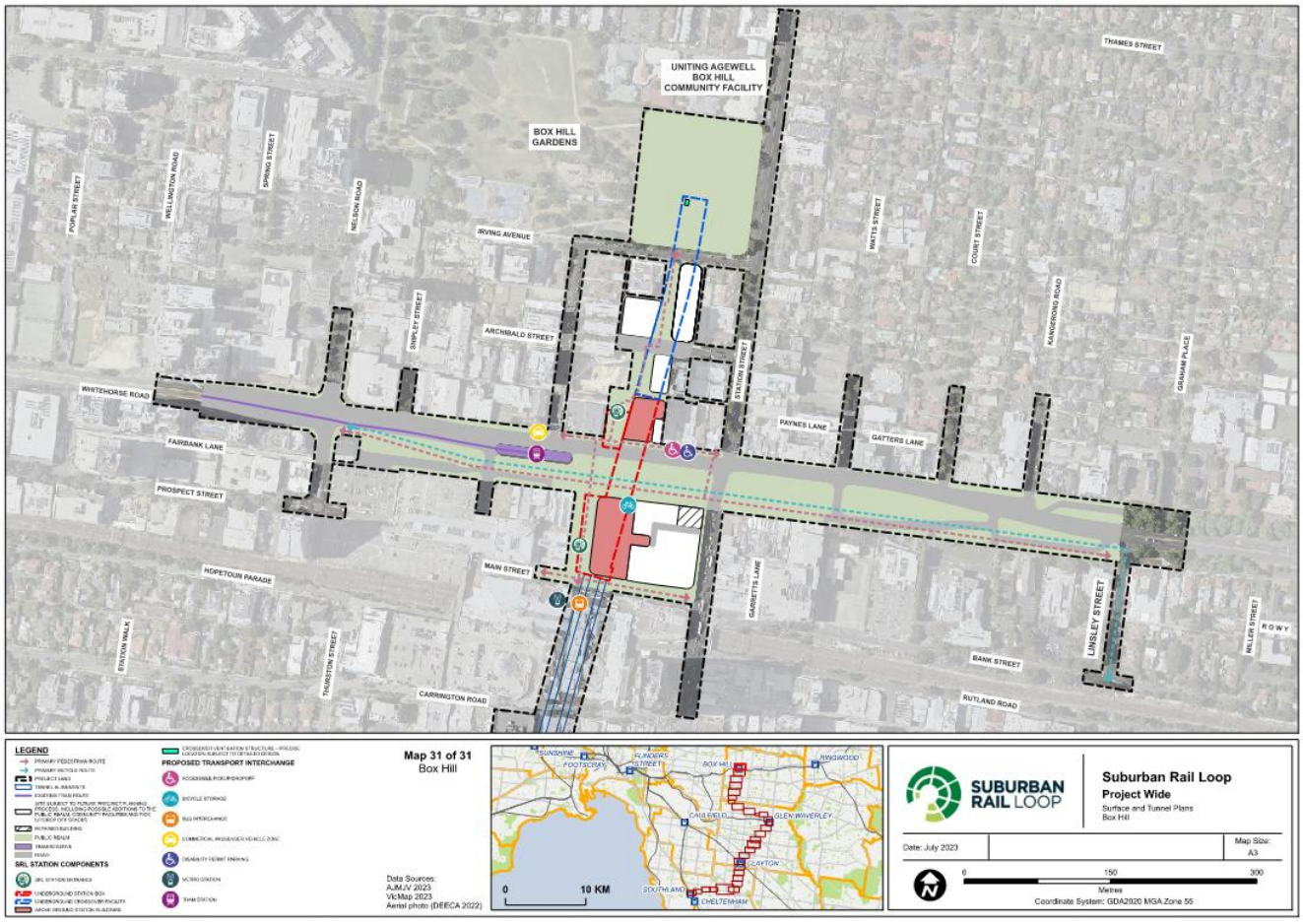


FIGURE 3.4 PROJECT LAND AREA IN BOX HILL

Figure 3.5 WIDER TRANSPORT NETWORK MODEL (BASE MAP) ASSSESSED BY THE SRL EAST PROJECT EES AND BOX HILL STRUCTURE PLAN AREA

The operational assessment within the EES Traffic and Transport Impact Assessment was undertaken by comparing the future state in 2041 without SRL East (known in that report as the 'Future No Project Case') against the future state with the SRL East Project (known in that report as the 'Project Case').

Each transport mode was assessed considering growth in population, employment and enrolments and the associated change in travel demands in the vicinity of the SRL East Project. The *Future No Project Case* used an existing land use forecast which did not take the SRL East Project into account. The growth in population, employment and enrolments for the *Project Case* was developed specifically for the SRL East Project using CityPlan, a Land Use and Transport Interaction (LUTI) model for Victoria which estimates the land use impacts and shift in demographics as a result of major transport projects like SRL East.

In simplest terms, CityPlan used the existing forecast of land use growth in Victoria developed without the SRL East Project and redistributed land use development (and associated population and employment) across Melbourne including into the SRL East Project's precincts in response to the increased transport accessibility and development capacity proposed through the SRL East Project. The CityPlan model was peer reviewed

during the development of the SRL Business and Investment Case and its use was subsequently tested through the SRL East EES Independent Advisory Committee process.

The transport modelling of the *Project Case* was subject to extensive review through the EES Traffic and Transport Impact Assessment, and the Minister's Assessment ultimately concluded that ***'I support the Independent Advisory Committee's finding that the transport modelling undertaken to underpin the assessment of operational transport effects is adequate for this phase of the project'*** (notwithstanding some areas of further assessment required, as discussed in the following section).[22] Given the outcome of that assessment, the SRL East EES Project Case has been adopted as the foundation or 'Baseline Scenario' for this report's assessment, including its recommendations which inform the Box Hill Structure Plan.

Further discussion of the previous EES Traffic and Transport Impact Assessment, including future growth forecasts, in comparison to, as well as their relative suitability for use as part of precinct planning is provided in Section 4.3.

3.5 EES further assessment requirements

In addition to the EPR's outlined in Section 3.2, the Minister's Assessment[23] for the EES included additional specific matters for further assessment as part of the planning for the SRL East Project. These matters include those related to the SRL East Project and some related to wider precinct matters.

The key transport planning-related matters for further assessment are summarised in Table 3.2 which identifies how these are being addressed by the SRL East Project.

Note this report is focused on the wider precinct matters that relate to Box Hill as part of structure planning, not matters related to the SRL East Project scope.

TABLE 3.2 MINISTER'S REQUIREMENTS FOR FURTHER CONSIDERATION - BOX HILL

MATTERS FOR CONSIDERATION	SRL EAST PROJECT SCOPE	WIDER PRECINCT PLANNING (THIS REPORT)
Modelling: • Refinements to the EES modelling will be required over time to optimise the benefits of the project including sensitivity testing.	✓	✓
Paid connections - Box Hill: • Connection not part of the EES proposal for Box Hill to be considered as a matter of priority.	✓	
Parking – Box Hill: • EES pick up / drop off location and provision to be reviewed with further analysis of the Elland Avenue intersection with Station Street required. • Consult with relevant road management authorities on reinstating parking impacted as a result of the project works.	✓	
Bus interchange – Box Hill: • Undertake pedestrian modelling to inform design of or the need to relocate the bus interchange.	✓	
Shared use path connections – Box Hill: • Whitehorse Road to Box Hill to Ringwood C1 Strategic Cycling Corridor link • Box Hill to Hawthorn C2 Strategic Cycling Corridor link – via structure planning • Additional improvements to cycling connections required.		✓

[22] *Minister for Environment and Climate Action, SRL East Minister's Assessment under Environment Effects Act 1978 (2022) p. 29*

[23] https://www.planning.vic.gov.au/__data/assets/pdf_file/0026/651905/SRL-East-Ministers-assessment.pdf

Section 1.5 provides details of the consultation and assessments completed to address the identified areas of further assessment by the Minister, required as part of future precinct planning following the EES.

4 Transport ambition for Box Hill

4.1 Overview

This section sets out the transport ambition for Box Hill and the strategic objectives which have informed the infrastructure and non-infrastructure recommendations. These recommendations will deliver the on-going improvements needed for the transport and street network to realise the transport ambition and goals.

To support Box Hill's future role as an attractive place to live, work and/or establish businesses, the structure planning for Box Hill needs to:

- Support the delivery of housing, jobs, services, and amenities in the right locations for new and existing residents, workers and visitors
- Enable infrastructure investment across transport, education, health, open space and other amenities.

A set of transport ambitions and goals common to all SRL East Structure Plan Areas were developed to help the Vision for each Structure Plan Area and surrounds, and to inform the Structure Plans.

The SRL East Structure Plans will identify how the five key themes of Boosting the Economy, Enriching Community, Better Connections, Enhancing Place and Empowering Sustainability will be delivered in the Structure Plan Area and set objectives, strategies and actions to realise the Vision for the area.

The areas surrounding the new SRL stations will attract significant investment, creating new local employment and housing opportunities, driving population and employment growth and land use changes.

This section also compares the baseline with the Box Hill Structure Plan's land use.

4.2 Transport ambition and goals

The population, job and traffic growth demands will require proactive management in order to realise the full potential of SRL East. The transport ambition provides a foundation for managing the growth in Box Hill, as stated below in Figure 4.1.

Transport Ambition for Box Hill

Managing the growing number of trips through more people choosing to walk, cycle and catch public transport as Box Hill develops.

FIGURE 4.1 TRANSPORT AMBITION FOR BOX HILL

From the transport ambition, a set of transport goals and modal principles were developed to support the Vision for Box Hill. The development of these goals and modal principles considered the existing transport challenges, gaps and opportunities.

The transport ambition and goals should be considered with the Vision and themes outlined in the Box Hill Structure Plan, which address requirements such as those in the Transport Integration Act 2010 (Vic). The

development of the Structure Plan and this report has collectively informed the infrastructure and non-infrastructure recommendations to achieve the transport ambition and providing better transport choices.

The transport goals are listed and explained in Table 4.1.

TABLE 4.1 TRANSPORT GOALS

GOAL	EXPLANATION
A safe and connected walking and cycling environment	Walking and cycling[24] will serve as the most convenient, safe and enjoyable means of travel in the neighbourhoods around each SRL station.
A revitalised bus experience	In line with Victoria's Bus Plan, help change people's perception of buses. Provide a passenger-focused bus service, making road-based public transport a competitive, attractive and convenient choice.
An all-inclusive transport network	Ensure transport is accessible to people of all ages, abilities and genders.
Anchoring sustainable travel services and shared mobility to SRL East	SRL East stations are seamless integrated hubs, allowing quality interchanges between sustainable travel modes.
Prioritising safe and healthy movement	In line with Victoria's Road Safety Strategy 2021-2030, the transport network becomes safer for all, particularly vulnerable users. Uptake in walking and cycling contributes to an increase in daily physical activity.
Smart and efficient use of parking	Parking management needs for all users, with a strong emphasis on providing for the needs of bike and micromobility users. Car parking spaces will be managed and used to maximise their effectiveness while considering impacts on the urban realm.
Enable new and emerging innovative mobility	Neighbourhoods around each SRL station will enable emerging and innovative mobility to provide more and convenient choice, especially for shorter to medium distance trips.

4.3 Future population and employment growth

The population and employment forecasts for the Box Hill Structure Plan Area are shown in Figure 4.2. The resident population is forecast to increase from 13,300 in 2021 to 29,100 residents by 2041. The worker population is forecast to increase from 18,500 to 38,700.[25] With more people living and working in Box Hill, the SRL station will become a focus point for movement.

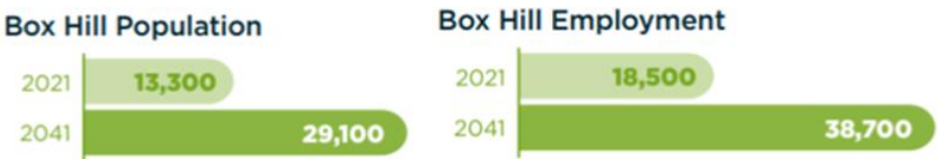


FIGURE 4.2 POPULATION AND EMPLOYMENT GROWTH WITHIN THE STRUCTURE PLAN AREA

[24] *Walking and cycling represent the action of moving as a pedestrian or cyclists, whether or not someone is walking or cycling unaided or using any kind of wheeled mobility aid, including cycles, scooters, wheelchairs, mobility scooters, walking frames, prams or buggies.*

[25] *AJM (2025), Economic Profile – Box Hill*

While the development projections within the transport model for the Baseline Scenario[26] are consistent with the Structure Plan overall, the Structure Plan has redistributed growth within Box Hill compared to the model input:

- Significant diversification of land uses adjacent to the SRL station at Box Hill and Box Hill Central Shopping Centre, particularly along Whitehorse Road and Station Street – these mixed land use areas will support higher density commercial and residential uses and strengthen the current retail offering at Box Hill Central Shopping Centre

- Higher concentration of housing adjacent to the SRL station at Box Hill and Box Hill Central Shopping Centre, and increased intensity of existing residential neighbourhoods

- Commercial office developments prioritised in areas that benefit from existing commercial functions near the SRL station at Box Hill and associated amenities.

The consistency of the input scenarios for the EES and structure planning reaffirms the adoption of the Project Case in the EES Traffic and Transport Impact Assessment as the 'Baseline Scenario' is appropriate.

4.4 Summary and implications

The transport ambition for a growing Box Hill is to encourage as many of the additional trips expected to be undertaken by active transport or public transport. This includes providing a local transport network that will facilitate 20-minute neighbourhoods, and the transport goals have been set towards achieving this ambition.

Box Hill will need to evolve so that while its people and employment intensity increases, growth is managed through sustainable and active transport while maintaining car access via the existing arterial road network. The transport network will need to evolve so that residents, workers and visitors have better travel options and experiences on active and public transport to manage increased movements to, from and within Box Hill.

This vision has set the basis for the development of the transport recommendations as part of the 'vision and validate' approach. A comparison of the Structure Plan's land use forecasts with those in the Baseline Scenario has found it is an appropriate basis to apply the vision and validate approach. This approach allows the transport ambition and goals for Box Hill to be at the centre of the recommendations in this report, enhancing connectivity considering benefits to the economy, community, place, and sustainability.

[26] *The Baseline Scenario is based on the EES Traffic and Transport Impact Assessment (2021). See Section 3.4 for more information.*

5 Future transport demands

5.1 Overview

Given the transport ambition to manage the growing number of transport trips by encouraging the use of sustainable transport modes, this section presents the approach to set an appropriate mode share target.

It considers the potential for transport choices to better meet the Structure Plan and transport ambition by:

- Determining the number of trips generated given the land use
- Understanding, at a broad level, where these trips started and ended (trip distribution)
- Developing a mode share target by considering which trips could change from one mode to another given land use and travel patterns.

This mode share target was then justified through benchmarking with comparator suburbs. Using the Baseline Scenario as a starting point (see Section 3.4 for more details), this was undertaken by assessing how travel choices and the mode share may further change with improvements to sustainable modes of transport (active and public transport) that address the challenges and gaps.

Analysis is based on the primary mode[27] for trips to, from and within Box Hill (through-trips are not included).

5.2 Trip generation

The number of trips to and from Box Hill is primarily influenced by the land use plans and population and employment forecasts. A resident population of 29,100 and a worker population of 38,700 people by 2041 is forecast in the Box Hill Structure Plan Area. As shown in Figure 5.1 this results in about 32,100 trips in the morning peak hour and about 37,900 trips in the afternoon peak hour beginning, ending, or being entirely within Box Hill.

There is a greater proportion of trips into Box Hill (attraction) during the AM peak hour, which is primarily driven by employment land uses. Trips from Box Hill (production) are lower and driven by residential land uses (see Figure 5.1). Meanwhile, in the PM peak hour, the trip production is higher than attraction, with the main source of trips being people returning home from work. The overall number of trips in the PM peak hour is higher than the AM peak hour due to increased levels of retail and leisure trips in the PM peak hour.

[27] *Refers to the main mode of travel used by an individual traveling to/from Box Hill. For example, a trip comprising of walking to/from a public transport facility and using public transport would be classed as a public transport trip.*

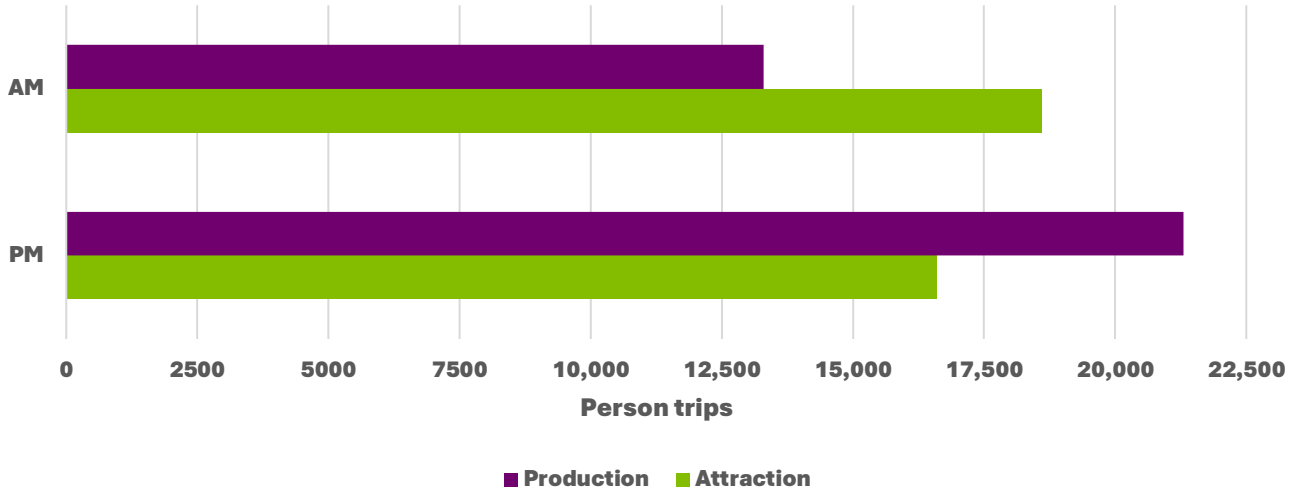


FIGURE 5.1 BOX HILL TRIP PRODUCTION AND ATTRACTION (AM AND PM PEAK HOUR 2041) (SOURCE: VITM)

5.3 Trip distribution patterns

Trip distribution patterns have been provided based on the AM peak period. The general trends for the AM peak are also representative of the PM peak.

The distribution of trips shows the majority of trips to and from Box Hill are located within the local area or surrounding suburbs (approximately 5 kilometres[28]) amidst a broad catchment that spans the inner and eastern Melbourne Metropolitan area (Figure 5.2).

Surrounding areas which generate and attract notable trips include Doncaster, Balwyn, Mont Albert North and Deakin University. However, these represent a relatively small proportion of trips compared to internal trips within Box Hill. Outside Box Hill and surrounding areas, areas along the Belgrave / Lilydale Line generate and attract more trips compared to other sources of travel demand.

[28] *Qualitative assessment of Figure 5.2 shows the majority of areas with high levels of trips occur within approximately 5 km radius of Box Hill).*

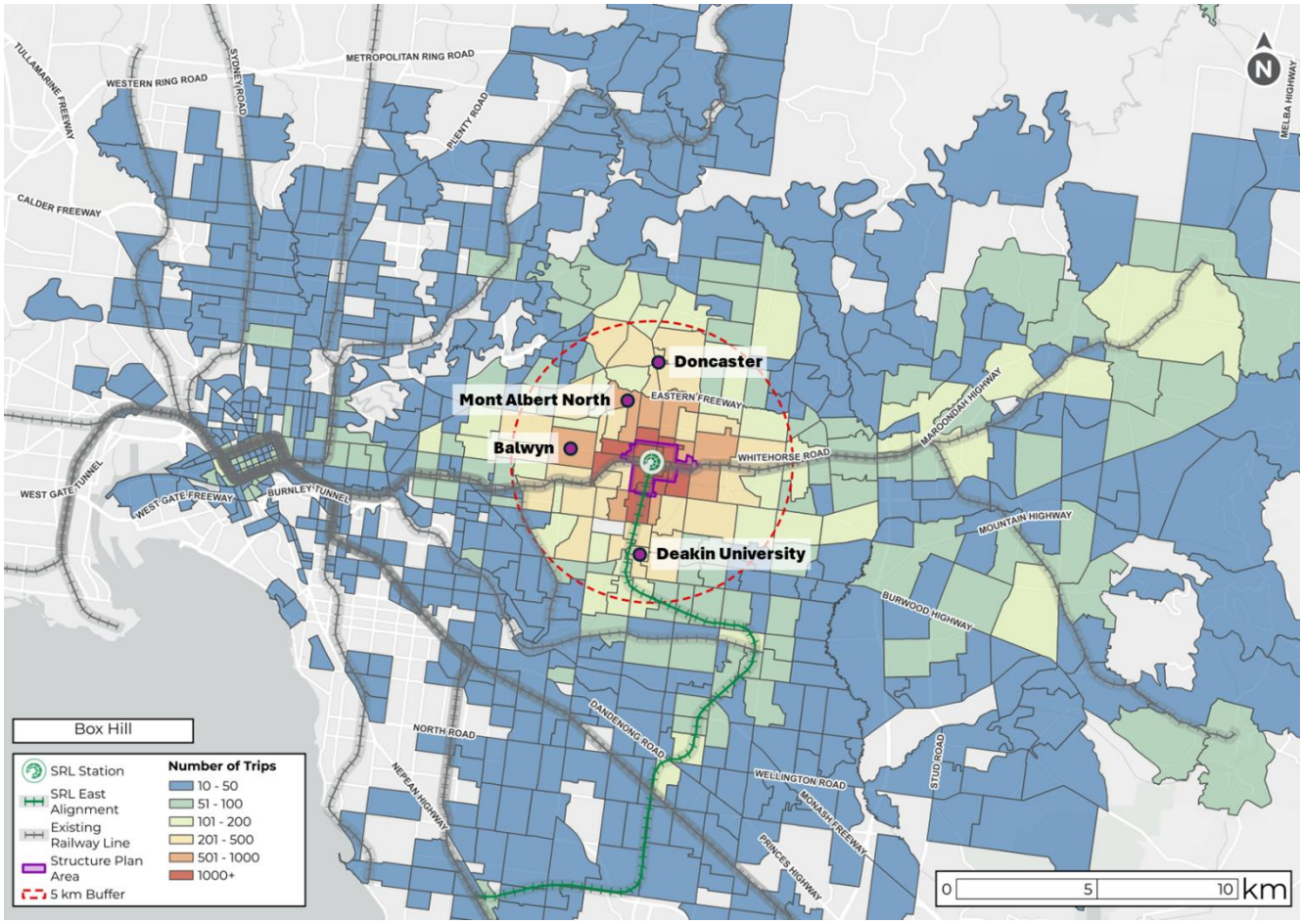


FIGURE 5.2 TRIP DISTRIBUTION – ORIGIN AND DESTINATION OF TRIPS TO AND FROM BOX HILL (AM PEAK 2041)

Based on the data in Figure 5.2, a summary of key areas and corridors (Figure 5.3) shows that approximately 50 per cent of trips to and from Box Hill are from within Box Hill itself and surrounding suburbs. Trips outside Box Hill and surrounding suburbs which potentially could be undertaken by a single seat trip on the Belgrave, Lilydale, or SRL East rail corridors account for a further 15 per cent of trips.[29] The remaining 35 per cent of trips are from elsewhere across Metropolitan Melbourne. The mode share assessment focuses on the 65 per cent of trips in the Structure Plan Area, surrounding suburbs, or along rail corridors as having potential to use public and active transport.

