

# CHAPTER 06

## INTEGRATED TRANSPORT



Plan Melbourne Outcome 3:  
Melbourne has an integrated  
transport system that connects  
people to jobs and services and  
goods to market.

As the Inner South East Metro Region grows, it will require better integration of land use and transport planning, better use of existing roads, and increased investment in public transport, walking and cycling. Making better use of transport infrastructure, complemented by good precinct design, can improve connections without necessarily the expense and disruption of delivering new infrastructure. Land use decisions, as well as mode shift opportunities, can significantly improve access and reduce transport-generated emissions.



Photo credit: Tim Bell Studio

Melbourne Metro Tunnel, SRL and the North East Link, as well as upgrades to the Monash Freeway, level crossing removals and additional rail improvements, will improve the connectivity of the Inner South East Metro Region to other parts of metropolitan Melbourne.

## State of play

Map 4 outlines the current state of play for transport in the Inner South East Metro Region.

### Road network

The region's road network is largely organised on a grid pattern with most arterial and connector roads following a north-south or east-west alignment. The exception to the grid pattern is an 'off-centre' street layout in Brighton, and several arterial roads and freeways of state significance which pass through the region as they radiate from Melbourne's CBD through the Inner South East Metro Region to other parts of Greater Melbourne and beyond.

The radial road network of the region is defined by the Eastern Freeway (in the north of the region), the Monash Freeway and Dandenong Road (in the central part of the region) and the Nepean Highway (in the southern part of the region). These roads provide connectivity to, and through, the region from Melbourne's CBD to areas further to the east and south-east, and from the key freight routes that run through the region.

Limitations exist in terms of the future capacity of the region's roads. North East Link and the Chandler Highway upgrade will provide key benefits at a regional and metropolitan level but may increase vehicular traffic in the northern part of the region, with the additional traffic likely to be heading in a southerly or south-westerly direction.

Congestion is increasing particularly during peak hours, as many residents commute beyond the region. By 2031, traffic volumes in the inner part of the Inner South East Metro Region are expected to increase by 17 per cent from 2015 (KPMG & ARUP, 2017, p. 15). Most of the region's arterial roads will be approaching or at capacity by 2031 (KPMG & ARUP, 2017, p. 18).

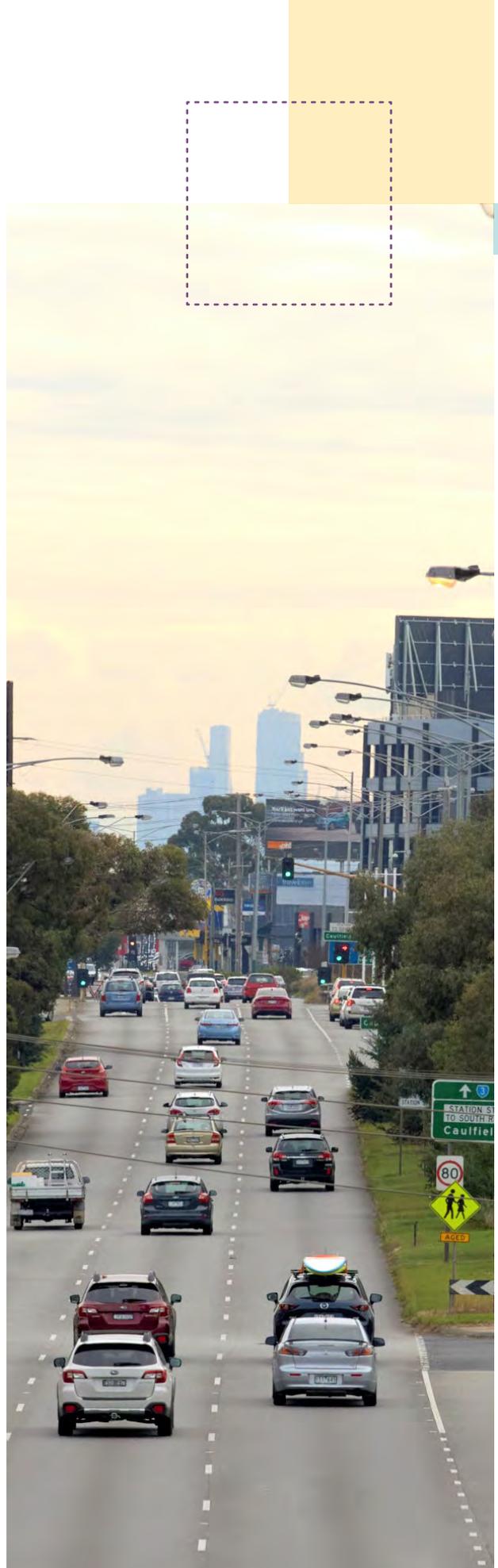


Photo credit: Tim Bell Studio

MAP 4. Inner South East Metro Region integrated transport state of play

**Precincts and Activity Centres**

- Major activity centre
- Regionally significant industrial precinct - existing

**Transport**

- State-significant road corridor
- Road network
- Train station
- ++++ Rail network
- Regional rail network
- Tram network
- Bus network
- High frequency bus network
- - - Strategic Cycling Corridor

