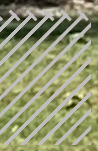


# THE MONASH BOULEVARDS URBAN DESIGN FRAMEWORK

Discussion Paper  
Appendix











**The Monash Boulevards**  
Urban Design Framework

Discussion Paper  
Appendix

Prepared by Tract for  
Monash City Council

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[00]

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# Contents.

## Appendix.

Appendix A	Planning Zones	06
Appendix B	Planning Overlays	12
Appendix C	Development Activity and Capacity Analysis	18
Appendix D	Urban Character & Public Realm	30
Appendix E	Movement and Access	44





# Appendix A Planning Zones

Refer to Figure 1 and Figure 2 to see how the planning zones apply across the Boulevards.

## Residential and Mixed Use Zones

The primary focus for the UDF is to develop built form guidelines and controls for land within the General Residential Zone (GRZ) and Mixed Use Zones (MUZ).

The GRZ is the most prevalent zone with a variety of schedules outlining heights, setbacks and other requirements.

GRZ2 is most commonly applied to properties fronting the Boulevard and GRZ3 is applied in most other areas. Neither of these schedules specify a maximum building height and as such, the parent control of 11 metres (three storeys) applies.

Other GRZ schedules include GRZ6 which applies to areas nearby Monash University and specifies a maximum building height of 11.5 metres (3 storeys), GRZ8 applies to areas near the Glen Waverley Activity Centre sets a height limit of 13.5m (4 storeys) and GRZ9 applies to the Mountain View with a maximum height limit of 29m (9 storeys).

The Neighbourhood residential Zone (NRZ) applies to areas in

Oakleigh and areas on the east side of Springvale Road in Glen Waverley.

The Residential Growth Zone applies to small areas of the Boulevards near Monash University and the Glen Waverley Activity Centre

The MUZ applies to a small group of properties in Hughesdale and a single property in Oakleigh.

This zone supports a wider range of non-residential uses than the residential zones and envisages a more urban built form outcome. There is no height limit currently specified for the MUZ.

## Commercial, Industrial and Special Use Zones

Although the UDFs will not make recommendations for land within the Commercial Zone, Industrial or Special Use Zones, there are substantial sections of residential land that interfaces with these zones.

The Commercial 1 Zone (C1Z) is the most compatible with residential uses. It aims to provide vibrant mixed use commercial centres for retail, office, business, entertainment and community uses. These types of uses nearby residential areas would provide key destinations.

The Commercial 2 Zone (C2Z) is located along small sections of Dandenong Road and Springvale Road. It is more focused on commercial uses, offices, bulky goods, some manufacturing and industries.

The Industrial 1 Zone (IN1Z) applies to a large number of properties in the eastern sections of Dandenong Road and small pockets of Springvale Road. It has a direct interface to some residential uses.



Schedule 6 to the Special Use Zone (SUZ6) applies large sections of Springvale Road and also has a direct interface with some residential properties.

Both of these zones aim to provide for industrial, manufacturing and office uses and are likely to be the least compatible with residential properties.

## **Other Zones**

The Public Use Zone applies to a number of properties in the study area. This zone provides for a range of public uses including local government uses and schools.

The Public Park and Recreation Zone (PPRZ) applies to a number of parks in the study area. These parks provide a high level of amenity for nearby residential areas.





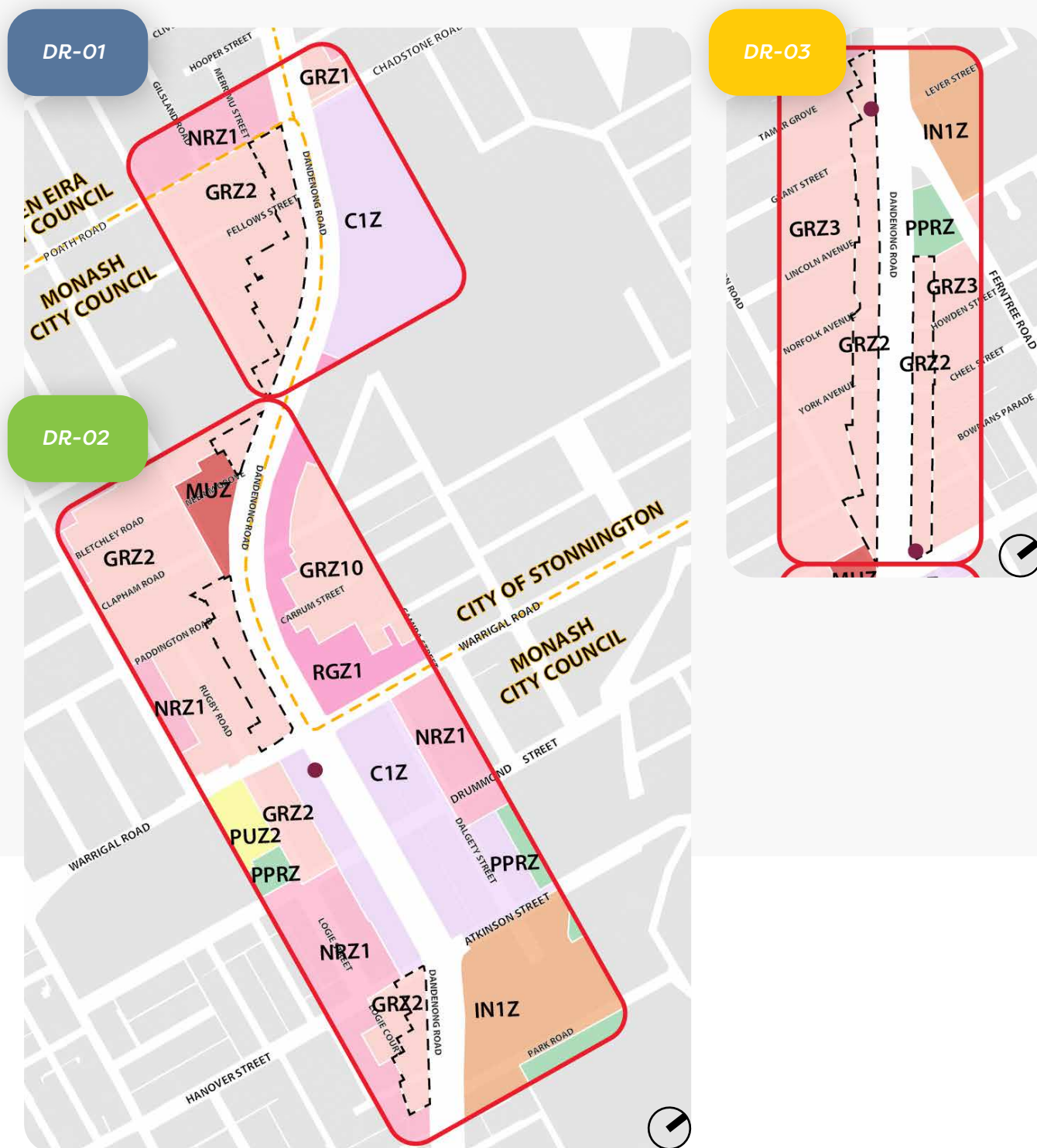
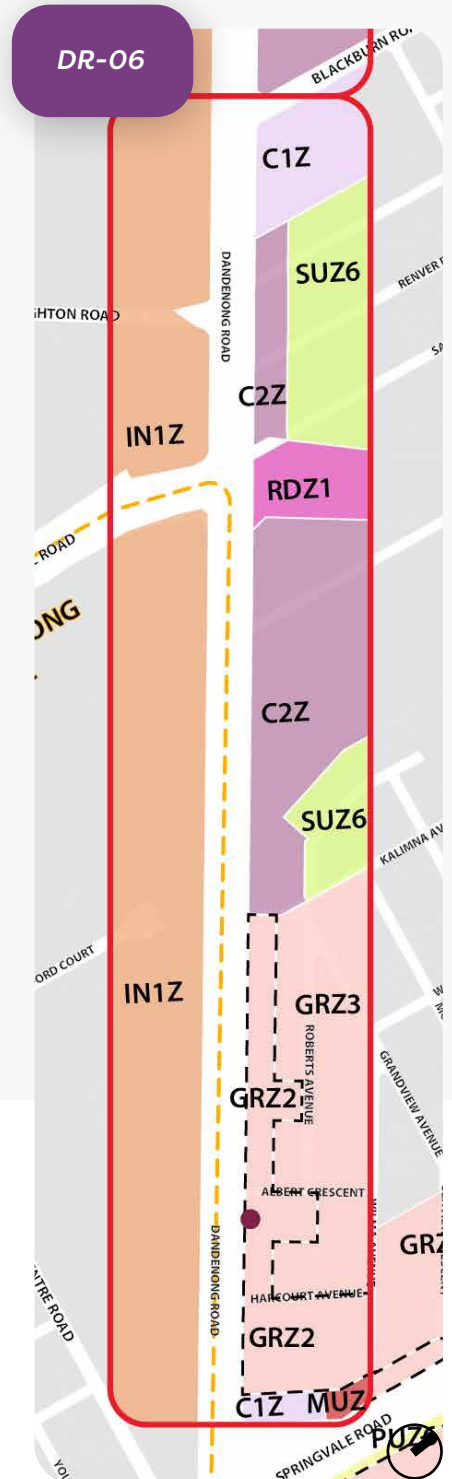
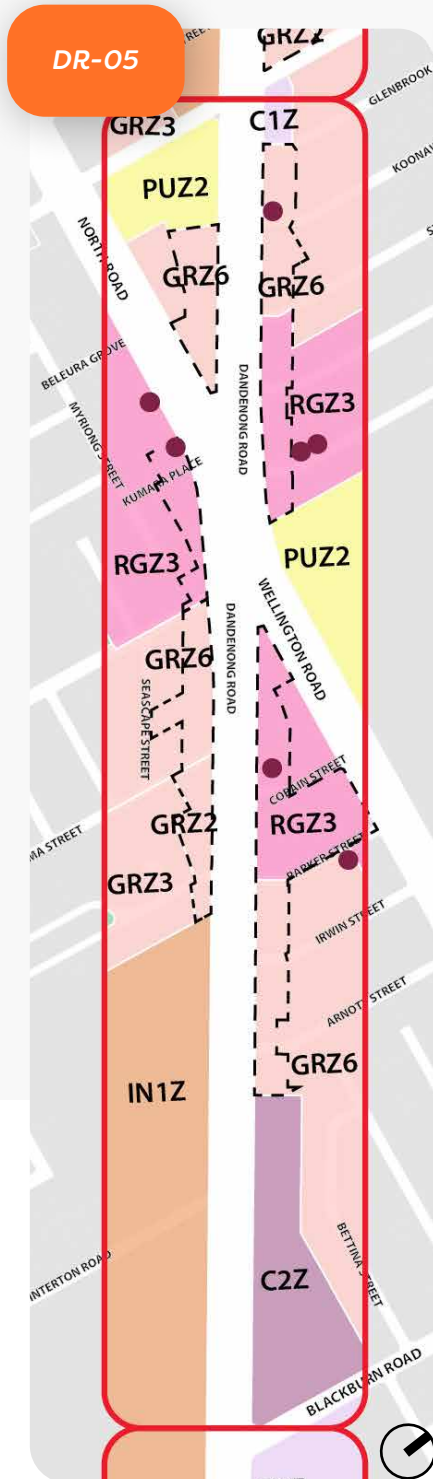
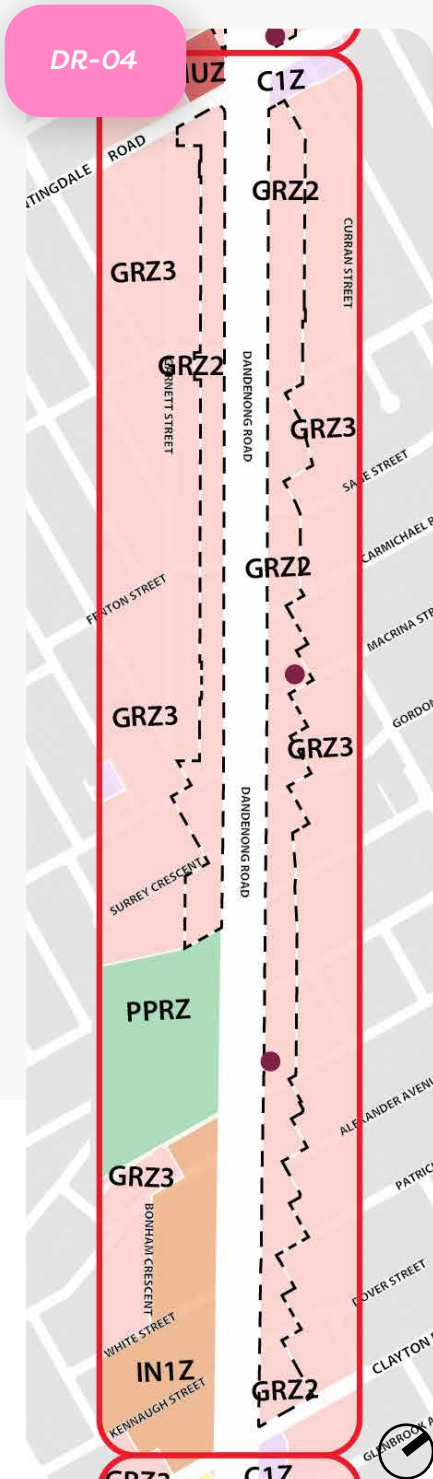
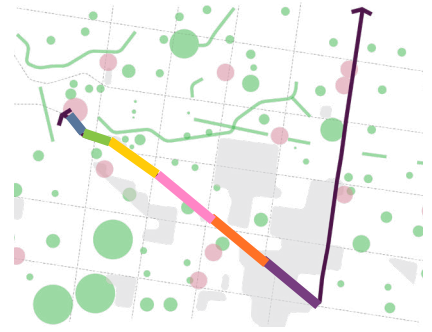


Figure 1. Dandenong Road - Planning Zones







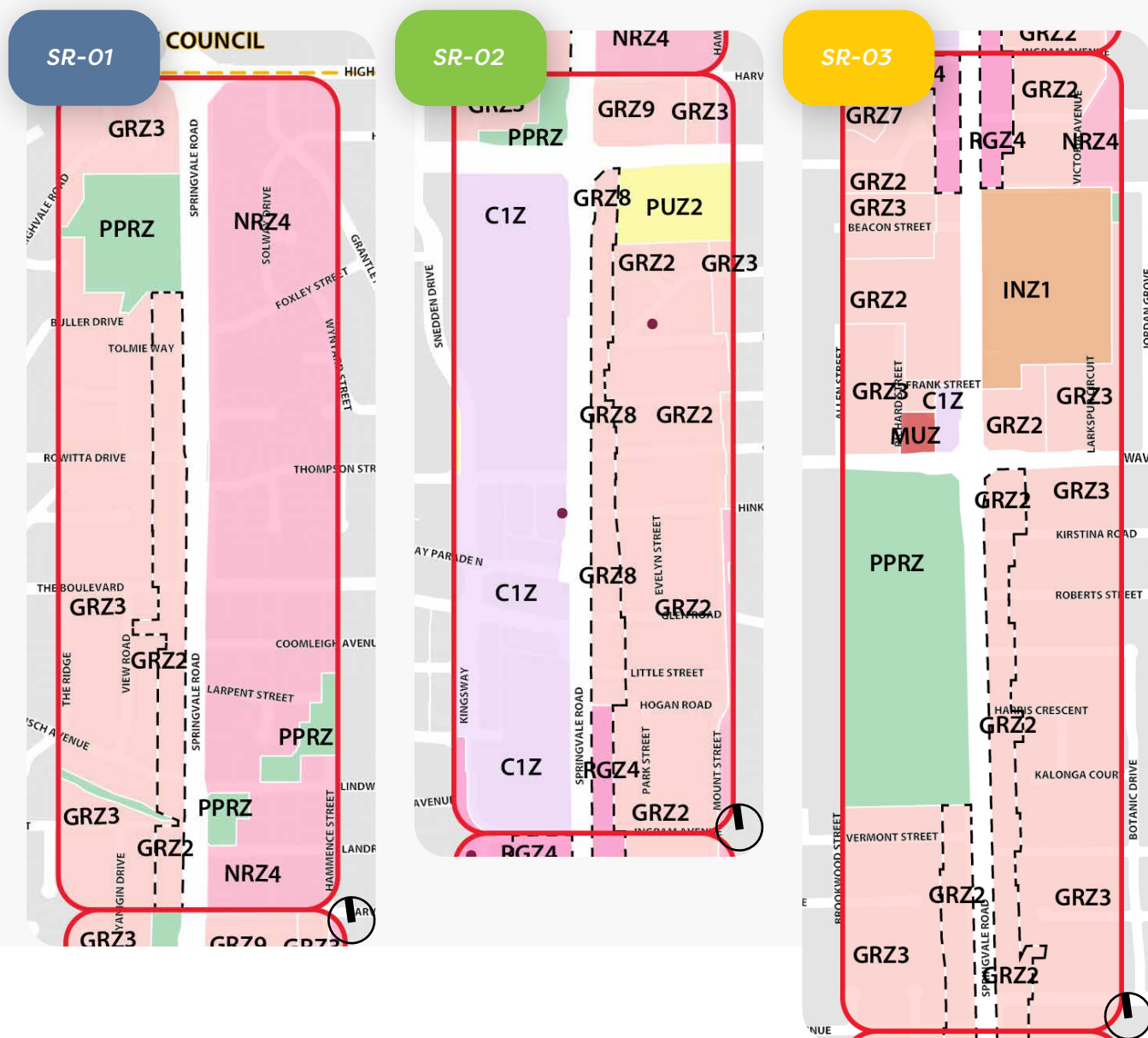
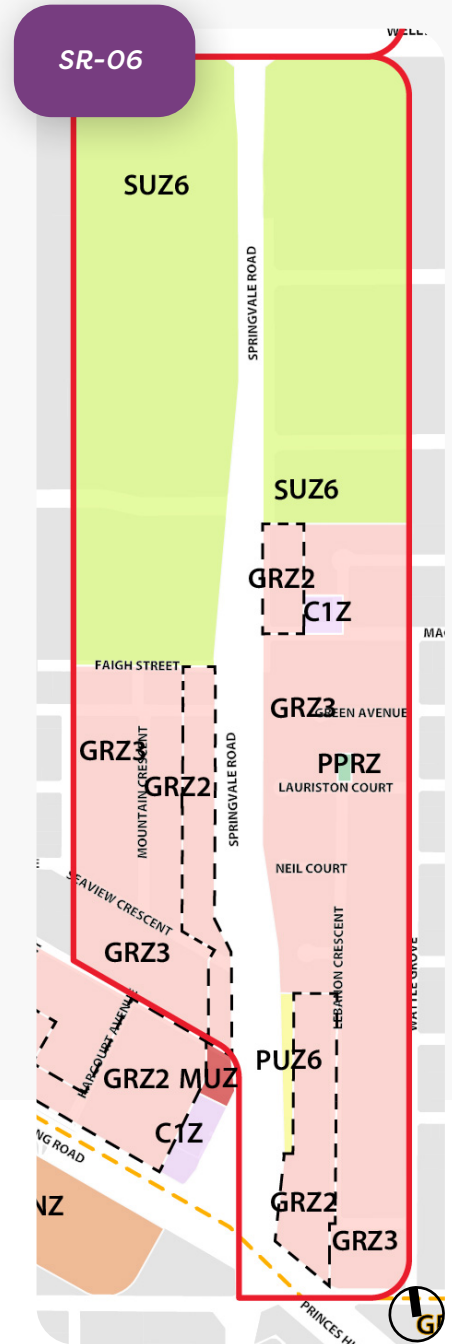
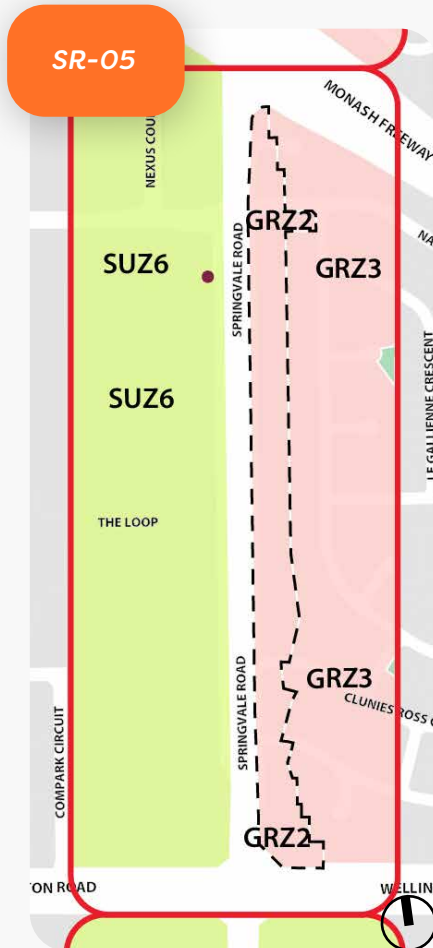
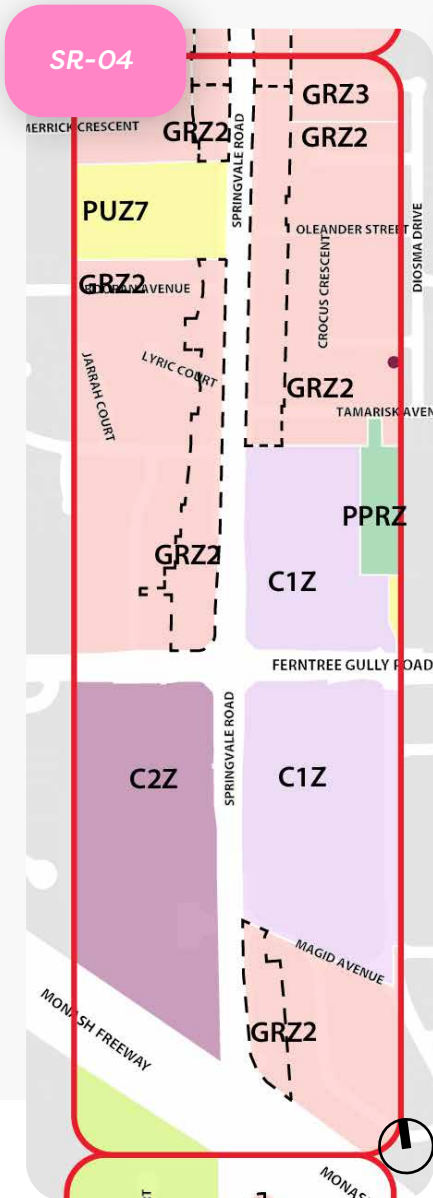
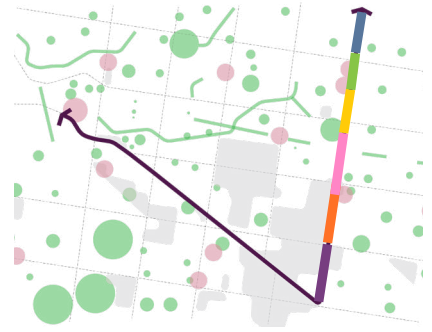