[29] *Based on trips which are potentially within an 800 m walk of a train station. The Belgrave and Lilydale Line includes over 30 stations which offer a single seat trip, while SRL East includes six stations, hence the higher potential for trips which could be undertaken by the Belgrave and Lilydale Line.*

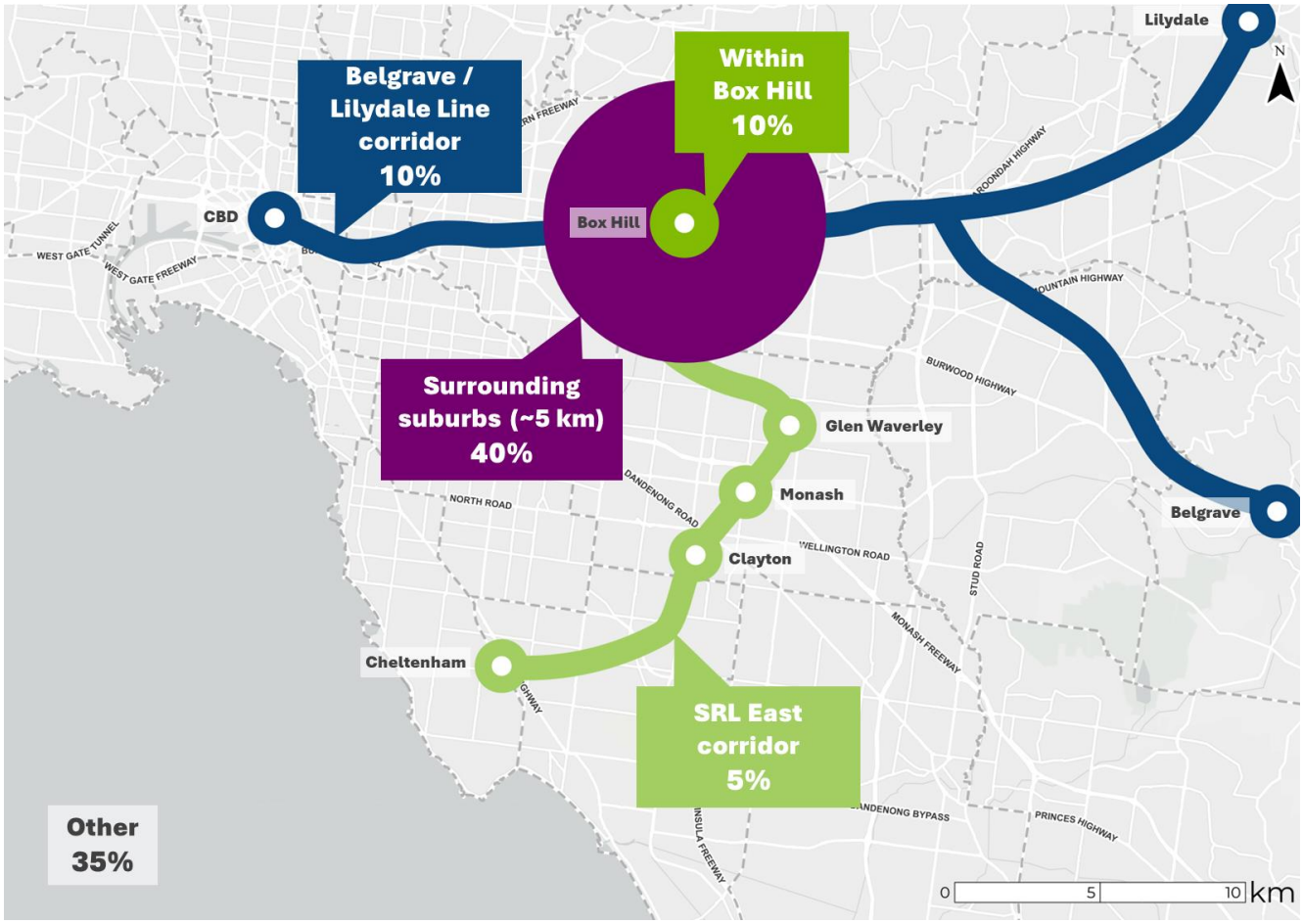


FIGURE 5.3 TRIP DISTRIBUTION – KEY AREAS AND CORRIDORS FOR TRIPS TO AND FROM BOX HILL (AM PEAK 2041)[30]

The ability to switch trips to sustainable modes will depend on improvements made to those modes, in addition to the shift achieved through increased land use density and road network congestion. For example, for public transport to be used for a wider variety of trips, such as weekend shopping trips, the frequency of services would need to be made sufficiently attractive. For cycling to be a viable option for carrying cargo, bicycle lanes and parking would need to be designed to support larger bicycles. The other 35 per cent of trips may benefit from the recommendations of this report, but have not been assumed in the mode share target given they are likely more reliant on broader public transport changes that are beyond the scope of the SRL East project.

Assessment of the Baseline Scenario mode share by distance (Figure 5.4) shows the opportunity to increase sustainable transport mode share through the shift of short distance private vehicle trips.

30 For the purpose of understanding strategic trips all percentages have been rounded to the nearest 5 per cent. Where overlap occurs between the 5 km area and rail corridors, trips have been allocated to the 5 km area. Trips along the rail corridors do not account for trips interchanging from other lines (i.e. only direct (single seat) trips have been included).

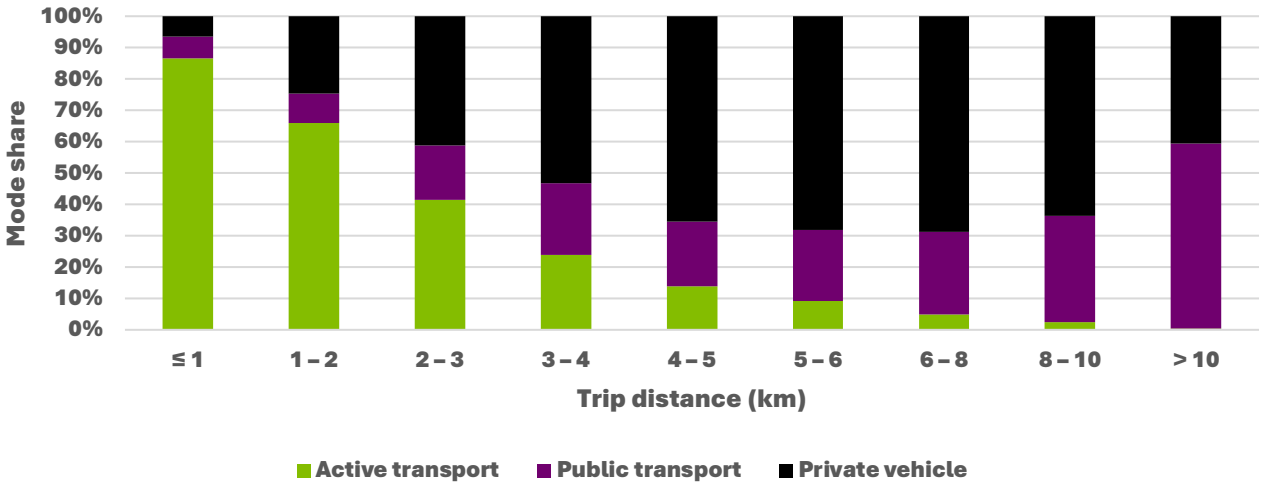


FIGURE 5.4 MODE SHARE BY DISTANCE TO BOX HILL (BASELINE AM PEAK 2041)

In particular, for trips of 2 to 3 km in distance over 40 per cent are forecast to be undertaken by private vehicle trips, which could readily be undertaken by active or public transport to the Structure Plan Area. There is also a significant proportion of trips to and from surrounding suburbs (less than 5 kilometres) that could switch to public and active transport.

5.4 Target mode share

Mode shares are a frequently used transport planning metric to provide a broad sense of how people choose to travel in an area. They are typically presented as the share of person trips by private car, public transport, and active transport.

Mode shares provide an indication of the relative attractiveness of the transport modes available in the area. When an area features mixed land uses, is served by convenient and frequent public transport, and provided with safe, direct and comfortable walking and cycling infrastructure, private vehicle usage tends to be lower as people have the choice to travel in other ways.

Setting a mode share target is useful as it:

- Communicates the future vision for the way that people travel, including the level of change expected from today, and compared to the Baseline Scenario and other areas
- Informs the transport recommendations to achieve this level of change
- Can be measured and monitored through existing processes, such as the ABS census
- Suggests how well the transport system meets the travel needs of the community.

Setting a target for increased sustainable transport mode share in Box Hill reflects the future higher-density, mixed use, transit-oriented development close to high-quality public transport services. In turn, this means there is greater opportunity for active and public transport compared to suburbs with more limited transport alternatives. In addition, mode share targets also consider that private vehicle trips will increase in volume over the life of the Structure Plan. Targeting increased active and public transport mode share for trips to, from or within Box Hill will help maintain strategic road corridors for broader traffic functions across Melbourne.

The trip distribution patterns and trip lengths (Section 5.3) suggest there is potential to achieve a greater mode share shift to sustainable modes in Box Hill than was estimated in the Baseline Scenario. This is possible due to the shifting of short distance trips to more sustainable modes which is supported by the proposed mix of land uses.

A comparison of the land use and transport characteristics of the six precincts has been undertaken to estimate an appropriate modal split target for each precinct. Box Hill has the highest Transit Score and is served by bus, rail and tram services centred around an activity centre that has undergone the largest scale of development uplift in the last 20 years. Clayton, Cheltenham and Glen Waverley have an existing railway station and adjacent bus interchange near existing activity centres with a similar Walk Score for all three precincts. In contrast, both Burwood and Monash have the lowest Walk Scores with no access to existing railway stations and have little recent land use change.

Based on the above groupings the following targets for have been set to increase sustainable transport compared to the baseline scenario:

- Box Hill has been set the lowest increase of 15 per cent in sustainable transport mode share as some mode shift has already occurred with development in recent years. Of this 15 per cent, 75 per cent of those trips changing modes is allocated to active transport and the remaining 25 per cent to public transport.

- Clayton, Cheltenham, and Glen Waverley have been set the highest increase of 25 per cent in sustainable transport mode share because they have a more immediate potential for change. Of this 25 per cent, 75 per cent of those trips changing modes is allocated to active transport and the remaining 25 per cent to public transport.

- Burwood and Monash have been set an increase of 20 per cent in sustainable transport reflecting the significant potential for change which is expected to occur closer to the opening of the SRL Station. Of this 20 per cent, 75 per cent is allocated to active transport and 25 per cent to public transport.

The primary focus of the sustainable transport mode share increase is the growth in active transport trips supported by the future land uses and short distance trips.

Figure 5.5 shows the future Baseline Scenario (including SRL East) and target mode shares for a typical peak hour[31] for Box Hill. The target shows a 15 per cent increase in sustainable transport made up of a 26 per cent increase in active transport and a 7 per cent increase in public transport. This illustrates the ability of Box Hill to manage the growing number of transport trips through more people choosing to walk, cycling and catch public transport as Box Hill develops.

[31] *Typical peak hour represents the average of the AM peak hour and PM peak hour*.

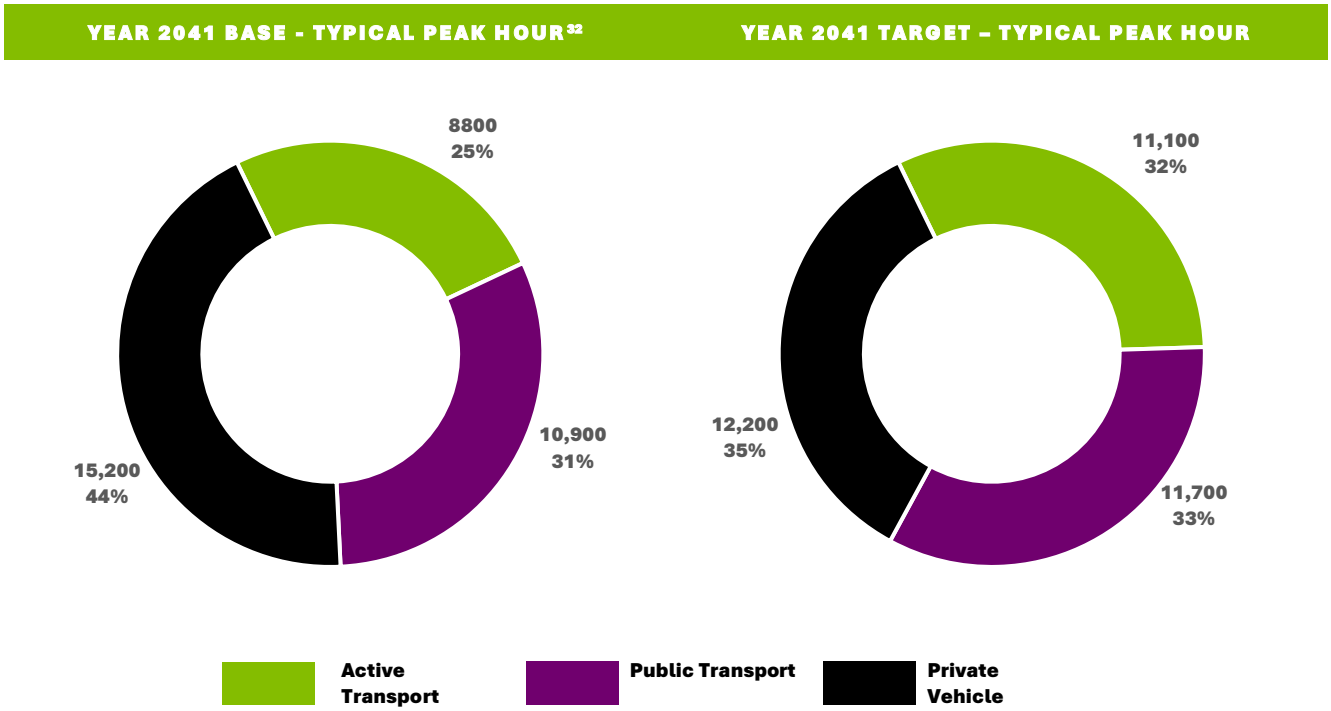


FIGURE 5.5 BOX HILL MODE SHARES

5.5 Mode share target rationale

To assess the rationale of the mode share target for Box Hill the target has been compared to comparator areas in Melbourne.

Assessment of ABS 2016 census data[33] for Greater Melbourne highlights the trend that areas with high population densities (Figure 5.6) typically have lower private vehicle mode shares, driven by factors including the spatial proximity of residential, employment and leisure land uses, as well as assumed or inferred higher degrees of access to public transport services that enable a shift to sustainable travel choices.

Plotting the 2041 Baseline Scenario and target mode share for Box Hill shows the baseline and target private vehicle mode shares are within the upper and lower bounds of the general trends observed for existing areas with similar residential densities (Figure 5.6).

The mode shares for Box Hill are shown in Figure 5.6:

- Baseline – upper end of the green bar
- Target – lower end of the green bar
- Purple area indicates the trendline plus the 95 per cent prediction interval.

[32] *Due to limitations in VITM actual active transport mode share may be higher than the baseline forecast due to mixed-used higher density land uses naturally favouring active transport and active transport initiatives from State Government and Local Councils which may occur from now until commencement of SRL East services.*

[33] *2016 ABS Census data considered appropriate for mode share analysis as it is pre-COVID and 2021 is pre-COVID 'normal'. 2021 ABS Census data considered appropriate for car ownership data as on balance 2016 and 2021 data is similar.*

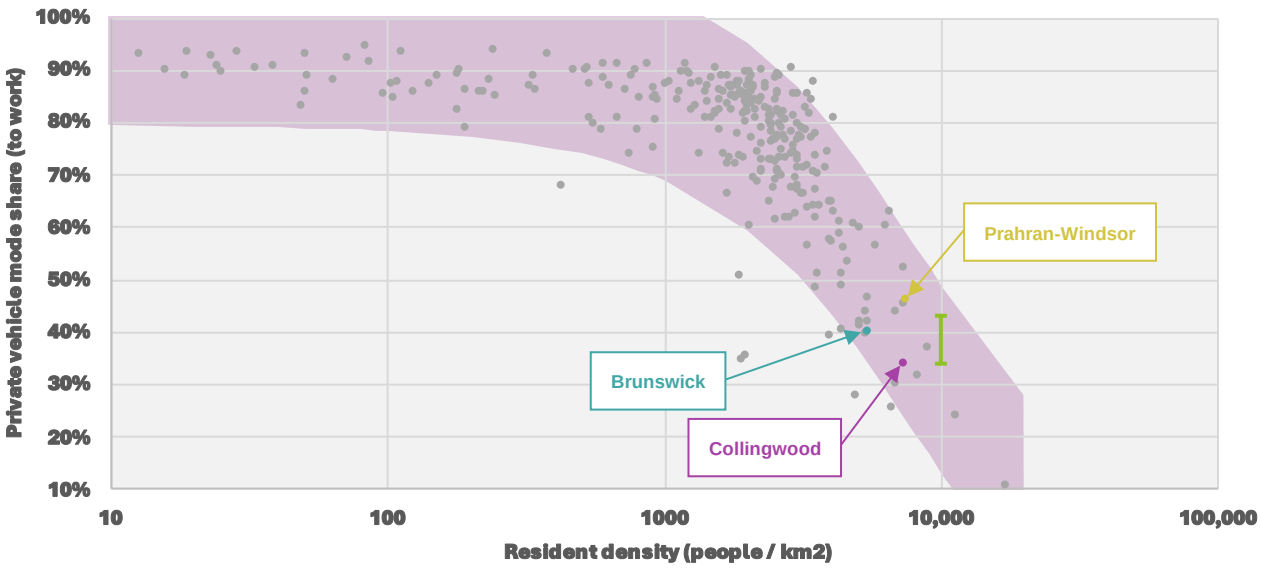


FIGURE 5.6 DISTRIBUTION OF MELBOURNE'S POPULATION DENSITY AND PRIVATE VEHICLE MODE SHARE BY SA2 LEVEL WITH BOX HILL 2041 MODE SHARE RANGES (SOURCE: ABS CENSUS 2016, JOURNEY TO WORK, PLACE OF USUAL RESIDENCE)

In addition, the future mode shares for Box Hill have been reviewed against the existing mode shares for various Melbourne areas to understand how they compare against current travel patterns. Areas were selected based on their similar resident density to the Box Hill of the future. As shown in Figure 5.7, the private vehicle mode share target for Box Hill resembles existing mode shares exhibited for areas in Melbourne. These areas reflect an appropriate target given the mix of higher density land uses, range of public transport services available, and quality of the active transport network. It must be noted that the Box Hill mode target is for 2041 compared to the other areas mode shares surveyed in 2016. It is expected that the comparable areas mode shares will improve by increasing the sustainable transport mode share and therefore decreasing the private car travel in the future.

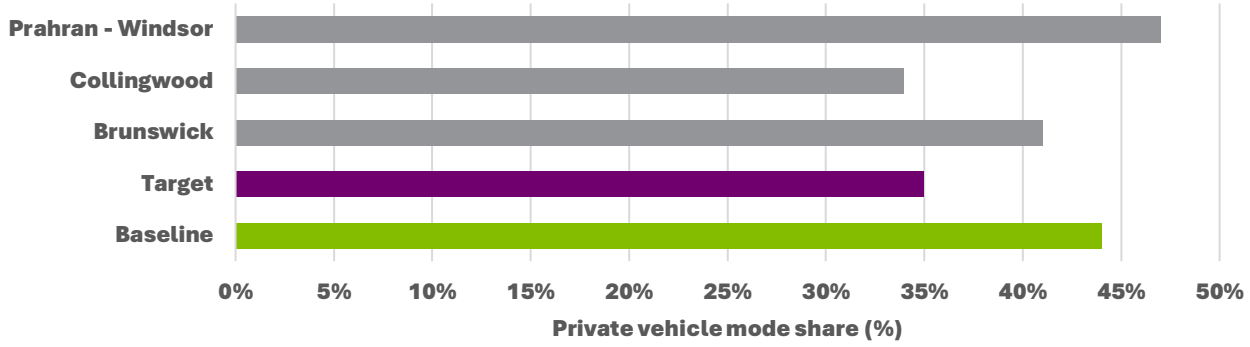


FIGURE 5.7 HIGH-LEVEL BENCHMARKING OF 2041 PRIVATE VEHICLE MODE SHARE TARGETS FOR BOX HILL (EXISTING AREAS SOURCE: ABS YEAR 2016 JOURNEY TO WORK, PLACE OF USUAL RESIDENCE)

6 Infrastructure recommendations

This section provides a summary of the modal ambitions, including the modal principles developed for SRL East Structure Plan Areas, and the corresponding strategic and local modal networks for the Box Hill Planning Area.

It provides the transport infrastructure recommendations for the Box Hill Structure Plan Area for each mode, and details how they address the identified challenges in Section 2, and how they adhere to the modal principles.

6.1 Modal principles and movement networks

6.1.1 OVERVIEW

The modal principles and transport networks that provide the strategic justification to support the future of the Structure Plan Area through the identified infrastructure recommendations are outlined in this section.

GUIDING PRINCIPLES

A set of guiding principles have been established for each mode to inform the development of the recommendations which will influence the movement experience throughout Box Hill. The principles were consolidated from a broader set of network-wide transport principles, which were developed using the DTP-adopted Movement & Place (M&P) classifications. These classifications, which have been specifically applied in the context of the SRL East structure planning, are designed to encourage the use of active and public transport while balancing the competing demands of movement and access in a rapidly evolving urban landscape.

These guiding principles align with the overarching transport ambition and goals set for the Box Hill Structure Plan Area. They provided a framework throughout the identification of the proposed infrastructure recommendations, ensuring that planned developments contribute to a more connected and accessible Box Hill. By adhering to these principles, the recommendations will help achieve the desired outcomes for mobility, while also supporting broader urban planning objectives for Box Hill. The following sections detail how these principles are applied to achieve an integrated and forward-thinking transport network.

The guiding principles for the Box Hill Structure Plan Area for each mode are provided in the following sections.

MOVEMENT NETWORKS

The DTP-adopted M&P classifications for SRL East structure planning also informed the identification of future strategic and local corridors for each mode.

Strategic corridors connect to destinations with metropolitan and regional significance such as employment and designated activity centres. Strategic modal corridors will provide high-quality connections that prioritise the movement of a particular mode, while still considering the function of other modes along that corridor.

More local links will provide an attractive corridor for moving within Box Hill and to the precinct core and other local destinations within and around Box Hill.

The strategic and local walking, cycling, public transport and general traffic / freight corridors across Box Hill generally align with the M&P classifications in Table 6.1.

TABLE 6.1 STRATEGIC AND LOCAL CORRIDORS AND ASSOCIATED M&P CLASSIFICATIONS

MODE	STRATEGIC	LOCAL
Walking	W1-W2	W3*
Cycling	C1- C2	C3*
Public transport	B1 – B2 & T1 – T3	B3
Traffic routes	GT1 – GT3 & F1 – F3	GT4*
* Referred to as municipal links or routes in the DTP Movement & Place Technical Appendix (September 2020)		

The strategic and local corridors within the Box Hill Planning Area for each mode are provided in the following sections.

6.1.2 WALKING

Provide for a vibrant community where walking is the preferred way to get to wherever you need to go locally.

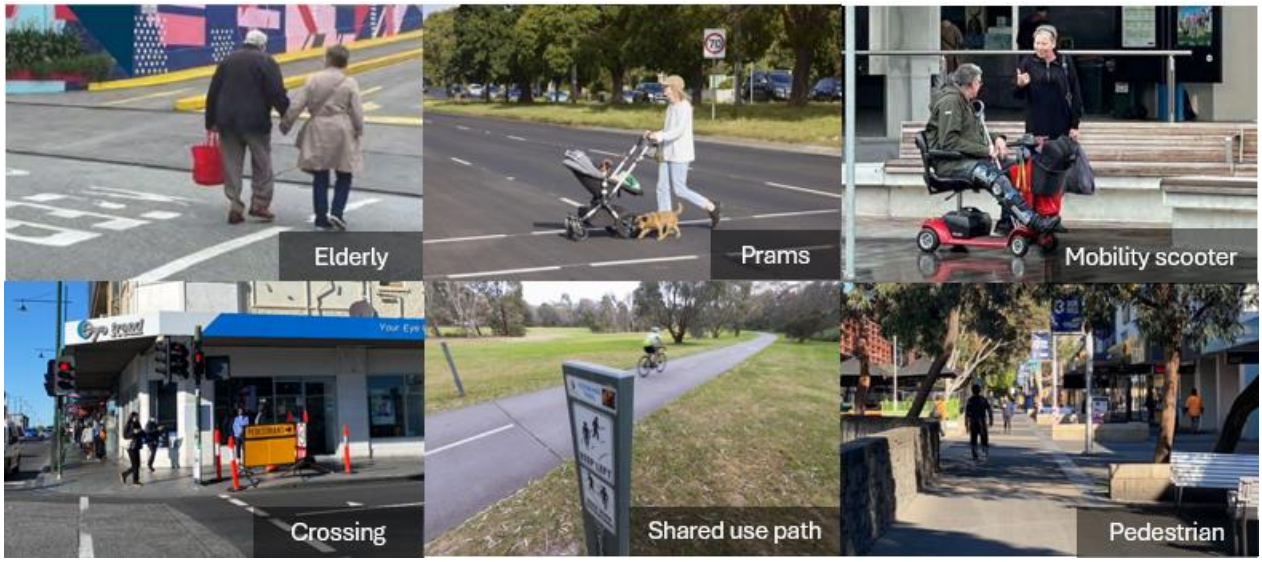


FIGURE 6.1 WALKING USER TYPES AND INFRASTRUCTURE

References to walking in this report include moving as a pedestrian unaided, or using any kind of wheeled mobility aid, such as wheelchairs, mobility scooters, walking frames, prams or buggies as shown in Figure 6.1.