**Principal Freight Network**

- PFN road
- PFN rail

**Transport projects - committed**

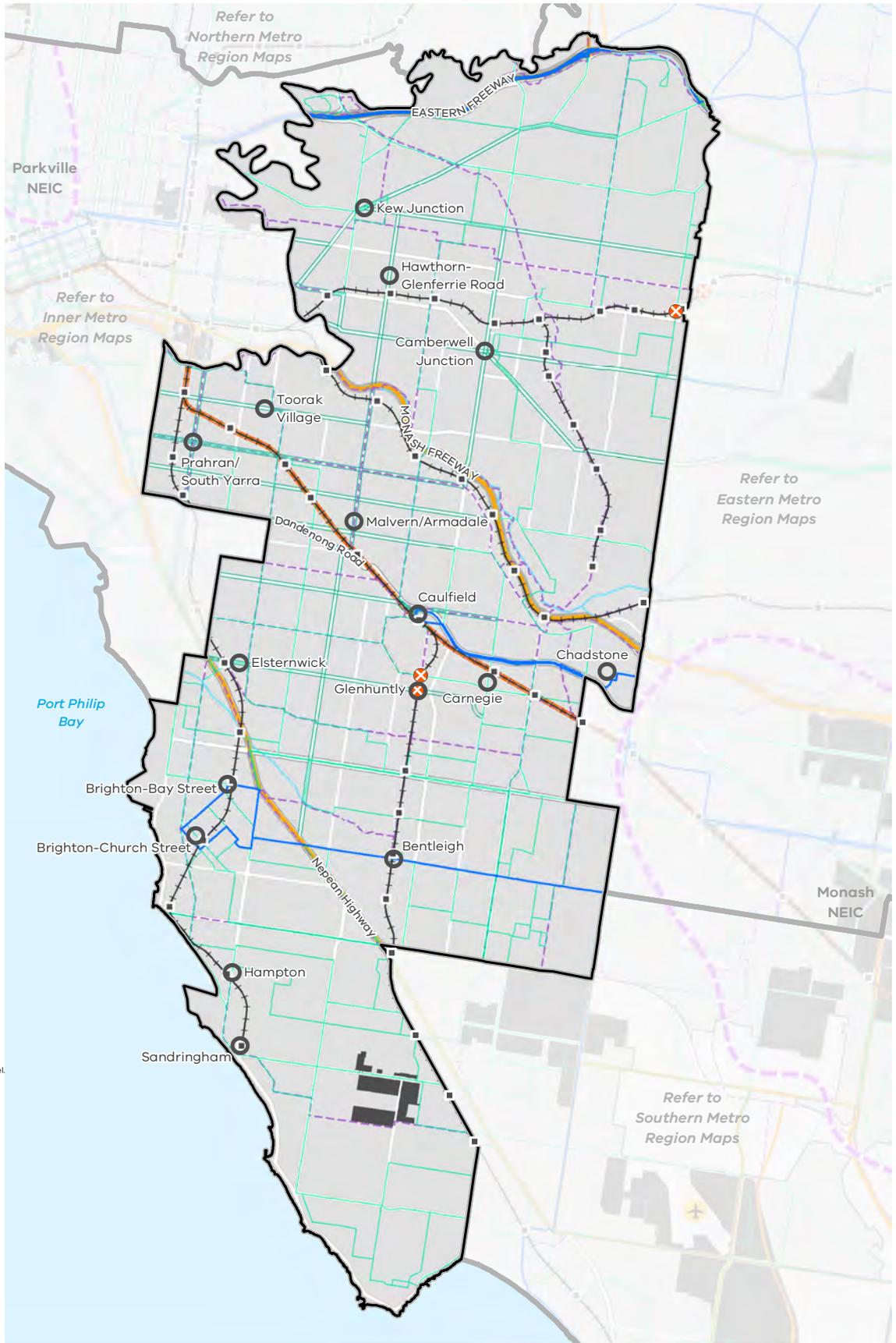
- ⊗ Level crossing removal site

**Environment**

- Waterway

**Land use/Administration**

- ▭ Regional boundary
- ▭ Urban area



**Note:**  
The Principal Freight Network reflects the version published in 2013 (Victoria the Freight State - the Victorian Freight and Logistics Plan, August 2013) in addition to Mordialloc Highway and West Gate Tunnel. East West Link has been removed. The Department of Transport is currently undertaking a review of the Principal Freight Network.



Location Map

## Public transport network

The rail and tram network provide fixed rail public transport coverage across much of the region. While the inner areas have a higher level of public transport accessibility compared to the outer areas, the region as a whole is very accessible compared to other regions. **Figure 11** shows the accessibility to public transport for people who live within the region based on how far they need to walk to access train, tram and bus services.

The rail network in the region radiates out from Melbourne's CBD. It forms part of Melbourne's broader commuter rail network that connects Melbourne's eastern, and south-eastern suburbs. The region is served by the Alamein, Belgrave, Cranbourne, Frankston, Glen Waverley, Lilydale, Pakenham and Sandringham lines, some of which become rail groups as they pass through the Inner South East Metro Region. As a result, the region's stations benefit from a higher frequency of services than many other regions. Caulfield Station also provides access to Gippsland via the Pakenham/Cranbourne lines.

The tram network consists of 13 tram routes connecting the region to Melbourne's CBD and generally follows the road network in a grid-like pattern.

These modes are complemented by bus routes, with over 20 bus routes serving the region. The three orbital SmartBus routes include Altona-Mordialloc which provides a north-south connection, Rowville-Caulfield which provides an east-west connection, and the Middle Brighton-Blackburn, which travels east-west and then north.

As well as a comparatively high level of public and active transport infrastructure, other attributes of the Inner South East Metro Region include a good distribution of activity centres, open space, community infrastructure and access to employment. These attributes provide an opportunity to significantly increase the proportion of trips undertaken by sustainable transport modes. Currently the region has a more sustainable journey to work mode share compared to the Melbourne metropolitan average. In 2016, 23 per cent of those living in the Inner South East Metro Region travelled to work by public transport, whereas the metropolitan Melbourne average was 16 per cent.

## Active transport network

The Inner South East Metro Region's active transport network provides cyclists, runners and pedestrians with access to key attractors in the region and in the adjoining Inner, Eastern and Southern metro regions.

In 2016, 4 per cent of residents walked to work in the Inner South East Metro Region. This compares to 3 per cent for metropolitan Melbourne. Two per cent cycled to work in the Inner South East Metro Region, which compares to 1 per cent for metropolitan Melbourne. Much of the bicycle network is on road although the level of road separation from vehicles varies across the region.