Figure 2. Springvale Road - Planning Zones







## Appendix B Planning Overlays

Refer to Figure 3 and Figure 4 to see how the planning overlays apply across the Boulevards.

### Design and Development Overlay (DDO)

The boulevards are affected by a number of DDO schedules however the majority of these overlays apply to non-residential land.

However DDO12 applies to residential properties within the Glen Waverley Activity Centre. This overlay supports building heights between 4 and 8 storeys within two precincts fronting onto Springvale Road.

### Special Building Overlay (SBO)

The SBO applies to properties near the corner of Dandenong Road and Springvale Road. It ensures that planning proposals are referred to the relevant floodplain management authority, and that they are consistent with floodplain development plans where such plans exist.

The SBO ensures that development maintains the free passage and temporary

storage of floodwaters, minimises flood damage, is compatible with the flood hazard and local drainage conditions and will not cause any significant rise in flood level or flow velocity.

### Vegetation Protection Overlay (VPO)

The VPO applies sections of Springvale Road in Glen Waverley, north of Waverley Road. The VPO requires a permit to remove vegetation under this overlay and applications must address a series of decision guidelines relating to the effect and role of native vegetation.

### Environmental Audit Overlay (EAO)

The EAO applies to a small number of properties along the Boulevards. It requires planning proposals for a sensitive use to obtain a certificate of environmental audit or state of accordance prior to development commencing.

## Heritage Overlay (HO)

The Boulevards include areas subject to the Heritage Overlay.

The heritage overlay requires a planning permit to undertake buildings and works associated with structural work, external changes and maintenance.

The Boulevards interface a series of Heritage Overlays listed below:

- HO17 - 1434 Dandenong Road, Oakleigh (Former Court House)
- HO19 - 1529 Dandenong Road, Oakleigh (Forester's Arms Hotel)
- HO20 - 1714-1716 Dandenong Road, Clayton North (Clayton North Primary School)
- HO22 - 1426-1428 Dandenong Road, Oakleigh (Shops)
- HO23 - 1650 Dandenong Road, Oakleigh East (Oakleigh Motel)
- HO92 - Residential, Commercial and Civic Area, North of Railway Station



HO17 - 1434 Dandenong Road, Oakleigh (Former Court House) \*



HO20 - 1714-1716 Dandenong Road, Clayton North (Clayton North Primary School) \*



HO22 - 1426-1428 Dandenong Road, Oakleigh (Shops) \*



HO23 - 1650 Dandenong Road, Oakleigh East (Oakleigh Motel) \*



HO19 - 1529 Dandenong Road, Oakleigh (Forester's Arms Hotel) \*



HO92 - Residential, Commercial and Civic Area, North of Railway Station \*

\*Images sourced from google.



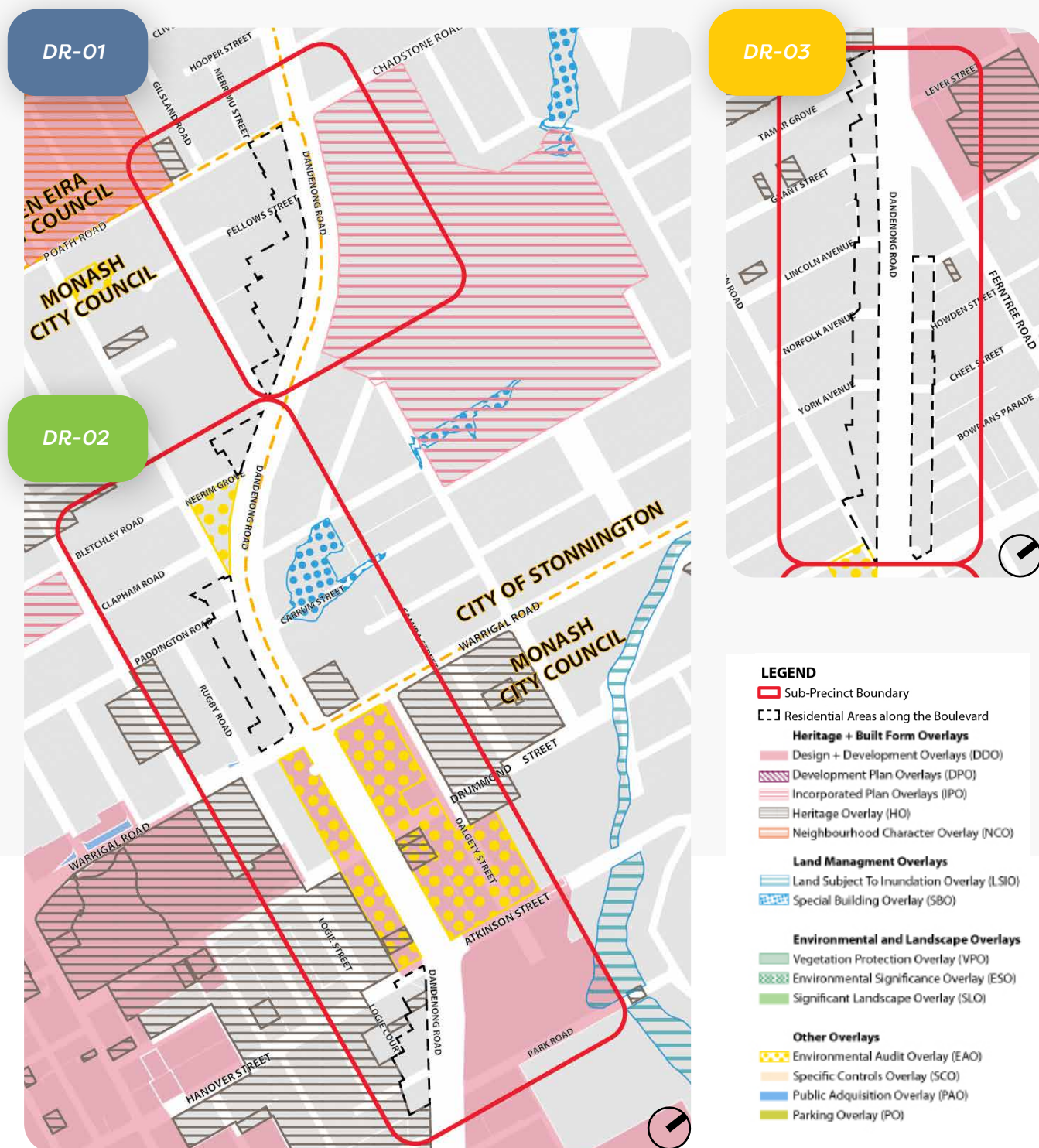
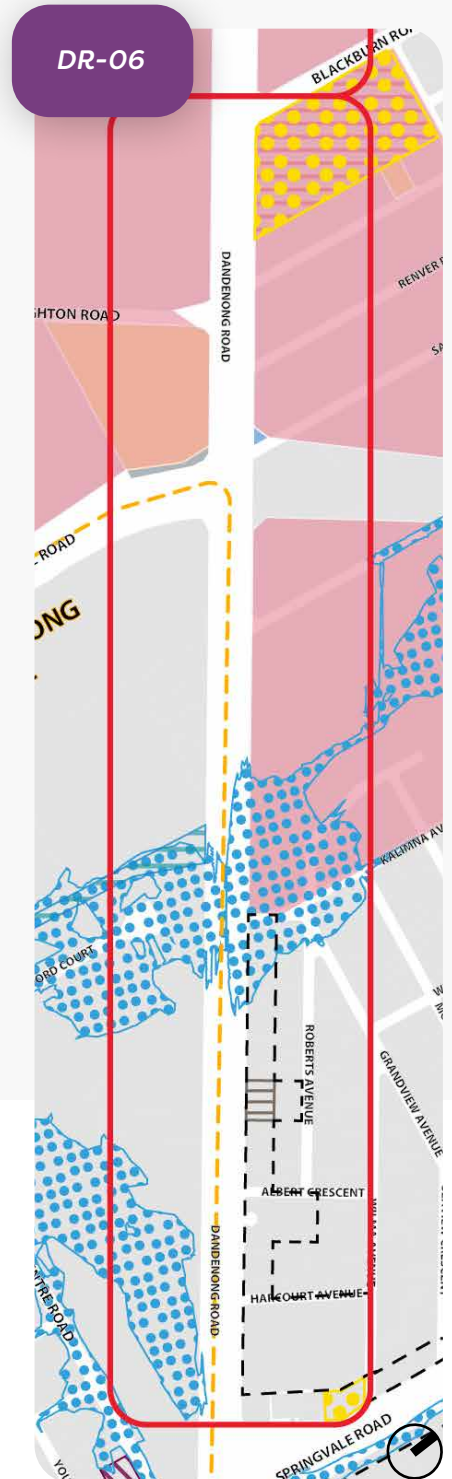
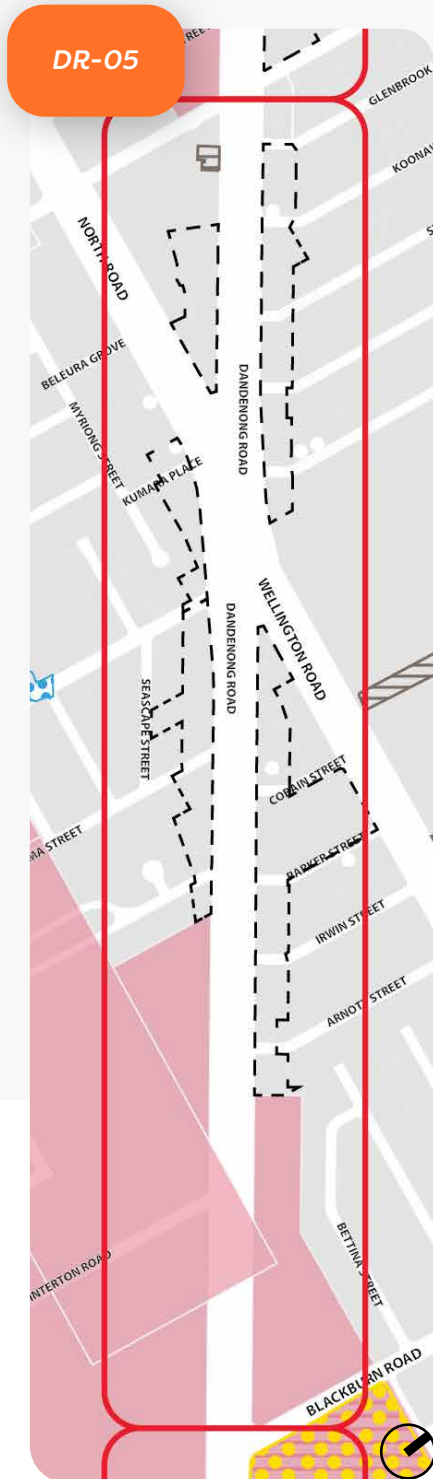
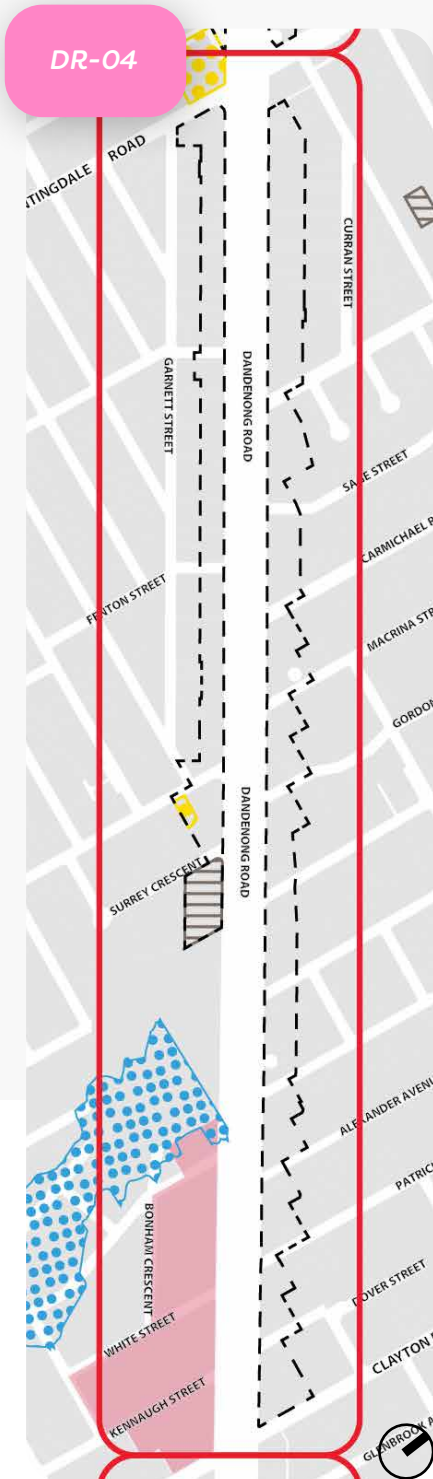
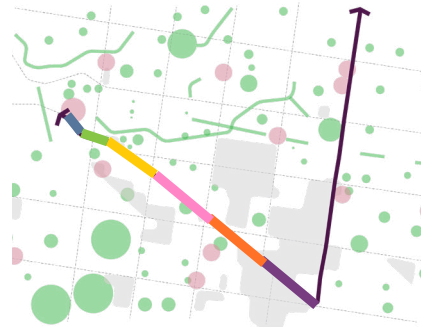