Sections of the Box Hill Structure Plan Area are relatively well serviced by pedestrian infrastructure and amenity compared to some parts of Greater Melbourne. In particular, several streets and areas in Box Hill that prioritise pedestrian movements include the Box Hill pedestrian mall (in Main and Market Streets) and Box Hill Gardens. However, walking connectivity beyond these areas is hindered by highly trafficked arterial roads and physical barriers, such as the existing rail infrastructure. Many pedestrian facilities will need to be enhanced, such as wider footpaths, to improve the walking experience within Box Hill.

Delivering a desirable pedestrian environment is critical to supporting the sustainability, functionality, and liveability of the Structure Plan Area, and offers significant health benefits.

Infrastructure recommendations for corridors that improve priority for walking are provided in Section 6.2.

WALKING PRINCIPLES

As outlined in Section 6.1.1, a set of guiding principles were established to inform the development of the recommendations that will influence the walking experience in Box Hill. These walking principles are provided in Figure 6.2. These walking principles align with the transport ambition and goals and provided a framework throughout the development of the infrastructure recommendations to ensure walking formed part of the integrated transport network.

FIGURE 6.2 WALKING PRINCIPLES

WALKING CORRIDORS

Strategic walking corridors connecting destinations with metropolitan and regional significance and local walking corridors moving people around Box Hill as defined in Section 6.1.1 for the Box Hill Planning Area are shown in Figure 6.3.

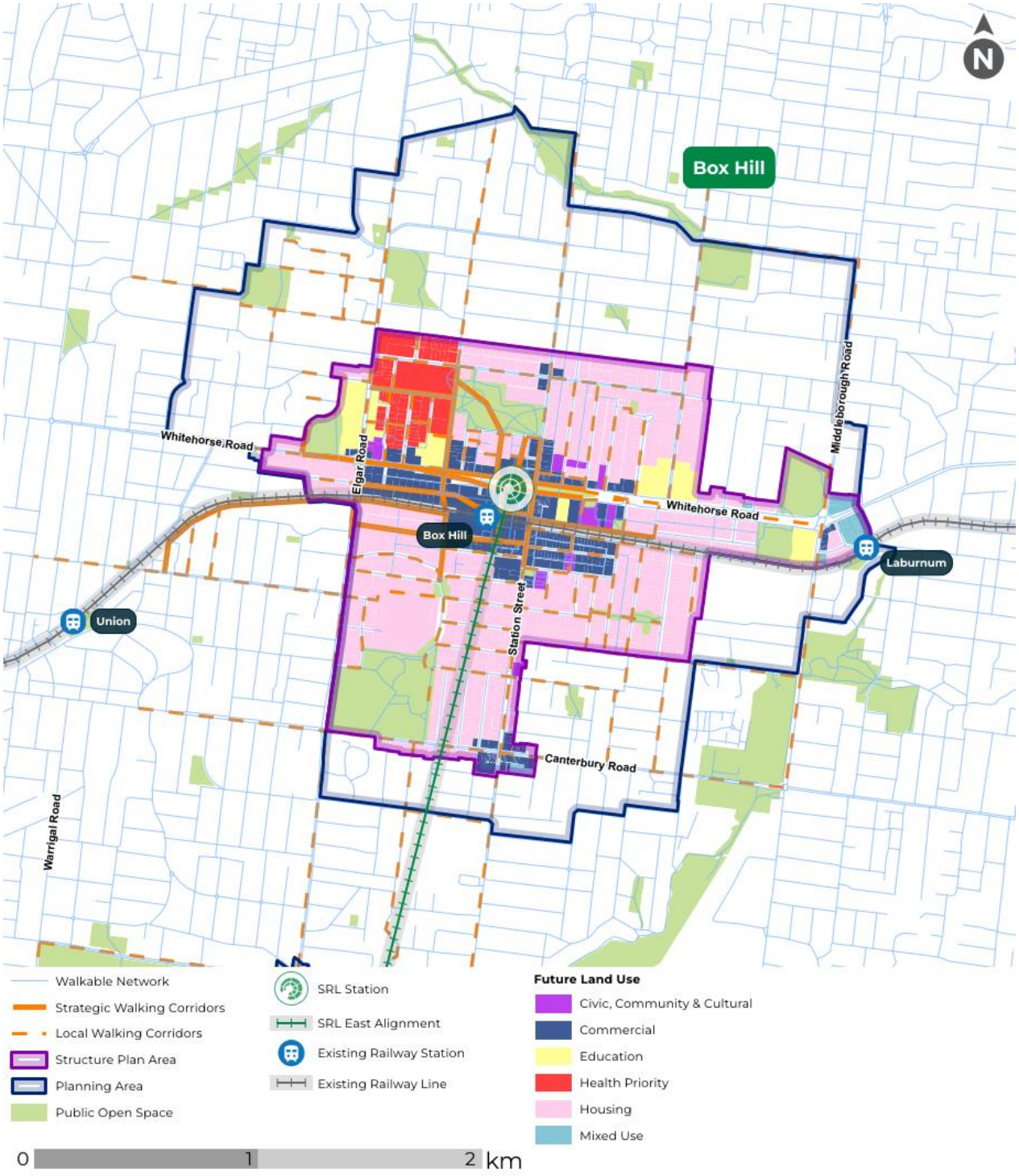


FIGURE 6.3 WALKING CORRIDORS IN THE BOX HILL PLANNING AREA

6.1.3 CYCLING AND MICROMOBILITY

The SRL East Structure Plan Areas provide world class active transport options. Bikes and other micromobility devices are some of the most attractive options for people to access local shops, schools, workplaces, and public transport facilities for longer journeys.

FIGURE 6.4 CYCLING AND MICROMOBILITY DEVICES

References to cycling in this report include personal mobility devices such as bicycles, scooters and cargo bikes, including electric powered devices.

Box Hill has a high-quality shared user path along the Box Hill to Ringwood Rail Trail. However, the cycling network is disconnected and does not facilitate a low-stress experience for cyclists of all ages and abilities. There are limited separated cycle routes that connect key destinations, such as Box Hill Central, the existing Box Hill Station and Box Hill Institute.

Recommendations for cycling and micromobility aim to support the use of micromobility devices of all kinds, allowing everyone to navigate the community safely and sustainably, with the associated health benefits of active transport.

Cycling in the Planning Area will be more available and safer for people of any gender, age or ability with well-planned and designed on and off road infrastructure which may include provision for cycling separated from other traffic, or providing for cyclists on streets with reduced speeds and with lower traffic volumes, supporting a wider range of devices. Cycling will support an alternative to driving for trips that may be too long for walking and facilitate quick short distance trips.

Micromobility devices such as e-scooters and e-bikes can also be offered as a shared service where anyone can unlock and use a device from a public fleet for a fee. Shared micromobility offers the flexibility and convenience of e-bikes and e-scooters without the need to pay upfront costs or securely store a private device at home or at a destination.

The shared e-scooter trials in the Melbourne, Yarra and Port Phillip municipalities (launched in 2022) have generated significant benefits for the community. The average number of trips per day per e-scooter is 4.3 to 5.5[34] across each quarter of 2023, which is among the highest e-scooter use in the world. For the same 2023 period the average length of e-scooter trips in the trial area ranged from 1.66 to 1.78 kilometres, showing the potential of the mode to assist with modal shift in the 1 to 2-kilometre trip distance bracket identified in Figure 5.4[34]. User surveys have found that around 28 per cent of e-scooter trips in the trial areas replaced a vehicle trip,[35] helping to reduce congestion and contribute to car light living. Despite the City of Melbourne's decision to end the trial in its municipality, other councils are considering working with the hire scheme operators in the future and private scooter uptake continues to increase in Melbourne. In October 2024, the Victorian

[34] https://public.ridereport.com/regions/australia *(Data range captured for each quarter of 2023)*

[35] *Williams, G. (2024, April 4). Making E-scooters Safer [Press release]. https://www.premier.vic.gov.au/sites/default/files/2024-04/240404-Making-E-Scooters-Safer.pdf*

Government announced that share hire e-scooters will be permanently legalised across Victoria, subject to agreement with councils.[36]

Infrastructure recommendations to improve cycling and micromobility transport in the Structure Plan Area are provided in Section 6.2.

CYCLING PRINCIPLES

As outlined in Section 6.1.1, a set of guiding principles were established to inform the development of the recommendations that will influence the cycling experience in Box Hill. These cycling principles are provided in Figure 6.5. These cycling principles align with the transport ambition and goals and provided a framework throughout the development of the infrastructure recommendations to ensure walking formed part of the integrated transport network.

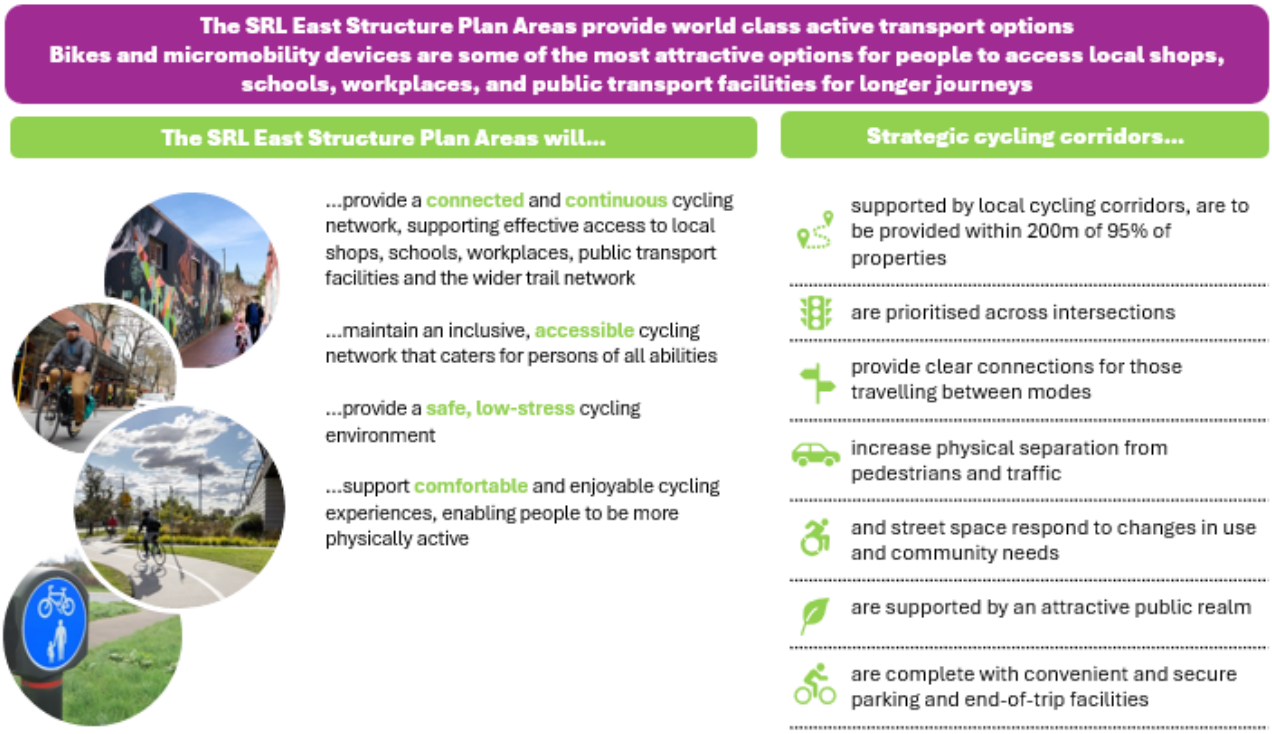


FIGURE 6.5 CYCLING PRINCIPLES

CYCLING CORRIDORS

Strategic cycling corridors connecting destinations with metropolitan and regional significance and local cycling corridors moving people around Box Hill as defined in Section 6.1.1 for the Box Hill Planning Area are shown in Figure 6.6.

[36] *Victorian Government (2024). Permanent E-Scooter Rules in Place Across the State. https://www.premier.vic.gov.au/permanent-e-scooter-rules-place-across-state*

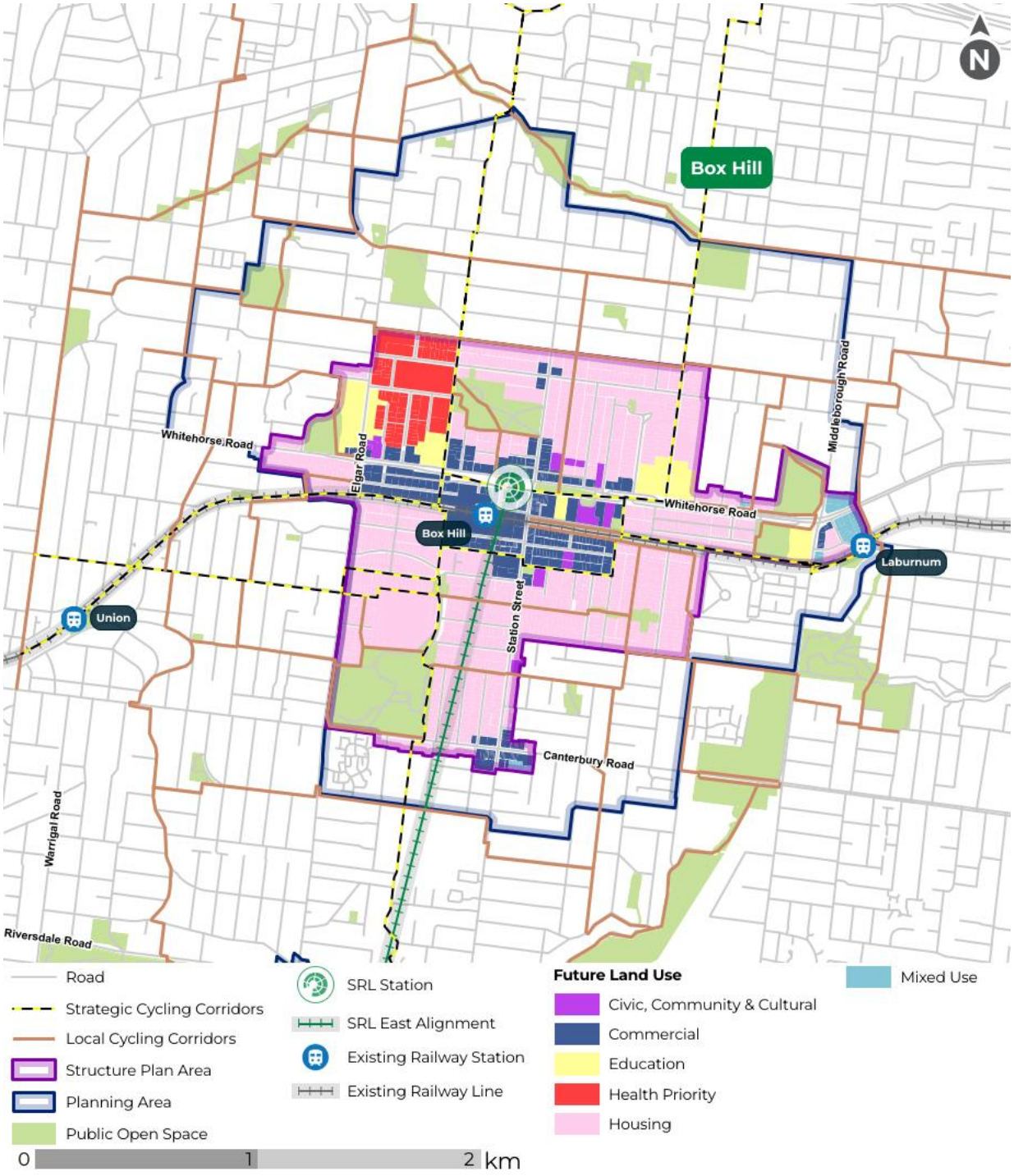


FIGURE 6.6 CYCLING CORRIDORS IN THE BOX HILL PLANNING AREA

6.1.4 PUBLIC TRANSPORT

Anchored around the new SRL interchanges, public transport is the most attractive option for people to travel distances that are too long to walk, cycle or use other micromobility devices.

FIGURE 6.7 PUBLIC TRANSPORT MODES AT BOX HILL

Box Hill is currently serviced by buses, trams and the Belgrave / Lilydale Line. The centre of Box Hill will play a vital role for connecting people to all transport services and modes, including the SRL station. The network of quality public transport corridors will connect across the greater Melbourne metropolitan area. The Box Hill Structure Plan Area is relatively well serviced by nearby public transport compared to some parts of Greater Melbourne.

Public transport will be a comfortable and reliable option for travelling when it is not within a comfortable walking distance, is too far to cycle or use micromobility devices, and is an attractive alternative to private vehicle use. In addition to the well-known environmental benefits, public transport is also a good way to increase health benefits through incidental exercise compared to private vehicles, by walking or cycling to stations and stops.

Infrastructure recommendations to improve public transport corridors are provided in Section 6.2.

PUBLIC TRANSPORT PRINCIPLES

As outlined in Section 6.1.1, a set of guiding principles were established to inform the development of the recommendations that will influence the public transport experience in Box Hill. These public transport principles are provided in Figure 6.8. These public transport principles align with the transport ambition and goals and provided a framework throughout the development of the infrastructure recommendations to ensure walking formed part of the integrated transport network.

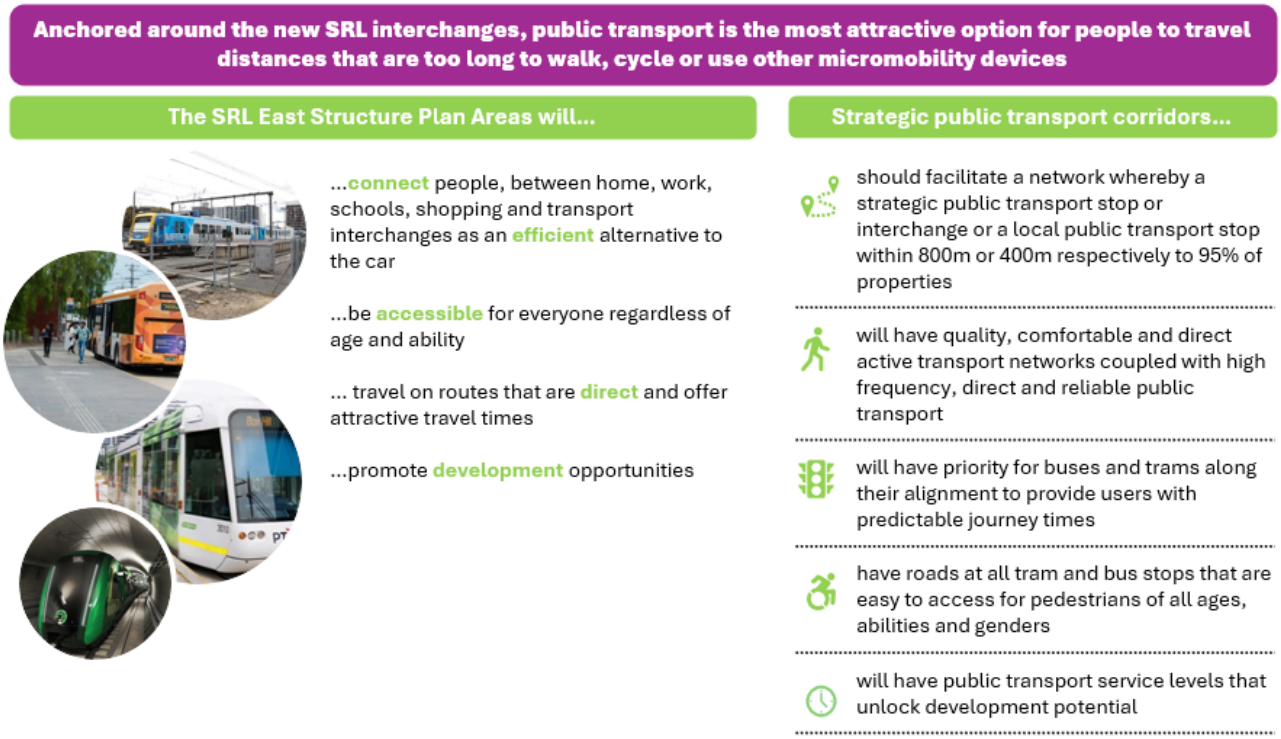


FIGURE 6.8 PUBLIC TRANSPORT PRINCIPLES

PUBLIC TRANSPORT CORRIDORS

Strategic public transport corridors connecting destinations with metropolitan and regional significance and local public transport corridors moving people around Box Hill are defined in Section 6.1.1 for the Box Hill Planning Area. SRLA and DTP have worked together to identify these strategic and local bus corridors taking into consideration existing bus routes and the introduction of the new SRL East Stations. While it is too early to detail specific route changes with the SRL stations expected to be delivered by 2035, Figure 6.9 shows the most likely strategic and local corridors identified through this collaboration with DTP.

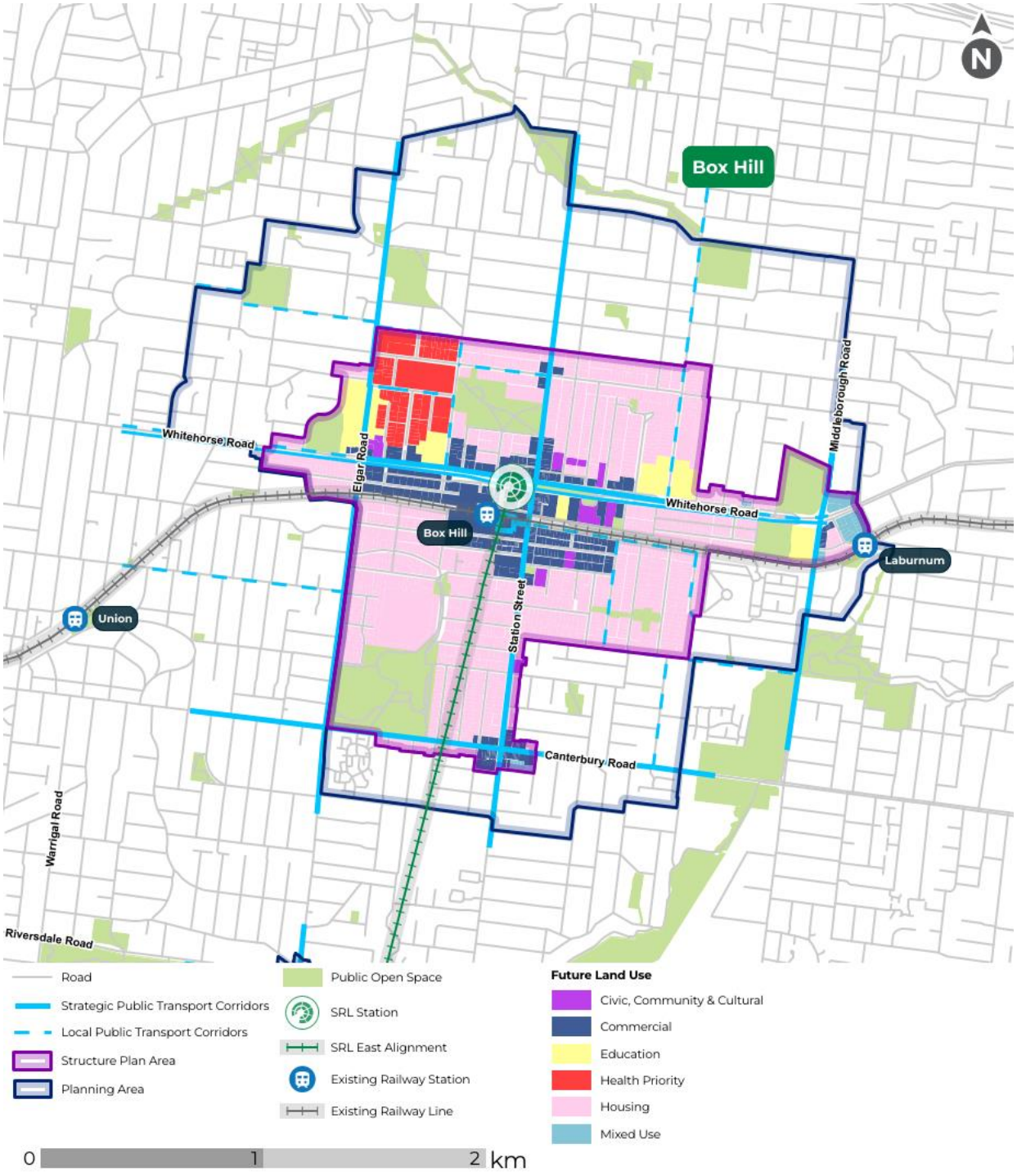


FIGURE 6.9 PUBLIC TRANSPORT CORRIDORS IN THE BOX HILL PLANNING AREA

6.1.5 GENERAL TRAFFIC AND FREIGHT

A vision of healthy, safe and sustainable communities will be delivered by well-planned strategic access and local neighbourhoods, anchored by the opportunity for people to live car free or car light.