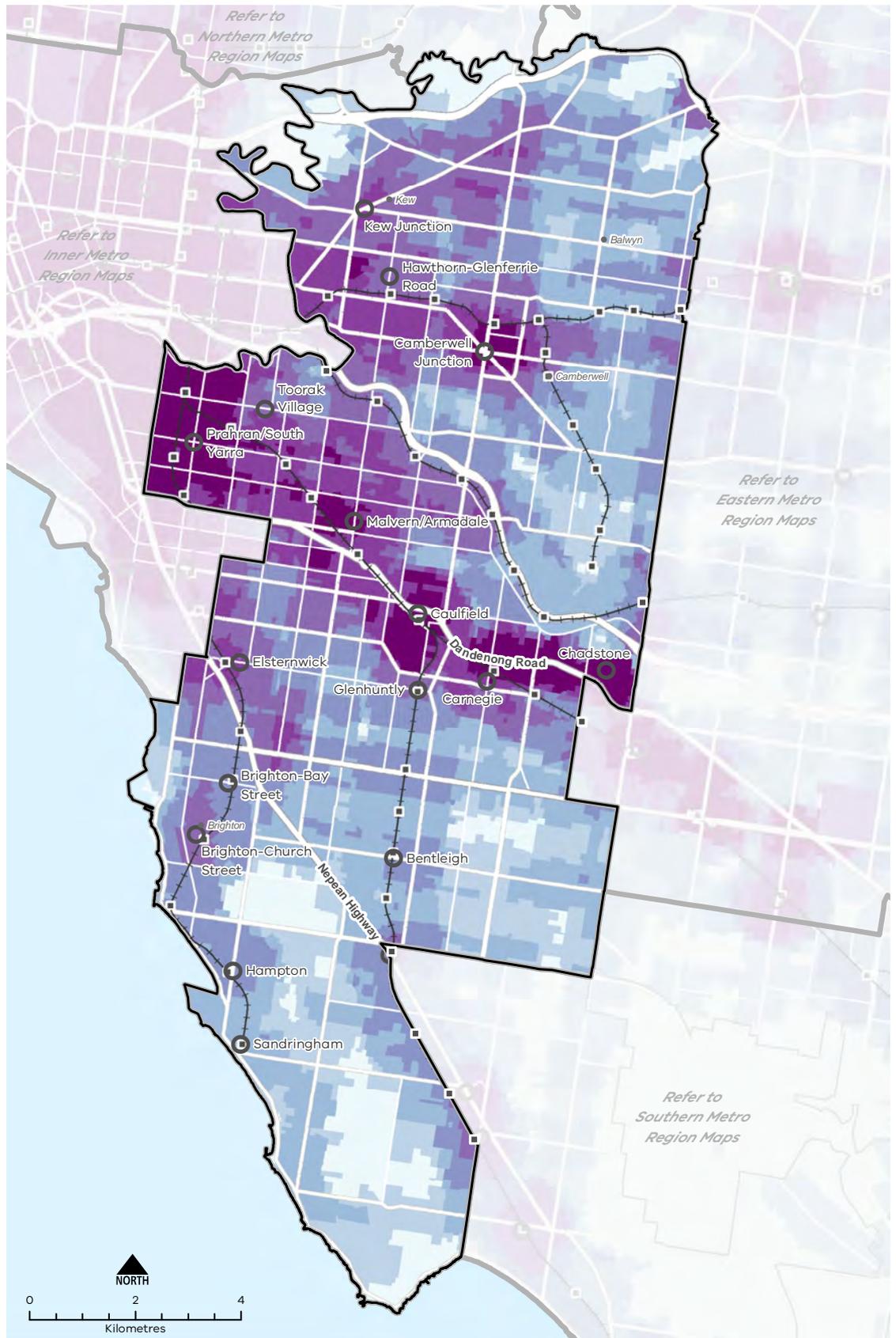
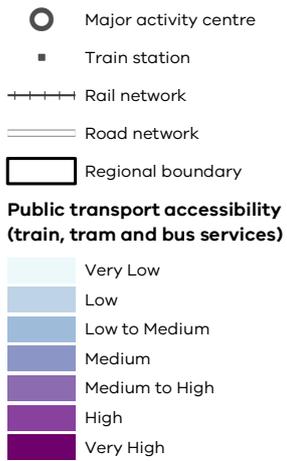
## Freight network

The Inner South East Metro Region is a key transit point for a number of Principal Freight Network (PFN) roads including the Monash Freeway and Dandenong Road. The PFN provides transparency to local government and community regarding the primary way goods will be moved throughout the region. This allows government to consider freight needs during the planning process to protect the end-to-end freight journeys from conflicting land uses.

The industrial precincts that have a manufacturing base or key commercial districts which rely on movement of goods include the Bayside Business District, Chadstone Major Activity Centre and the Prahran-South Yarra Major Activity Centre.

Freight volumes are predicted to increase in Victoria from around 360 million tonnes in 2014 to nearly 900 million tonnes in 2051, making efficient management of urban deliveries a key element of the region's freight task.

FIGURE 11. Public transport accessibility in the Inner South East Metro Region



Map derived from train, tram and bus services across the metropolitan area for the public transport timetables for the AM peak period (0700 – 0859) in October 2020