Figure 3. Dandenong Road - Planning Overlays





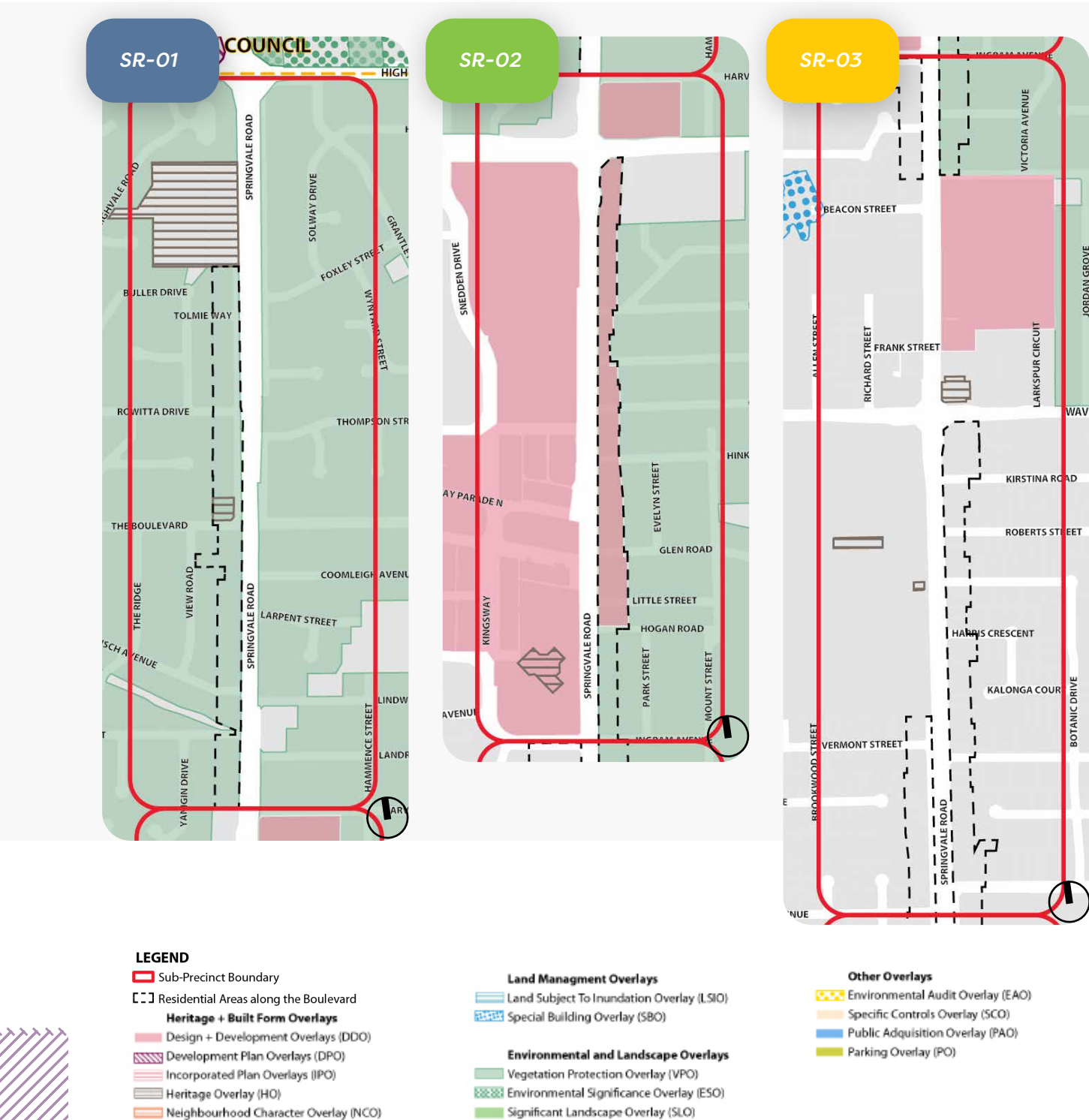
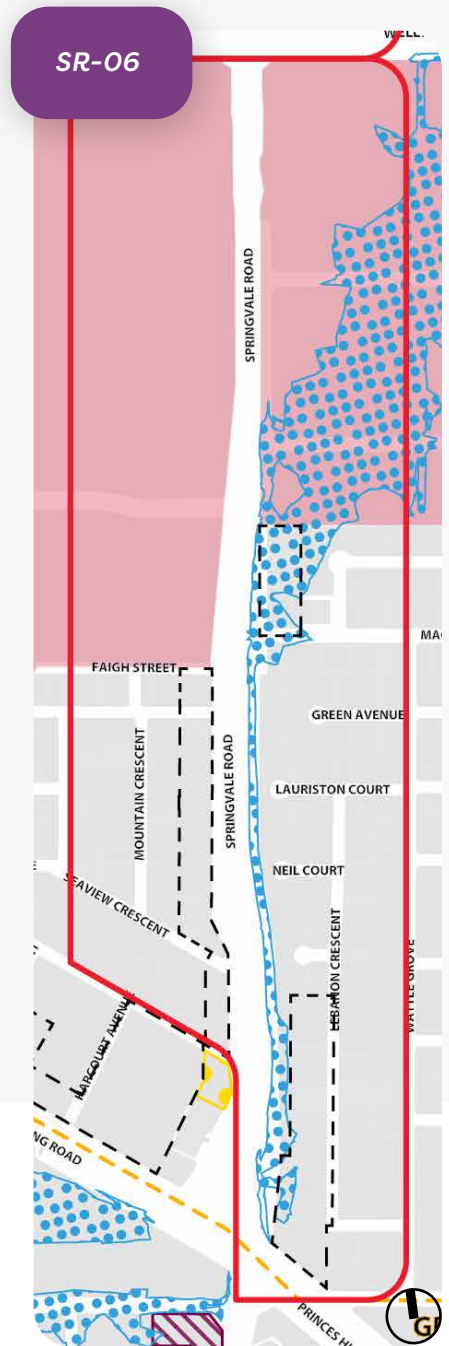


Figure 4. Springvale Road - Planning Overlays







# Appendix C Development Activity and Capacity Analysis

## 1.1.1 Overview

This section outlines the development activity within the Boulevards and identifies opportunities and constraints for new development based on a range of characteristics.

It also analyses existing lot widths across the Boulevards and the types of residential developments that may be delivered on lots with their existing configuration and planning controls.

Development activity and capacity is an important consideration in preparing the UDF. Recent development can indicate the type of development that the Boulevards will attract in the future. Analysing the potential capacity of the Boulevards is also important to understand the scale and type of development that could potentially be accommodated and what level of planning intervention may be needed to unlock development potential in the Boulevards.

Specifically the elements analysed in this section include:

- Existing development of 3-4 storeys.
- Existing Planning Applications.
- Lot sizes - categorised into large sites (over 900sqm) and medium sized sites (between 600 and 900sqm).
- Existing Heritage Overlays.
- Existing Strata Development .
- Sites with over 10% slope that would be constrained for development.
- Locations where no service roads exist - these locations may have development constraints because of direct access onto an arterial road and lack of off-street parking.

## 1.1.2 Development Activity and Capacity Analysis

### Dandenong Road

Refer to Figure 5 for analysis of development activity and capacity along the Dandenong Road Boulevard.

Development opportunities along the Boulevard are mixed. The western end of the study area in proximity of the Chadstone Shopping Centre Warrigal Road includes a number of larger sites however many opportunities have already taken up with a high proportion of strata developments.

Another area of focus for development is around the Monash University where there is a significant amount of strata titled properties.

Elsewhere across the Boulevard lot sizes are generally greater than 600 sqm however there are a limited number of sites over 900 sqm. Strata development is interspersed with larger lots.

### Springvale Road

Refer to Figure 6 for analysis of development activity and capacity along the Springvale Road Boulevard.

The northern end of the Boulevard is defined by its steeper topography. This may present a constraint for future development however lot sizes are generally greater than 600 sqm and there are a small number of strata properties.

Properties in proximity of the Glen Waverley Activity Centre have been a focus for development, which is supported by planning controls allowing for greater intensification.

This area and residential properties further south lack a service road. This may limit development because of constraints in gaining direct access to properties and constraints in providing visitor parking.

In other locations along the Boulevard, strata properties are interspersed with lots of mixed sizes that are generally over 600sqm.





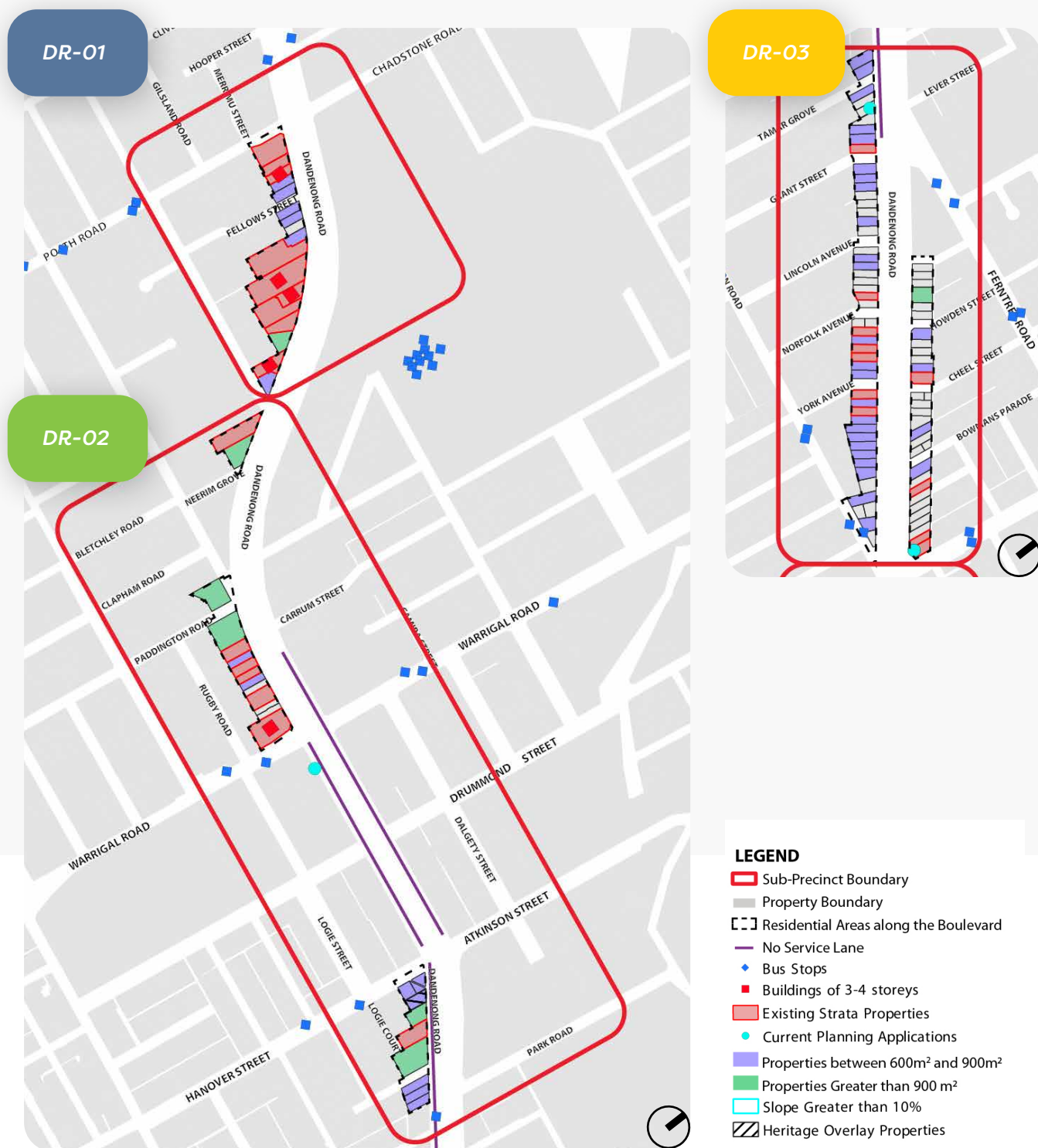
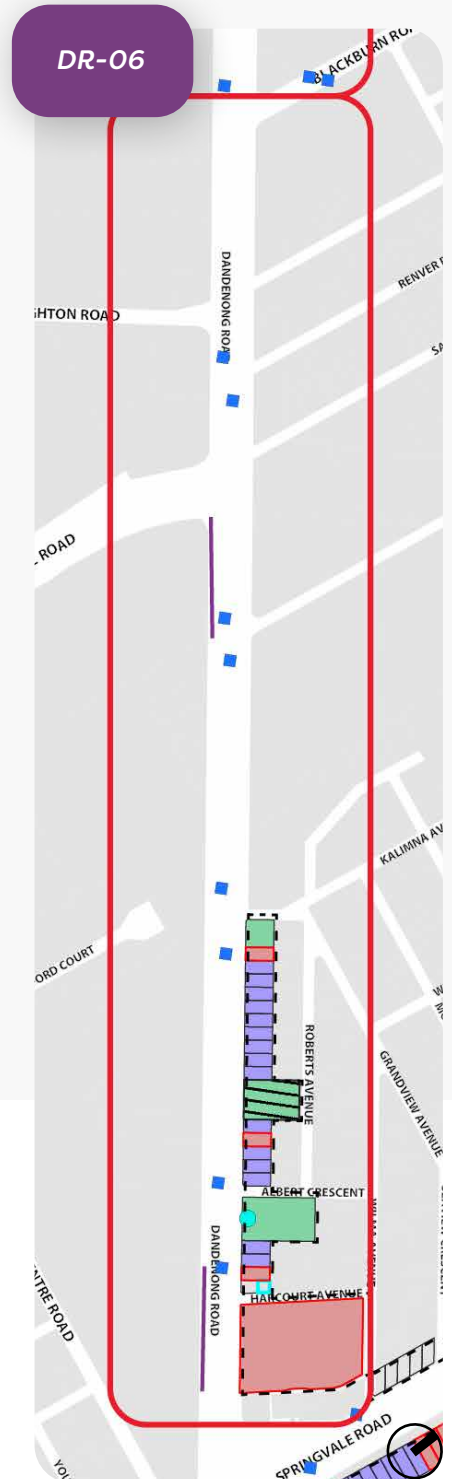
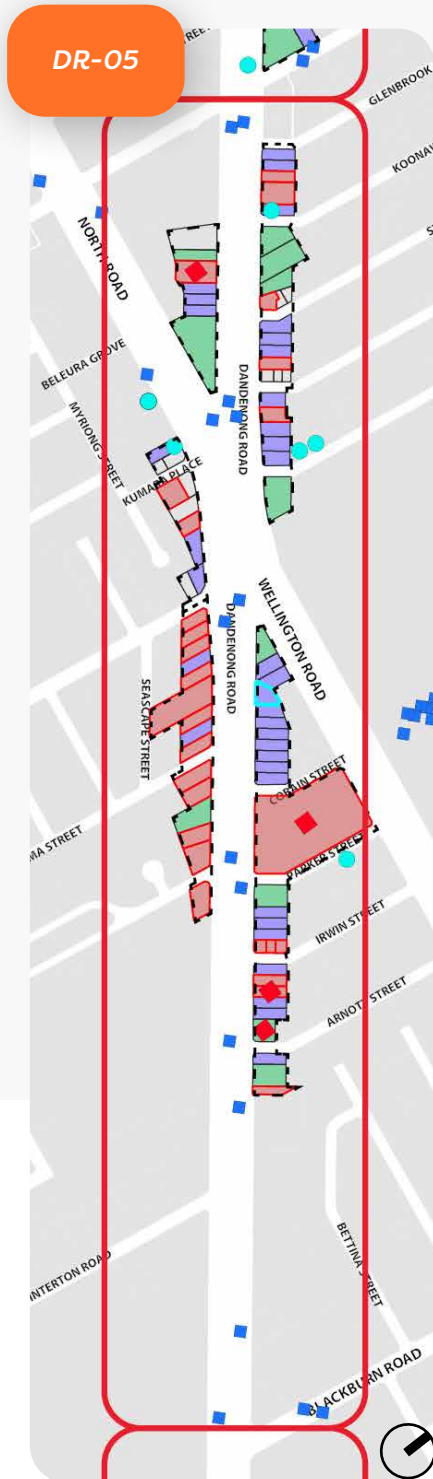
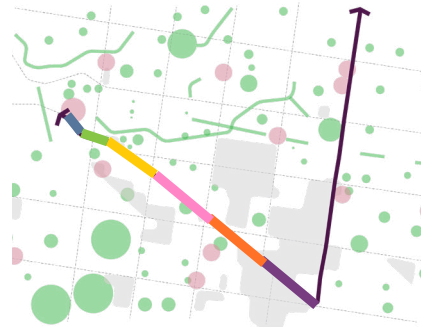