FIGURE 6.10 EXAMPLES OF GENERAL TRAFFIC AND FREIGHT VEHICLES

Box Hill benefits from access to strategic road routes including Elgar Road, Whitehorse Road, Station Street, Canterbury Road and Middleborough Road. Protecting arterial road access while increasing priority for other modes particularly in the precinct core will support liveability in Box Hill for residents, workers and visitors. The option of car light living will be achievable in the Structure Plan Area as access to other modes increases and denser mixed land use develops and help to manage congestion on existing road network.

The diversity of the existing Box Hill activity core, containing consolidated retail (Box Hill Central Shopping Centre) and other land uses such as hospitality, entertainment, medical centres and community hubs results in relatively complex freight, servicing and emergency access needs. The Box Hill Structure Plan provides the opportunity to 'rethink' how these essential services will be managed for existing land uses as well as new developments.

Freight (including smaller parcels), service and emergency vehicles will need to be appropriately accommodated to support the future growth of Box Hill. This includes maintaining important freight and emergency access to major land uses such as Box Hill Central and Box Hill Hospital.

Introducing new freight management practices for the Structure Plan Area through 'last mile' policies will impact how new freight tasks are undertaken and influence existing freight tasks for the betterment of businesses and the community.

Providing mobility hubs and implementing Last Mile Freight Plans (discussed in Section 7.2 and Section 7.3) and built form controls will provide measures for managing freight in the Structure Plan Area. Freight management policies prepared in consultation with the City of Whitehorse and partners will introduce new freight management practices and assets to Box Hill, such as parcel lockers, cargo bikes and small electric vehicle delivery vans to reduce the freight burden on the network and environment.

Infrastructure recommendations to improve freight management in Box Hill are provided in Section 6.2.

GENERAL TRAFFIC AND FREIGHT PRINCIPLES

As outlined in Section 6.1.1, a set of guiding principles were established to inform the development of the recommendations that will influence the general traffic and freight experience in Box Hill. These general traffic and freight principles are provided in Figure 6.11. These general traffic and freight principles align with the transport ambition and goals and provided a framework throughout the development of the infrastructure recommendations to ensure walking formed part of the integrated transport network.

FIGURE 6.11 GENERAL TRAFFIC AND FREIGHT PRINCIPLES

STRATEGIC AND LOCAL TRAFFIC CORRIDORS

Strategic general traffic and freight corridors connecting destinations with metropolitan and regional significance and local general traffic corridors moving people around Box Hill as defined in Section 6.1.1 for the Box Hill Planning Area are shown in in Figure 6.12.

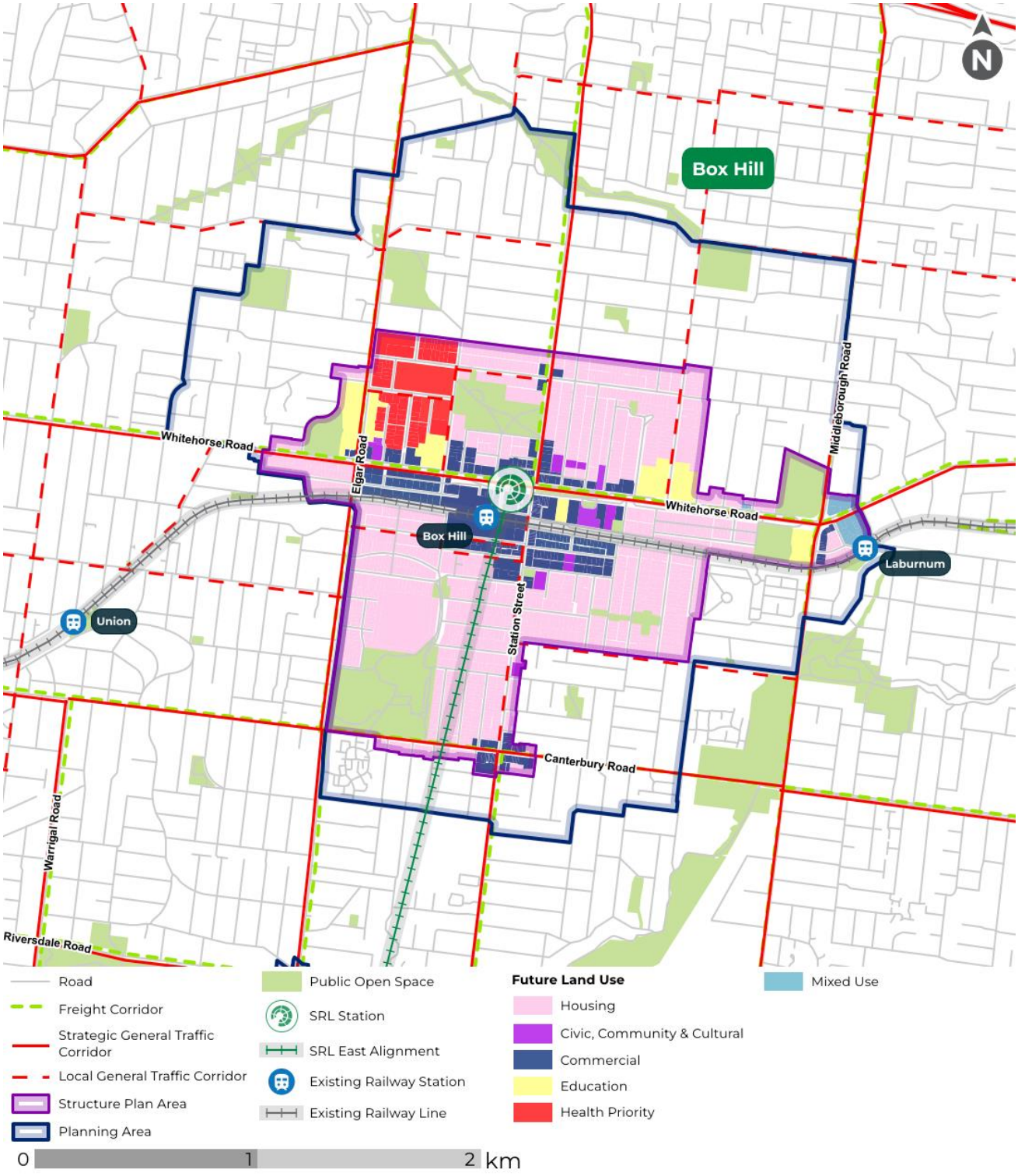


FIGURE 6.12 STRATEGIC TRAFFIC AND LOCAL ACCESS CORRIDORS IN THE BOX HILL PLANNING AREA

6.2 Infrastructure recommendations

6.2.1 OVERVIEW

Infrastructure recommendations have been developed to inform the Structure Plan and help achieve the Box Hill transport ambition. The sequencing of implementing the recommendations is based on the phases outlined in Figure 6.13 to reflect the anticipated development of the Box Hill Structure Plan Area.

More details on the timeframes of the delivery of the recommendations are provided in the Box Hill Structure Plan.

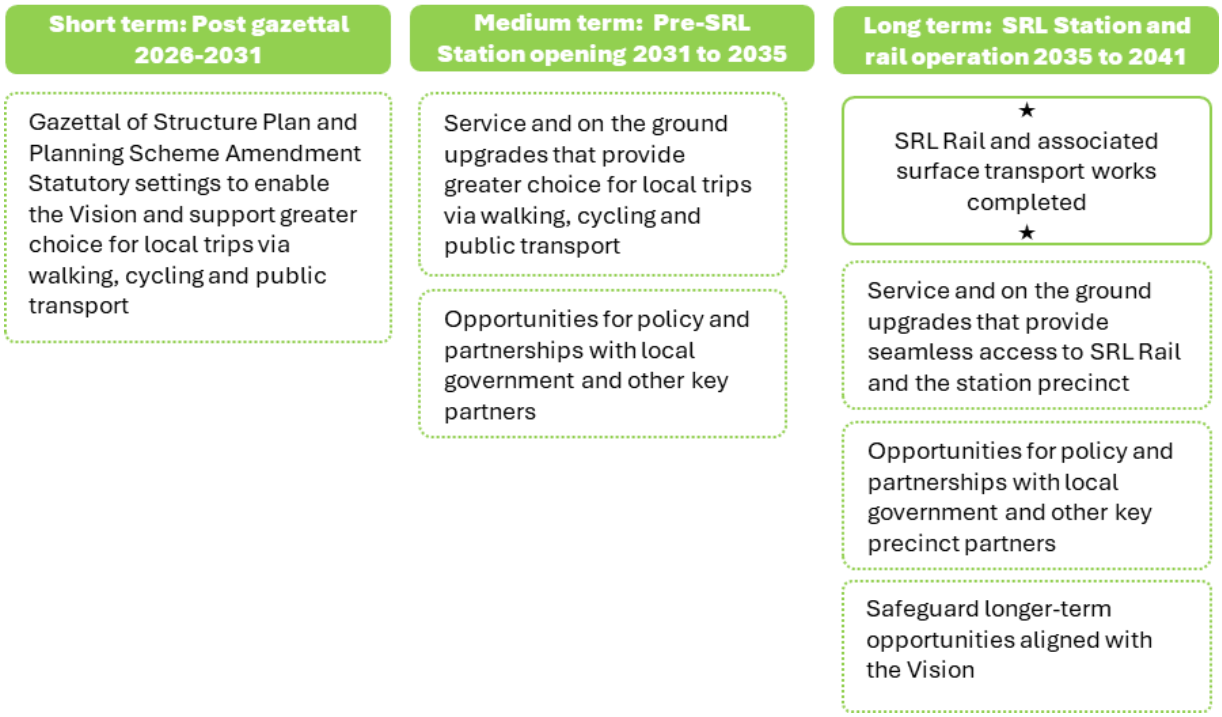


FIGURE 6.13 PHASES OF DEVELOPMENT AND TRANSPORT PLANNING

The infrastructure recommendations focus on upgrades to strategic and local movement corridors that provide the greatest opportunity to provide improvements to facilitate sustainable transport including walking, cycling, public transport and place-making, while maintaining the strategic function of general traffic and freight corridors. These recommendations can be broadly categorised into four groups with recommendation types, as summarised in Table 6.2.

TABLE 6.2 INFRASTRUCTURE RECOMMENDATION TYPES

RECOMMENDATION GROUP	INFRASTRUCTURE RECOMMENDATION TYPES
Setting the priority network	• **New and Upgraded Strategic Corridors** that help achieve the Box Hill Vision with a particular focus on active and public transport upgrades • Upgraded local **Green Streets**, with a particular focus on general active transport upgrades and support for innovative modes.
Unlocking the priority network	• **New Key Links**, focusing on creating active transport permeability and connecting transport corridors • **Existing streets that require upgrades outside existing road reserves** • **New and upgraded crossings** of busy roads.
Hubs and interchanges integrated with the network	• Upgrades to **public transport interchanges** to enhance the services, facilities, and customer experience • New **bicycle hubs** to encourage active transport to the station.
Enabling the priority network	• Maintaining **strategic traffic and freight corridors** • Designating **low traffic neighbourhoods** • Managing **integrated parking** for all modes.

Figure 6.14 below identifies examples of potential treatments that could be considered when recommendations are progressed into project design and delivery by a delivery agency. Some treatments are particularly relevant to low traffic neighbourhoods (LTN).

FIGURE 6.14 EXAMPLES OF POTENTIAL TREATMENTS

The infrastructure recommendations for Box Hill were developed to address the various modal challenges identified across the Structure Plan Area while adhering to the modal principles proposed in this report so the movement network continues to cater for the demand in Box Hill as it evolves. While responding to some mode specific challenges, the recommendations intend to facilitate an integrated approach to encouraging a mode shift towards public and active transport while maintaining capacity and efficiency for general traffic, particularly on the main roads through Box Hill.

The infrastructure recommendations for the Box Hill Structure Plan Area are provided in the following sections.

6.2.2 SETTING THE PRIORITY NETWORK

In setting the priority movement network, identifying specific Upgraded Strategic Corridors and Green Streets is important role for providing a network of appropriate and integrated connections through and within Box Hill to support the transport ambition. The general nature of the Upgraded Strategic Corridors and Green Streets are described in Table 6.3.

TABLE 6.3 UPGRADED STRATEGIC CORRIDORS AND GREEN STREET RECOMMENDATION DESCRIPTIONS (SOURCE: SRLA, 2024)

RECOMMENDATION TYPE	RECOMMENDATION TYPE DESCRIPTION
Upgraded Strategic Corridors	Upgraded Strategic Corridors are street corridors that require improvements to achieve the transport goals. Changes could include an upgraded active transport corridor and streetscaping, or an upgraded public transport corridor with enhanced priority. Each Upgraded Strategic Corridor is described by an associated infrastructure recommendation that outlines the significant changes to the street cross-section and/or the adjacent land uses.
Green Streets	Green Streets are a collective network of street corridors that are proposed for upgraded pedestrian and cycling connectivity, improved access to important local destinations, and an enhanced tree canopy. The recommended upgrades to Green Streets are high-level, focussing on street typologies rather than unique cross-sections. As such, one infrastructure recommendation covers the upgraded network of Green Streets across Box Hill.

The identified recommendations for Box Hill intended to set the priority movement network are detailed in Table 6.4 with the identified corridors and streets in Box Hill are shown in Figure 6.15.

TABLE 6.4 INFRASTRUCTURE RECOMMENDATIONS – SETTING THE PRIORITY NETWORK

REF	SRL EAST RAIL PROJECT APPROVED SCOPE	
1	**Deliver a reimagined Whitehorse Road as a people-focused boulevard** Extend activity east and west from central Box Hill and improve the journey experience with a focus on public transport, walking and cycling. *Connected to recommendation 13*	
REF	**RECOMMENDATION**	**STRATEGIC JUSTIFICATION**
2	**Enable enhanced priority for buses and pedestrians on Station Street** Investigate improvements for buses on Station Street including the upgrade of the Box Hill Bus Interchange and Station Street intersection. Investigate improvements to the walking experience on Station Street by increasing amenity and accessibility, with new crossings at Bank Street and upgraded crossings near Rutland Road and Kent Road. *Connected to recommendations 15 and 23*	Station Street is a key link in Box Hill's strategic bus network, providing access to Box Hill Bus interchange. Station Street is also an important north south pedestrian link through the Box Hill's commercial heart. Enabling enhanced priority for buses and pedestrians on Station Street will address existing challenges by: • Facilitating improvements to bus service reliability and performance along the corridor. • Improving the amenity for pedestrians along the corridor and maintaining the connection to the precinct core and public transport hub • Improving bus accessibility to Box Hill Bus Station and the interchange experience including waiting area safety and amenity, and connections to the existing Box Hill Station. This recommendation also responds to identified walking and public transport principles including: • Public transport corridors will have quality, comfortable and direct active transport networks coupled with high frequency, direct and reliable public transport • Limiting the impact of cars and service vehicles on high-activity and high-value places • Walking corridors be supported by an inviting public realm, seating, lighting, and trees.
3	**Enable a new north-south active transport spine through the heart of Box Hill.** Connect communities with a walking and cycling bridge between Nelson Road and Thurston Street. Investigate walking and cycling upgrades for Nelson Road and Thurston Street to promote sustainable transport access to Box Hill Hospital, Box Hill Institute, Box Hill Gardens and Surrey Park.	Nelson Street and Thurston Street both connect important destinations along relatively lightly trafficked links north and south of the Lilydale / Belgrave Line respectively. Enabling the completion of a new north-south active transport spine through the heart of Box Hill will address existing challenges by: • Removing existing barriers to walking and cycling connectivity through Box Hill • Providing a higher level of safety and amenity for pedestrians and cyclists along the corridor • Providing the missing link along the Doncaster to Burwood Strategic Cycling Corridor. This recommendation also responds to identified walking and cycling principles including: • To provide access to primary walking destinations • Facilitate the provision of local cycling corridors within 200m of 95% of properties • Walking corridors be supported by an inviting public realm, seating, lighting, and trees.

REF	RECOMMENDATION	STRATEGIC JUSTIFICATION
4	**Enable an upgraded east-west active transport corridor between Union Train Station to Bank Street** Investigate improvements to create low stress walking and cycling corridor, including upgraded crossing points, and traffic calming.	Churchill Street and Hopetoun Parade provides an opportunity to create an improved east west strategic walking and cycling corridor along the Lilydale / Belgrave Line linking to the shared path on Bank Street west of the precinct core. Enable an upgraded east-west active transport corridor between Union Train Station to Bank Street will address existing challenges by: • Providing a safer and more accessible east west active transport corridor connecting the Structure Plan Area to and through the precinct core • Removing existing barriers to walking and cycling connectivity through Box Hill • Providing a higher level of safety and amenity for pedestrians and cyclists along the corridor. This recommendation also responds to identified walking and cycling principles including: • To provide access to primary walking destinations • To reduce conflict between pedestrians and cyclists and other micromobility • Facilitate the provision of local cycling corridors within 200m of 95% of properties • Walking corridors be supported by an inviting public realm, seating, lighting, and trees.
5	**Enable new pedestrian links through the Box Hill centre** Enable a new permeable network of pedestrian links to, from, and through the centre connecting people and workers with transport and amenity.	The core of Box Hill is crossed by multiple strategic walking corridors and contains key destinations for the region. Enabling a people focused pedestrian core will help to address existing challenges by: • Prioritising pedestrian movements and reducing conflict with vehicular traffic on all streets in the core area • Removing barriers, increasing access, priority and amenity for pedestrians to key destinations within the precinct core. This recommendation also responds to identified walking and cycling principles including: • To provide access to primary walking destinations • To provide clear connections for pedestrians travelling between modes • To reduce conflict between pedestrians and cyclists and other micromobility • Allowing street space to respond to changes in use and community needs • Walking corridors be supported by an inviting public realm, seating, lighting, and trees.
6	**Facilitate Canterbury Road bus corridor upgrade and extension** Investigate streetscape improvements to improve bus stops, walkability, and access to local businesses.	The strategic nature of Canterbury Road provides a significant opportunity to improve bus connectivity along the southern boundary of Box Hill. Facilitate an extension and upgrade of the bus corridor along Canterbury Road will help to address existing challenges by: • Increasing public transport accessibility for residents and businesses along the corridor • Providing more efficient connections to services along intersecting bus corridors • Improving the existing bus stop waiting areas to prioritise pedestrian safety, DDA compliance, and better amenity. This recommendation also responds to identified public transport principles including: • Public transport corridors will have quality, comfortable and direct active transport networks coupled with high frequency, direct and reliable public transport • Facilitate the provision of a local public transport stop within 400 m of most properties • Providing public transport service levels that unlock development potential.

REF	RECOMMENDATION	STRATEGIC JUSTIFICATION
7	**Enable a network of local Green Streets** A broad classification for a collective network of local streets that should be prioritised for improvement due to their significance for sustainable travel and their ability to support pedestrian experience to key destinations (such as recreational facilities, public transport stops and stations and key employment areas), environmental outcomes, and bike and public transport routes.	A network of Green Streets consistent with recommendations in the Urban Design Report will facilitate a low traffic environment with a higher ability to cater for sustainable transport modes. The provision of Green Streets will address existing challenges by: • Improving public amenity to encourage people to walk and cycle the shorter distance trips including to the strategic corridors within Box Hill • Discouraging general traffic along these streets, contributing to the low traffic neighbourhoods within Box Hill. • Improving local bus stop amenity to be consistent throughout Box Hill. A network of Green Streets will respond to identified active and public transport modal principles including to: • Reduce conflict between vehicles and people walking and cycling • Allow walking corridors to be supported by an inviting public realm, seating, lighting, and trees • Allow street space to respond to changes in use and community needs • Facilitate the provision of local cycling corridors within 200 m of 95% of properties • Facilitate the provision of a local public transport stop within 400 m or strategic public transport stop or interchange within 800 m of 95% of properties.
8	Safeguard aspirational modal priorities as per the Movement and Place classifications	Movement and Place classifications have informed the development of the modal strategic corridors, Green Streets and Strategic Corridors informing a range of the Recommendations in this report. The classifications will also inform future transport assessments and design options as the precinct develops.

FIGURE 6.15 INFRASTRUCTURE RECOMMENDATIONS – SETTING THE PRIORITY NETWORK

6.2.3 UNLOCKING THE PRIORITY NETWORK

Connectivity through and within Box Hill is generally hindered by large urban blocks, the rail line and major arterial roads. The type of recommendations that aim to address these challenges include the provision of Key Links, upgrading existing roads beyond the existing road reserve, and provision of new and upgraded crossings to enhance active transport connectivity.

KEY LINKS

The increased permeability enabled by Key Links helps to improve the attractiveness of walking by reducing travel times and creating low-stress active transport routes. They also improve the place and amenity value of existing routes. Key Links can be implemented in multiple ways including:

- Fixed Key Link – specific alignment across identified parcels of land requiring access to be created during land development
- Flexible Key Link – the specific location of the Key Link is flexible and multiple parallel options may be considered. A wider area highlighting the need for increased permeability has been identified.

There are three types of Key Links varied by their importance (critical, important and local), which can be summarised as:

- **Critical Key Links** are considered essential connections to achieving the vision for Box Hill
- **Important Key Links** provide connection to or between strategic transport corridors
- **Local Key Links** aim to improve local active transport connections / permeability and place activation.

Critical Transport Projects

For Box Hill, the Nelson Road to Thurston Street Link was identified as a Critical Transport Project. The project proposes to provide an active transport connection over the rail line, between Nelson Road and Thurston Street, enabling delivery of a new south-north active transport spine for Box Hill and delivering the missing link along the Doncaster to Burwood Strategic Cycling Corridor which is designated to support strategic cycling and walking movements. Nelson Road and Thurston Street are also relatively low-trafficked streets (compared to the surrounding arterial road network) and are located on the existing cycle desire line linking to the Koonung Creek Trail to the north and Surrey Park to the south. Nelson Road and Thurston Street are also categorised as strategic walking corridors, recognising the desire for pedestrian journeys between residential catchments and key land use and public open space destinations.

Based on the outcomes of the Nelson Road to Thurston Street critical link assessment, there are further improvement opportunities that should be considered in future design development to work towards the aspirational M&P performance targets. It is recommended the project is further developed including for relevant accessibility requirements and delivered:

- By SRLA and DTP
- Prior to the opening of the SRL station at Box Hill, and within the current lifespan of SRL East's structure planning process.

Determination of an agreed design solution (including associated costs) should be managed by DTP and SRLA in consultation with relevant stakeholders and landowners, including Box Hill Shopping Centre owner, Vicinity Centres, along with VicTrack and the City of Whitehorse.

NEW AND UPGRADED PEDESTRIAN AND CYCLE CROSSINGS

Improvements to walking and cycling crossings including new and upgraded intersections and crossings across major arterial roads such as Whitehorse Road, Elgar Road and Station Street improve priority for active transport users in line with demand, reducing crossing delay. It can also help reduce the frequency of cyclists needing to dismount to cross the road.

Where there is a strong active transport desire line but no crossings across a major road, new crossings in the form of pedestrian=operated signals, cyclist-operated signals, non-signalised crossings, or signalised intersections are identified.

Similarly, some existing intersections and/or crossings require upgrades to improve active transport connectivity where there is a strong desire line. The upgrades may include minor relocations, public transport integration, improved safety through painted markings or raised wombat crossings, or provision of bicycle lanterns.

UNLOCKING THE PRIORITY NETWORK RECOMMENDATIONS

The identified recommendations for Box Hill intended to unlock the priority movement network are detailed in Table 6.5, with the identified links and intersections in Box Hill shown in Figure 6.16.