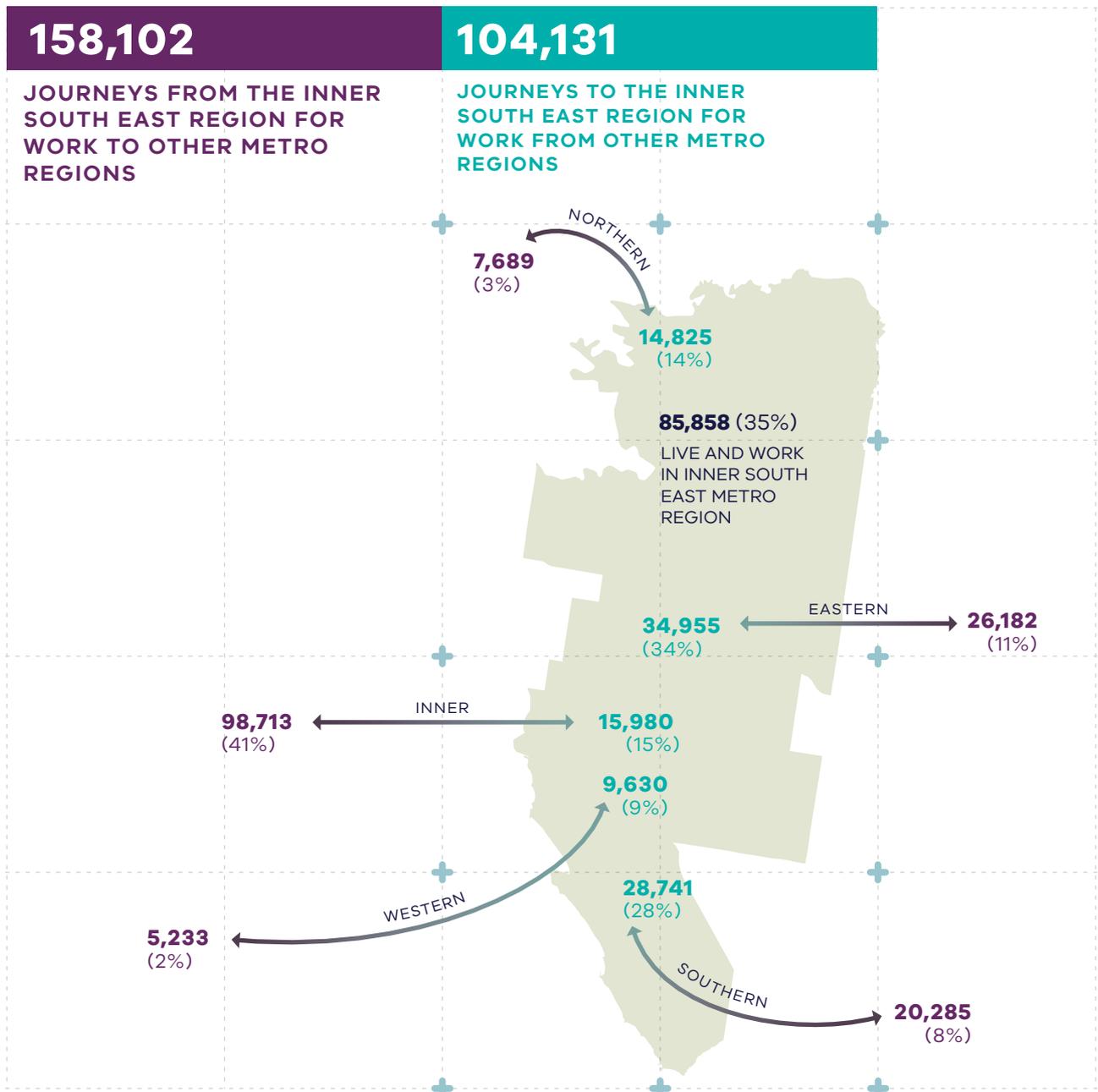


### Regional access and movement

Thirty-five per cent of Inner South East Metro Region residents work in the region (Figure 12). Compared to the other regions, the Inner South East Metro Region has the lowest proportion of residents who also work within the region. The region also has little connection with the north and west of Melbourne. In 2016, the most common work destination was the Inner Metro Region, specifically the City of Melbourne (SGS, 2019, p. 40).

The proportion of movement to the Inner Metro Region is higher than those who live and work in the Inner South East Metro Region. The most common origin of people working in the Inner South East Metro Region, after the region itself, was workers from the Eastern Metro Region, notably the Kingston and Monash LGAs (SGS, 2019, p. 40).

FIGURE 12. Journey to work in and out of the Inner South East Metro Region



Source: Australian Bureau of Statistics (2016) *Census of Population and Housing*, Commonwealth of Australia, Canberra, Australia.

## Regional strengths

- The region benefits from a strong freeway network and access to arterial roads.
- Strong existing public transport and active transport networks in comparison to other regions provide a foundation to shift more trips to sustainable forms of transport.
- Planned major transport investments will further increase access to road and public transport networks and assist in reducing congestion.

## Regional challenges

- Elements of the region's transport infrastructure are ageing or at capacity and require replacement or upgrading.
- Transport networks have become more congested as movement has increased, both within and through the region.
- Improvements to roads and footpaths are required to increase pedestrian and cycling safety and to make better use of road space.

## Directions and strategies

The directions identified to achieve the 2050 vision for the Inner South East Metro Region in terms of integrated transport and Outcome 3 of Plan Melbourne are:

<b>Direction 8</b>	Improve transport connections to support the productivity of the Inner South East Metro Region
<b>Direction 9</b>	Improve the efficiency of the road network
<b>Direction 10</b>	Improve active and public transport options to promote mode shift and support 20-minute neighbourhoods
<b>Direction 11</b>	Allow a more flexible use of the existing road network
<b>Direction 12</b>	Support more efficient and sustainable urban deliveries

Each direction is implemented through regionally-specific strategies identified in this land use framework plan.

Map 5 shows how integrated transport will be enhanced across the Inner South East Metro Region by 2050 as a result of these directions and strategies, together with Plan Melbourne and other strategies and initiatives as outlined in Appendix 01.