Figure 5. Dandenong Road - Development Activity & Capacity Analysis





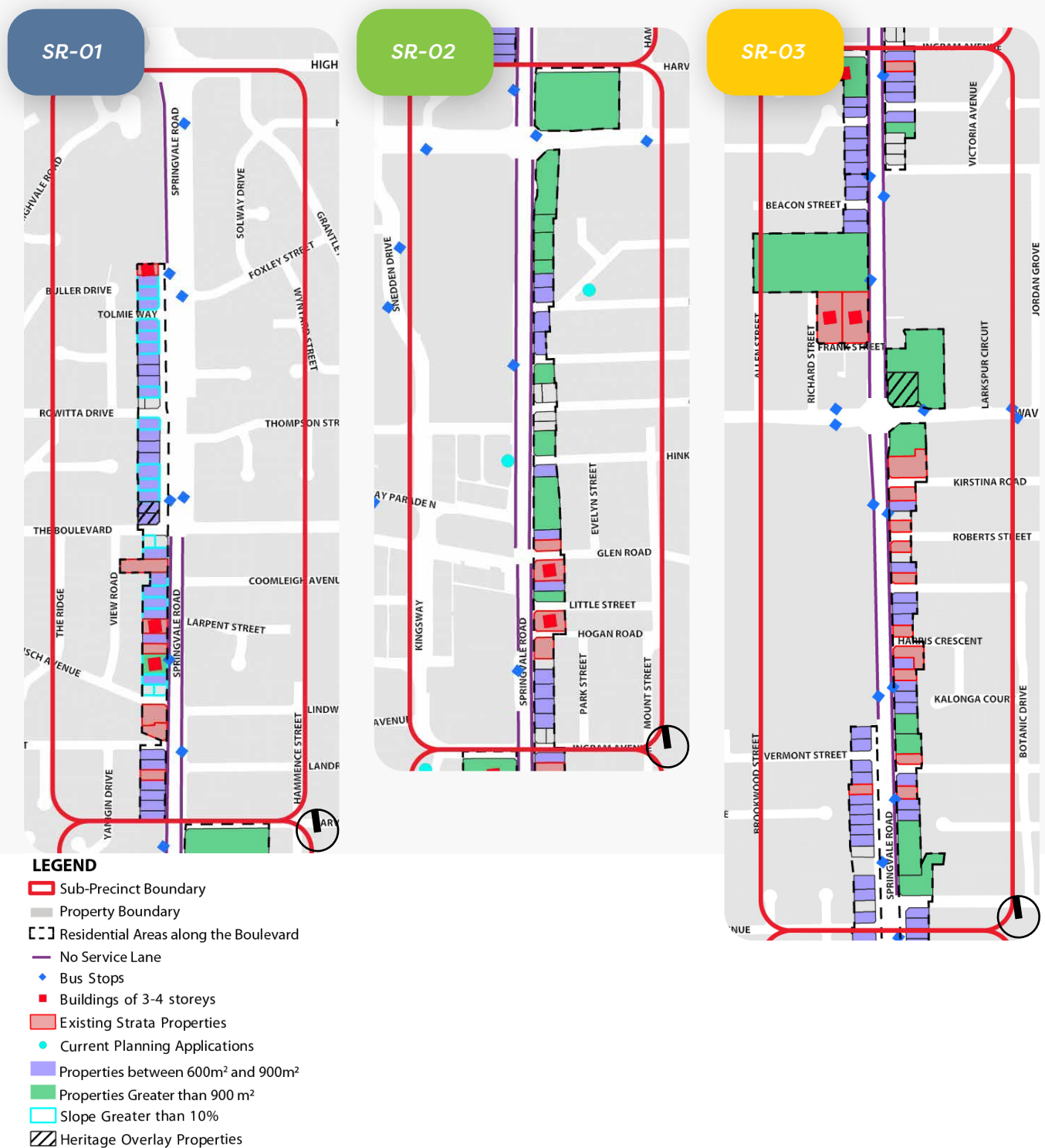
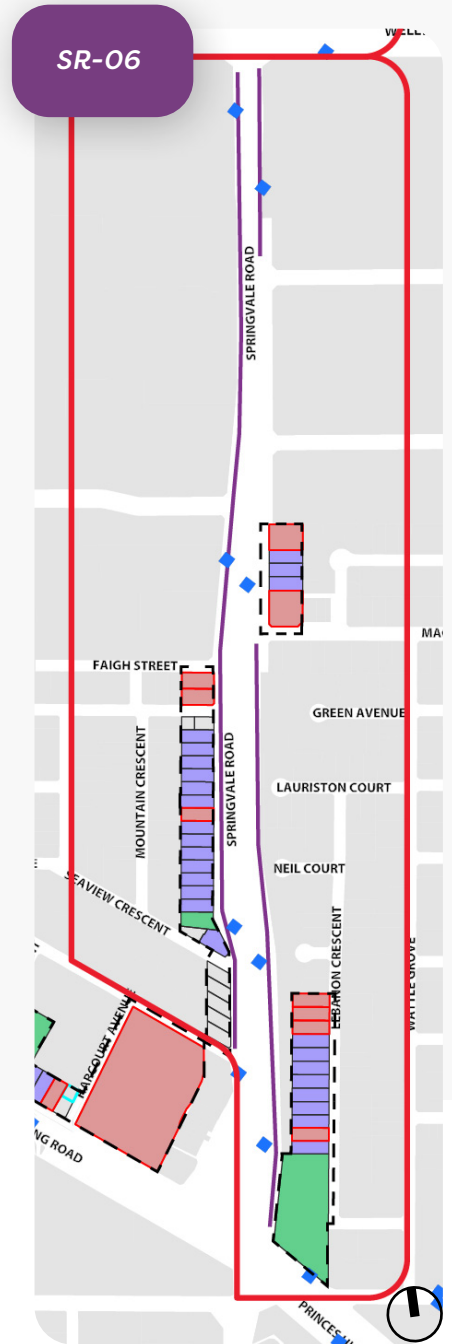
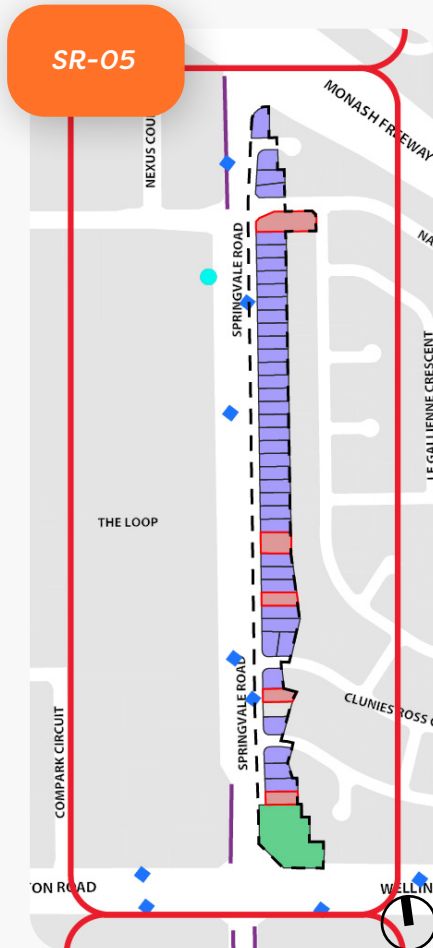
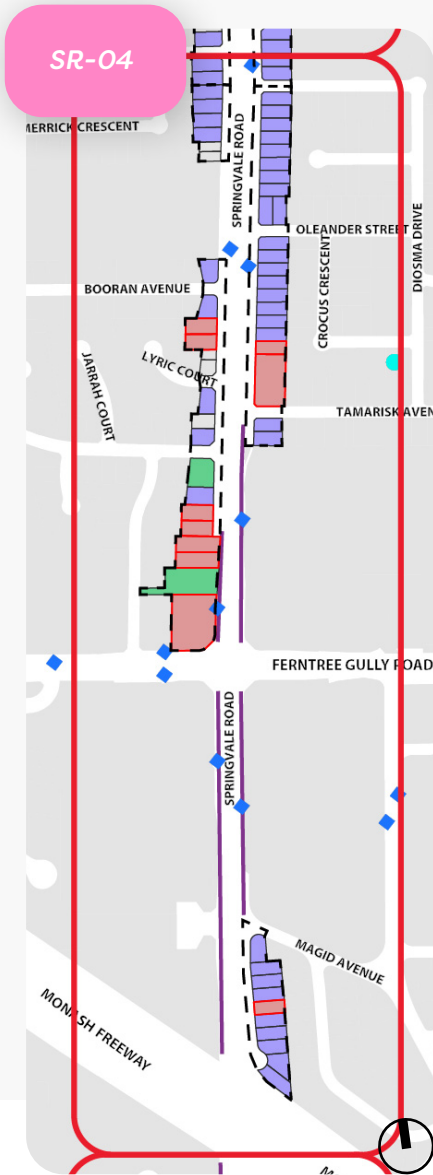
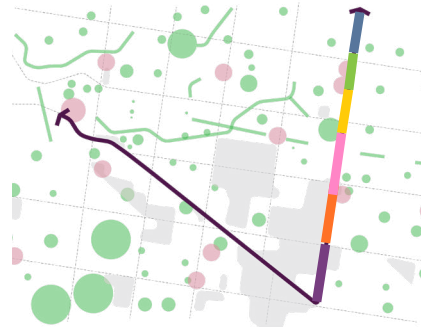


Figure 6. Springvale Road - Development Activity & Capacity Analysis





## Lot Width Development Typologies & Analysis

### Development Typologies

Figure 7 identifies a range of development typologies that could potentially be delivered within the Boulevards based on existing lot widths and current planning controls.

Lot width is considered to have a big impact on the types of development that could be delivered within the Boulevards. This is because the width is typically the smallest dimension of a site and when planning controls and standards are applied, it provides the biggest constraint to development.

The typologies outlined in Figure 7 have been developed utilising Standard B17 outlined in Clause 55.04 of the Monash Planning Scheme. This depicts setbacks to the side boundaries for medium density development.

The typologies also take into account typical minimal floor widths for development and minimum requirements for access.

The typologies are outlined as

follows:

**Typology 1** is a common form of medium density housing provided in the Boulevards. It is configured with a common driveway down one side of the site which provides access to dwellings.

**Typology 2** is similar to typology 1 however it provides for a three storey townhouse. Standard B17 requires the third level to be recessed further away from the side boundary.

**Typology 3** is another common development type which would typically require two sites to be consolidated. The driveway is provided down the middle of the site with dwellings located either side of the access way.

**Typology 4** provides for a low scale apartment development of 3 storeys. In this typology basement car parking is provided.

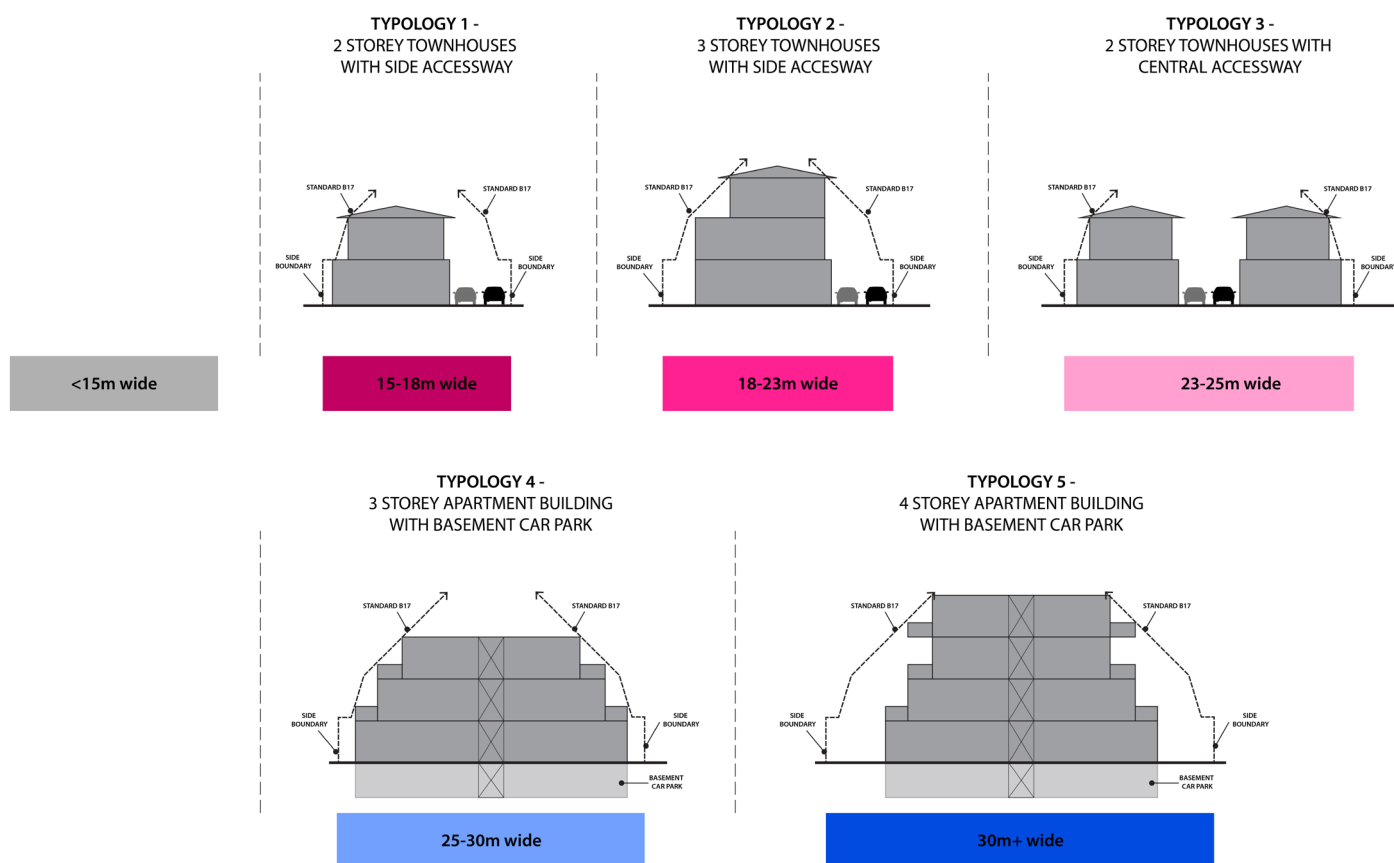
**Typology 5** is similar to Typology 4 however it provides for a four storey apartment building. Standard B17 requires the fourth level to be recessed further away from side boundaries.

### Dandenong Road and Springvale Road Analysis

Figure 8 and Figure 9 analyse how the development typologies apply across the residential properties in the Boulevards.

The mapping demonstrates that lot widths will generally support medium density development however lot consolidation will be required to achieve apartment development.

There are small sections of Dandenong Road where lot width will provide a constraint to any medium density development.



**Figure 7.** Development Typologies based on lot width  
(These sections do not include the Mountain View Hotel site, where 8 storeys are permitted within GRZ9)





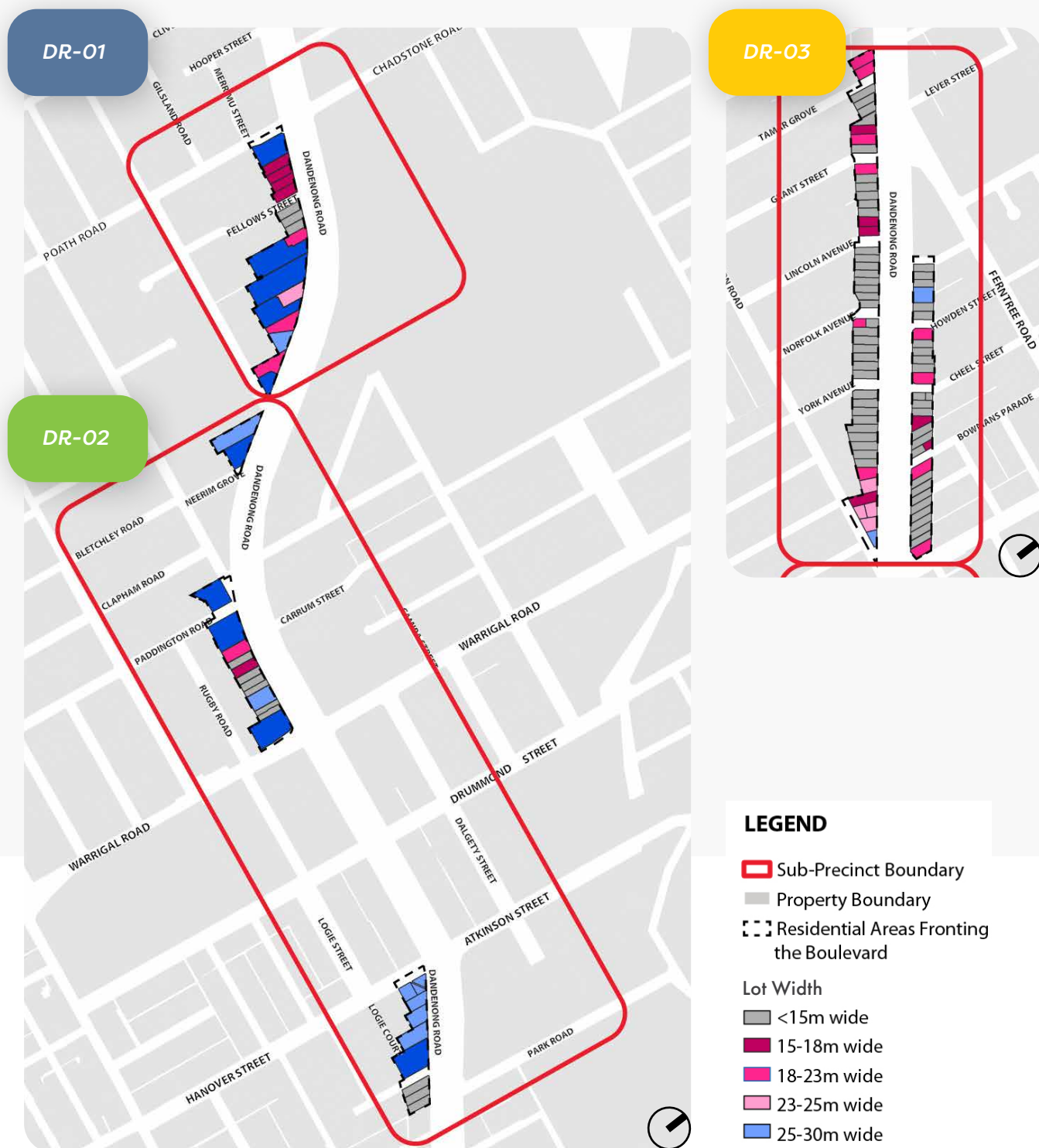
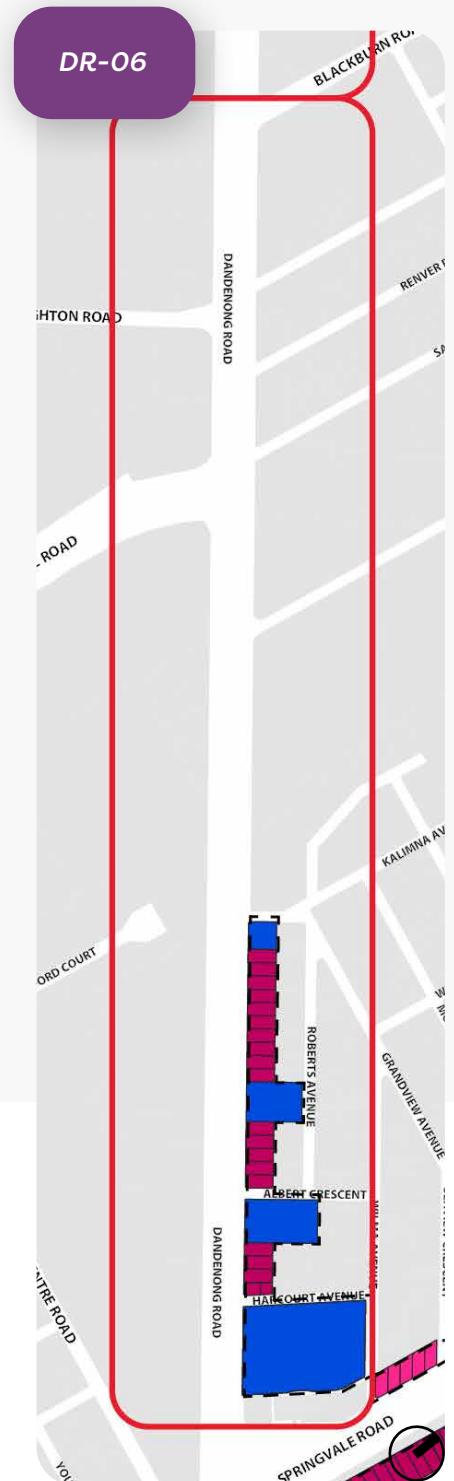
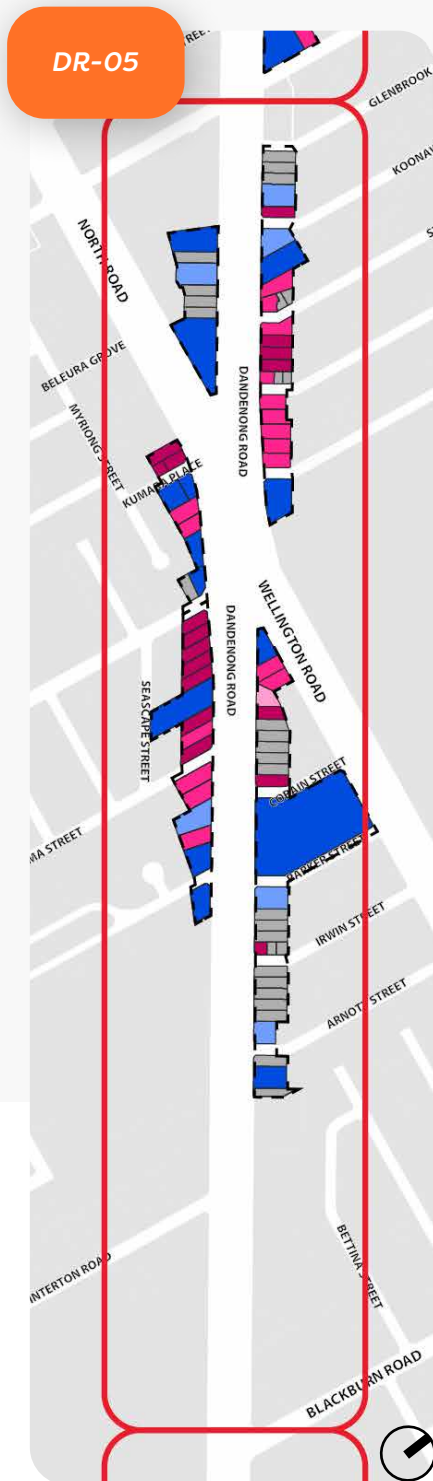
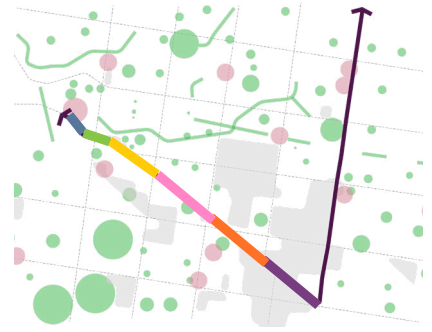
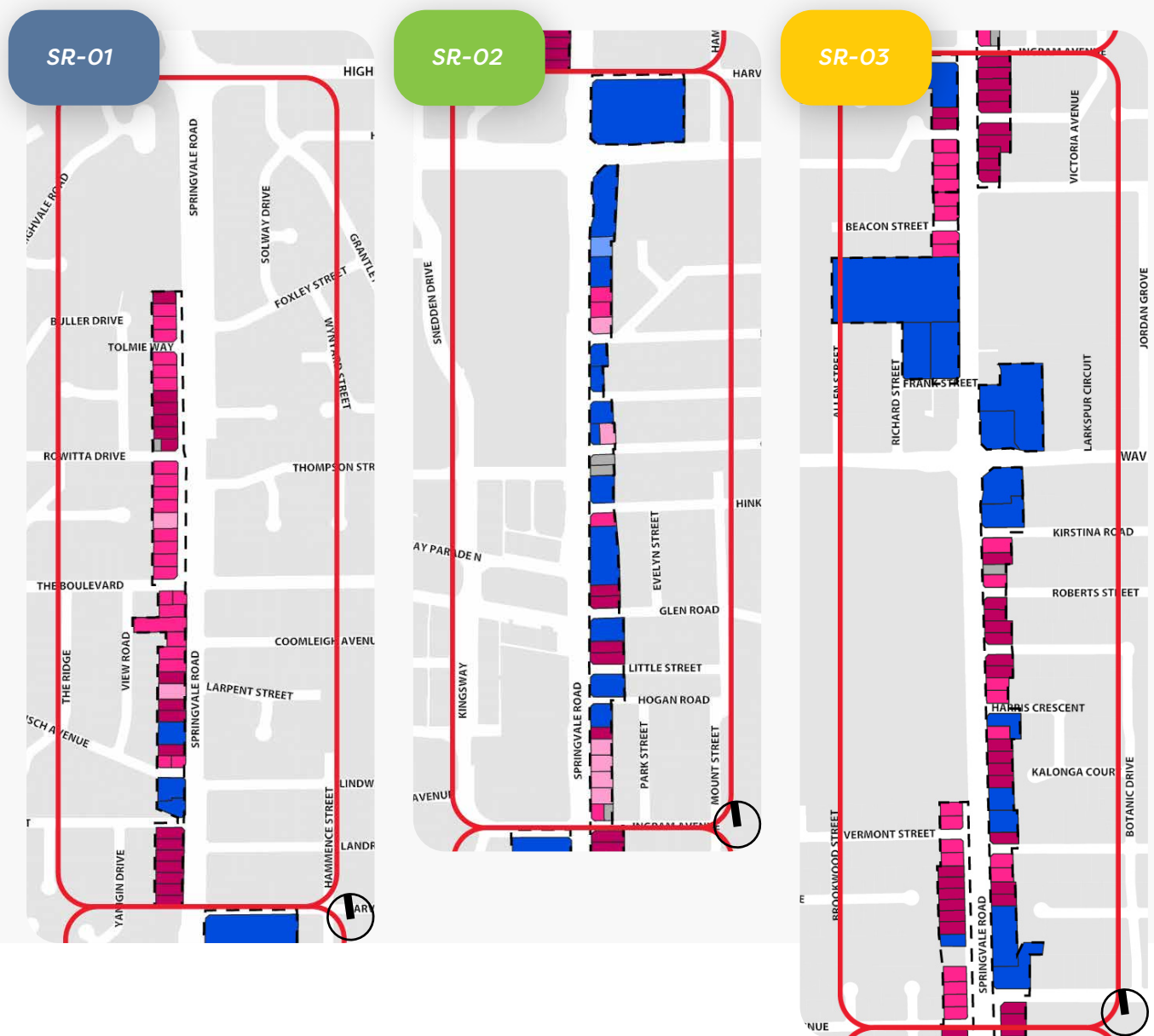