TABLE 6.5 INFRASTRUCTURE RECOMMENDATIONS – UNLOCKING THE PRIORITY NETWORK

REF	SRL EAST RAIL PROJECT APPROVED SCOPE	
9	**Critical – Key Link:** Deliver a north-south pedestrian promenade connecting Whitehorse Road, the northern SRL station entrance and Box Hill Gardens. Refer to Figure 6.16 for Critical Links.	
REF	**RECOMMENDATION**	**STRATEGIC JUSTIFICATION**
3A	**Critical – Key Link:** Enable delivery of the new north-south active transport spine by connecting Nelson Road and Thurston Street via a new bridge over the rail corridor. Refer to Figure 6.16 for Critical Links. *Connected to recommendation 3*	The provision of this critical link across the Lilydale / Belgrave Line will enable the completion of a new north-south active transport spine through the heart of Box Hill, with the justification detailed in Recommendation 3.
5A	**Critical – Key Link:** Facilitate a new permeable network of pedestrian links to, from, and through the centre by extending Main Street to Prospect Street via a new pedestrian link and public plaza. Refer to Figure 6.16 for Critical Links. *Connected to recommendation 5*	The provision of this critical link will complete a key strategic walking corridor through the heart of Box Hill, with the justification detailed in Recommendation 5.
10	**Important – Key Links:** Deliver the tools for the responsible authority to facilitate landholder-delivery of Important links. Refer to Figure 6.16 for Important links (new links and enhanced corridors). *Delivery of Important Key Links connected to recommendations 5 and 7*	The provision of key links at appropriate locations are primarily intended to increase permeability throughout Box Hill for pedestrians and cyclists. Providing these **Important key links** will help to address existing challenges by: • Providing more direct access between key destinations or transport corridors for pedestrians and cyclists through larger urban blocks where there is a **higher pedestrian or cycling modal priority.** • Contributing to a better amenity for pedestrians and cyclists • Widening the walkable catchments to public transport nodes and hubs. The provision of **Important key links** will respond to identified modal principles including to: • Improve access to primary walking destinations • Allow walking corridors to be supported by an inviting public realm, seating, lighting, and trees • Reduce conflict between vehicles and people walking and cycling • Facilitate the provision of local cycling corridors within 200 m of 95% of properties • Facilitate the provision of a local public transport stop within 400 m or strategic public transport stop or interchange within 800 m of 95% of properties.
11	**Local – Key Links:** Deliver the tools for the responsible authority to investigate landholder-delivery of Local links. Refer Figure 6.16 for Local Links (new links and enhanced corridors).	**Local key links** provide a similar function and benefit to the Important key links outlined above albeit at a local level. They may not have the strategic modal priority or demand, however they will address local gaps through the larger urban blocks and facilitate local urban realm improvements and linking open spaces throughout Box Hill. The provision of **Local key links** will respond to the same identified modal principle as the Important key links above.

REF	RECOMMENDATION	STRATEGIC JUSTIFICATION
12	**<u>Facilitate improvements to pedestrian crossings</u>** Investigate the new or upgraded crossings to improve access and amenity for pedestrians and cyclists. Refer to Figure 6.16 for new and upgraded crossings. Note, Whitehorse Road crossing upgrades are to be delivered by SRL East Rail Project approved scope.	There are three arterial roads (Elgar Road, Station Street and Whitehorse Road) through the Box Hill Structure Plan Area that provide a high level of strategic access to, from and through Box Hill. Providing new or improved crossing facilities at intersections will help address existing challenges by: • Reducing dwell times at crossing points on the arterial roads and hence journey times along pedestrian and cycling corridors • Providing safer pedestrian and cycle access across the busy arterial roads with improved crossing infrastructure including cycle lanterns • Increasing the walkable and cycle catchments to public transport with more direct and faster access along key active transport corridors. New and improved crossing infrastructure will respond to identified modal principles including to: • Provide safe and convenient crossing locations at intersections and key destinations • Improve access to primary walking destinations • Prioritise cyclists at intersections and increased physical separation from pedestrians and traffic • Reduce conflict between vehicles and people walking and cycling • Provide roads at all bus stops that are easy to access for pedestrians of all ages, abilities and genders.

FIGURE 6.16 INFRASTRUCTURE RECOMMENDATIONS – UNLOCKING THE PRIORITY NETWORK

6.2.4 INTEGRATED INTERCHANGES AND PUBLIC TRANSPORT

Improvements to public transport interchanges provide better accessibility of the public transport network.

In Box Hill, public transport interchange improvements are the responsibility of the Victorian Government rather than precinct planning. These improvements include:

- Investigating upgrades to the existing Box Hill Station
- Planning for improvements to the Box Hill bus interchange and bus stop infrastructure
- Investigating additional bus priority corridors to support future demand.

Further recommendations that fall under the responsibility of SRL East or the precinct planning include:

- New bicycle hubs are designed to provide users with sustainable transport mode choices for various journey types throughout Box Hill.

The identified recommendations for Box Hill intended to integrate hubs and interchanges into the movement network are detailed in Table 6.6, with the identified locations in Box Hill shown in Figure 6.17.

TABLE 6.6 INFRASTRUCTURE RECOMMENDATIONS – INTEGRATED INTERCHANGES AND PUBLIC TRANSPORT

REF	SRL EAST RAIL PROJECT APPROVED SCOPE	
13	**Deliver a high-capacity bicycle parking hub at the SRL station** Provide secure parking for 400 bicycles incorporated into the station building to provide convenient interchange with SRL, the existing Belgrave / Lilydale Line, bus and tram services. Future proof for the bike hub to double in capacity when the demand arises.	
REF	**RECOMMENDATION (OTHER STATE GOVERNMENT AGENCY)**	**STRATEGIC JUSTIFICATION**
14	**Investigate upgrades to the existing Box Hill station** Investigate upgrades to existing Box Hill station platforms, improved connectivity to the bus interchange, and provide a direct interchange with the SRL station.	The very close proximity of the existing Box Hill Station to the SRL station provides a good opportunity to provide an upgraded train interchange. Upgrades to the existing station will help to address existing challenges by: • Prioritising pedestrian safety, amenity, wayfinding, and DDA compliance at and within the immediate vicinity of the existing Box Hill Station • Facilitating efficient pedestrian access between the existing Box Hill Station, bus interchange and the new SRL station. This recommendation also responds to identified modal principles including: • Providing clear connections for pedestrians travelling between modes • Reducing conflict between pedestrians and cyclists and other micromobility.
15	**Investigate Box Hill bus interchange upgrade** Investigate upgrades of the Box Hill bus interchange focused on improved customer experience and connectivity to the existing Box Hill Station and the SRL stations. *Connected to recommendations 2 and 23*	The very close proximity of the Box Hill bus interchange to both the existing station and new SRL station at Box Hill provides a good opportunity to upgrade the bus interchange. Access and customer experience upgrades to the bus interchange will help to address existing challenges by: • Improving the existing bus interchange waiting areas with better amenity and facilities • Prioritising pedestrian safety, wayfinding, and DDA compliance at Box Hill bus interchange • Facilitating more efficient pedestrian access between the Box Hill bus interchange and the existing Box Hill Station. This recommendation also responds to identified modal principles including: • Providing clear connections for pedestrians travelling between modes • Providing public transport service levels that unlock development potential.
16	**Investigate a future high-capacity public transport corridor** Investigate a future high-capacity public transport corridor further east along Whitehorse Road	The strategic nature of Whitehorse Road provides a significant opportunity to improve public transport connectivity and capacity connecting communities east of Box Hill to existing high-capacity public transport services. Provision of a future high-capacity public transport corridor to the east of Box Hill will address existing challenges by: • Improving accessibility to a higher capacity public transport service from the east to Box Hill • Providing additional connectivity to the broader strategic transport network. This recommendation also responds to identified modal principles including: • Providing public transport service levels that unlock development potential • Facilitate the provision of a strategic public transport stop within 800 m or a local public transport stop within 400 m of 95% of properties.

REF	RECOMMENDATION (OTHER STATE GOVERNMENT AGENCY)	STRATEGIC JUSTIFICATION
17	**Plan for a more useable bus network** Plan for the upgrade of bus stop infrastructure, such as reviewing bus stop locations, provision of shelters, hardstands, real time information and wayfinding to provide a quality bus network throughout Box Hill.	Box Hill is generally well serviced by the current bus network. Upgrading the bus stop infrastructure to provide a high and consistent user experience will help to address existing challenges by: • Improving the existing bus stop waiting areas to prioritising pedestrian safety, DDA compliance, and better amenity • Potentially improving accessibility through the review of bus stop locations and providing better wayfinding towards and at bus stops. This recommendation also responds to identified modal principles including: • Reduce conflict between vehicles and people walking and cycling • Facilitate the provision of a local public transport stop within 400 m of most properties • Providing public transport service levels that unlock development potential.
18	**Investigate future bus priority** Investigate the need for future additional bus priority corridors as Box Hill evolves.	Ongoing reviews of the bus network will help to address challenges by: • Improving service reliability and performance on key corridors as demand increases • Identifying potential service efficiency issues with all services through the Box Hill Structure Plan Area stopping via the bus interchange. This recommendation also responds to identified modal principles including: • Providing priority for buses along their alignment to provide users with predictable journey times • Providing public transport service levels that unlock development potential.

FIGURE 6.17 INFRASTRUCTURE RECOMMENDATIONS – HUBS AND INTERCHANGES INTEGRATED WITH THE NETWORK

6.2.5 ENABLING PRIORITY MOVEMENT WHILE PROTECTING LOCAL ACCESS

The focus of recommendations which enable the priority network include maintaining existing strategic traffic corridors to allow other corridors to cater for local, more sustainable modes of transport, implementing changes to parking, and providing low-traffic neighbourhoods.

Elgar Road, Canterbury Road and Middleborough Road are important traffic corridors that support key bus, general traffic and freight movements through Box Hill that will be maintained.

Sustainable modes of travels will be prioritised on corridors such as local streets. This is further supported by designated low-traffic neighbourhoods in Box Hill. Low-traffic neighbourhoods generally refer to a residential area usually within a boundary of arterial corridors where traffic management measures are implemented to reduce general traffic movements, particularly through-traffic. These low-traffic neighbourhoods are located in areas where collector roads and local streets are concentrated. Low-traffic neighbourhoods prioritise the use of sustainable modes of transport including walking, cycling and public transport in a safer low-speed environment where local car access is maintained.

Infrastructure recommendations have been identified and aim to reduce private vehicle trips through the precinct core such as encouraging car park access via alternative routes off major arterial roads where higher general traffic movements are supported.

The identified recommendations for Box Hill intended to unlock the priority movement network are detailed in Table 6.7 and shown in Figure 6.18.

TABLE 6.7 INFRASTRUCTURE RECOMMENDATIONS – ENABLING THE PRIORITY NETWORK

REF	RECOMMENDATION	STRATEGIC JUSTIFICATION
19	**Maintain the strategic road network** Maintain the strategic bus, traffic and freight function of Elgar Road, Canterbury Road, and Middleborough Road to enable transformation of streets within the heart of Box Hill.	The strategic road network allows for a significant number of vehicles to access and pass through Box Hill. Maintaining the strategic function of these roads will help address identified challenges by: • Keeping strategic traffic, including freight vehicles, off the local roads within Box Hill, and where traffic is entering the precinct core or other key destinations, ensuring it is via the most direct route to the destination as possible • Maintaining the ability to provide future bus priority measures to continue service reliability • Widening the walkable catchments to public transport nodes and hubs. Maintaining major road functionality will respond to identified modal principles including to: • Provide priority for buses and trams along their alignment to provide users with predictable journey times • Provide for vehicle movements through the SRL East Structure Plan Areas • Limit the impact of cars and service vehicles on high-activity and high-value places.
20	**Facilitate low-traffic neighbourhoods** Facilitate low-traffic neighbourhoods that reduce rat running, improve safety, and make streets a quieter and more enjoyable environment for walking and chatting with neighbours. Low-traffic neighbourhoods to consider the role of collector roads.	Low traffic neighbourhoods create an environment whereby the impacts of vehicle traffic are minimised, with a higher ability to cater for sustainable transport modes. The provision of low traffic neighbourhoods will address existing challenges by: • Maintain local vehicle access on these streets, while considering safer vehicle speeds to improve safety and amenity for local walking and cycling trips. • Assist in the management of on-street parking around key destinations including commuter parking during busy periods. The provision for low traffic neighbourhoods will respond to identified modal principles including to: • Reduce conflict between vehicles and people walking and cycling • Allow street space to respond to changes in use and community needs • Facilitate the provision of local cycling corridors within 200m of 95% of properties.
21	**Facilitate new consolidated public parking** Facilitate new consolidated public parking in strategic locations to enable alternative uses for on-street parking in key locations, such as streetscape improvements or bike parking, to contribute to active transport priorities.	Opportunities to reallocate on street kerb space to prioritise amenity and non car modes may be facilitated by convenient consolidated parking options. The provision of new consolidated public parking in strategic locations will help address existing challenges by: • Improving the priority, safety and amenity for pedestrians and cyclists on the transport network throughout Box Hill • Improving the levels of public on-street bicycle parking. Facilitating new consolidated public parking will respond to identified modal principles including to: • Reduce conflict between vehicles and people walking and cycling • Allow street space to respond to changes in use and community needs • Allow walking corridors to be supported by an inviting public realm, seating, lighting, and trees • Allow cycling corridors to be complete with convenient and secure parking and end-of-trip facilities.

REF	RECOMMENDATION	STRATEGIC JUSTIFICATION
22	**Explore options to relocate commuter car parking to other stations** Explore options for relocating commuter car parking to stations with less public transport accessibility as part of any redevelopment of Box Hill Central.	Commuter car parking for Box Hill station is currently located in Box Hill Central car park. Exploring options to relocate commuter car parking to other stations will help to address existing challenges by: • Helping to reduce peak commuter traffic on the road network accessing Box Hill Central, contributing to improved conditions for public and active transport modes. Relocating commuter car parking to other stations will respond to identified modal principles including to: • Limit the impact of cars and service vehicles on high-activity and high-value places • Minimise parking in high-value space areas to support development intensity.
23	**Plan for simplified access to Box Hill Central** Plan for simplified access to Box Hill Central for buses and cars to unlock improvements to Station Street for pedestrians and streetscapes. *Connected to recommendations 2 and 15*	Station Street provides access to Box Hill bus interchange and is one of the primary vehicle access points to Box Hill Central car park, both in close proximity to each other. Simplified vehicle access to Box Hill Central will address existing challenges by: • Facilitating improvements to bus service reliability and performance along station street and to the bus interchange • Improving the amenity for pedestrians along the corridor and maintaining the connection to the precinct core and public transport hub. Simplifying access to Box Hill Central will respond to identified modal principles including to: • Provide priority for buses along their alignment to provide users with predictable journey times • Reduce conflict between vehicles and people walking and cycling • Allow street space to respond to changes in use and community needs • Limit the impact of cars and service vehicles on high-activity and high-value places.
24	**Support implementation of smart transport network** Support implementation of smart network improvements on arterial roads to increase network resilience and facilitate diversion of vehicles to arterial roads with available capacity.	Transport infrastructure and traffic management within Box Hill will be supported by implementing smart network improvements in order to get the most benefit. Smart transport network improvements will help address identified challenges by: • Ensuring traffic is diverted via the appropriate routes to key destinations, including car parking within and around the precinct core • Minimising traffic congestion on both the strategic and local road network within Box Hill.

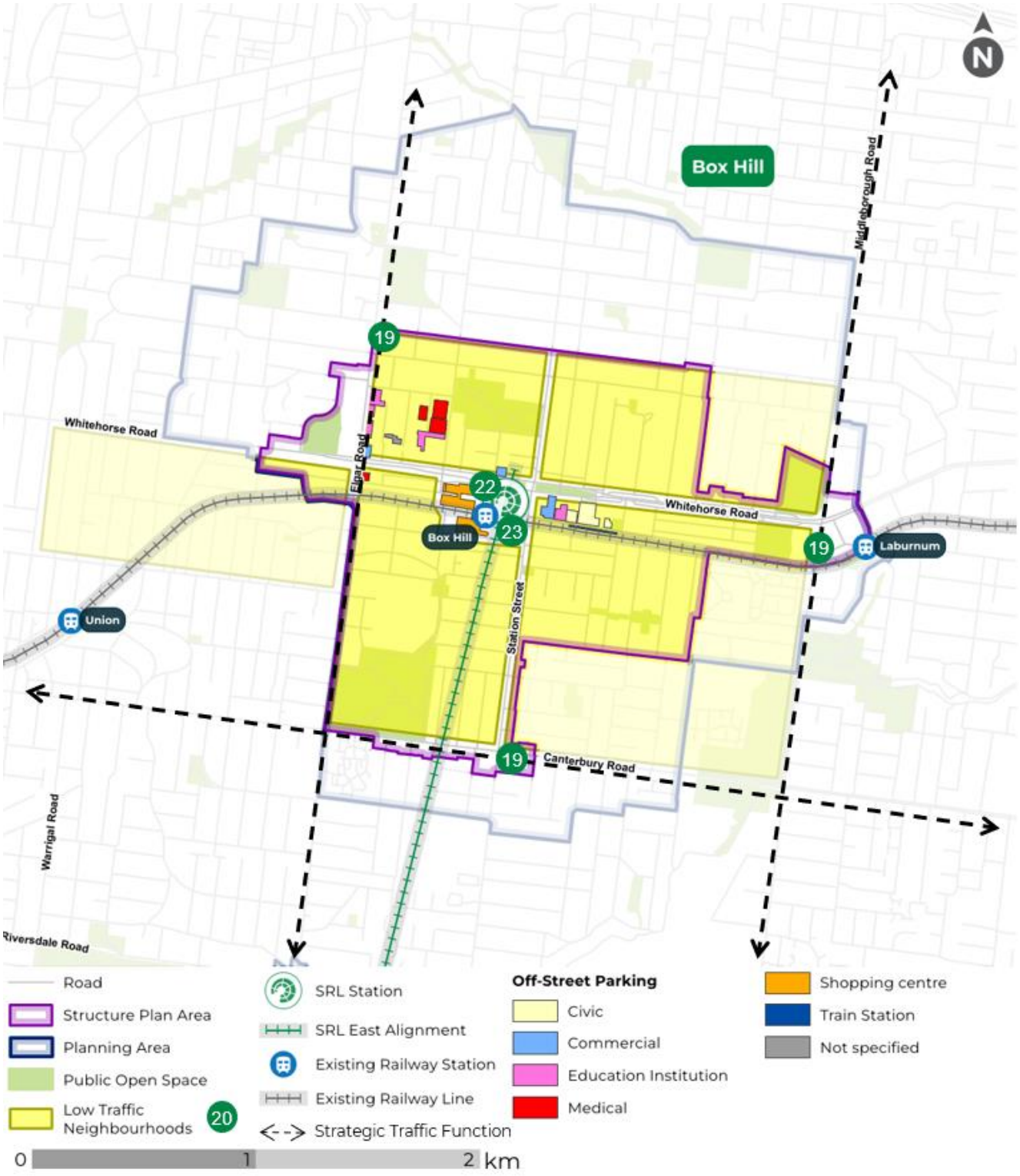


FIGURE 6.18 INFRASTRUCTURE RECOMMENDATIONS – ENABLING THE PRIORITY NETWORK

7 Non-infrastructure recommendations

This section sets out non-infrastructure tools and recommendations to help achieve the traffic and transport ambitions for the Box Hill Structure Plan Area.

The recommendations may be incorporated as an amendment to the Whitehorse planning scheme or may simply be a supporting opportunity. The non-infrastructure recommendations may be identified as mechanisms in their own right and also to support the infrastructure recommendations to encourage a mode shift to active and public transport modes for local trips to, from and within Box Hill.

A Precinct Parking Plan for Box Hill was developed alongside this report to inform recommendations including car parking rates and other management tools, and bicycle and micromobility parking rates. The SRL East Draft Structure Plan – Transport Technical Report – Appendix A – Precinct Parking Plan – Box Hill provides an integrated parking response for the Box Hill Structure Plan Area and is attached as Appendix A to this report.

A more efficient and sustainable use of the kerbside will be important role as activity increases within Box Hill. Recommendations are provided to guide the management of kerbside activities, property access, waste management, last-mile freight deliveries, and the development of a Kerbside Management Framework to facilitate better use of the kerbside.

Additional recommendations are identified, including well-established initiatives such as Green Travel Plans and car share schemes, and innovative approaches such as mobility hubs are explored.

7.1 Integrated parking

A better paradigm for parking that is smarter and more efficient across all modes towards a more sustainable precinct.

Parking movements are required at the start and end of every journey for a range of travel modes including bikes, micromobility and cars. The common parking types are shown in Figure 7.1.

FIGURE 7.1 EXAMPLES OF PARKING

This section sets out guiding principles for parking and identifies tools to manage integrated parking in Box Hill. These tools also aim to promote active and sustainable transport choices in the Structure Plan Area.

7.1.1 INTEGRATED PARKING PRINCIPLES

A series of guiding principles have been established to inform the development of the integrated parking experience in the SRL East Structure Plan Areas. These integrated parking principles are shown in Figure 7.2.

These principles also align with the transport ambition and goals and provide a benchmark to which the parking related non-infrastructure recommendations can be measured in achieving the ambition.

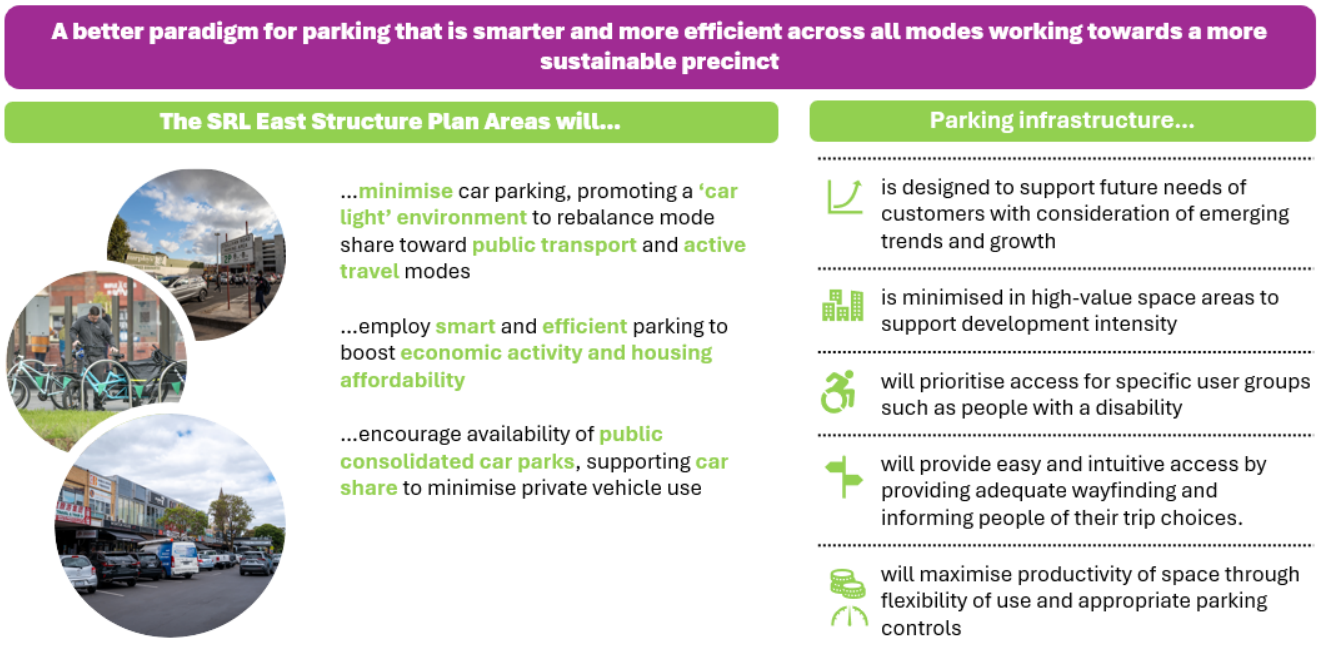


FIGURE 7.2 INTEGRATED PARKING PRINCIPLES

7.1.2 CAR PARKING MANAGEMENT TOOLS

The SRL East Draft Structure Plan – Transport Technical Report – Appendix A – Precinct Parking Plan – Box Hill (Precinct Parking Plan – Box Hill) discusses car parking management tools to support the development of the Structure Plan Area and help achieve the transport goals and ambition for Box Hill.

Table 7.1 provides an overview of the recommended car parking management tools proposed in the Precinct Parking Plan – Box Hill.

TABLE 7.1 CAR PARKING MANAGEMENT TOOLS PROPOSED IN THE PRECINCT PARKING PLAN

CAR PARKING MANAGEMENT TOOLS	DESCRIPTION	PRECINCT PARKING PLAN REFERENCE
Development parking controls – parking rates	The Precinct Parking Plan – Box Hill proposes a mix of maximum and minimum-maximum parking rates for land uses, including specific nominated rates for residential (multi-dwelling developments), office and retail land uses. These maximum parking rates are based on a review of policy, standards, guidelines empirical data and examples of car parking management in other locations.	Section 5.1 of the Precinct Parking Plan – Box Hill
On-street parking management	On-street parking management techniques include parking restrictions, paid parking schemes and monitoring / enforcement tailored to support various goals such as pick-up / drop-off areas, short to long-term visitor parking and residential / commuter needs, while considering pedestrian safety and place-making activities through guidance to local governments.	Section 5.4 of the Precinct Parking Plan – Box Hill
Consolidated parking	Consolidated parking is shared parking that is generally provided off-site from the end destination and can reduce the total amount of parking provided in a precinct by allowing the same space to be used by different people at different times.	Section 5.5 of the Precinct Parking Plan – Box Hill
Unbundled parking (decoupled parking)	Unbundled parking separates parking costs from development costs, allowing occupants to pay only for the parking they need, which may change over time, promoting efficiency and fairness.	Section 5.6 of the Precinct Parking Plan – Box Hill
Repurposing car parking	Designing parking spaces with flexibility and adaptability in mind, such as with suitable heights and flat floors, enables their adaptation for other purposes, optimising space utilisation.	Section 5.8 of the Precinct Parking Plan – Box Hill

7.1.3 PARKING FOR CYCLING AND MICROMOBILITY

The Precinct Parking Plan – Box Hill also identifies the need for appropriate provision and range of bicycle and micromobility parking to improve the experience of cycling and micromobility trips, encouraging an increase to mode share for cycling and micromobility.