Photo credit: Tim Bell Studio

MAP 5. Inner South East Metro Region integrated transport 2050

**Precincts and Activity Centres**

- Regionally-significant commercial area\*
- Activity corridor
- Regionally-significant industrial precinct - existing

**Transport**

- State-significant road corridor
- Road network
- Train station
- Rail network
- Regional rail network
- Strategic Cycling Corridor

**Principal Public Transport Network**

- PPTN station
- PPTN interchange
- Bus
- Tram

**Principal Freight Network**

- PFN road
- PFN rail

**Suburban Rail Loop**

- SRL - interchange station

**Transport projects - committed**

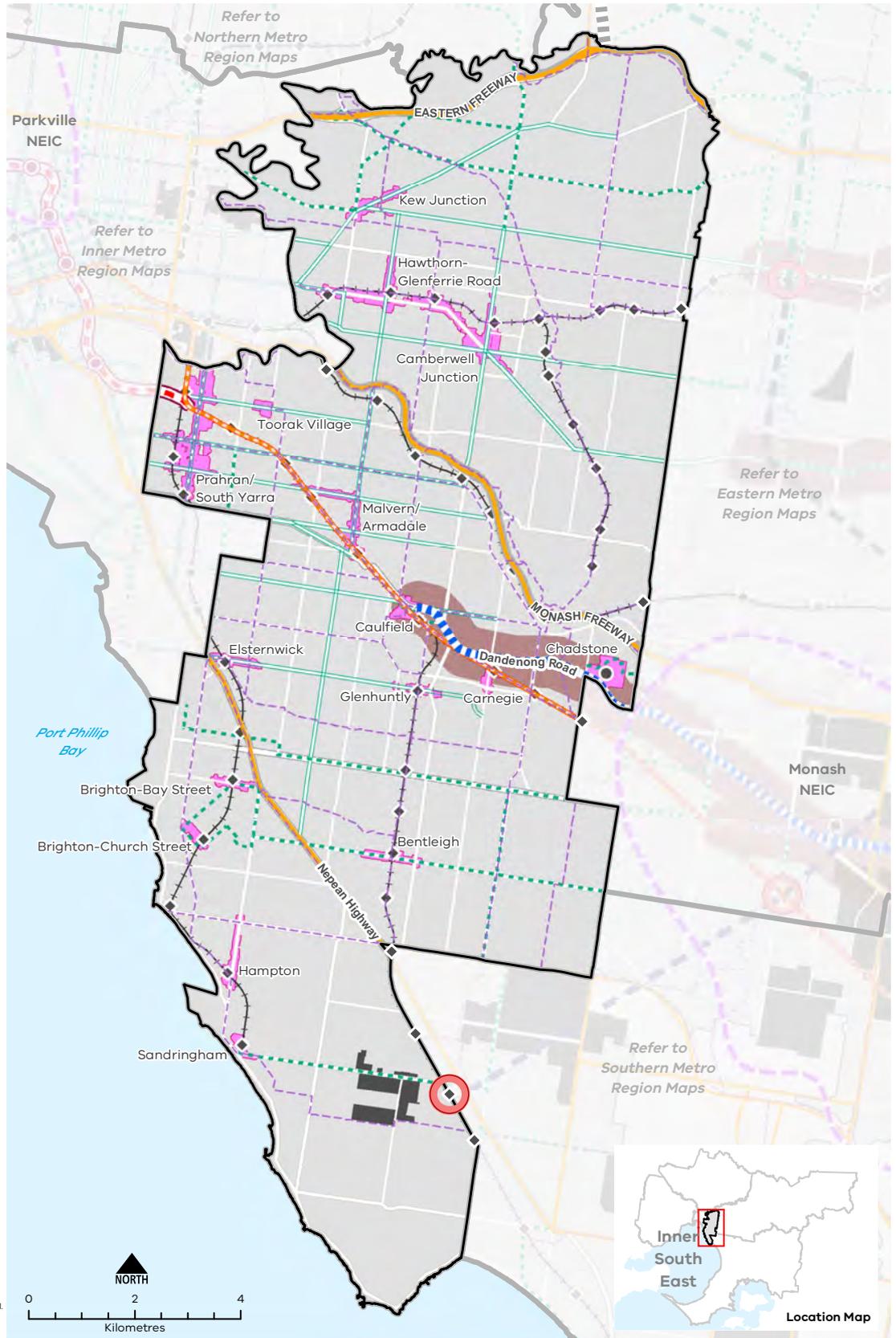
- Rail improvements Sunbury to Cranbourne
- Metro Tunnel (Rail)
- North East Link

**Transport projects - potential**

- Proposed Caulfield to Rowville Link\*\*

**Land use/Administration**

- Regional boundary
- Urban area



\*These layers are based on the state- and regionally-significant commercial land identified in MICALUP, 2019. The activity centre boundaries identified in local council planning schemes may differ.  
 \*\*Caulfield to Rowville Link Concept route subject to design and planning work to examine alignments

**Note:**  
 The Principal Freight Network reflects the version published in 2013 (Victoria the Freight State - the Victorian Freight and Logistics Plan, August 2013) in addition to Mordialloc Highway and West Gate Tunnel. East West Link has been removed. The Department of Transport is currently undertaking a review of the Principal Freight Network.

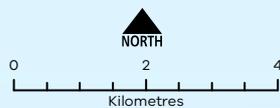




Photo credit: Tim Bell Studio

### DIRECTION 08.

## Improve transport connections to support the productivity of the Inner South East Metro Region

Improvements to the existing public transport network will help to achieve modal shift by encouraging a greater proportion of the population to use trains, trams, buses and active transport over motor vehicles. In the longer term, city-shaping projects such as SRL will also enhance public transport accessibility within the region and beyond.

The Metro Tunnel, Caulfield to Dandenong Level Crossing Removal Project and upgraded signalling will deliver improved service frequencies and capacity on the Cranbourne and Pakenham rail lines and, in turn, provide for extra services on other lines that run through the region.

Upgrades to key transport hubs, such as Caulfield and South Yarra stations, will improve intermodal connectivity and help move people within the station precincts. By integrating and maximising land use and development outcomes around these public transport improvements, modal shift will occur as businesses and people seek locations close to public transport.

### Caulfield Station

Caulfield Station will be a key transport interchange for the Inner South East Metro Region. The station will have lines running through both the City Loop and the Metro Tunnel, enabling Frankston line users to use Caulfield to transfer to Metro Tunnel stations. As well as playing a key interchange role, Caulfield Station will continue to be a key destination for both Caulfield Racecourse and Monash University.

The first stage of the proposed Caulfield to Rowville Link will join Caulfield Station to Monash University Clayton via Chadstone Major Activity Centre. This connection is key to the proposed expansion of Monash University's Caulfield campus and the growing importance of the Monash NEIC. A direct connection between Caulfield and the Monash NEIC will provide an integrated public transport network to education and employment nodes that are of regional and state importance.