Figure 8. Dandenong Road - Lot Width Analysis







## LEGEND

Sub-Precinct Boundary

Property Boundary

Residential Areas Fronting the Boulevard

## Lot Width

<15m wide

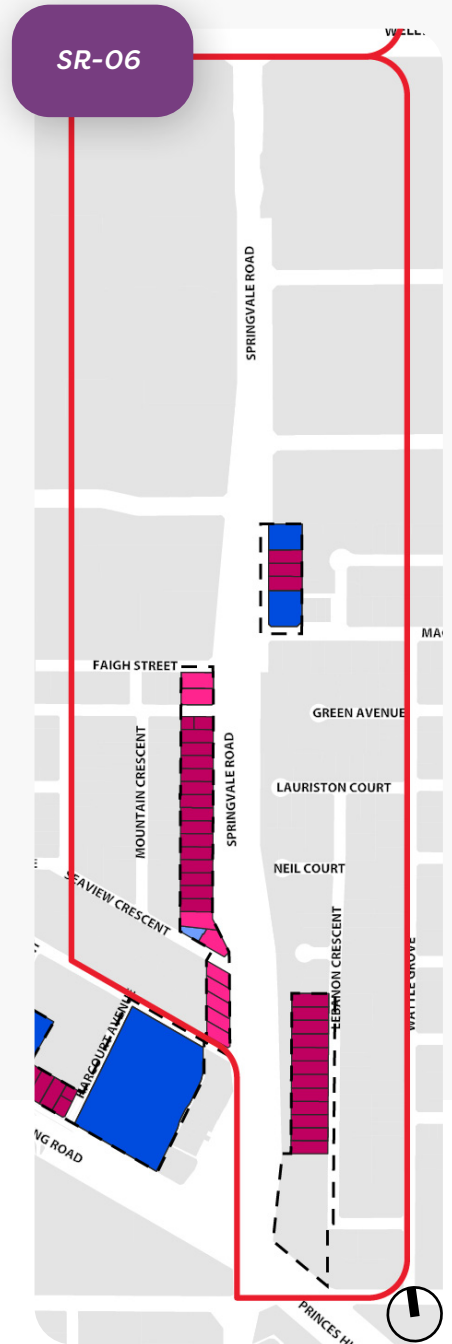
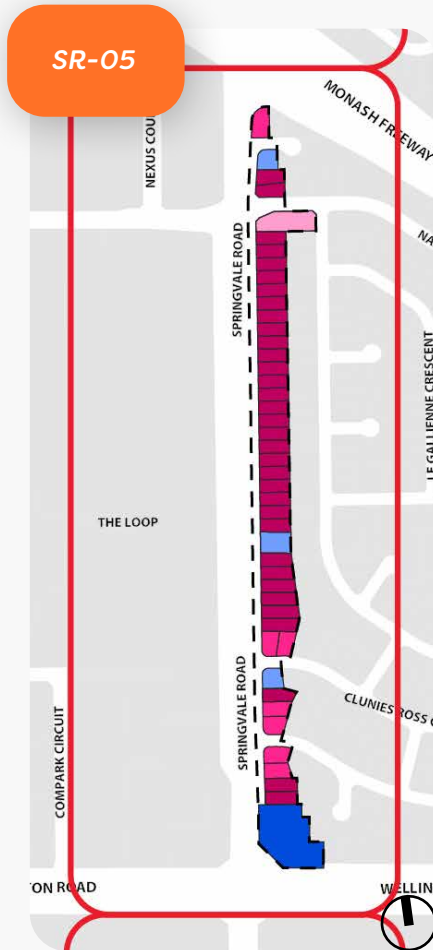
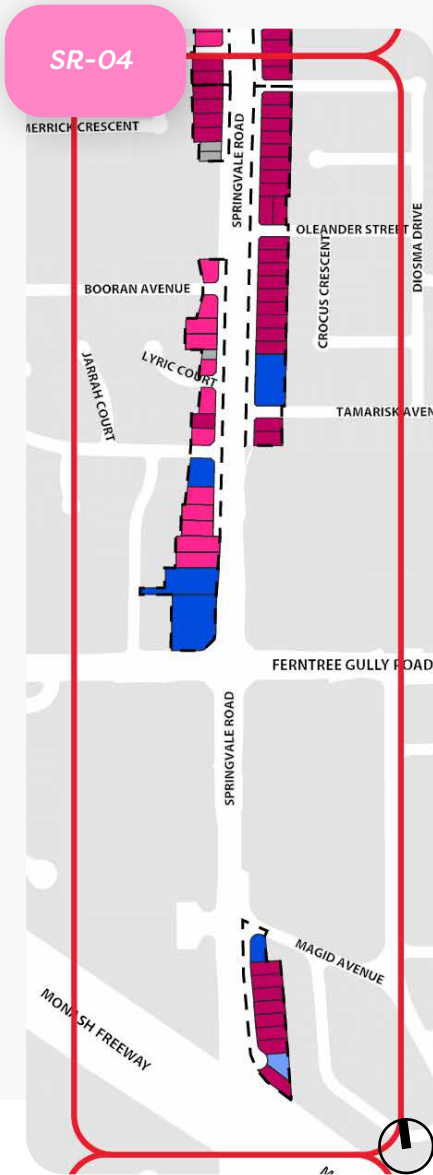
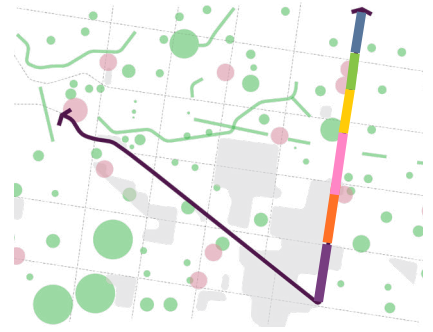
15-18m wide

18-23m wide

23-25m wide

25-30m wide

Figure 9. Springvale Road - Lot Width Analysis







## Appendix D Urban Character & Public Realm

### Overview

This section provides analysis of urban character and public realm within the Boulevards and identifies key issues and opportunities to be addressed through the UDF.

The urban character and public realm of the Boulevards will need to change to deliver the policy directions for densification and to create a higher quality environment where people want to live.

Understanding the existing character is important to establish which of the urban elements of the Boulevards should be protected, and those that could be improved. It will also enable new development to sensitively integrate with the surrounding neighbourhoods.

Improvements to the public realm will be important in making the Boulevards attractive locations for housing, providing recreational spaces for residents and providing separation and protection from large volumes of traffic.

Urban character can be defined by the interplay of a range of qualitative and quantitative elements that work together to create a place. These elements include architectural styles, building scale and siting, topography, views and vistas, landscaping and proximity to amenities such as open space and shops.

Public realm relates to spaces outside of private property that people can use in their day to day lives. These spaces usually include parks, plazas, and streetscapes.

For the UDF, the analysis of the public realm focuses on the central median of the Boulevards, and the service roads which traverse most of the length of Springvale Road and Dandenong Road.

## Gateways

### Dandenong Road

Figure 10 identifies key gateways along Dandenong Road.

The gateways are generally defined by major road intersections. This is due to the scale of the road pavement creating a separation between buildings. The built form response to the key intersections is varied along the Boulevard.

The western gateway to the Boulevard features the Chadstone Shopping complex, and a nine-storey commercial office tower. This site is located outside of the UDF area, however, it contributes to the urban character of the precinct. Other notable built form gateways include the Warrigal Road intersection which features a ten-storey mixed use development, and the Blackburn Road intersection where M-City, a 12 storey mixed use development is located.

The Wellington Road/North Road gateway includes the Monash University as a key destination at that intersection. The site features residential zoned land for the remaining corners of the gateway.

The Springvale Road intersection is another key gateway. It currently features a significant amount of road space and a small neighbourhood activity centre.

### Springvale Road

Figure 11 identifies key gateways along Springvale Road

Like Dandenong Road, the major road intersections generally define the key gateways along the Boulevard. There are also important topographical and landscape features that create gateways.

The northern entrance to the Boulevard occurs at Highbury Road however there is a significant topographical gateway located adjacent Rowina Drive. This location allows for views along the vegetated Springvale Road corridor towards the Glen Waverley Activity Centre.

The High Street Road intersection is a major gateway featuring the prominent built form of the Glen Shopping Centre. The Mountain View hotel site has a nine storey height limit and will provide prominent built form on the north east corner of the intersection.

The Central Reserve provides a key landscape gateway in the precinct. This major open space precinct provides a green break along the built up road.

The Ferntree Gully Road intersection is a major road gateway which could be enhanced. The service stations and shopping centre feature building setbacks making the intersection appear even larger.

Other significant gateways include the Monash Freeway crossing, which provides providing a visual break in the built form, and the Wellington Road and Dandenong Road intersections.



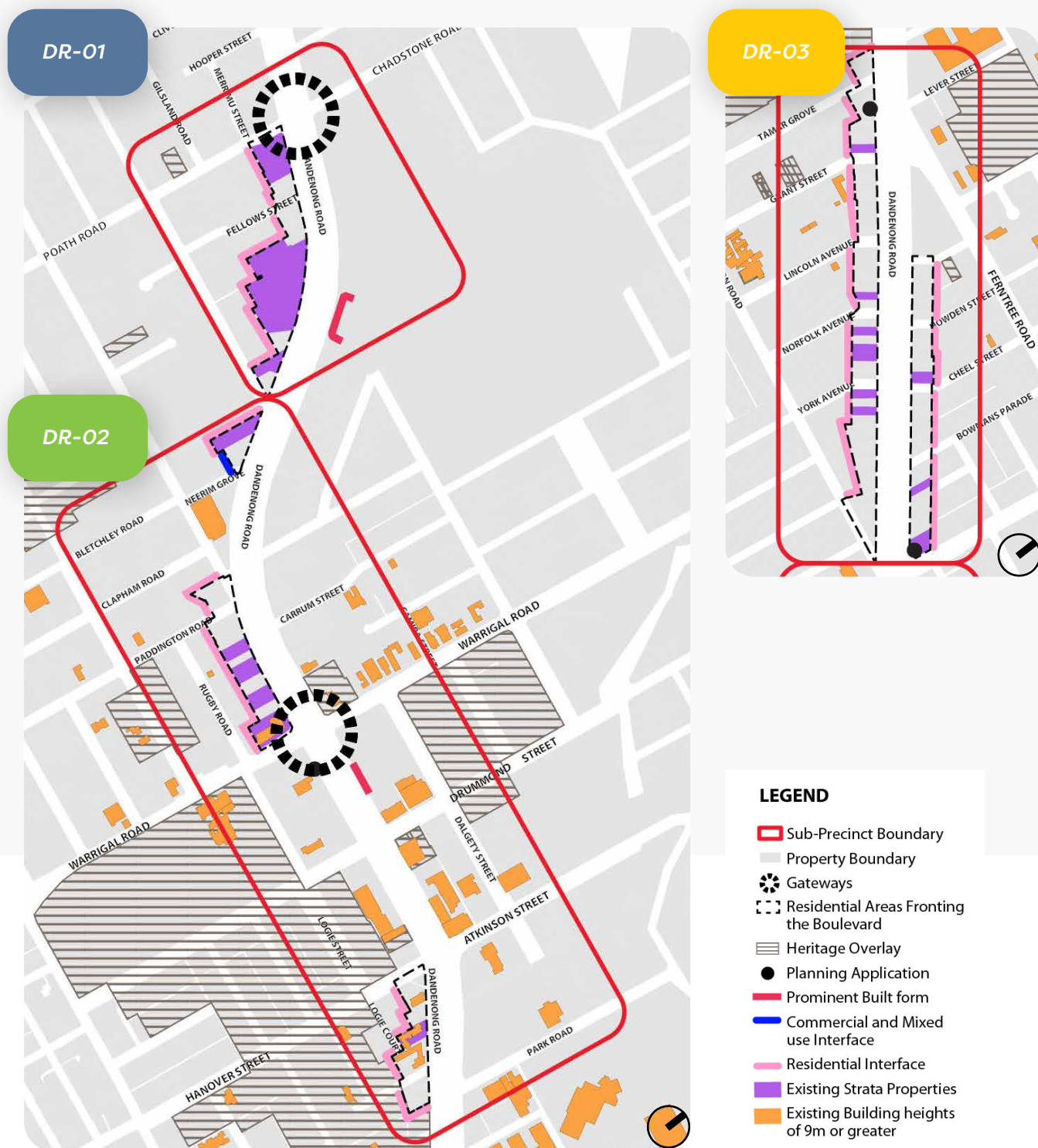
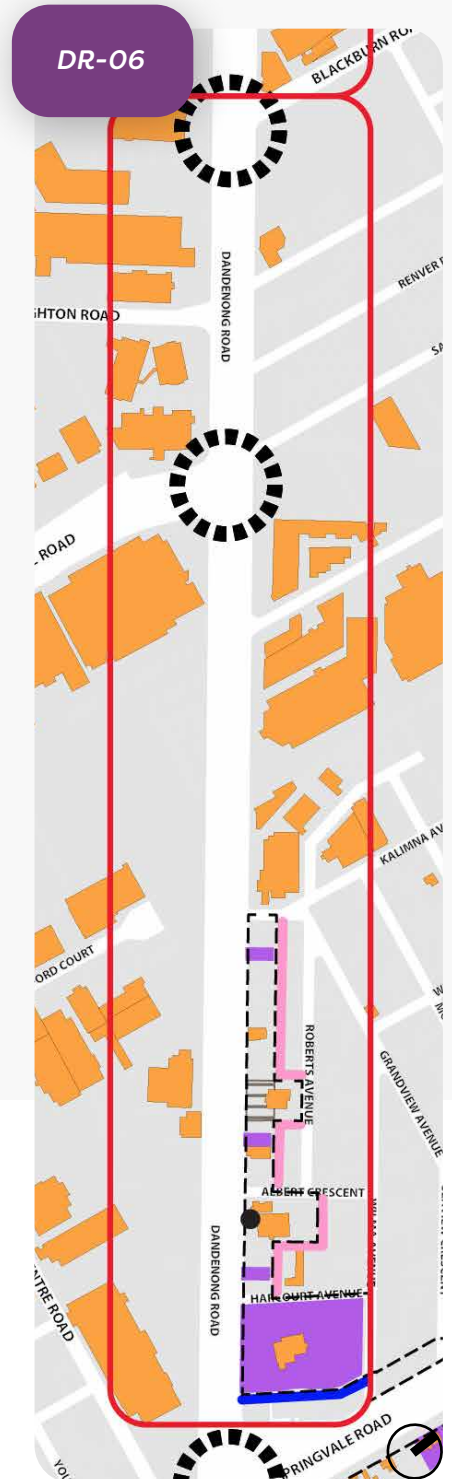
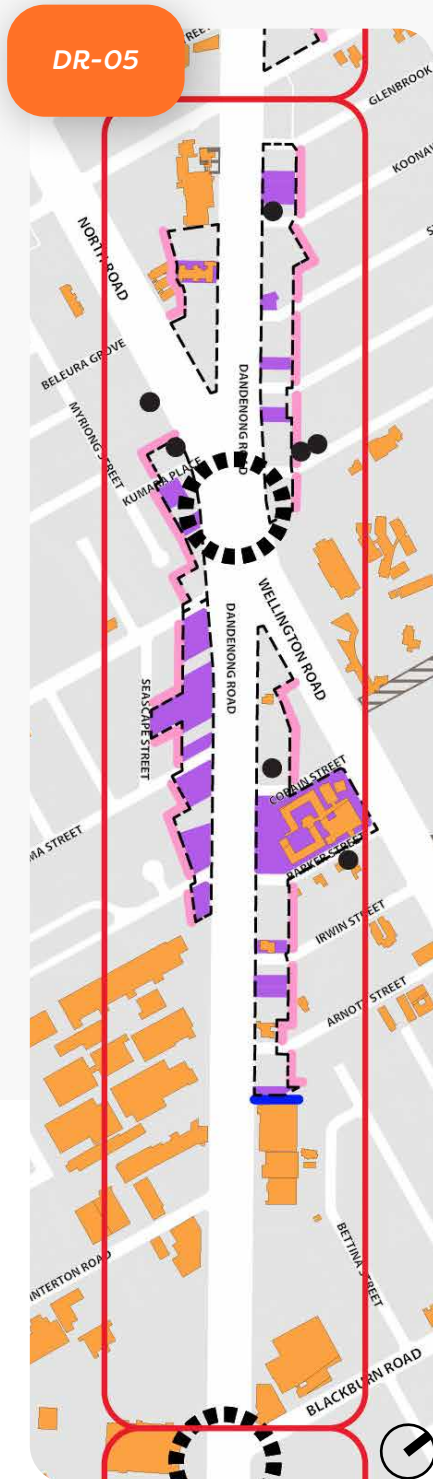
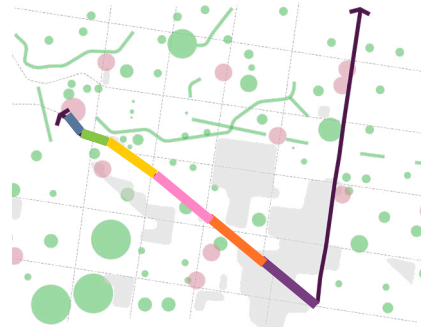
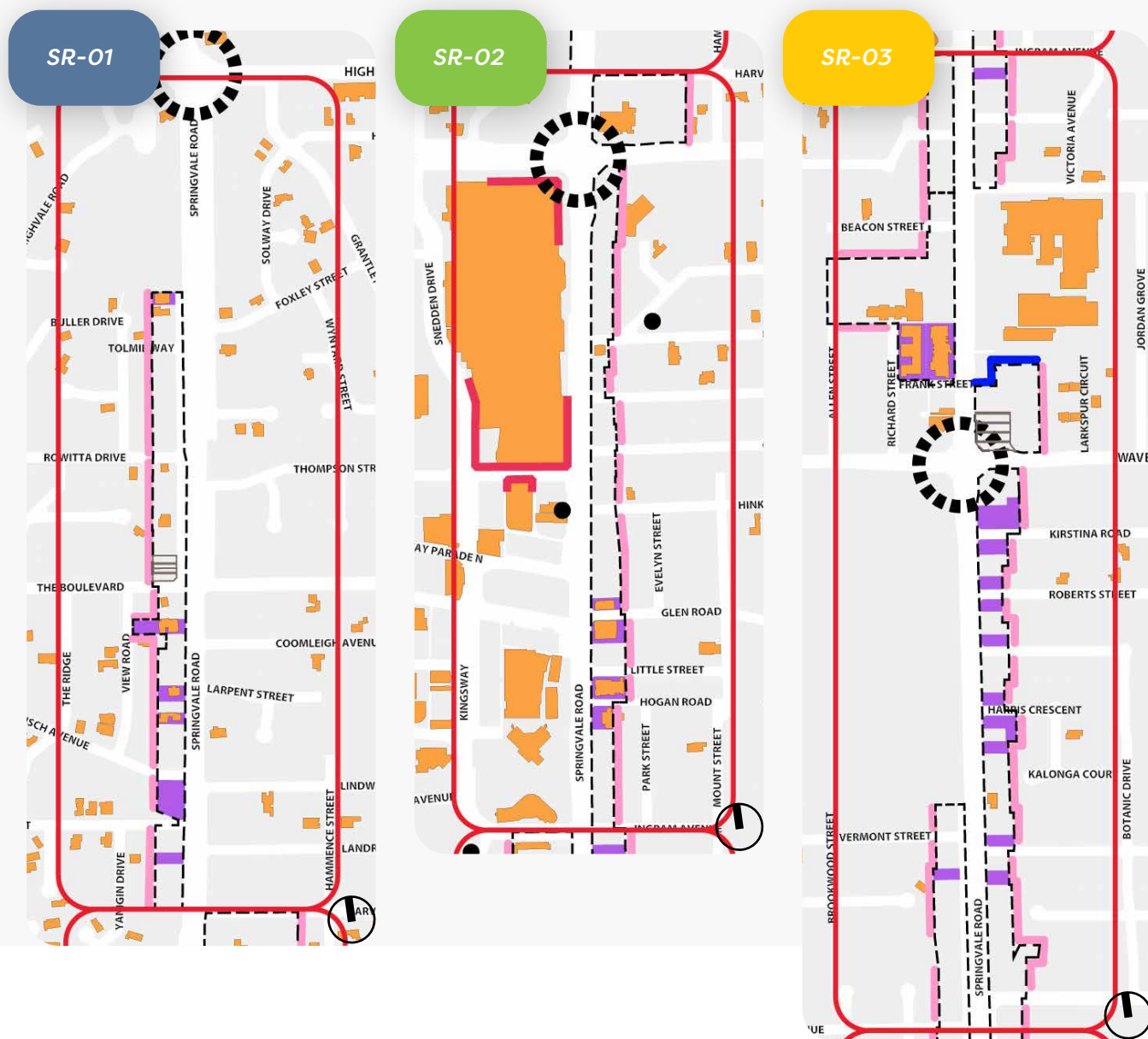