Some cycling and micromobility trips also require end-of-trip facilities, allowing users to change and shower, while offering security and weather protection for cyclists and their devices.

Section 5.2 of the Precinct Parking Plan – Box Hill discusses the recommended minimum bicycle parking rates and recommended bicycle parking supporting facilities respectively.

7.2 Better use of kerbside

The kerbside is the space between the road carriageway and footpath as shown in Figure 7.3. The kerbside can be a contested space with various competing uses. These competing uses include priority lanes for buses or bikes, providing driveway access to properties and businesses, and providing pick-up / drop-off space for people and goods. The kerbside also supports place-making activities such as outdoor dining and landscaping such as trees to provide canopy cover.

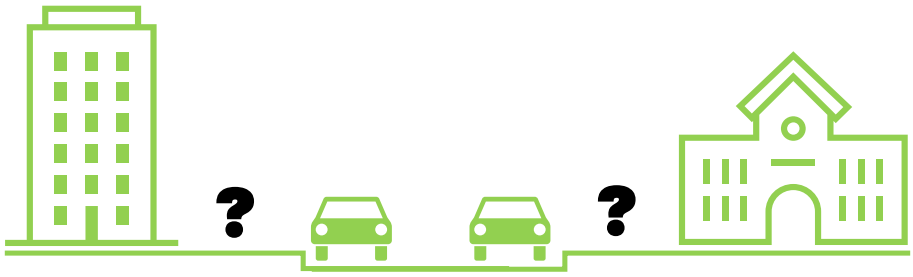


FIGURE 7.3 KERBSIDE SPACE IN THE CONTEXT OF THE STREET CROSS SECTION

The layout of different streets can influence how people travel and influence the attractiveness of a place. Some streets will have a different balance of modes and changes to the public realm, which may require a street's cross section to change. As travel behaviours in Box Hill shift to using active and public transport, there is the opportunity to change the focus of the kerbside from primarily supporting car trips with parking and property access to a more balanced approach. These changes can range from minor enhancements to more transformative changes similar to those seen in inner Melbourne and some suburban activity centres over the last 30 years where more trees, wider footpaths, safe bike lanes and public transport priority have been implemented alongside growth in central city activity.

Ambitions for a better public realm will require better management of the kerbside space to support features such as improved landscaping, tree canopy coverage and place-making opportunities like outdoor dining. Examples of different kerbside uses are shown in Figure 7.4.

FIGURE 7.4 DIFFERENT KERBSIDE USES

7.2.1 KERBSIDE MANAGEMENT FRAMEWORK

The Box Hill Structure Plan provides an opportunity to embrace a more efficient and diverse kerbside. Parking will continue to be provided depending on the street, surrounding properties, and street activity. However, other uses such as landscaping, dining, bicycle / shared micromobility parking within mobility hubs or travel lanes may be a better fit in some places. Where parking is an appropriate use, parking controls will be adopted that direct space for different users and support the wider private vehicle parking aims and ambitions.

Applying road user hierarchies and considering place to develop the Kerbside Management Framework Road is a transparent way of identifying when and where different users of the street have priority in the kerbside.

Table 7.2 shows a suggested kerb use hierarchy for different area types include the activity centre, residential area and industrial area. These priorities will need to be further developed and aligned to key street typologies to support different goals and aspirations for Box Hill.

The City of Whitehorse will be encouraged to develop the Kerbside Management Framework to guide controls and restrictions across streets where proactive management of the kerbside is required.

TABLE 7.2 SUGGESTED KERB USE HIERARCHY FOR DIFFERENT AREAS

	ACTIVITY CENTRE	RESIDENTIAL AREA	INDUSTRIAL AREA
Landscaping opportunities	High	High	Medium
Public transport	High	High on bus routes	High on bus routes
Emergency services	Case by case, but if required High	Case by case, but if required High	Case by case, but if required High
Car share	High	High	Medium
Taxi & rideshare	High	Low	Low
Electric vehicle charging	Medium	Medium	Medium
Parklets	High	Medium	Low
Micromobility and bicycle parking	High	Medium	Low
Food deliveries	High	Low	Low
Deliveries	High	Low	High
Accessible	High	Medium	High
Pick up / drop off (PUDO)	High	High around schools and community activity areas	Low
Car parking for residents	Low	Medium	Low
Car parking for local workers	Low	Medium	Medium
Car parking for customers	Medium	Low	Medium
Commuter car parking	Not an acceptable kerb space use	Low	Low
Car parking for construction workers	Case by case	Case by case	Case by case

7.2.2 ACCESS TO PROPERTIES

Providing driveway access to properties is an important function of roads that requires the management of conflicts between vehicles turning into properties and other traffic such as pedestrians and cyclists. This impacts the space that can be used for place-making that can contribute to better people-focused environments.

Better outcomes can be achieved by providing access into new developments away from frontages with high movement or place-making functions (strategic walking and/or cycling corridors) to locations such as rear laneways or reducing or consolidating the number of access points. Minimising vehicle crossovers in strategic locations along Upgraded Strategic Corridors and Green Streets as well as arterial roads where significant increase in land use intensification is proposed can support safer movements and better amenity for pedestrian and cyclists.

A broad set of property access guidelines have been developed considering the M&P classifications and are listed in Table 7.3.

TABLE 7.3 BROAD SET OF PROPERTY ACCESS GUIDELINES

	PROPERTY ACCESS GUIDELINES
General considerations	• Consider the land use and property access requirements, whether primarily residential, commercial, and whether the property is in the Structure Plan Area core, along busy arterial corridors or within surrounding residential areas. • All new property development or redevelopment should consider the appropriate statutory and design guidance and specifications set out in: » Austroads, *Guide to Traffic Management Part 5 – Road Management* » Municipal Planning Scheme requirements » Australian Standards (AS2890.1 – Parking Facilities).
Properties with multiple street frontages	• Where access via a laneway to the side or rear of a property is available, provide appropriate space to facilitate on-site car park access, delivery vehicle and waste removal vehicles • Properties with multiple frontages to provide car park access along the frontage that is neither an Upgraded Strategic Corridor nor Green Street, or the lesser M&P classification. Existing access crossovers should be consolidated to provide a single crossover where possible • Should both property frontages share the same street type such as a Green Street or Upgraded Strategic Corridor, and M&P classifications, consider additional factors including traffic (all modes) volumes, adjacent property characteristics and other relevant factors.
Properties with single street frontages	• Where the property frontage has a M&P classification of 3 or less and is neither a Green Street nor Upgraded Strategic Corridor, provide a single point of access to the property • Where the property frontage is on a street whereby the M&P classifications for general traffic, public transport, freight and cycling are 3 or less and on an Upgraded Strategic Corridor, provide a single point of access to the property • Where the property frontage is on a street whereby the M&P classifications for walking, cycling, and place are 3 or less and on a green street, provide a single point of access to the property • Where the property frontage is on a street whereby the respective M&P classifications are greater than 3, and a Green Street or Upgraded Strategic Corridor, provide a single point of access to the property. Integrate appropriate kerbside/ access management measures to minimise the impact on the street frontage.

7.2.3 WASTE MANAGEMENT

Waste management is an integral part of city life, albeit a 'back of house' function, associated with waste removal.

Large developments often have on site loading and waste facilities due to the size of land block, scale of the task, type of vehicle and/or the need to store goods on-site due to high shelf turnover.

Some shops with street frontages may lack alternative access and often cannot facilitate larger storage areas and so rely on the local street interface, generally using smaller vehicles.

Residential development has traditionally not included service areas but as density increases the need to facilitate more frequent turnover of residents, family size households and higher waste management means these tasks are less suitable for the kerb space, as shown in Figure 7.5.

FIGURE 7.5 APARTMENT BINS BLOCKING PAVEMENT

7.2.4 LOCAL FREIGHT DELIVERIES

The *Victorian Freight Plan 2018–2050, Delivering the Goods* predicted the freight movement task for Victoria will increase two to three-fold from 2014 levels by 2050. Since this prediction, as with many aspects of daily life, the COVID pandemic has potentially changed the trajectory of freight growth and potentially the type of freight vehicle, with COVID travel restrictions introducing the benefit of online shopping to new markets. While the need to shop from home has diminished, the benefits of online shopping for customers and retailers means this market continues to grow.

While online retailing has the potential to reduce personal travel and car trips, the overall implications for the road network can be significant as more people need individual freight deliveries more frequently, particularly smaller parcels. It is not uncommon to observe multiple freight-based trips occurring on local streets associated with the delivery of orders and parcels.

There is opportunity in the SRL East Structure Plan Areas to work with developers, local governments, community and businesses to harness new practices and options for freight to reduce the impact of these trips on the local network by managing freight, so the right vehicle type is used for the right delivery.

The Victorian Freight Plan was developed in consultation with local governments and the freight industry to consider the future of freight in the state. This 'freight future' includes recognition of more personal freight delivery, and opportunities for smaller lighter and more efficient forms of freight delivery, particularly in the last mile first mile space.

The Freight Plan sets out five priorities to support the freight and logistics system to improve how goods are moved to their local, interstate and overseas markets. How the Freight Plan should be reflected in the SRL East structure planning is summarised in Figure 7.6.

Victorian Freight Plan 2018-2050

5 Priorities

1. Manage existing and proposed freight corridors and places in conjunction with urban form changes
2. Reduce the impact of congestion on supply chain costs and communities
3. Better use of our rail freight assets
4. Plan for Victoria's future port capacity
5. Stay ahead of the technology curve

- Manage existing and proposed freight corridors and places in conjunction with urban form changes
- Reduce the impact of congestion on supply chain costs and communities
- Work with local government to remove or reduce first and last mile impediments
- Develop more freight friendly solutions for Melbourne's CBD
- Prioritise the use of technology to improve the management of network congestion on the road network

Reflections for SRL East Structure Plan Areas

- Management of on-street loading restrictions can improve efficiency of freight
- Traditional CBDs can be problematic for freight movements. There is the opportunity to proactively plan areas for more freight friendly solutions, including development controls and last / first mile freight policies
- Ensuring the local network hierarchy recognises the role of freight and freight corridors where appropriate
- Reducing the climate cost of transportation of freight – supporting increasing use of cargo bicycles and EVs

FIGURE 7.6 VICTORIAN FREIGHT PLAN AND HOW THIS CAN BE REFLECTED IN SRL EAST STRUCTURE PLANNING

Managing the 'first and last mile' of freight tasks will be key in ensuring balance between the needs of people and freight in the SRL East Structure Plan Areas. The City of Melbourne and Transport for NSW have both recognised the potential for managing this part of the freight task for network efficiency and improved urban amenity with the former releasing a Last Kilometre Freight Plan[37] and the latter a Last Mile Freight Toolkit.[38]

A Last Mile Freight Plan (LMFP) is recommended to be developed for the Structure Plan Area, particularly with smaller parcels and deliveries. The Freight Plan will guide new and existing developments in adopting emerging and more sustainable modes for local deliveries.

The Freight Plan will likely include the use of cargo bikes, smaller electric delivery vehicles, and freight and mobility hubs. This could include community delivery boxes, such as the Australia Post Parcel Lockers shown in Figure 7.7 which are becoming more common and will continue to evolve. These sustainable last mile freight delivery options and parcel lockers can also be integrated into mobility hubs to improve access and reduce unnecessary trips as recipients can collect their parcels during an existing trip. There is also an opportunity to encourage alternative freight modes and approaches that improve convenience and sustainability for the delivery of take-away food and groceries.

[37] *City of Melbourne, June 2016, Last Kilometre Freight Plan, <https://www.melbourne.vic.gov.au/sitecollectiondocuments/last-kilometre-freight-plan-june-2016.pdf>*

[38] *Transport for NSW, November 2020, Freight and Servicing Last Mile Toolkit – A guide to planning the urban freight task, <https://www.mysydney.nsw.gov.au/sites/default/files/2023-05/Freight%20and%20Servicing%20Last%20Mile%20Toolkit%20Master%20Document(1)-compressed-1.pdf>*

FIGURE 7.7 COMMUNITY DELIVERY BOX EXAMPLE (SOURCE: AUSTRALIA POST PARCEL LOCKER[39])

Other potential Last Mile Freight Plan considerations are summarised in Table 7.4.

TABLE 7.4 LAST MILE FREIGHT PLAN CONSIDERATIONS

Potential for consolidating delivery and servicing facilities between different properties	Potential for the role of precinct freight consolidation hubs. Identify redundant space with the potential to support consolidation of delivery tasks. This could range from Freight Consolidation Centres (FCCs) through to community delivery parcel drop off sites that allow multiple personal deliveries in one trip rather than through multiple trips. Integration of freight into mobility hubs.
Development of a freight journey planner and freight access maps for use by businesses and logistics companies servicing properties	
Development of principles for allowing out of hours deliveries, to reduce freight traffic during peak activity periods and opportunities to use redundant out of hours space	Special loading permit zones and spaces for more efficient and low impact / low emission vehicles
Encouragement for local businesses to invest in and utilise cargo bikes to manage local delivery tasks	Monitor the use of street loading spaces so that local government can timely respond to overuse and under use of loading spaces
Stakeholder engagement including potential for the development of precinct freight portals to share and promote more efficient freight options and new and advancing technological options and experiences	Pilot studies to inform businesses of opportunities to change practices and support change
Identify opportunities to use local traffic management during construction projects to encourage more sustainable freight choices - for example, partial road closures could still allow cargo bikes and other two wheeled vehicle passage	Development of last mile toolkit to assist business, developers, and residents in understanding and implementing more sustainable last mile practices
Out of hours loading in the street scape when demands for other purpose is minimal (for example, bus lanes or pedestrian areas between midnight and 6am)	

It is recognised that some of the last mile freight initiatives are likely to be new to businesses in Box Hill. As such, there may be benefits in working with existing business to develop pilot schemes that can trial and/or showcase different approaches to managing last mile freight use.

As the roll out of electric vehicles (EVs) continues it may also be prudent to plan for the potential to provide EV charging associated with loading facilities.

[39] *https://auspost.com.au/receiving/collection-points/use-a-247-parcel-locker*

Finally, it is recognised the period where the densification of Box Hill and the delivery of the SRL station is likely to result in periods and locations of disruption. Implementing Last Mile Freight Plans may provide a tool that will help SRLA, the City of Whitehorse and the local community manage deliveries during these periods. This will take advantage of the opportunities these periods produce to do things differently, which may then continue post construction if they are successful.

There is an opportunity to showcase these evolving freight management approaches in Box Hill, providing a benchmark for managing freight in Melbourne's middle to outer centres.

7.3 Supporting travel choices

Enabling greater choice for how you would like to get around wherever you are in Box Hill.

Approaches to supporting travel choices will complement recommendations for all transport modes and parking. Supporting travel choices will contribute to achieving the transport goals and ambitions with an integrated transport approach. These include measures such as Green Travel Plans, car share schemes, mobility hubs and street layouts that support a greater diversity of travel choices and activity.

7.3.1 GREEN TRAVEL PLANS

A Green Travel Plan sets out ways that occupants or visitors to an existing or new commercial or residential building can adopt more sustainable transport such as walking, cycling, public transport or car-pooling.

Green Travel Plans can be a significant contributor to achieving more sustainable mode share targets. United Kingdom studies cited in a City of Sydney guideline indicate that providing Green Travel Plans can achieve significant reductions in commuter car trips, averaging 18 per cent and as high as 50 per cent.[40] Green Travel Plans are most effective when they include regular monitoring.

Green Travel Plans can be prepared by or on behalf of developers, tenants, owners, body corporate, businesses, education and leisure occupiers and facility / property managers. Green Travel Plans prepared by developers will be passed on to the tenants or other occupants allowing for specific business or property manager incentive commitments to be incorporated to meet the needs of the users. These incentives can range from providing towels and hairdryers as part of end-of-trip facilities, cycle-to-work incentives and supporting walking, cycling and car share groups, through to financial incentives such as travel vouchers, MYKI cards, subsidised bicycle hire, or low-interest rate loans to help purchase equipment or bicycle insurance.[41]

When prepared at the development planning application stage, Green Travel Plans can contribute to evidence for Green Star ratings and/or Built Environment Sustainable Scorecard (BESS) alignment. A well prepared Green Travel Plan can form part of the marketing for new developments to demonstrate to potential occupiers its sustainable access and the need for less parking.

Effective Green Travel Plans include enforcement, regular monitoring and updating to understand the changing gap between aspirational mode share and actual mode share.

The need to require Green Travel Plans is being incorporated into more planning schemes across Victoria. However, the trigger for mandating these travel behaviour tools varies.

[40] *UK Department for Transport, March 2008, Essential Guide to Travel Planning, < https://webarchive.nationalarchives.gov.uk/ukgwa/20101213165120/http://www.dft.gov.uk/pgr/sustainable/travelplans/work/>*

[41] *Examples of incentives in existing Melbourne and international GTPs: La Trobe University Sports Park Partner Precinct GTP; Northumberland Street office development, Collingwood; Barratt and Darwin Green residential development, Cambridge UK*

Using Green Travel Plan requirements and triggers examples from Victoria and NSW as well as internationally, the Green Travel Plan triggers listed in Table 7.5 are recommended to be captured in the Whitehorse Planning Scheme by means of an appropriate Schedule to the relevant zone.

TABLE 7.5 RECOMMENDED GREEN TRAVEL PLAN TRIGGERS AND APPROACH

USE	GREEN TRAVEL PLAN TRIGGER [1]	EXCEPTIONS
Residential	≥ 10 dwellings or if not known: > 1000 m^2 GFA	-
Office	> 1000 m^2 GFA	-
Retail premises	> 1000 m^2 GFA	-
Education	All	Except for schools where student requirements may make Green Travel Plans irrelevant
Leisure	> 1000 m^2 GFA	Except where movement generated < 50 trips per hour
Industrial	> 5000 m^2 GFA	Except where movement generated < 50 trips per hour
[1] Green Travel Plan development size trigger intended to ensure requirements imposed on developments over a nominated size.		

For existing major uses in the SRL East Structure Plan Areas, it is recommended that SRLA should work with these land holders to develop or update Green Travel Plans to recognise the increasing accessibility of Box Hill that will be delivered as part of SRL East.

7.3.2 CAR SHARE SCHEMES

Car share schemes provide access to shared vehicles, reducing the need for private car ownership optimising the use of space. When integrated with high quality local public transport and active travel options, car share schemes can significantly decrease car ownership and use, with research suggesting that a single car share vehicle can replace 7 to 10 privately owned cars.[42]

Car share scheme spaces should be encouraged in on-street car parking areas and within off-street development sites and supported by the development of car share policies and/or guidelines in consultation with Council and building and strengthening relationships between key stakeholders and car share operators. This is discussed in detail in Section 5.3 of the Precinct Parking Plan – Box Hill.

7.3.3 MOBILITY HUBS

Mobility hubs provide a space designed specifically to offer access to various sustainable transport modes with enhanced facilities that enable integrated travel choices.[43] They provide users with one location for all travel choices and facilitates investment in better facilities rather than choices and facilities spread across an area.

The hubs are often located near community services, co-working places, or an Activity Centre, and are connected to strategic cycling corridors. The hub provides space for mobility, place and logistics functions:

- The mobility function includes the co-location of transport modes, including conventional public transport, e-scooter and bike hire, car share, and sustainable private transport modes

[42] *Shaheen, S.A. & Cohen, A.P. (2013), Carsharing and Personal Vehicle Services: Worldwide Market Developments and Emerging Trends,* International Journal of Sustainable Transportation, *Volume 7, (Issue 1), https://www.researchgate.net/publication/241730570_Carsharing_and_Personal_Vehicle_Services_Worldwide_Market_Developments_and_Emerging_Trends*

[43] *Collaborative Mobility UK (CoMoUK), 2023, What are mobility hubs?, <https://www.como.org.uk/mobility-hubs/overview-and-benefits>*

- The place function could include facilities to improve convenience and comfort such as bathrooms, water fountains, shaded areas and vending machines
- The logistics function includes the integration of parcel lockers or micro-delivery centres.

The mobility hub functions and conceptual network are shown in Figure 7.8.

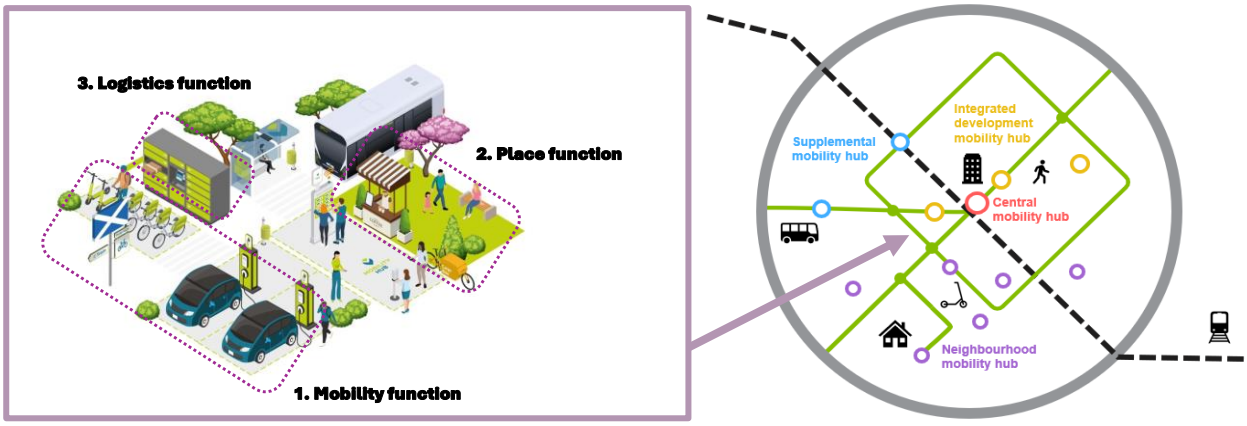


FIGURE 7.8 MOBILITY HUB FUNCTIONS AND CONCEPTUAL NETWORK

The benefits that mobility hubs generate for the wider community include improved access to sustainable transport, especially for first and last mile trips, convenient transfer between transport modes, land use integration, improved public realm, and reduced street clutter. Mobility hubs also provide an opportunity to reduce car parking demand within Box Hill.

7.4 Non-infrastructure recommendations summary

A set of non-infrastructure recommendations to manage parking and provide better active and sustainable transport choices were developed, along with recommendations to manage kerbside activities and local freight deliveries. A pragmatic approach to car parking is adopted, recognising the growing opportunities and viability other travel options, including bicycle and micromobility, for trips to, from and within Box Hill.

The full list of non-infrastructure recommendations and opportunities is provided in Table 7.6 and is based on the analysis undertaken for this report and the Precinct Parking Plan – Box Hill attached as Appendix A to this report. Table 7.6 also identifies where the non-infrastructure recommendations and opportunities strongly support the infrastructure recommendations discussed in Section 6.2.