This alignment will provide rail-based public transport to Chadstone, facilitate ongoing development of the Dandenong Road corridor to Clayton and reduce reliance on car-based travel. Connections should be considered to the nearby major activity centres of Carnegie and Oakleigh in the adjacent region. The growth of major education, research, health and corporate employment in the area around Monash University Clayton adds further impetus to the need for a fixed rail connection to Caulfield.

## Suburban Rail Loop

SRL will transform the way people move around Melbourne's metropolitan area. Even though the likely project alignment is outside the Inner South East Metro Region, the impact on travel patterns will be profound and will stimulate major changes in land use and development in those activity centres directly served by the new rail line. With orbital movement possible between the various lines, and no need to travel to or near Melbourne's CBD to change lines, a long-term impact is likely to flow on to a broader number of rail-based activity centres across Greater Melbourne. As SRL stations will be key attractors, it will be important to establish good public and active transport links to them from the Inner South East Metro Region.

## Other key enhancements

The key regional linkages for this region are shown in **Figure 14**. Decisions regarding appropriate modes for these links should consider the capacity of existing infrastructure, ongoing sustainability and providing travel choices over a longer time period including evening and late-night travel.

A potential connection between Caulfield Station and the northern part of the Inner South East Metro Region would provide greater north-south public transport connectivity. Detailed planning is also required to investigate a potential link north of Caulfield towards Camberwell.

Gaps in east-west public transport connections have also been identified including:

- Elsternwick to Monash NEIC and Clayton
- Caulfield to Monash NEIC and Clayton.

Elsternwick Major Activity Centre is located on the Sandringham train line, which connects to activity centres in the Bayside LGA.

The coverage, frequency and performance of the region's bus network should also be continually improved to make buses a feasible alternative to the private car. The bus network should provide access to those parts of the region not serviced by the fixed rail network and should integrate with different transport modes. The bus network provides an important connector to and from railway stations, tram lines and employment areas, including activity centres. Another consideration is identifying on-demand bus services to alleviate traffic congestion across the sub-region by providing targeted services to residents lacking access to public transport.

Strategic Cycling Corridors will connect state-significant locations and activity centres. Priority active transport projects will promote increased safe use of the region's cycling and walking network (see **Figure 13**).

Primary routes provide a core network of Strategic Cycling Corridors that connect places of state significance – the Central City, metropolitan activity centres and NEICs within metropolitan Melbourne. Main routes are Strategic Cycling Corridors that provide additional connections to state-significant destinations as well as connections to major activity centres and key train stations across metropolitan Melbourne.

**STRATEGY 22.** Improve public and active transport connections between major activity centres.

**STRATEGY 23.** Plan for public and active transport connections to link into the Suburban Rail Loop.

**STRATEGY 24.** Improve north-south public transport connections where gaps exist, especially between Camberwell and Caulfield.

**STRATEGY 25.** Improve east-west public transport connections where gaps exist, particularly from Elsternwick and Caulfield to Monash NEIC and Clayton.

**STRATEGY 26.** Improve the performance, coverage and frequency of the region's bus and tram network.

**STRATEGY 27.** Support cycling for transport through the development of Strategic Cycling Corridors in the Inner South East Metro Region.

**FIGURE 13. Strategic Cycling Corridor network – Inner South East Metro Region**

-  Major activity centre
  -  State-significant road corridor
  -  Road network
  -  Train station
  -  Rail network
  -  Regional boundary
  -  Urban area
- Strategic Cycling Corridor**
-  Primary route (C1)
  -  Main route (C2)