Figure 10. Dandenong Road - Gateway & Urban Character Analysis







## LEGEND

Sub-Precinct Boundary

Property Boundary

Gateways

Residential Areas Fronting the Boulevard

Heritage Overlay

Planning Application

Prominent Built form

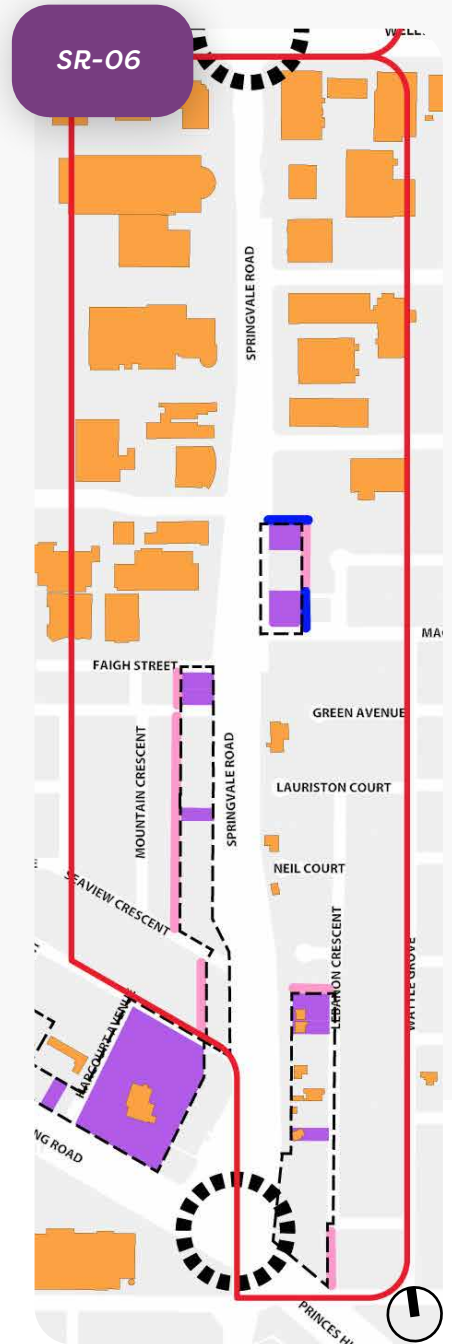
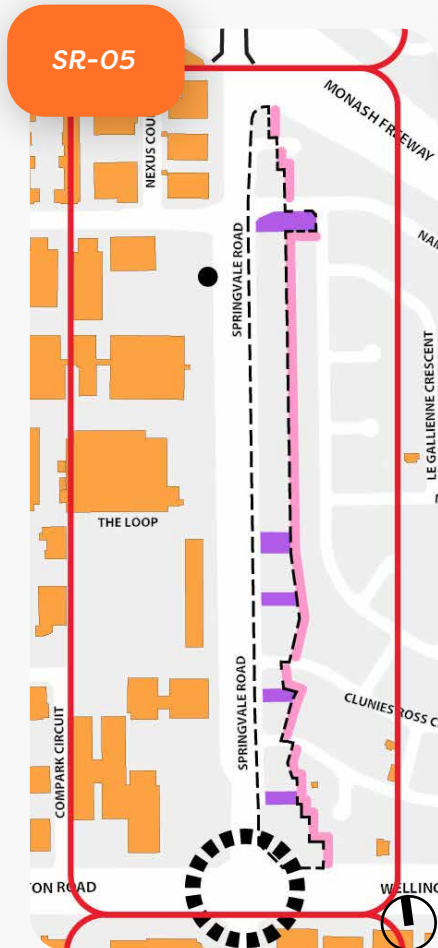
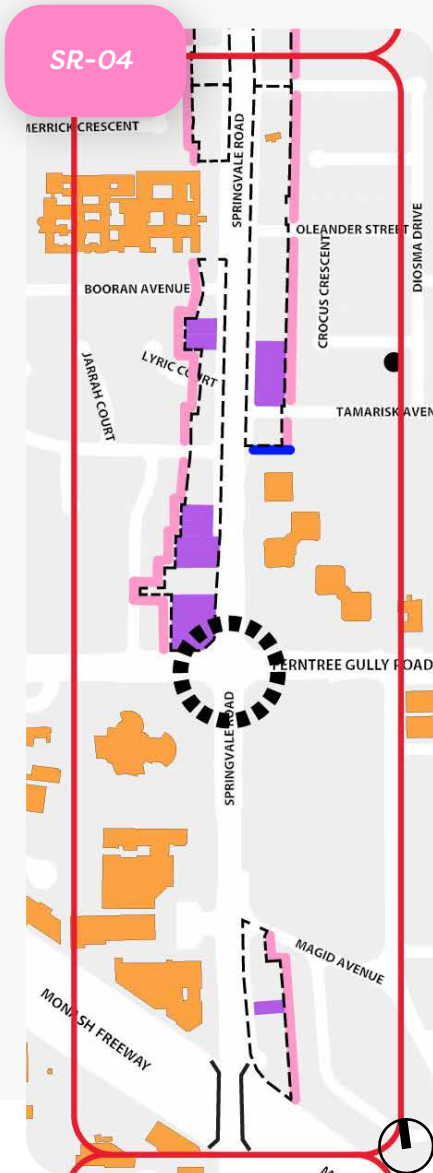
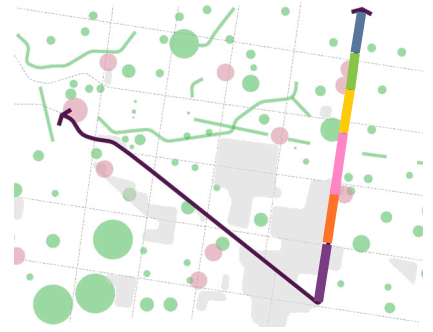
Commercial and Mixed use Interface

Residential Interface

Existing Strata Properties

Existing Building heights of 9m or greater

Figure 11. Springvale Road - Gateway & Urban Character Analysis





# Built Form Character

## Dandenong Road

Figure 10 identifies key gateways along Dandenong Road.

The gateways are generally defined by major road intersections. This is due to the scale of the road pavement creating a separation between buildings. The built form response to the key intersections is varied along the Boulevard.

The western gateway to the Boulevard features the Chadstone Shopping complex, and a nine-storey commercial office tower. This site is located outside of the UDF area, however, it contributes to the urban character of the precinct. Other notable built

form gateways include the Warrigal Road intersection which features a ten-storey mixed use development, and the Blackburn Road intersection where M-City, a 12 storey mixed use development is located.

The Wellington Road/North Road gateway includes the Monash University as a key destination at that intersection. The site features residential zoned land for the remaining corners of the gateway.

The Springvale Road intersection is another key gateway. It currently features a significant amount of road space and a small neighbourhood activity centre.



Interwar dwelling with landscaped front garden, along Dandenong Road.



Recent medium density development with minimal front landscaping, along Dandenong Road.



Recent medium density development with landscaped front garden, along Dandenong Road.

## Springvale Road

Figure 11 analyses a range of built form elements along Springvale Road. Like Dandenong Road, built form character within residential areas vary, and there are limited areas with a distinctive character.

Housing along the Springvale Road Boulevard is predominantly post-war detached dwellings with spacious setbacks. These dwellings are interspersed with villa units and more recent town houses of one and two storeys.

The Glen Waverley Activity Centre provides a location for higher density development particularly in the adjacent commercial areas. This is recognised in the residential height controls around the Activity Centre already have a maximum of 4 storeys.

There are a number of interfaces between residential and industrial / commercial uses along the Boulevard. These are usually separated by a road. Residential properties generally have another residential property to the rear along the Boulevard.



Townhouse development, along Springvale Road with a high front fence providing a buffer to the road.



Non-residential use near the Glen Waverley Activity Centre, with minimal front setback, and no landscape amenity contributing to the street.



Existing dwelling with an established front landscape, providing amenity to the street, along Springvale Road.

## Landform and Views

### Dandenong Road

Figure 12 depicts topographical elevation along Dandenong Road and identifies areas of steeper sloping land.

Topographical variation along the Boulevard is generally subtle however there are recognisable undulations in the central sections of Dandenong Road. There are a range of views available in these locations.

The topography also influences the location of service roads in the undulating areas. The service roads are often located above or below the main traffic lanes providing a separation from the traffic. This scenario is depicted in Figure 14.

Land slope is generally moderate along the Boulevard and is unlikely to have a major impact on development.

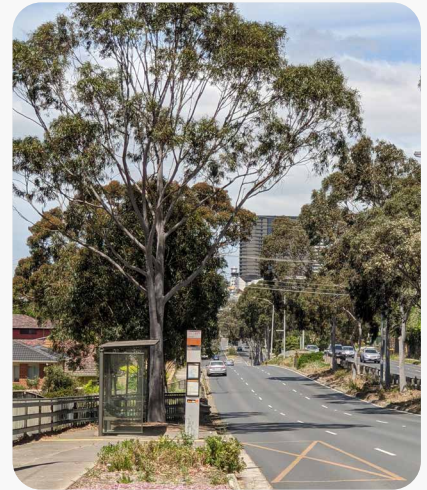
### Springvale Road

Figure 13 depicts topographical elevation along Springvale Road and identifies areas of steeper sloping land.

Topographical variation along the Boulevard is generally greater than Dandenong Road particularly in the northern sections. Glen Waverley Activity Centre is a recognisable highpoint from which land falls gradually to the south.

In this area, the service road is located above and below the main traffic lanes of Springvale Road. This allows for separation from the traffic providing a higher level of amenity. It also allows for views as shown in the photo opposite. This scenario is depicted in Figure 15.

Land slope is generally moderate along the Boulevard with the exception of the northern sections where many properties have slope greater than 10%.



Undulating topography looking south along Springvale Road, towards the Glen Waverley Activity Centre, with canopy cover providing a distinct sense of character.



Long views to the east, to the Dandenong Ranges, along Springvale Road in Precinct 1.



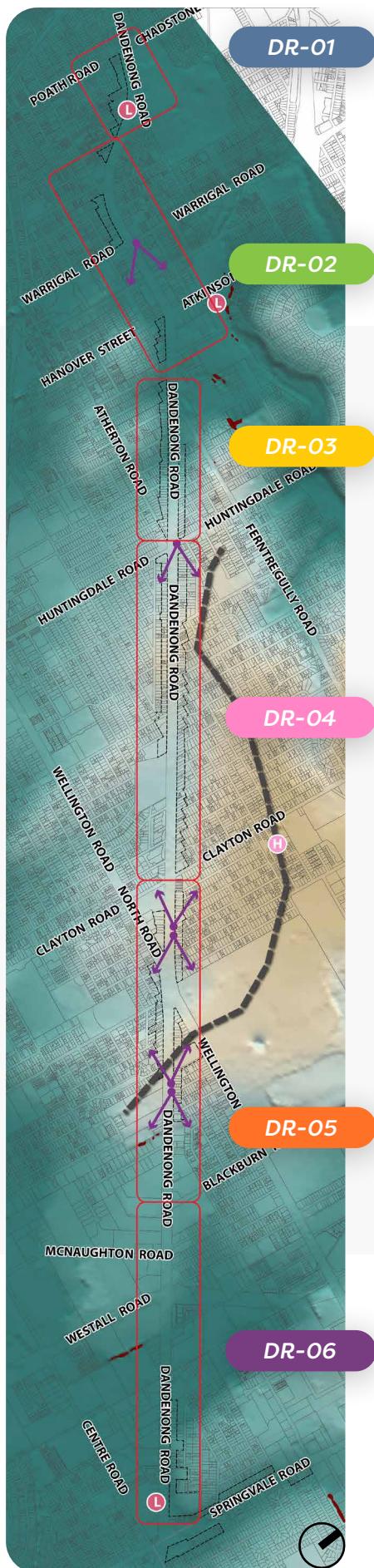


Figure 12. Dandenong Road - Elevation Analysis

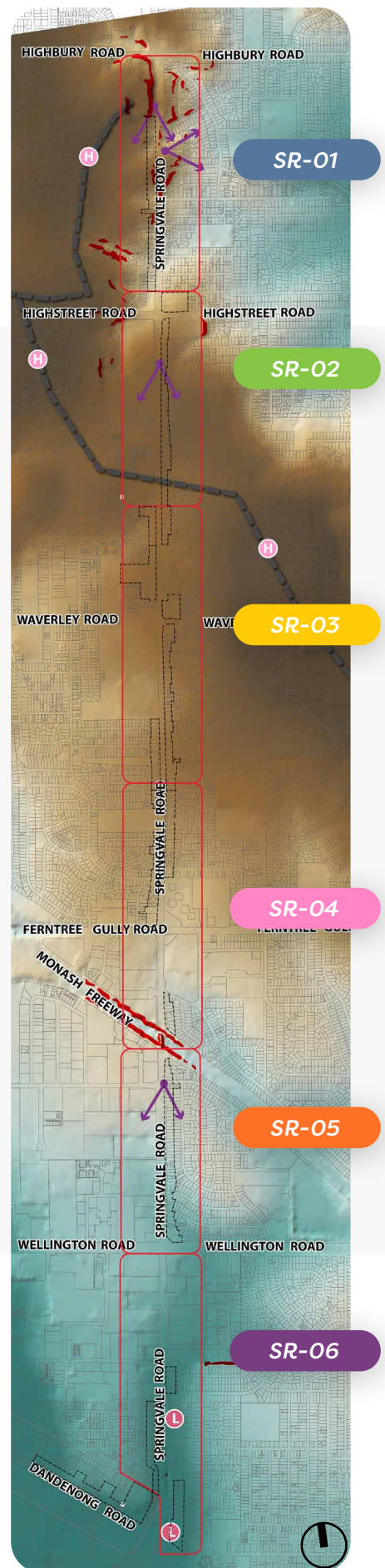


Figure 13. Springvale Road - Elevation Analysis

Figure 14 and Figure 15 below depict a common situation along the northern sections of Springvale Road and some sections of Dandenong Road where the service road is

located above or below the main traffic lanes. This configuration provides significant benefit to residents by not only creating a visual

separation from traffic but also a buffer from the noise of passing traffic.