TABLE 7.6 NON-INFRASTRUCTURE RECOMMENDATIONS

REF	RECOMMENDATION / OTHER OPPORTUNITY		SUPPORTED INFRASTUCTURE RECOMMENDATION(S)
INTEGRATED PARKING			
BHTP 1*	Implement increased minimum bicycle parking and end-of-trip facility requirements to support sustainable modes and reflecting the change in cycling usage within 'living locally' based neighbourhoods and over time.	Recommendation	• Deliver a reimagined Whitehorse Road as a people focused boulevard (Ref. 1) • Enable a new north-south active transport spine through the heart of Box Hill (Ref. 3) • Enable an upgraded east-west active transport corridor between Union Train Station to Bank Street (Ref. 4) • Enable a network of local Green Streets (Ref. 7) • Critical – Key Link (Ref. 3A & 5A) • Important – Key Links (Ref. 10) • Local – Key Links (Ref. 11) • Deliver a high-capacity bicycle parking hub at the SRL station (Ref. 13)
BHTP 2*	Develop public realm cycling and micromobility end-of-trip policy and guidelines.	Opportunity	
BHTP 3*	Implement development parking controls, limiting new development parking provisions.	Recommendation	• Facilitate low-traffic neighbourhoods (Ref. 20) • Facilitate new consolidated public parking (Ref. 21) • Explore options to relocate commuter car parking to other stations (Ref. 22)
BHTP 4*	Support major landholders to explore reducing existing parking supply and adopting alternative uses for the land as accessibility and density in the Structure Plan Area increase.	Opportunity	
BHTP 5*	Encourage adoption of an unbundled car parking model for on-site car parking provision and management.	Recommendation	
BHTP 6*	Encourage the provision of consolidated car parking options which could be used to manage accessibility changes over time and reduce reliance on on-site parking.	Recommendation	
BHTP 7*	Implement adaptable building design requirements for new above-ground car parking facilities that enable their use for other purposes as parking demand reduces over time. Require developers to have an Adaptable Parking Plan which outlines future options for the use of on-site parking.	Recommendation	
BHTP 8*	Encourage Council to further develop and update the on-street parking management policy that supports the significant changes in land use density, diversity and accessibility levels in the Structure Plan Area over time.	Opportunity	
GREEN TRAVEL PLANS			
BHTP 9	Implement Green Travel Plan requirements for applicable new developments to help guide occupant travel behaviour, including monitoring commitment and program.	Recommendation	• Deliver a reimagined Whitehorse Road as a people focused boulevard (Ref. 1) • Enable a new north-south active transport spine through the heart of Box Hill (Ref. 3) • Enable an upgraded east-west active transport corridor between Union Train Station to Bank Street (Ref. 4) • Enable a network of local Green Streets (Ref. 7) • Critical – Key Link (Ref. 3A & 5A) • Important – Key Links (Ref. 10) • Local – Key Links (Ref. 11)
BHTP 10	Encourage Council to develop an improved Green Travel Plan Framework in the short term to guide and influence travel behaviours of occupants and visitors to new and existing buildings. This may include providing best practice templates, tools and strategies and incorporation of monitoring and review requirements.	Opportunity	
BHTP 11	Support preparation of Green Travel Plans for existing major employers and land holders, including local education facilities to help	Opportunity	

REF	RECOMMENDATION / OTHER OPPORTUNITY		SUPPORTED INFRASTUCTURE RECOMMENDATION(S)
	influence existing travel behaviours to major destinations as accessibility increases.		
CAR SHARE SCHEMES			
BHTP 12*	Encourage Council to develop policy and guidelines for car share schemes in public areas and new developments that include electric vehicle charging facilities, by: • Facilitating stronger relationships between developers and car share operators • Recognising electric vehicle charging for car share schemes in Green Travel Plans • Encouraging on-site car share scheme parking with electric vehicle charge points.	Opportunity	• Facilitate low-traffic neighbourhoods (Ref. 20) • Facilitate new consolidated public parking (Ref. 21) • Explore options to relocate commuter car parking to other stations (Ref. 22)
MOBILITY HUBS			
BHTP 13	Encourage the development of a network of new mobility hubs in strategic locations across the Structure Plan Area.	Recommendation	• Deliver a reimagined Whitehorse Road as a people focused boulevard (Ref. 1) • Enable a new north-south active transport spine through the heart of Box Hill (Ref. 3) • Enable an upgraded east-west active transport corridor between Union Train Station to Bank Street (Ref. 4) • Enable a network of local Green Streets (Ref. 7) • Critical – Key Link (Ref. 3A & 5A) • Important – Key Links (Ref. 10) • Local – Key Links (Ref. 11)
BHTP 14	Develop a mobility hub strategy and implementation framework with key stakeholders and partners, considering private and public sites, including: • Investigate partnerships with shared micromobility operators and Council and explore potential to undertake trials within the Structure Plan Area • Delivery of a central mobility hub with Council and land-owners in the centre of the Structure Plan Area • Facilitate or contribute to the provision of integrated development mobility hubs • Consultation and delivery of supplementary mobility hubs that can be tied to other public transport interfaces and peripheral parking areas • Investigate possible neighbourhood mobility hub land options and partnerships with Council.	Opportunity	
LOCAL FREIGHT DELIVERIES AND WASTE MANAGEMENT			
BHTP 15	Encourage centralisation and sharing of loading, waste and freight management facilities to reduce the number of access points and kerbside demands during peak community activity periods.	Recommendation	• Maintain the strategic road network (Ref. 19)
BHTP 16	Support adoption of alternative freight vehicle and freight delivery models within the Structure Plan Area to reduce vehicle emissions associated with these trips, including development of a Last Mile Freight Plan in association with Council.	Opportunity	
BETTER USE OF THE KERBSIDE			
BHTP 17	Encourage Council to develop a suite of policies and plans with Council to manage the function and needs that interface with the kerbside, which may include: • A Kerbside and Access Management Framework based on use hierarchy principles which supports urban cooling, sustainable transport modes and reduced	Opportunity	• Deliver a reimagined Whitehorse Road as a people focused boulevard (Ref. 1) • Enable enhanced priority for buses and pedestrians on Station Street (Ref. 2) • Enable a new north-south active transport spine through the heart of Box Hill (Ref. 3)

REF	RECOMMENDATION / OTHER OPPORTUNITY		SUPPORTED INFRASTUCTURE RECOMMENDATION(S)
	private car trips, and on-street parking demands • A Kerbside Management Plan to inform access, freight and waste management and kerbside use in the Structure Plan Area.		• Enable an upgraded east-west active transport corridor between Union Train Station to Bank Street (Ref. 4) • Enable new pedestrian links through the Box Hill centre (Ref. 5) • Facilitate Canterbury Road bus corridor upgrade and extension (Ref. 6) • Enable a network of local Green Streets (Ref. 7) • Investigate a future high-capacity public transport corridor (Ref. 16) • Investigate future bus priority (Ref. 18) • Facilitate low-traffic neighbourhoods (Ref. 20)
BHTP 18	Implement controls to respond to design recommendations for: • Access of secondary roads where possible (lane ways, side streets) • Access discouraged from Upgraded Strategic Corridors and/or Green Streets, high activity pedestrian and cyclist links • Encouraging on-site waste and freight management facilities.	Recommendation	• Deliver a reimagined Whitehorse Road as a people focused boulevard (Ref. 1) • Enable enhanced priority for buses and pedestrians on Station Street (Ref. 2) • Enable a new north-south active transport spine through the heart of Box Hill (Ref. 3) • Enable an upgraded east-west active transport corridor between Union Train Station to Bank Street (Ref. 4) • Enable new pedestrian links through the Box Hill centre (Ref. 5) • Enable a network of local Green Streets (Ref. 7) • Facilitate low-traffic neighbourhoods (Ref. 20)
BHTP 19	Implement loading and waste management requirements for new developments including requirement for loading to be entirely on-site for key land uses (such as large residential, large retail, industrial).	Recommendation	• Maintain the strategic road network (Ref. 19) • Facilitate low-traffic neighbourhoods (Ref. 20)
BHTP 20*	Encourage shared parking arrangements in developments to enable efficient and overall lower parking provisions.	Recommendation	• Facilitate low-traffic neighbourhoods (Ref. 20) • Facilitate new consolidated public parking (Ref. 21) • Explore options to relocate commuter car parking to other stations (Ref. 22)
BHTP 21*	Encourage car share scheme parking spaces in developments.	Recommendation	

* Item included in the Precinct Parking Plan - Box Hill.

8 Conclusion

SRL East will improve access to and from Box Hill and to nearby state and regional significant activity centres.

More active and sustainable transport choices will help improve the amenity and liveability of the Structure Plan Area. Compared to the Baseline Scenario, this will help to further reduce traffic congestion, better manage parking and provide for more efficient use of land. The mode share target shows an increase in active transport mode share by 26 per cent (increase of 2300 trips during typical peak hour) compared to the baseline from 25 per cent to 32 per cent, with public transport mode share increasing by 7 per cent (an increase of 800 trips during a typical peak hour).

Table 8.1 summarises the types of recommendations that have been developed and their alignment with the transport goals. The infrastructure and non-infrastructure recommendations will deliver a more connected network and increased travel choice by building on existing arterial road and rail access and contributing to a modal shift towards sustainable travel choice across the Box Hill Structure Plan Area.

In doing so, these recommendations will support achieving the vision for the Box Hill Structure Plan Area and provide a framework to guide growth and change, while protecting and preserving the character and features that people love about them now.

TABLE 8.1 TYPES OF TRANSPORT IMPROVEMENTS AND ALIGNMENT WITH THE TRANSPORT GOALS

TRANSPORT RECOMMENDATIONS	TRANSPORT GOALS						
	A safe and connected walking and cycling environment	A revitalised bus experience	An all-inclusive transport network	Anchoring sustainable travel services and shared mobility to SRL East	Prioritising safe and healthy movement	Smart and efficient use of parking	Enable new and emerging innovative mobility
Infrastructure types							
New and Upgraded Strategic Corridors that enable the Structure Plan with a particular focus on active and public transport upgrades	✓	✓	✓		✓		
Upgraded local Green Streets, with a particular focus on active transport upgrades and support for innovative modes	✓		✓			✓	
New Key Links, focusing on creating active transport permeability and connecting transport corridors	✓		✓	✓			
New and upgraded crossings of busy roads	✓		✓		✓		
Upgrades to public transport interchanges to enhance the services, facilities, and customer experience		✓		✓			
New bicycle hubs to encourage active transport to the SRL station, existing railway station and bus interchange	✓	✓		✓			
Maintaining strategic traffic and freight corridors		✓				✓	
Designating low traffic neighbourhoods	✓		✓		✓		
Non-Infrastructure types							
Development of SRL East Structure Plan Area appropriate parking rates					✓	✓	
Partnering with Council to plan and manage streets through local freight delivery and kerbside management plans						✓	
Supporting travel choices including Green Travel Plans and encourage use of mobility hubs					✓		✓

AJM
Joint Venture

Appendix A

SRL East Draft Structure Plan – Transport Technical Report – Appendix A – Precinct Parking Plan – Box Hill

AJM
Joint Venture

Appendix B

Peer Review Report

Client
Clayton Utz and White & Case on behalf of SRLA

Date
19 February 2025

Transport Engineering Peer Review

Suburban Rail Loop East

Box Hill

Planning
Transport
Urban Design
Waste

ratio:

ratio.com.au

Project
Box Hill SRL East Structure Plan Area

Prepared for
Clayton Utz and White & Case on behalf of SRLA

Our reference
21802T

Directory path	https://ratioconsultants1.sharepoint.com/sites/21802T577/Shared Documents/Work/Reports/21802TREP01BOX F01 Box Hill TTR Peer Review.docx

Acknowledgement of Country

We acknowledge the Traditional Owners of the land we work, live and travel on, and appreciate the rich cultures of the Aboriginal and Torres Strait Islander Peoples and their enduring connection to country.

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1. Introduction

1.1. Background

Ratio Consultants have been engaged by Clayton Utz and White & Case lawyers on behalf of the Suburban Rail Loop Authority (SRLA), to peer review the Box Hill Transport Technical Report.

The SRLA is currently in the process of preparing Structure Plans for areas around each of the new Suburban Rail Loop (SRL) East stations at Box Hill, Burwood, Glen Waverley, Clayton, Monash and Cheltenham.

The SRL East rail project and associated stations were assessed and approved as part of an Environment Effects Statement (EES) assessment process which culminated in Planning Scheme Amendment GC197 to the Whitehorse, Monash, Kingston and Bayside Planning Schemes.

AJM Joint Venture (AJM) were commissioned by SRLA to prepare Transport Technical Reports (TTR) to inform preparation of the structure plans for each of the Structure Plan Areas.

The Box Hill Structure Plan Area is irregular in shape but is generally bound by Severn Street to the north, Clota Avenue and Barcelona Street to the east, including an extension along the rail corridor to include Laburnum Station, a combination of Albion Road and Canterbury Road to the south and Elgar Road to the west.

Ratio Transport team have been requested to review the traffic and transport engineering studies prepared by AJM for Box Hill, Burwood and Cheltenham.

This report summarises the peer review undertaken by Ratio of the TTR, which includes a Precinct Parking Plan for the Box Hill Structure Plan Area. Separate peer review reports have been prepared in respect of the Transport Technical Reports prepared for the Burwood and Cheltenham Structure Plan Areas.

1.2. Instructions

Instructions were received from Clayton Utz and White & Case lawyers on the 13/11/2024, requesting a peer review of the Draft *SRL East Structure Plan, Box Hill, Transport Technical Report* (TTR), dated January 2025, prepared for the Box Hill Structure Plan Area.

Specifically, my instructions were:

> *This letter sets out instructions for you to undertake a peer review of the Technical Report and prepare a peer review report.*
>
> *Your peer review report should address the following matters:*
>
> *(a) The scope of your role in reviewing the Technical Report;*
>
> *(b) The appropriateness of the methodology, assumptions and limitations in the Technical Report;*

(c) *Whether the findings, assessment outcomes and recommendations in the Technical Report are appropriate in the context of the structure plan planning process for the Box Hill Structure Plan Area.*

A final version of the TTR was provided on the 12th February 2025, in order to complete this assessment.

1.3. References

While preparing this report I have reviewed and had regard to the following documents.

Table 1.1: Reference Documents

Document	Date
SRL East Structure Plan - Transport Technical Report – Box Hill, prepared by AJM Joint Venture	January 2025
SRL East Structure Plan - Transport Technical Report – Box Hill, prepared by AJM Joint Venture	February 2025
Suburban Rail Loop East, Inquiry and Advisory Committee Report and Appendices	23 June 2022
Suburban Rail Loop East Environment Effects Statement Summary Report	Undated
SRL East – Environmental Management Framework	Endorsed 17/10/2022
SRL Surface and Tunnel Plans	Approved 28/4/2024

In addition to the above documents, a variety of online mapping resources were used, including Melway, Google Maps, and Landchecker.

1.4. Acronyms and Abbreviations

For ease of reference, commonly used acronyms and abbreviations are summarised in Table 1.2.

Table 1.2: Acronyms and Abbreviations

Acronym	Reference	Acronym	Reference
SRLA	Suburban Rail Loop Authority	TTR	Transport Technical Report
SRL	Suburban Rail Loop	EES	Environment Effects Statement
SPA	Structure Plan Area	EPRs	Environmental Performance Requirements
AJM	AJM Joint Venture	PPP	Precinct Parking Plan
TTIA	Traffic and Transport Impact Assessment	DTP	Department of Transport and Planning

1.5. Limitations of the Peer Review

The following review is based on the content of the TTR as a background study to inform the proposed Box Hill Structure Plan. The Structure Plan itself and background reports prepared by other disciplines have not been provided or considered in this review.

Likewise, the validity of the data provided in the TTR, and the conclusions reached have not been tested as part of this review other than by assessing their appropriateness against the purpose of informing a Structure Plan on transport matters.

The Structure Plan Area sits within the broader Planning Area Declaration to which the SRLA is the planning authority.

2. The Project

2.1. Overview

The Suburban Rail Loop (SRL) is a major rail project ultimately providing a 90km loop around Melbourne providing a rail corridor from Cheltenham to Werribee via Melbourne Airport.

SRL East is the first stage of the 'Project' and comprises a rail line and six new stations at Cheltenham, Clayton, Monash, Glen Waverley, Burwood and Box Hill.

2.2. Suburban Rail Loop East Environment Effects Statement

An Environment Effects Statement (EES) was prepared for the SRL East rail infrastructure including the six new SRL rail stations. The EES was the subject of inquiry by the Suburban Rail Loop East Inquiry and Advisory Committee and assessment by the Minister for Environment and Climate Action, culminating in the Minister's Assessment Report dated July 2022. The SRL East portion of the project is currently under construction.

The Environmental Performance Requirements (EPRs) for the design, construction and operation of the SRL East are detailed in *SRL East – Environmental Management Framework,* which was approved by the Minister for Planning on the 17/10/2022.

The SRL East Environmental Management Framework includes eight Traffic and Transport related EPRs, referenced as T1 through to T8. The EPRs are divided into three indicative timing phases, being Design, Construction or Operation, with some EPR's relevant to more than one phase of the project.

The Traffic and Transport EPRs are divided into eight topics, as summarised in Table 2.1.

Table 2.1: Traffic and Transport Environmental Performance Requirement Topics

Ref.	Environmental Performance Requirement	Timing
TI	Develop and implement Transport Management Plan(s) (TMP)	Design & Construction
T2	Establish and convene a Transport Management Liaison Group (TMLG)	Design & Construction
T3	Manage road transport impact during construction	Design & Construction
T4	Manage public transport impacts during construction	Design & Construction
T5	Manage active transport impacts during construction	Design & Construction
T6	Road transport design and operation	Design & Operation

T7	Public transport design and operation	Design & Operation
T8	Active transport design and operation	Design & Operation

Each of the EPR's have a number of subset requirements, however broadly speaking T1 through to T6 are primarily related to the design and construction phases of the project. The Box Hill TTR contains a specific list of relevant EPRs in Table 3.1 and a response as to how the relevant EPR will be addressed.

Ratio are satisfied that the TTR has been prepared having regard to the requirements of the EPRs that are relevant to the preparation of a structure plan for the Box Hill Structure Plan Area.

2.3. Box Hill Structure Plan Area

Two areas are identified around the future Box Hill SRL Station, comprising a Structure Plan Area and a wider Planning Area. The broader Planning Area includes the Structure Plan Area and was declared in December 2023, by the Minister under the *Suburban Rail Loop Act 2021* (Vic). The declaration makes the Suburban Rail Loop Authority (SRLA) a planning authority under the *Planning and Environment Act 1987* (Vic) for the land in Box Hill to which the Planning Area applies.

The Planning Area and the Structure Plan Area are shown in Figure 2.1.

Figure 2.1: Box Hill Structure Plan and Planning Areas

The Box Hill Structure Plan applies to the Structure Plan Area identified in pink on the preceding figure.

It is understood that the Structure Plan Area is broadly based on an 800m walking distance from the proposed Box Hill SRL Station.

3. Structure Planning Process

3.1. Overview

The purpose of a Structure Plan is to define the preferred direction of future growth within an activity centre and articulate how it will be managed[1].

The City of Melbourne[2] provides the following summary of what should be included in a Structure Plan:

A structure plan sets out a vision for an area in the next 10 to 20 years. Structure plans provide guidance about appropriate directions and opportunities for change. They are strongly focused on sustainability, planning for change that is environmentally, socially and economically sustainable.

They include:

- *Plans to guide activities and land uses, including proposed locations for new community hubs and business clusters*
- *Plans to manage traffic, car parking, walking, cycling, public transport and freight transport route*
- *Guidance about building heights and forms*
- *Plans to enhance open space, including public gathering spaces, parks and gardens.*

Further guidelines for preparing Structure Plans are outlined within various sections of the Victorian Planning Scheme.

3.2. Planning Scheme Guidelines for Structure Plans

In preparing this Peer Review, we have referenced the transport related provisions of the Whitehorse Planning Scheme:

- Clause 18 Transport
- Clause 45.09 Parking Overlay
- Clause 52.06 Car Parking
- Clause 52.34 Bicycle Parking

The relevant considerations from a transport perspective are discussed as follows:

Clause 18 Transport

Clause 18 of the Planning Scheme states that:

Planning should ensure safe, integrated and sustainable transport system that:

[1] Department of Transport and Planning Structure Planning Guideline, dated 20/7/2023
[2] https://www.melbourne.vic.gov.au/local-area-planning

- *Provides access to social and economic opportunities to support individual and community wellbeing.*
- *Facilitates economic prosperity.*
- *Actively contributes to environmental sustainability.*
- *Facilitates network wide efficient, coordinated and reliable movement of people and goods.*
- *Supports health and wellbeing.*

Reference should also be given to the subclauses of Clause 18, including:

Table 3.1: Relevant Subclauses of Clause 18 of the Whitehorse Planning Scheme

Clause	Title	Clause	Title
18.01-1S	Land use and transport integration	18.02-2S & 2R	Cycling
18.01-2S	Transport System	18.02 – 3S	Public Transport
18.01-3S & 3R	Sustainable and safe transport	18.02 – 3R	Principal Public Transport Network
18.02	Movement Network	18.02 – 4S	Roads
18.02-1S	Walking	18.02 – 4L	Car Parking
18.02-1L	Sustainable Personal Transport	18.02 – 5S	Freight

The overarching aspiration of the various strategies under Clause 18 is to reduce reliance on the private vehicle by promoting, facilitating and planning for an increased mode share towards sustainable transport options.

3.3. Planning Scheme Practice Notes

A range of Practice Notes have been prepared to assist with implementation of the Victorian Planning Scheme. Practice notes relevant to the preparation of the SRL East Structure Plans include:

- Planning Practice Note 58: Structure planning for activity centres (PPN58)
- Planning Practice Note 57: Parking Overlays (PPN57)

PPN58 Activity Centres

Planning Practice Note 58: Activity Centres (PPN58) was prepared in September 2018 and is currently under review. At the time of preparing this assessment, the government is currently working on 10 activity centres (excluding SRL East precincts) which are expected to be approved in early 2025.

A further 25 Activity Centres have also been announced by the government, with a further 25 expected in the new year. On the basis of the work being undertaken on Activity Centres throughout Metropolitan Melbourne, it is anticipated that new guidelines and criteria will be developed to assist in facilitating development of Activity Centres.

In terms of current guidelines informing the development of the TTR for Box Hill, PPN58 provides a list of objectives the structure plan should achieve. The ones relevant to transport related matters are as follows:

— *Be consistent with regional and local transport, retail, economic, social, environmental, demographic and housing roles of the centre.*

— *Facilitate a pedestrian environment*

— *Support greater transport mode choice*

— *Provide a mobility network and traffic and carparking management that encourages and supports sustainable transport mode choices*

PPN58 outlines a six step process for preparing a structure plan. Step two of the process is Background Research. The TTR forms part of the background research prepared to inform the Structure Plan.

PPN57 Parking Overlay

The Victorian Planning Practice Note 57: Parking Overlay (PPN57) was prepared in August 2023 and provides guidance on preparing and applying a Parking Overlay.

In regard to the number of car parking spaces specified by the Schedule to the Parking Overlay, PPN57 notes the following:

A schedule to the Parking Overlay can be used to vary the standard number of car parking spaces required under clause 52.06. Specifically, it can be used to:

1. *Vary the car parking rate and measure for any use listed in Table 1 of clause 52.06-5*
2. *Specify car parking requirement for any use not listed in Table 1 of clause 52.06-5*
3. *Specify maximum and minimum car parking requirements for any use*
4. *Apply Table 1 – column B rates to any use listed in the table to clause 52.06-5*

Of particular note: *"the schedule should only be used to reduce standard number of car parking spaces specified in Table 1 of clause 52.06-5...."*

Before a Parking Overlay is implemented a Car Parking Assessment needs to be prepared that identifies the car parking needs and issues for the area to which the parking overlay will apply.

The Car Parking Assessment should set out the relevant objectives and strategies and include a review of the supply and demand, as well as any relevant social, economic and environmental considerations.

Appendix A of the TTR contains the Car Parking Assessment that has been prepared to support the preparation of a Parking Overlay for the Box Hill Structure Plan Area. The Car Parking Assessment attached to the TTR has been titled Precinct Parking Plan.

PPN57 states that:

A car parking plan must include the following content:

- *the objectives of the plan*
- *the area to which the plan applies*
- *findings from research and surveys that provide factual material to support the plan*
- *an assessment of car parking demand and supply*
- *car parking strategies proposed to facilitate the plan's objectives*

- *any locational, financial, design or other actions necessary to implement the objectives and strategies.*

PPN57 recommends that Parking Overlays are regularly monitored and reviewed to reflect the changing nature of a precinct.

3.4. Other Considerations

In my opinion, in addition to the Planning Scheme and associated Practice Notes, consideration should be given to existing activity centre structure plans, particularly those that respond to the sustainable transport ambitions set out in Clause 18 of the Planning Scheme.

In regard to the proposed Box Hill Structure Plan, consideration should be given to the recommendations and findings of the Box Hill North Masterplan – Amendment C245whse tribunal report.

4. Box Hill Transport Technical Report (TTR)

4.1. Purpose

The purpose of the TTR is to inform the preparation of the Box Hill Structure Plan in terms of managing relevant transport considerations, such as traffic, car parking, walking, cycling, public transport and freight movements.

The following Peer Review is based on the report titled *SRL East Structure Plan – Transport Technical Report – Box Hill*, dated February 2025.

4.2. Methodology

The TTR states that each of the Structure Plans will be prepared using a Vision and Validate methodology. The TTR outlines the overarching Transport Ambition for Box Hill to support the Structure Plan Vision as follows:

Transport Ambition for Box Hill

Managing the growing number of trips through more people choosing to walk, cycle and catch public transport as Box Hill develops.

A set of Transport Goals are outlined in Table 4.1 of the TTR that expand on the preceding ambition. The goals broadly address walking, cycling, safety, public transport, inclusivity, sustainability, parking and emerging mobility modes.

The Box Hill TTR (Section 1.4) states that the following steps were taken to reach the recommendations for the Box Hill Structure Plan.