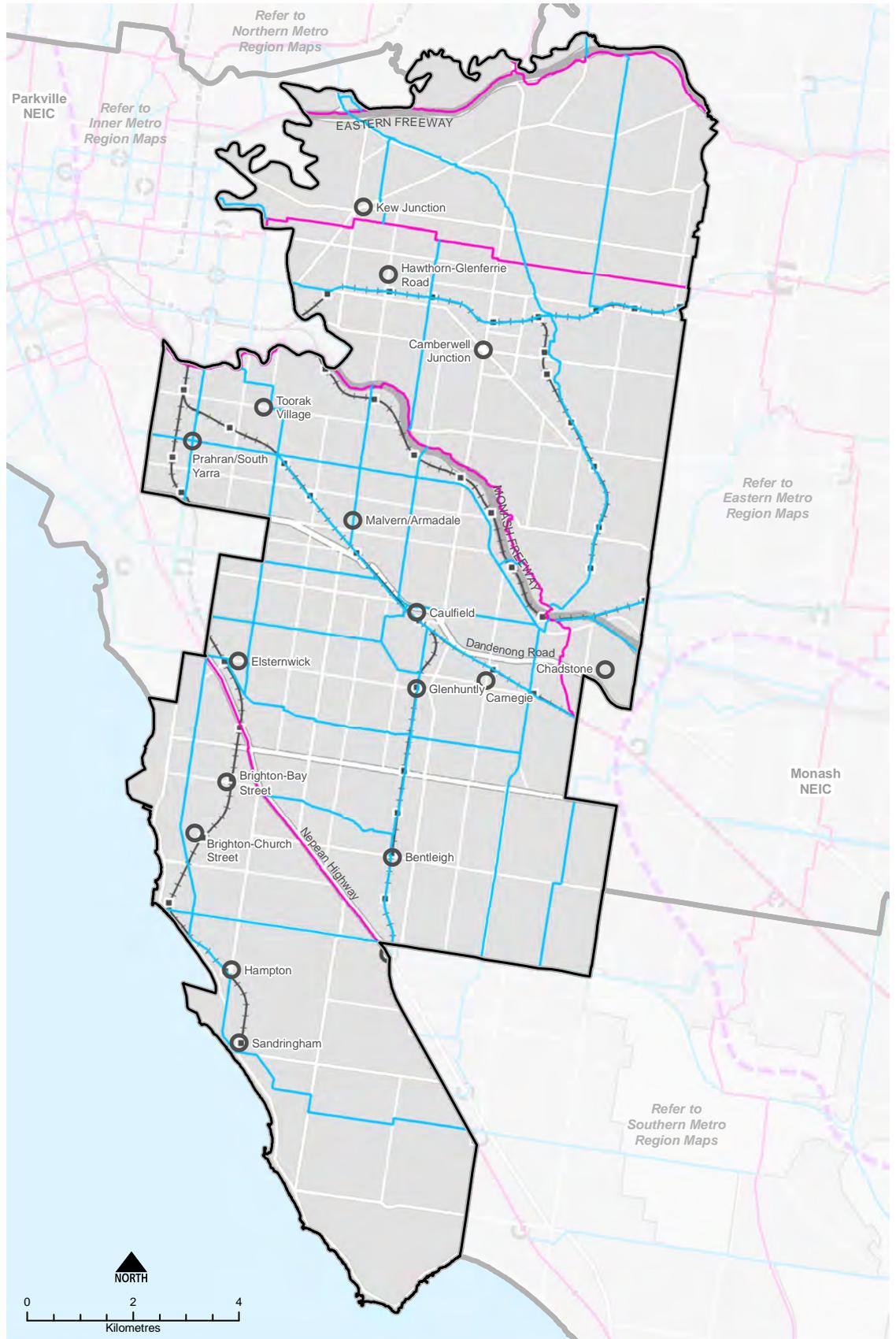
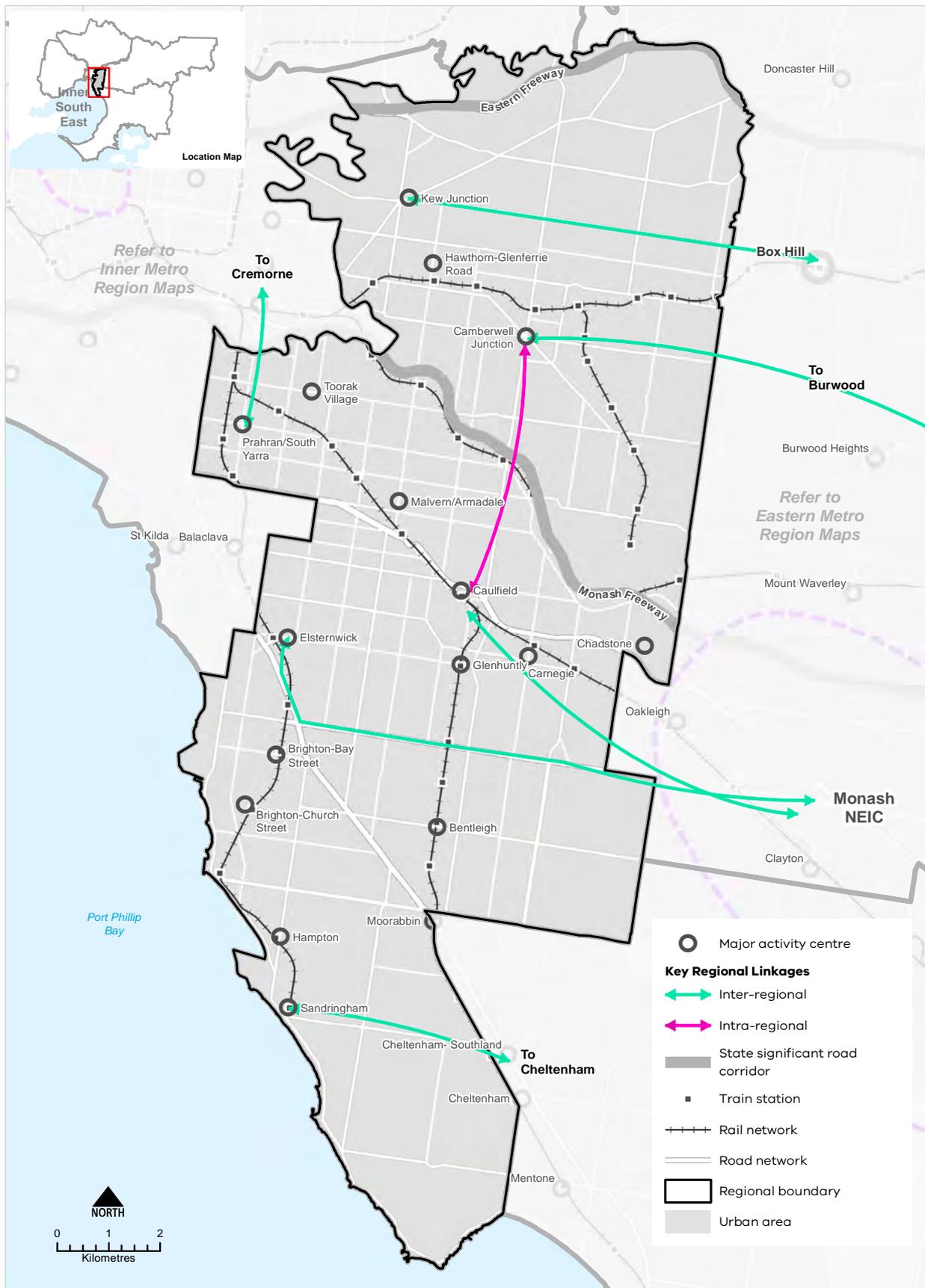


FIGURE 14. Key regional linkages – Inner South East Metro Region



**DIRECTION 09.****Improve the efficiency of the road network**

Given the highly urbanised nature of the Inner South East Metro Region and the high value of land, there is limited scope for transformational road projects to ease road congestion. Within the confines of the road network, measures such as transit lanes, staggered vehicular access to freeways at interchanges, the use of clearways and improved traffic signalisation all represent ways of improving the efficiency of the road network.

Recent level crossing removals have already improved traffic flow in the region. Other level crossings scheduled to be removed are Union Road in Surrey Hills by 2023, and Glen Huntly Road and Neerim Road in Glen Huntly by 2024. Planning is also underway for intersection upgrades on South Road, which links Nepean Highway to the Dingley Bypass and is used by approximately 40,000 people a day. The plan is to upgrade intersections and investigate peak period clearways to ease road congestion. In the longer term, the impacts of city-shaping transport projects such as North East Link and SRL on the region's existing road network should be considered and ameliorated.