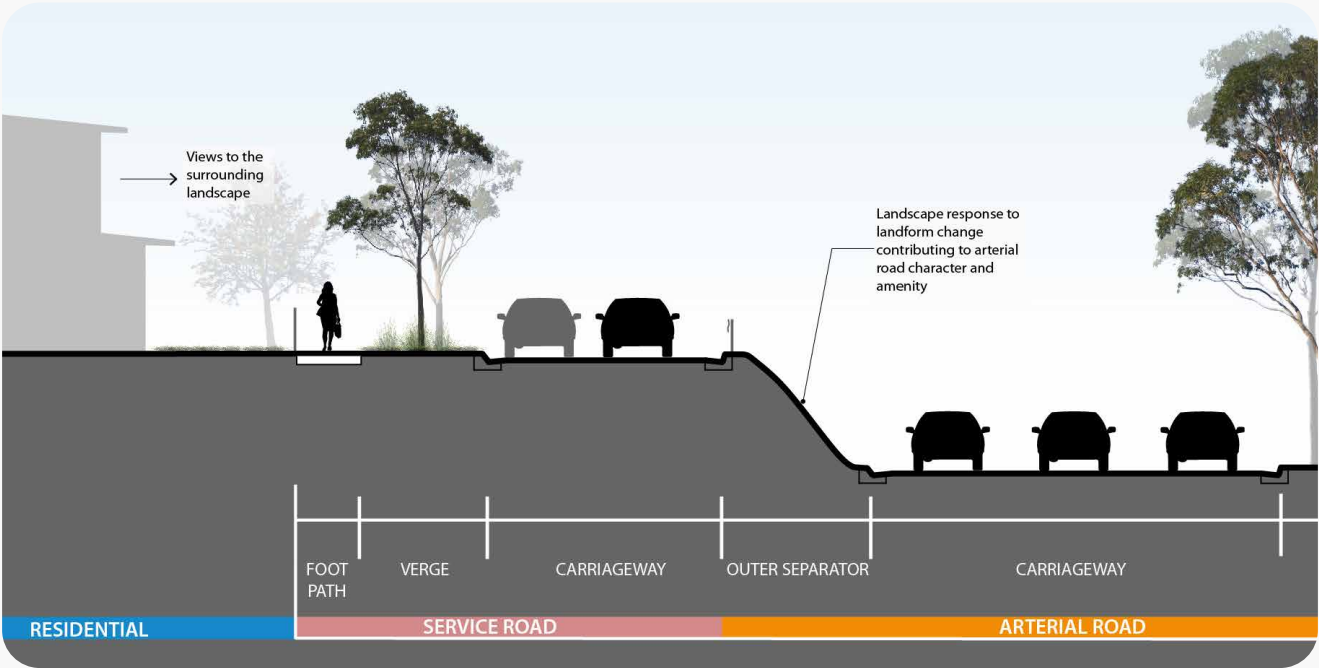


Figure 14. Example of service road, located in an elevated position

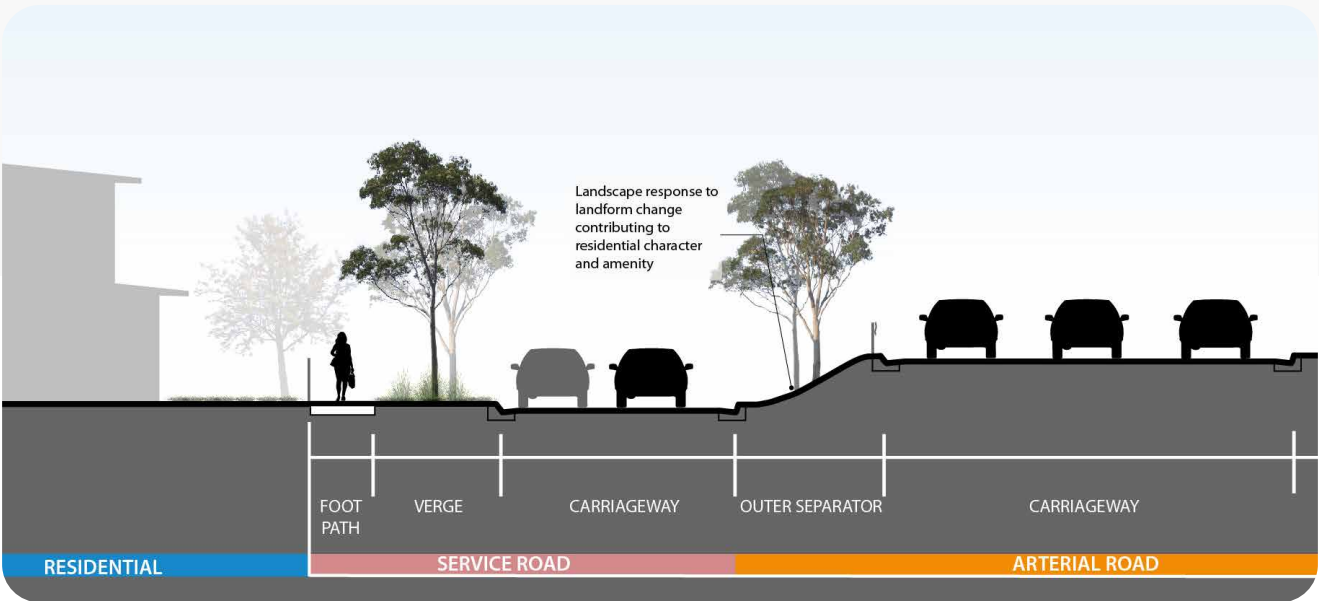
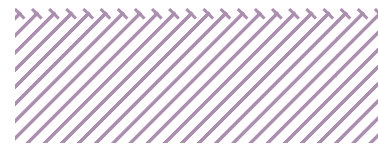


Figure 15. Example of service road, located in a lower position

## Landscape Character



The Monash Urban Landscape Character and Canopy Vegetation Strategy (MULCVS) provides direction on the preferred future landscape character and tree canopy cover across the municipality.

The key aim of the Strategy is to protect the Garden City Character, as described in the Municipal Strategic Statement, as ‘..... a general feeling of “greenness” created by significant tree canopy cover contained within large, vegetated set backs and areas of open space.’

The ‘greenness’ is created by a combination of tree canopy, medium and smaller trees, shrubs, garden beds and grass.

The study area traverses seven of nine preferred Landscape Character types defined by the City of Monash

There are opportunities for the UDF to reinforce these landscape character types both in the private and public realms.

### Impacts of Development on Landscape Character

The replacement of original detached dwellings with larger dwellings, multi-unit developments and apartment developments is impacting on the ‘greenness’ of the city due to:

- Additional driveway crossovers reduce the number of street trees,
- Additional building height, that requires taller trees to buffer the built form from view, and
- Additional car parking (multiple garages), and hard-stand surfaces,

The small scale urban change that is occurring does little to increase the ‘greenness’ of the city. Larger developments can provide a more impact on landscape character due to the consolidated nature of developments.

### How can the UDF strengthen the Garden City Character

The UDF will provide guidance on a number of elements that could strengthen the Garden City Character and contribute to the feeling of ‘greenness’ across the City. These include:

- Service lane configuration including the nature strip width and street tree planting.
- Front setbacks for development and the proportion of the setback which is planted with grass or garden bed and trees.
- Side and rear setbacks.
- Front fences including their height, material and style.
- Garden design to reinforce the particular Landscape Character Type in which a site is located.
- Providing open space along the corridor and enhancing connections to existing open space

The challenge for the UDF is to balance the strategic direction to provide denser forms of housing along the Boulevards with the desire to strengthen the landscape character.





## Open Space Access

Figure 16 and 17 identifies the 400m walking catchments to open space across the Boulevards Study Area.

Access to open space is critical to the health and well-being of the people in the City of Monash. Open space can also contribute to lowering the heat stress related to the Urban Heat Island Effect

Open space can provide different kinds of amenity to residents. Sporting complexes and playing fields such as Central Reserve act as a draw card and a destination outside of the local catchment. Other, smaller parks and playgrounds located along and nearby the Boulevards act as local places to recreate and relax. Linear parks provide a recreational function as well as important ecological functions.

Sometimes these open spaces are not always usable, acting as urban infrastructure such as managing storm water. However, these open spaces also contribute to the amenity of the area through visual relief.

The plan opposite identifies a number of gaps in the open space network where residential properties are beyond 400m walk from open space. The 400m distance is often used as a benchmark in urban planning for providing good access to open space.

There are opportunities to address some of these gaps in open space to ensure the Boulevards are desirable places to live.

In addition to distance, physical barriers can also prevent people from accessing open space. This is particularly key in the Boulevards where major road infrastructure is difficult to cross in order to access open space.

## How can the UDF enhance open space along the Boulevards

Whilst not mapped as public open space, there are opportunities for service roads and central medians to increase their contribution to the overall amenity of the Boulevards.

This could be focused on locations where:

- There are identified gaps in the open space catchments.
- The Service Road reserve is of a sufficient width to accommodate an open space function and fulfil its traffic and transport roles.
- Where there are opportunities to remove redundant road space and create pocket parks for the community
- In central medians along the Boulevards, where pedestrian refuges largely lack embellishment and amenity, presenting a hostile environment.

The private realm also provides an opportunity to contribute to the open space setting of the Boulevards. Where lot depth is sufficient, there may be opportunities to provide deeper front setbacks to allow for the garden to make a contribution to the landscape setting of the street.

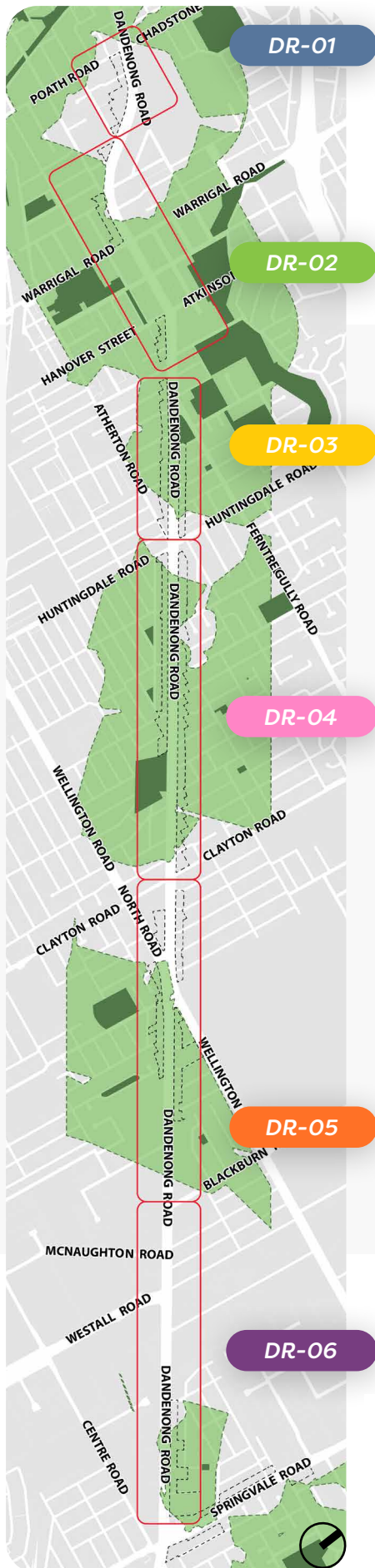


Figure 16. Dandenong Road - Open Space Catchment Plan

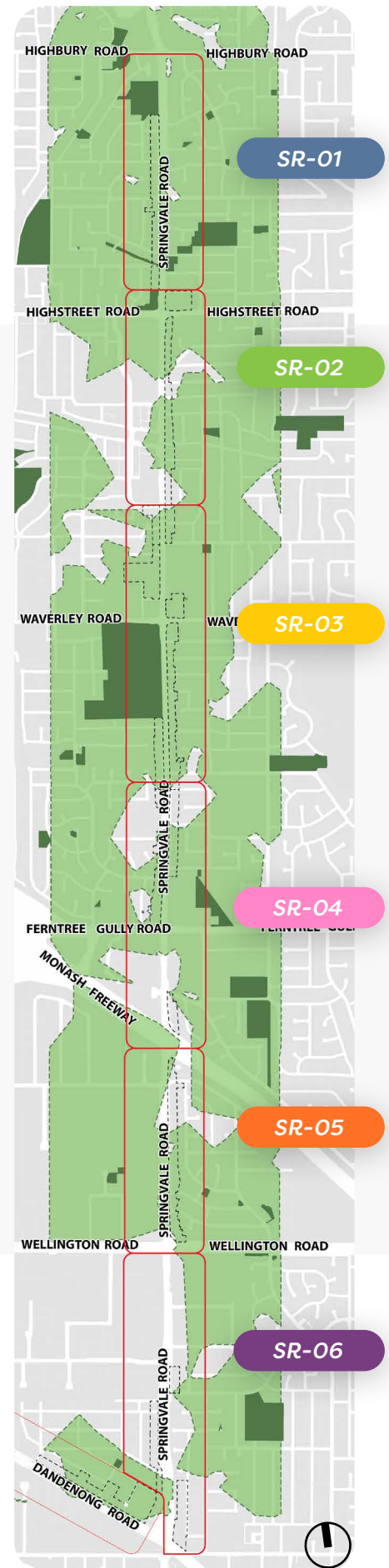


Figure 17. Springvale Road - Open Space Catchment Plan



# Appendix E Movement and Access

## Overview

This section provides analysis of movement and access within the Boulevards and identifies key issues and opportunities to be addressed through the UDF.

Access to multiple modes of transport and being able to move easily along the corridors and to surrounding destinations, is critical to making the Boulevards attractive housing destinations.

As declared arterial roads, the Boulevards are focused on efficient vehicle movement with minimal disruption.

This is to the detriment of pedestrians and cyclists, who have limited opportunities to cross multiple lanes of traffic to access destinations. The constant movement of traffic also diminishes the amenity of the Boulevards.

The UDF provides an opportunity to enhance access and movement along the Boulevards to make them attractive and safe places to live.

This should focus primarily pedestrian and cyclist movement as it is the easiest and most enjoyable form of transport. In addition, providing improved access

to public transport will enhance access to surrounding employment and education destinations.

The UDF can influence improvements to the service roads along the Boulevards as this land is managed by Council. The UDF can also advocate for changes and improvements the traffic thoroughfare sections of the Boulevards particularly in providing additional pedestrian and cyclist crossings and infrastructure.






Figure 18 and Figure 19 provide analysis of walking, cycling, public transport and motor vehicle infrastructure across the Boulevards

## Walking

Walking is an enjoyable and easy form of transport. It promotes active and health lifestyles, and provides significant economic and environmental benefits.

The Boulevards play an important role in getting people to and from the surrounding shops, public transport stops, community and education facilities. The footpaths on both sides of the Boulevards are consistent, and do not inhibit pedestrian movement.

However a key deterrent for walking are long waiting times at pedestrian crossings and a lack of pedestrian infrastructure to provide safety and comfort. The high number of crashes involving pedestrians as outlined in Figure 20 and Figure 21 provides evidence of the hostile environment for pedestrians.

In some locations, it can take two sets of signals to cross some of the major roads, leaving pedestrians stranded on a narrow central median with little vehicle protection, or amenity.

In addition, the significant spacing between pedestrian crossings (signalised and grade separated) also limits access to destinations along the Boulevards. In some locations the gap between pedestrian crossings is up to 1.3 kms. There are opportunities to provide additional crossings along the Boulevards particularly in proximity of major destinations.

Other aspects of the Boulevards that could be improved to make pedestrian journeys more enjoyable include additional shade trees planted in verges, and more street furniture, include regular seating and drinking fountains in key locations. There are opportunities to provide this infrastructure within service roads.

## Cycling


Cycling is another form of active transport that should be encouraged along the Boulevards, however safety and convenience needs to be prioritised for cyclists.

Not all cyclists feel confident and safe riding in traffic with other vehicles, and most prefer smaller, slower, shared environments for a more enjoyable riding environment.

There are opportunities to formalise the sharing of service roads with vehicles to make this space increasingly safer for cyclists. The installation of traffic calming measures to reduce vehicle speeds in some locations could increase safety, and enhance awareness of cyclists.

However, service roads do not extend the full length of both Springvale Road and Dandenong Road, which may interrupt this cycle network. Other routes will need to be identified to ensure continuation of those journeys are not interrupted.

This could include widening of footpaths to become a shared path where appropriate, narrowing the road in key locations to included protected bike lanes, or re-routing cyclist traffic elsewhere.



## Public Transport

The Monash Boulevards are both well serviced by public transport with key bus routes running down the length of Springvale Road, whilst Dandenong Road has a bus route running along most of its length. The majority of the Boulevards are within a 400m walk to a bust stop.

In addition, the train station at Glen Waverley provides additional public transport catchment to some sections of Springvale Road.

Whilst there is good access to bus stops, there is typically little amenity at the bus stops, with little to no buffer from the high flow of traffic along Springvale and Dandenong Roads.

Where possible, it would be beneficial to utilise the outer separator between the main roads, and the service road, to accommodate a safer, more user friendly environment for bus patrons. This upgrade could extend to include raised thresholds over the service road, to slow down traffic as users cross the road to the bus stop, and additional landscaping and canopy cover.

## Future Transport Projects

There are a number of significant transport projects identified by the Victorian State Government, which could impact on accessibility in the Boulevards. These projects include:

### Suburban Rail Loop

The Suburban Rail Loop (SRL) will connect people via frequent train services to Monash University, and Glen Waverley Activity Centre, which are key nodes along the Monash Boulevards project.

The proposed Monash University Station is some distance (1.4km approx.) from Dandenong Road however the Glen Waverley station will be within walking distance at less than 400m from Springvale Road.

Planning works for Stage 1 of the SRL are currently underway.