— Step 1: Review existing conditions

— Step 2: Review the baseline

— Step 3: Setting the transport ambition and goals

— Step 4: Determine the initial movement network and opportunities

— Step 5: Iterate the development of the Structure Plan with transport

— Step 6: Validate the recommendations

AJM have also outlined a five phase stakeholder engagement process that at the time of preparing this review, was up to Phase 2 labelled 'Shaping the Plans'. The TTR states that engagement with both Whitehorse City Council and Department of Transport and Planning (DTP) had occurred prior to completion of the TTR and had helped inform the transport recommendations.

4.3. Investigation

The TTR includes an investigation and discussion on the following existing transport infrastructure items:

- Road network and operating conditions
- Pedestrian and cycle networks and connectivity
- Public transport services and routes
- Accident history
- Freight routes and demand
- Parking supply, location and type including both on-street and off-street spaces.
- Car park demand
- Mode share characteristics
- Car ownership
- Bicycle ownership

Once AJM had established existing conditions for various metrics including car and bike ownership, walk score, transit score, travel mode etc, they benchmarked the metric against other comparable locations within Melbourne.

The TTR also includes an assessment of how the transport infrastructure listed above and current mode share can be encouraged to become more sustainable and less reliant on private vehicles, with the introduction of the Box Hill SRL Station, associated Structure Plan and recommended infrastructure improvements.

4.4. Findings

Existing Conditions

The TTR provides a robust description of existing conditions and transport characteristics more broadly, the key findings of the existing conditions assessment are detailed in Table 2.9 of the TTR and summarised as follows:

— The precinct has a comprehensive footpath network, which has been assessed as generally safe and comfortable, although it is noted that the level of amenity decreases outside the centre of Box Hill.

— The cycling network is generally restricted to a few main high quality routes through the precinct.

— There are a number of existing barriers for pedestrians and cyclists including busy roads, the train line and in some place's large blocks.

— Box Hill is served by all modes of public transport, however connections between the various modes are indirect..

— Bus and tram services are at risk of being delayed at peak times as they don't have priority over passenger vehicles.

— Box Hill is served by a number of arterial road corridors both north south and east west.

— The roads within the Box Hill Structure Plan Area are not part of the Principal Freight Network.

— There are in the order of 6560 off street parking spaces publicly available and a further 4711 on-street parking spaces.

— The significant supply of car parking encourages private vehicle use.

— There are limited bicycle parking opportunities.

Car Parking

The key finding outlined in Appendix A –Precinct Parking Plan, is that the same parking rates should not be applied to the entire Structure Plan Area at this stage, given the delay in the completion of the SRL East Stations.

The proposed areas for initial parking rates within the parking overlay are defined as Area A and Area B as shown in Figure 4.1.

Figure 4.1: Proposed Areas for Parking Overlay Zones – Area A and Area B

The TTR confirms that parking overlays are a common tool to use in Activity Centres of this nature to manage car parking provision.

In regard to parking provision, the TTR quotes a study undertaken by DTP[3], which found that minimum car parking rates, such as those included in Clause 52.06 of the Planning Scheme,

[3] Modernising car parking and bicycle facilities requirements, discussion paper, DTP, October 2023

can encourage an oversupply of car parking, which results in increased traffic, noise and emissions and a poorer quality urban environment.

The DTP study proposes to change the statutory parking requirements for both cars and bicycles based on a sites proximity to public transport, which will include removal or refinement of minimum parking rates and application of maximum rates.

The TTR proposes to adopt maximum parking rates for Area A and both minimum and maximum rates for Area B. The proposed parking rates for Area A and Area B are reproduced as Table 4.1 and compared to the Clause 52.06 Planning Scheme rates and the existing Box Hill Parking Overlay (PO1) rates.

Table 4.1: Proposed Box Hill Parking Overlay Rates

<table>
<tr><th>USE</th><th>EXISTING MINIMUM RATES [1]</th><th>BOX HILL PO1 (MIMIMUM) [2]</th><th>RECOMMENDED AREA A (ALL MAXIMUM)</th><th>RECOMMEDED AREA B</th><th>UNIT/ MEASURE</th></tr>
<tr><td rowspan="3">Dwelling</td><td rowspan="2">1</td><td>0.5</td><td>0.6</td><td>0.5 min – 1 max</td><td>1 bedroom /studio</td></tr>
<tr><td>0.75</td><td>0.9</td><td>0.6 min – 1 max</td><td>2 bedroom</td></tr>
<tr><td>2</td><td>1.0</td><td>1.2</td><td>1 min – 2 max</td><td>3+ bedrooms</td></tr>
<tr><td>Residential building (student accommodation)</td><td>0.1-0.25 [3]</td><td>-</td><td colspan="2">0.3 (maximum)</td><td>bed</td></tr>
<tr><td>Office</td><td>3.5</td><td>2</td><td>1.5</td><td>2 min</td><td>100 m^2 NFA</td></tr>
<tr><td>Supermarket</td><td>5</td><td>-</td><td>3.5</td><td>3.5 min</td><td>100 m^2 LFA</td></tr>
<tr><td>Retail premises, including Shop</td><td>4</td><td>-</td><td>2</td><td rowspan="2">Retail – N/A
Shop – Clause 52.06 ‘Column B’ rates (minimum)</td><td>100 m^2 LFA</td></tr>
<tr><td>Other</td><td></td><td>Clause 52.06 'Column B' rates (minimum)</td><td>Clause 52.06 ‘Column B’ rates (maximum)</td><td></td></tr>
</table>

[1] Clause 52.06-5 Table 1 Column A rates, includes residential visitor rates not shown here. [2] Existing Schedule to the Parking Overlay PO1 rates - includes residential visitor rates not shown here. [3] Whitehorse local policy 22.14

The TTR states that all proposed rates will be discretionary, with the ability to modify the rates to the satisfaction of the Responsible Authority. This inclusion will allow greater flexibility for development within the Structure Plan Area than the Area A / Area B may initially imply. This is considered an appropriate response to a developing Activity Centre such as that proposed within the Box Hill Structure Plan Area.

We have undertaken a review of the proposed parking rates and make the following comments:

The Area A rates are based on existing average car park demand as recorded by the ABS Census data. These rates are proposed as maximums, allowing residential development parking provision as per existing demand or with reduced parking provision, including zero parking, within the core Area A. This is considered an appropriate approach to parking

provision for residential development in this key location that is already well served by sustainable transport options.

A more conservative approach has been taken for Area B, with the current Clause 52.06 rates adopted as maximums and rates slightly less than the existing ABS Census data adopted as minimums. This is considered a reasonable approach to encourage lower parking provision in the wider Structure Plan Area.

A maximum rate of 0.3 spaces per bed is proposed for student accommodation across both Area A and Area B. Based on our experience this is a relatively high rate of parking provision, with many student accommodation facilities providing very limited to no parking. The use of this rate as a maximum, with no minimum will allow future student accommodation facilities to provide an appropriate level of parking based on their location within the Structure Plan Area.

Office parking demand is typically a product of supply, such that if an office has a generous rate of parking (ie Planning Scheme rates) then employees are more likely to opt to use private vehicles. The proposed rate of 1.5 spaces / 100sqm as a maximum within Area A is considered appropriate and consistent with a number of office buildings already approved in this core area. The office rate of 2.0 spaces / 100sqm as a minimum in Area B is considered more appropriate than the current minimum rate of 3.5 spaces / 100sqm, but may be too high in some locations within Area B. The ability for development to seek a reduction to this minimum rate is noted and should allow an appropriate level of parking to be provided.

The proposed rates for retail and supermarket over Area A and Area B are considered appropriate given that Box Hill already has a significant retail offering at Box Hill Central and that future retail offerings through the wider Structure Plan Area are likely to be smaller local activity centres serving the immediate residential catchment.

For all other uses, the existing Column B rates within Clause 52.06 have been adopted as maximums with no minimums for Area A and as minimum rates for Area B. This approach is considered consistent with the aspirations to facilitate mode shift and promote sustainable transport choices.

Bicycle Parking

Consistent with the findings of other Activity Centres, AJM identified that the bicycle parking rates within the Whitehorse Planning Scheme do not represent best practice for bicycle provision. Particularly in the context of supporting more sustainable and active transport options. The Box Hill PPP therefore includes a recommendation for higher bicycle parking provision rates, which is considered appropriate and desirable.

Supporting Mode Share and Managing Car Parking

In addition to car and bicycle parking rates, the TTR found that a range of initiatives are beneficial in supporting mode shift towards reduced reliance on private vehicle and managing car parking supply. The TTR found that the following initiatives could include:

- Car share
- Mobility Hubs
- On-street parking management
- Consolidation of parking
- Unbundled parking
- Adaptable buildings

In our opinion, supporting mode shift requires a holistic approach, and as such it is appropriate to consider a wide variety of initiatives that can support and encourage a reduction in the use of private vehicles.

4.5. Assumptions

General

The TTR is based on a number of assumptions, the most significant being the ability of the implementation of planning controls and actions to give effect to the Structure Plan in advance of commencement of operation of SRL East, which is projected to occur in 2035. This assumption has impacted various aspects of the TTR, with project completion, traffic impacts and mode shift discussed as follows:

Structure Plan Commencement

In transport terms the Box Hill Structure Plan Area is well served by existing sustainable transport infrastructure, including but not limited to, the Box Hill Train Station, Box Hill Bus Interchange, trams on Whitehorse Road and a comprehensive bus network through the Structure Plan Area. The area is also served by existing walking and bicycle infrastructure and is likely to see increased usage of micromobility modes as their usage continues to grow.

The TTR refers to 'Walk Score' and 'Transit Score' of the Box Hill Structure Plan Area. Walk Score is an online program that calculates how well served an area is with amenities, such as shops, parks and other services within convenient walking distance. The higher the score the easier it is to undertaken daily tasks by walking.

Transit Score is a similar metric that measures how well served a particular location is by public transport, taking into consideration distance to nearest stop, route frequency and type of transit available.

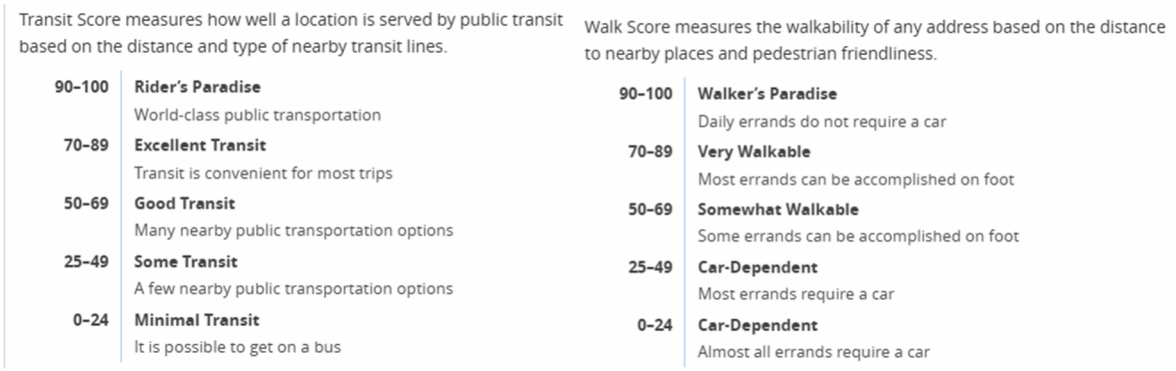
The TTR notes that the existing walk score of the Box Hill Structure Plan Area is an average of 82 with an average transit score of 73, noting this is an average across the entire Structure Plan Area and that areas closer to Box Hill Station will have increased walk and transit scores and those further away are likely to have reduced scores.

A walkscore of 82 is considered 'very walkable' with most errands able to be achieved on foot.

A transit score of 73 is considered 'excellent' with transit convenient for most trips.

For reference the walk and transit score categories are shown in Figure 4.2.

Figure 4.2: Walk Score and Transit Score Definitions[4]



Transit Score measures how well a location is served by public transit based on the distance and type of nearby transit lines.

90–100	**Rider's Paradise** World-class public transportation
70–89	**Excellent Transit** Transit is convenient for most trips
50–69	**Good Transit** Many nearby public transportation options
25–49	**Some Transit** A few nearby public transportation options
0–24	**Minimal Transit** It is possible to get on a bus

Walk Score measures the walkability of any address based on the distance to nearby places and pedestrian friendliness.

90–100	**Walker's Paradise** Daily errands do not require a car
70–89	**Very Walkable** Most errands can be accomplished on foot
50–69	**Somewhat Walkable** Some errands can be accomplished on foot
25–49	**Car-Dependent** Most errands require a car
0–24	**Car-Dependent** Almost all errands require a car

Adopting an aggregate average for both walk and transit scores across the entire Box Hill Structure Plan Area is considered a very conservative assumption, noting that the Structure Plan Area is generally based on an 800m walking distance from the future Box Hill SRL station and as such there is expected to be a reasonable variation across the Structure Plan Area.

In our opinion a more refined review of the walk and transit scores for any development proposal within Area A or B at the planning permit application stage, would be beneficial and help assess the appropriateness of the proposed car parking provision.

It is reasonable to assume that the transport planning for any future permit application would take the particular scores of the site into account, noting that the scores will also change as development progresses and more goods and services and/or sustainable transport options become available.

From a transport perspective, the introduction of a Structure Plan with reduced parking rates, for Area A, can be supported and is consistent with the recent approval of the Box Hill Central North Masterplan.

The proposal to have different parking rates between Area A and Area B, responds appropriately to the proposed implementation of the Structure Plan before the commencement of operation of SRL East and new SRL station at Box Hill.

Traffic Assumptions

The TTR refers to the SRL East Rail Environment Effects Statement (EES) (2021), which was supported by a Traffic and Transport Impact Assessment (TTIA). The EES TTIA included traffic modelling implications of the SRL East project.

The TTR states that the work undertaken by AJM, builds on the Traffic and Transport Impact Assessment prepared for the SRL East Environment Effects Statement (EES). The transport modelling prepared for the EES process by AJM, included future land use and travel pattern changes anticipated as a result of the SRL East project.

This assumption is considered reasonable given the traffic modelling by AJM was accepted during the EES hearing.

Parking Demand Assessment

The Precinct Parking Plan (PPP) includes two future scenarios, labelled 'Business as Usual' and 'Mode Shift'. The assumption between the two scenarios relates to the ability to increase

[4] https://www.walkscore.com/transit-score-methodology.shtml & https://www.walkscore.com/methodology.shtml

mode shift by limiting the potential provision of car parking through car parking rates for new development, as well as a range of proposed improvements to increase the use of sustainable transport modes.

In our view, providing a comparison of business as usual and the potential reduction in parking with a targeted strategy to facilitate mode shift, is an appropriate way to demonstrate the benefits of the proposed parking rates and the risk (or lost opportunity) of over supplying car parking.

Parking

The PPP proposes to split the Box Hill Structure Plan Area into Area A and Area B and adopt different parking rates for each of the two areas. It is our opinion that this is an appropriate response to the delayed timing of the Box Hill SRL Station itself and also to the variation that exists and will continue to exist, over the larger Structure Plan Area.

It is anticipated that any Parking Overlay applied to the Structure Plan Area will need to be reviewed and modified over time as development in the area progresses. It is also likely that the wider Area B could be divided further, to respond to the variation through the Structure Plan Area.

At the time of preparing this assessment, Ratio have not undertaken a review of the proposed parking rates, the appropriateness of Area A vs Area B or the specific implications on any particular site within either area.

Nonetheless, the proposal to provide different parking rates for Area A vs the remainder of the Structure Plan Area (Area B) is considered appropriate and consistent with managing car parking in Activity Centres.

4.6. Limitations

One of the most significant limitations to this study is the expected timing of the SRL East construction. The anticipated operation of the SRL East rail corridor is projected for commencement of operation in 2035, and as such the Structure Plan needs to respond to both the ultimate outcomes of the SRL East project and the interim conditions before the new stations are in operation. Given that redevelopment of an area takes a considerable amount of time including design, approval and construction, there also needs to be consideration for the transition period that will occur in the years immediately prior to the Box Hill SRL station opening.

Other limitations of the TTR study include:

VITM TRAFFIC MODELLING PROGRAM

— Traffic analysis program VITM has been relied upon, which like most transport software programs has limitations. One noted by AJM[5] is that VITM lacks sensitivity to active transport modes in favour of assuming vehicle movements instead, resulting in potentially lower active transport usage than that shown on the mode shift graphic.

[5] TTR Executive Summary Recommendations (footnote 3, pdf pg 9/250)

DATA COLLECTION

— AJM note that the bicycle parking assessment was undertaken using a desktop review of the Structure Plan Area and as such is likely to contain discrepancies.

— The report relies on VISTA data for bicycle ownership from 2012-2020 and 2022. Bicycle ownership levels have generally increased over the past decade, suggesting that historical data may not reflect future ownership levels. Furthermore, the data period is potentially impacted by Covid-19.

— The occupancy of the car parking both on-street and off-street has not been surveyed over an extended period of time, with observations used to determine the current level of business.

4.7. Recommendations

The TTR outlines a table of recommendations defined as either Infrastructure Recommendations or Non-infrastructure Recommendations. The table is reproduced as Table 4.2

Table 4.2: TTR Summary of Recommendations

TRANSPORT RECOMMENDATIONS	TRANSPORT GOALS						
	A safe and connected walking and cycling environment	A revitalised bus experience	An all-inclusive transport network	Anchoring sustainable travel services and shared mobility to SRL East	Prioritising safe and healthy movement	Smart and efficient use of parking	Enable new and emerging innovative mobility
Infrastructure types							
New and Upgraded Strategic Corridors that enable the Structure Plan with a particular focus on active and public transport upgrades	✓	✓	✓		✓		
Upgraded local Green Streets, with a particular focus on active transport upgrades and support for innovative modes	✓		✓			✓	
New Key Links, focusing on creating active transport permeability and connecting transport corridors	✓		✓	✓			
New and upgraded crossings of busy roads	✓		✓		✓		
Upgrades to public transport interchanges to enhance the services, facilities, and customer experience		✓		✓			

New bicycle hubs to encourage active transport to the SRL station, existing railway station and bus interchange	✓	✓		✓			
Maintaining strategic traffic and freight corridors		✓				✓	
Designating low traffic neighbourhoods	✓		✓		✓		
Non-Infrastructure types							
Development of SRL East Structure Plan Area appropriate parking rates					✓	✓	
Partnering with Council to plan and manage streets through local freight delivery and kerbside management plans						✓	
Supporting travel choices including Green Travel Plans and encourage use of mobility hubs					✓		✓

The preceding recommendations are considered to be high level aspirations, that provide an appropriate overview of how both infrastructure and non-infrastructure changes can be used to support the development of the Structure Plan.

It is understood that a more detailed Implementation Plan will be created to expand on the above recommendations including a timeframe and responsibility for delivery.

5. Response to Instructions

5.1. Instructions

Clayton Utz and White & Case lawyers provided the following instructions on the 13/11/2024, requesting a peer review of the Transport Technical Report (TTR) prepared for the Box Hill Structure Plan Area.

Specifically, the instructions were:

> *This letter sets out instructions for you to undertake a peer review of the Technical Report and prepare a peer review report.*
>
> *Your peer review report should address the following matters:*
>
> *(d) The scope of your role in reviewing the Technical Report;*
>
> *(e) The appropriateness of the methodology, assumptions and limitations in the Technical Report;*
>
> *(f) Whether the findings, assessment outcomes and recommendations in the Technical Report are appropriate in the context of the structure plan planning process for the Box Hill Structure Plan Area.*

5.2. Scope of Involvement to Date

The Ratio Transport team were engaged by Clayton Utz on behalf of SRLA, in August 2024, to undertake a peer review of the Transport Technical Report (TTR) prepared to inform preparation of the SRL East structure plans.

Of the six SRL East Structure Plan Areas, the Ratio Transport team have been requested to peer review three Transport Technical Reports including Box Hill, Burwood and Cheltenham.

Since being engaged in August 2024, Ratio Transport have been provided with drafts of the Box Hill TTR and associated PPP for review and discussion, attended workshops, sought to understand the intent and conclusions reached in the TTR and PPP.

Ratio were provided with a final draft TTR and PPP In January 2025 in order to commence this peer review. An updated version with minor editorial changes was provided 12th February 2025, that has been referenced to finalise the opinions in this peer review.

This peer review seeks to respond to the instructions provided, which largely seek an opinion on whether the TTR prepared by AJM has responded to the relevant guidelines and provides sufficient detail to enable preparation of a Draft Structure Plan, suitable for exhibition.

This peer review does not attempt to assess the validity of the data collected, or the analysis of the data supporting that supports the recommendations. This peer review is limited to an assessment of the methodology, assumptions and scope of investigation, to determine if the outcomes and recommendations are appropriate to inform the transport related issues required to prepare a Structure Plan.

This review has been prepared by Hilary Marshall, Director of Ratio Consultants assisted by Peter Malley, Senior Associate and Ana Lee, Senior Transport Engineer also from Ratio.

During the course of the peer review I have liaised with Tim De Young, Director of Eukai, who has been engaged by White & Case lawyers on behalf of SRLA, to review the Glen Waverley, Monash and Clayton Precinct Structure Plan areas.

5.3. Appropriateness of Methodology, Assumptions and Limitations

The methodology adopted by AJM to prepare the TTR is considered to be a relatively standard approach to undertaking an investigation and preparing recommendations for a large precinct like the proposed Box Hill Structure Plan.

Existing conditions data was collected, then reviewed and calibrated to establish a baseline. AJM then prepared the transport goals and ambitions to inform the Vision for the Box Hill Structure Plan. A detailed review of the road network throughout the Structure Plan Area was undertaken using the DTP Movement and Place Framework. AJM then determined the transport network improvements required to support the Structure Plan and finally validated the recommendations to ensure they aligned with the identified goals and ambitions.

In terms of transport infrastructure, the TTR includes an investigation and discussion on all relevant aspects of transport in our view.

The reliance on the traffic modelling undertaken and accepted as part of the SRL East EES process by AJM, is considered appropriate.

In our experience, any large scale study will have some limitations. The limitations identified earlier included the traffic modelling program VITM and data collection.

VITM is the Victorian Integrated Transport Model and the adopted software package for the majority of large precinct assessments prepared by or on behalf of the State Government, to determine the appropriate road network. VITM is used throughout Metropolitan Melbourne on a variety of land sizes and uses and is considered appropriate for the SRL East precincts. Furthermore, the modelling for the SRL East EES TTIA used VITM, which was accepted for use and approval of the SRL East Project.

Data collection of traffic and/or parking conditions poses a limitation on any project. The data is typically collected on a particular day at a particular time of the day and year, and as such is subject to variations, errors and statistical anomalies. AJM have used large data sets from the ABS Census data, which will help reduce the potential for errors, bias and anomalies.

In our view, the exact utilisation of car parking throughout the Structure Plan Area is not required at this stage of the structure plan process. As outlined above, any data collected would represent a small snap shot in time and would be most likely considered out of date by the time planning applications are sought post approval of the structure plan.

Therefore, in our view the detailed summary of parking types, locations and quantity is sufficient to prepare the Precinct Parking Plan and provide appropriate recommendations on managing car parking resources as the precinct develops.

5.4. Appropriateness of Findings and Recommendations

In our view the findings, assessment outcomes and recommendations of the TTR contain sufficient depth of understanding and analysis to prepare recommendations to inform the preparation of the Structure Plan suitable to be exhibited for public consultation.

Specifically, the adoption of a parking overlay with rates for two separate areas, is considered a reasonable response to planning in the interim period between when the Structure Plan will take effect and when the Box Hill SRL East Stations will be open.

5.5. Summary

In our opinion the purpose of the Transport Technical Report (TTR) is to determine the potential transport implications of the proposed Structure Plan which proposes to significantly increase both population and employment within the identified Structure Plan Area. The TTR then needs to provide clear strategies on how to manage the increase in activity.

The TTR needs to respond to the relevant Transport Environmental Performance Requirements (EPRs) included in the SRL East Environmental Management Framework document.

Based on our review of the TTR, we are satisfied that a sufficient level of investigation for all relevant transport related matters, including parking, has been addressed and that the SRL East EPRs relevant to this stage of the project have been considered.

In summary, the TTR provides guidance on the key transport issues that should be addressed in a Structure Plan including:

— Traffic management

— Car parking

— Public transport

— Walking

— Cycling

— Freight movements

The TTR includes recommendations related to all of the above transport matters.

In summary, the TTR and the attached Precinct Parking Plan (PPP) in our view have appropriately investigated the various transport and parking related matters to inform the preparation of a Structure Plan.

Joint Venture
222 Exhibition Street
Melbourne VIC 3000

PO Box 23061 Docklands
VIC 8012 Australia

AJM
Joint Venture

contact@srla.vic.gov.au | 1800 105 105 (call anytime)
suburbanrailloop.vic.gov.au

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