**STRATEGY 28.** Improve vehicular flow on the region's arterial and connector road network.

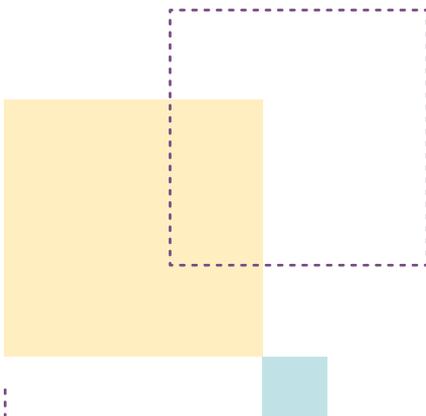
**DIRECTION 10.****Improve active and public transport options to promote mode shift and support 20-minute neighbourhoods**

Improvements to local transport options, including bus, cycling and pedestrian access, are needed to support the delivery of 20-minute neighbourhoods across the Inner South East Metro Region. More sustainable transport options and choices will make it easier for people to move within the region.

A total of 38 per cent of people in the region used a car when making a short trip under 5 kilometres in the region, whereas 33 per cent of people walked, and only 2 per cent of people cycled for short trips (DELWP, 2021b). To reduce dependence on private vehicles, public transport, cycling and walking need to be more accessible. This means significant upgrades to public transport access, and improvements to pedestrian and cycling accessibility, better linking neighbourhoods to employment, and social and community services.

The different needs of users making these trips should be considered in the planning and design of new links along with safety, which is paramount to increase uptake of cycling. Bicycle parking and end-of-trip facilities should also be considered at key destinations to improve the proportion of cycling trips.

Although there are limited places to provide new off-road links, identification and provision of Strategic Cycling Corridors is important to connect trip generators within and outside the region. Trip generators such as schools are dispersed across the region. Along with the region's relatively high urban density they require a well-integrated active transport network. Although many active transport journeys, particularly those of cyclists, follow familiar peak hour patterns to or from the inner city, the dispersed nature of the region's activity centres and educational and health facilities means that active transport plays an important role in local transport movements.



Improving north-south active transport links in the Inner South East Metro Region to provide safe and convenient connections from residential areas to the rail and tram network is important. In addition to the Strategic Cycling Corridor network, the following new or improved links are needed

- Between Highett and Kew (an identified gap in the north-south connectivity of the region)
- An alternative cycling route to Chapel Street as a north-south connection in the western part of the region
- From Hawthorn along Camberwell and Toorak roads, to establish a connection to Deakin University and SRL.

**STRATEGY 29.** Create pedestrian-friendly neighbourhoods by enhancing major pedestrian links and expanding the network.

**STRATEGY 30.** Create a network of walking and cycling links for local trips that link to public transport.

**STRATEGY 31.** Prioritise sustainable transport in activity centres and health and education precincts to support higher density mixed-use walkable precincts.

**STRATEGY 32.** Provide walking and cycling routes and drop-off zones to health and community services and recreation facilities.

## DIRECTION 11.

### Allow a more flexible use of the existing road network

As an established region, space is constrained. To accommodate future travel needs and support the shift to active, sustainable modes of transport, flexible use of the existing road network will be required.

This should balance the needs of transport users and place users, and design a mix of transport modes appropriate to how roads and places are used by communities.

Opportunities to increase the capacity of the existing road network are limited although some gains can be made through better use of existing roads for public and active transport. These alternatives need to be easier, more convenient and cheaper than car travel to increase the proportion of people using public transport, walking or cycling.

While there is a substantial tram network in the region, many of these routes operate in mixed traffic on undivided roads which makes them slow. One of the slowest trams is Route 78 along Chapel Street which averages 12 kilometres per hour (City of Stonnington, 2018). Designating road space for trams and buses will make these modes more efficient and help drive mode shift from cars to public transport.

A more efficient allocation of road space including car parking will also improve safety for cyclists. Over 40 cyclists are seriously injured or killed on roads across the region, on average, each year (Jacobs, 2019, p. 3). Chapel Street and Beach Road are the main areas where cyclist accidents occur. On-street parking has contributed to a relatively high level of car dooring incidents for cyclists. Additionally, incidents occur at intersections where cyclists interact with turning vehicles. Removing conflicts in road space between traffic and cyclists will increase safety for cyclists as well as the perception of safety.

**STRATEGY 33.** Improve existing road infrastructure to provide for public transport, walking and cycling.

**STRATEGY 34.** Balance movement and place when designing and upgrading the region's road network.

**DIRECTION 12.****Support more efficient and sustainable urban deliveries**

Metropolitan freight volumes are expected to grow at an average annual rate of 2.6 per cent each year between 2014 and 2051. The flow-on effect of population growth and higher levels of e-commerce will increase the potential for conflicting land uses, requiring state and local government to work together to plan for more efficient use of the existing transport network.

Ongoing assessment of how planning influences urban freight outcomes is needed. This is particularly relevant for inner city areas where high competition for available road space between vehicles, bicycles and service delivery vehicles, parking, loading zones and delivery docks is impacting the reliability and efficiency of freight deliveries.

More efficient and effective freight movement reduces congestion and the amenity and environmental impacts of higher freight volumes.

**STRATEGY 35.** Balance the need for first and last mile freight delivery with other demands on road space.

**STRATEGY 36.** Facilitate efficient and sustainable regional freight movements.

**ACTIONS –  
Integrated transport**

**ACTION 7.** Investigate barriers and opportunities to increase public and active transport mode share across the region to support culture change, spread demand on transport infrastructure, reduce greenhouse gas emissions and support 20-minute neighbourhood outcomes. Identify trial locations in the region to focus the investigation.



Photo credit: Department of Jobs Precincts and Regions / SDP Media