### Wellington Road Light Rail

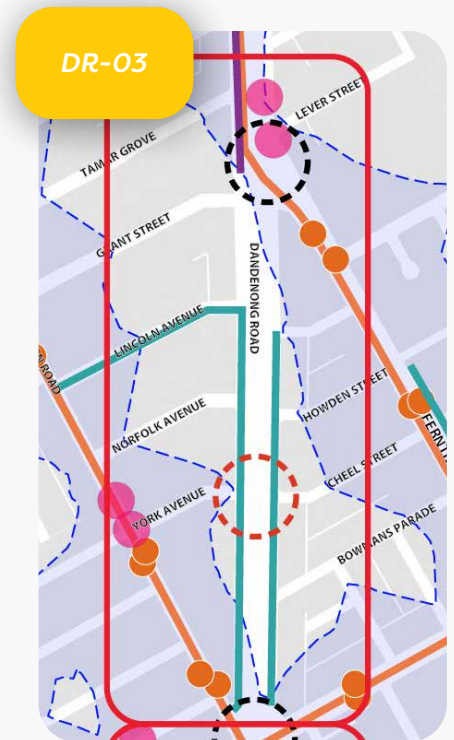
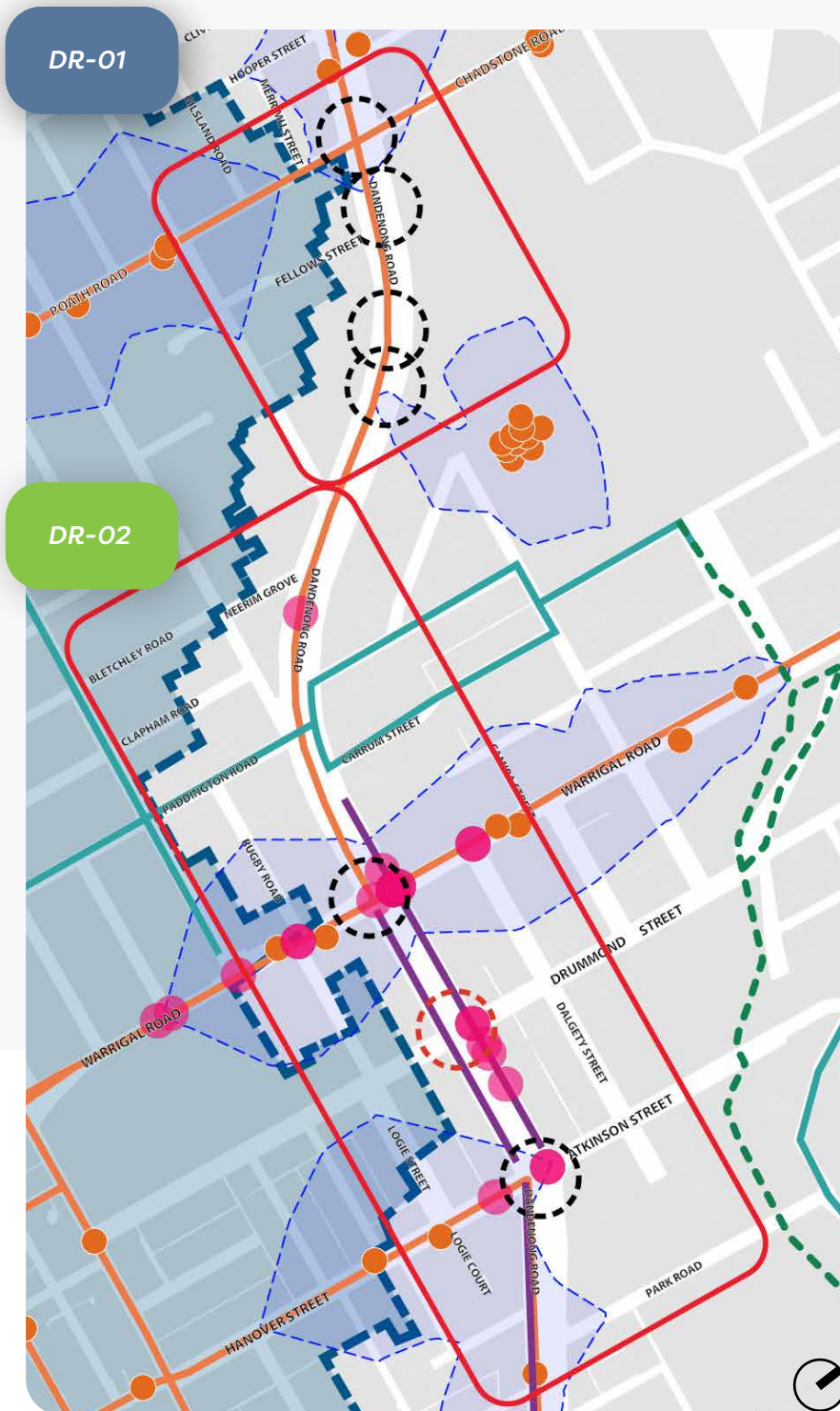
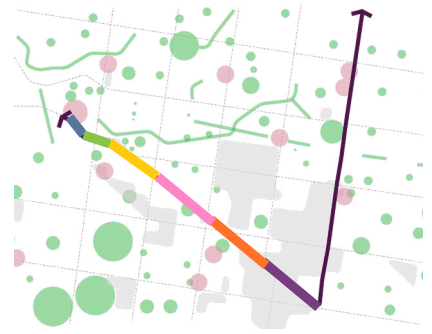
The proposed light rail extension would connect Monash University to Chadstone Shopping Centre, with one route proposed along Wellington Road. This would provide a well needed public transport route adjacent to Dandenong Road.

The current status of this project is unknown.

### Westall Road Extension

The extension is proposed on an existing road reserve from the intersection of Westall Road/Princess Highway to the Monash Freeway. Some of the benefits include decreasing traffic congestion and freight on parallel local roads, such as Springvale Roads, and, addressing the current traffic delays to and from the Monash National Employment and Innovation Cluster.

Although this project is identified by the Government it remains unfunded.

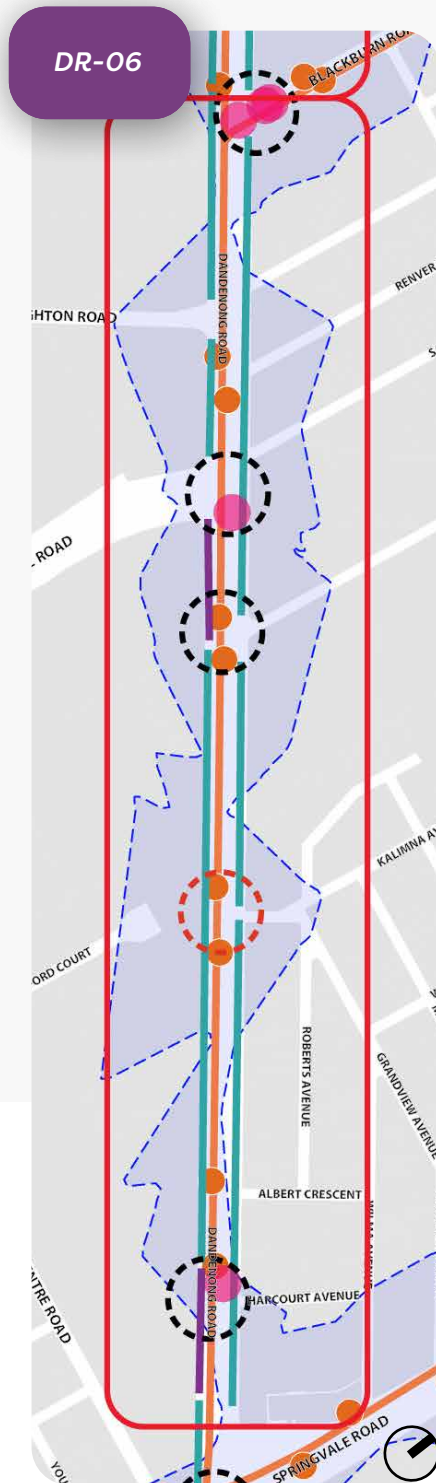
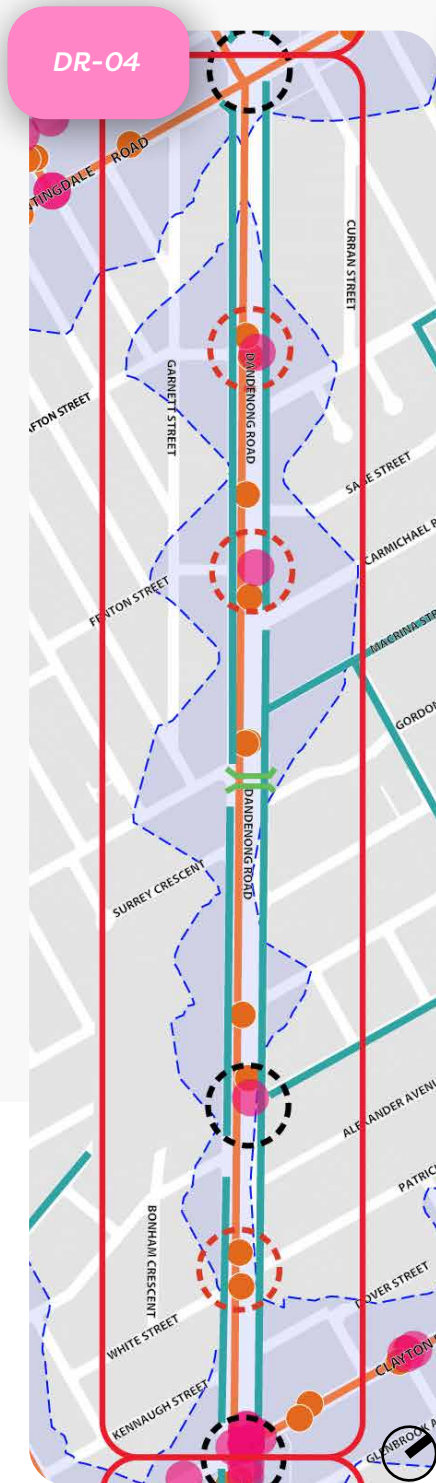


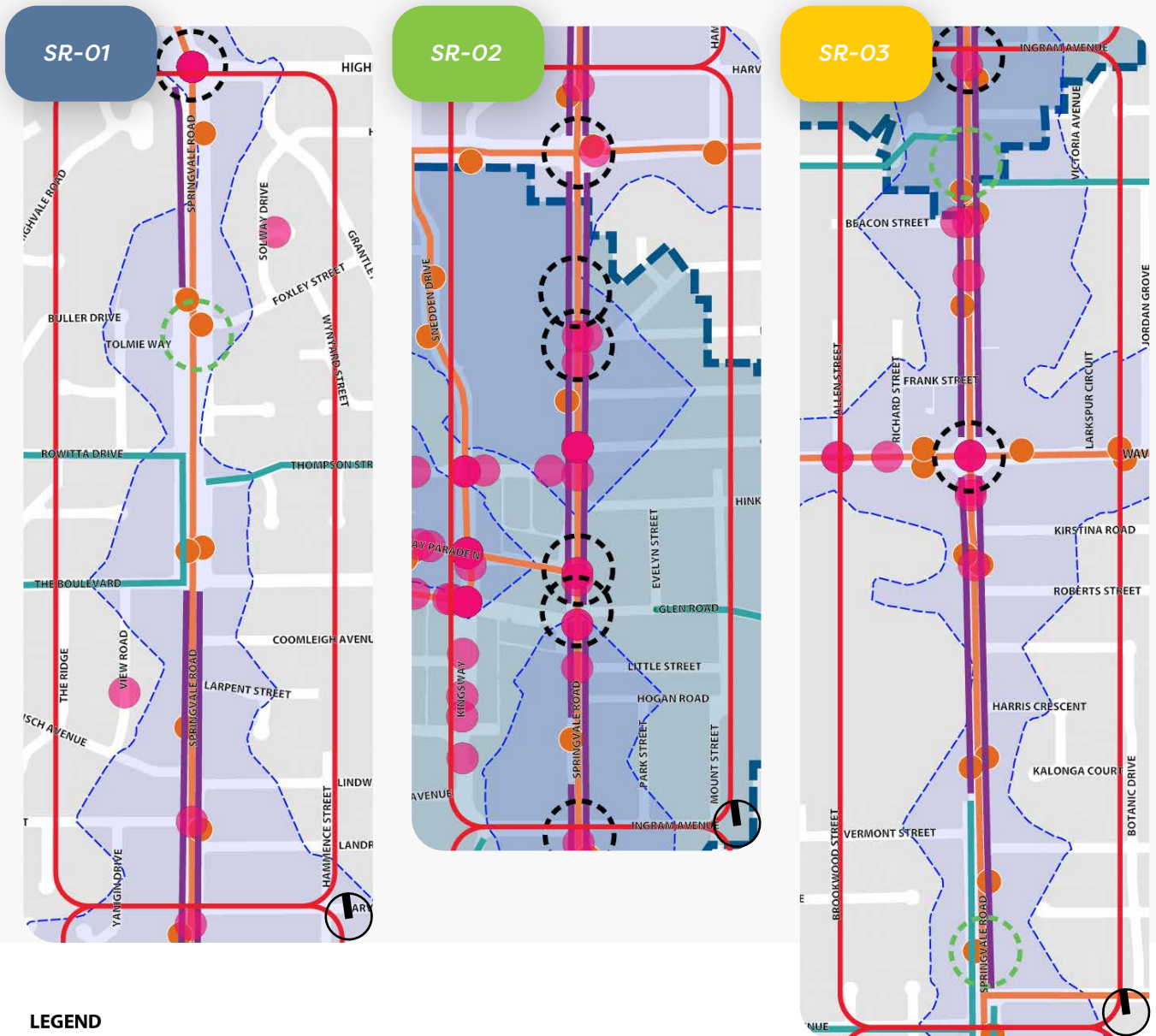
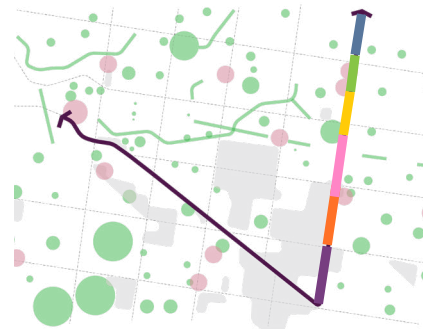
#### LEGEND

- ▬ Sub-Precinct Boundary
- ▬ Property Boundary
- - - Residential Areas Fronting the Boulevards
- ▬ Bus Network
- Bus Stop
- ▬ 200m Catchment to Bus Stop
- ▬ Existing Shared Paths
- ▬ Existing Low-Traffic Stress Cycling Routes
- ▬ No Service Lane
- Pedestrian Crash Locations
- Signalised Intersection
- ▬ Signalised Pedestrian Crossing
- ▬ Unsignalised Pedestrian Crossing
- ▬ Pedestrian Overpass
- ▬ Train Station 800m Catchment

Figure 18. Dandenong Road - Access and Movement Analysis





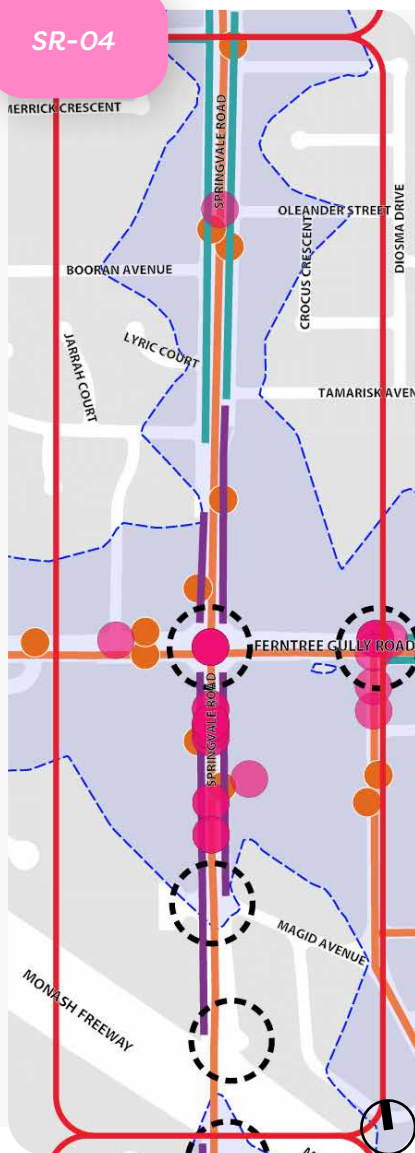


#### LEGEND

- ▬ Sub-Precinct Boundary
- ▬ Property Boundary
- ▬ Residential Areas Fronting the Boulevards
- ▬ Bus Network
- Bus Stop
- ▬ 200m Catchment to Bus Stop
- ▬ Existing Shared Paths
- ▬ Existing Low-Traffic Stress Cycling Routes
- ▬ No Service Lane
- Pedestrian Crash Locations
- ⊙ Signalised Intersection
- ⊙ Signalised Pedestrian Crossing
- ⊙ Unsignalised Pedestrian Crossing
- ▬ Pedestrian Overpass
- ▬ Train Station 800m Catchment

Figure 19. Springvale Road - Access and Movement Analysis

SR-04



SR-05



SR-06





## Private Motor Vehicles

The majority of road users are people in private vehicles, commuting along the corridors for work, education and for day to day needs. The service roads provide more of a local role. They provide access to homes, businesses and some public transport services.

Whilst there are opportunities to enhance some of these service roads for pedestrian and cyclists, the movement of private vehicles should not be excessively reduced. Calming of traffic, including raised thresholds, and kerb outstands are ways that traffic can still flow freely whilst making drivers more aware of their surroundings as they have to share the roads with cyclists and pedestrians.

## Traffic Volumes

Figure 20 and Figure 21 opposite outline the number of vehicles using the Boulevards each day. It demonstrates that some sections of Dandenong Road and Springvale Road are more heavily trafficked than others. It also identifies a number of intersections where there are substantial traffic volumes in all directions.

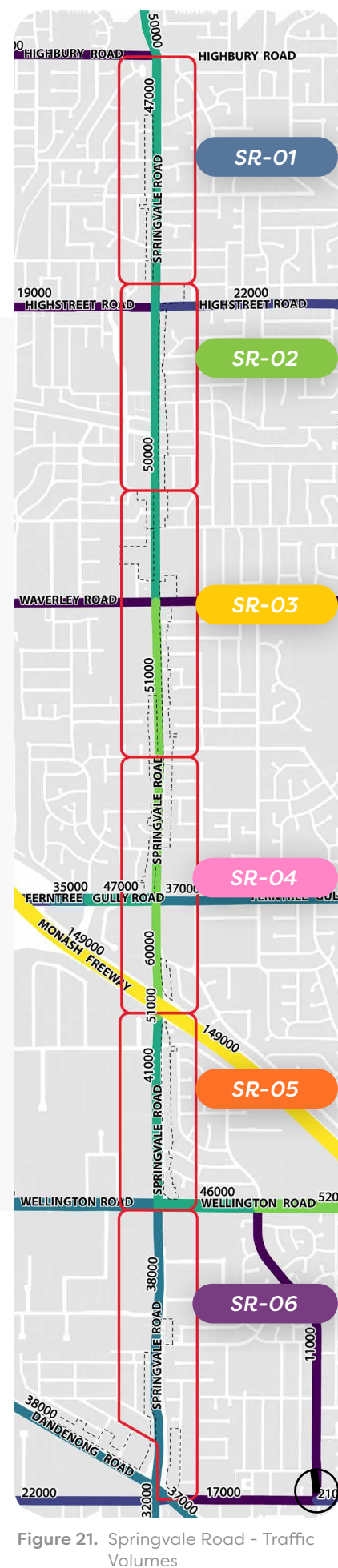
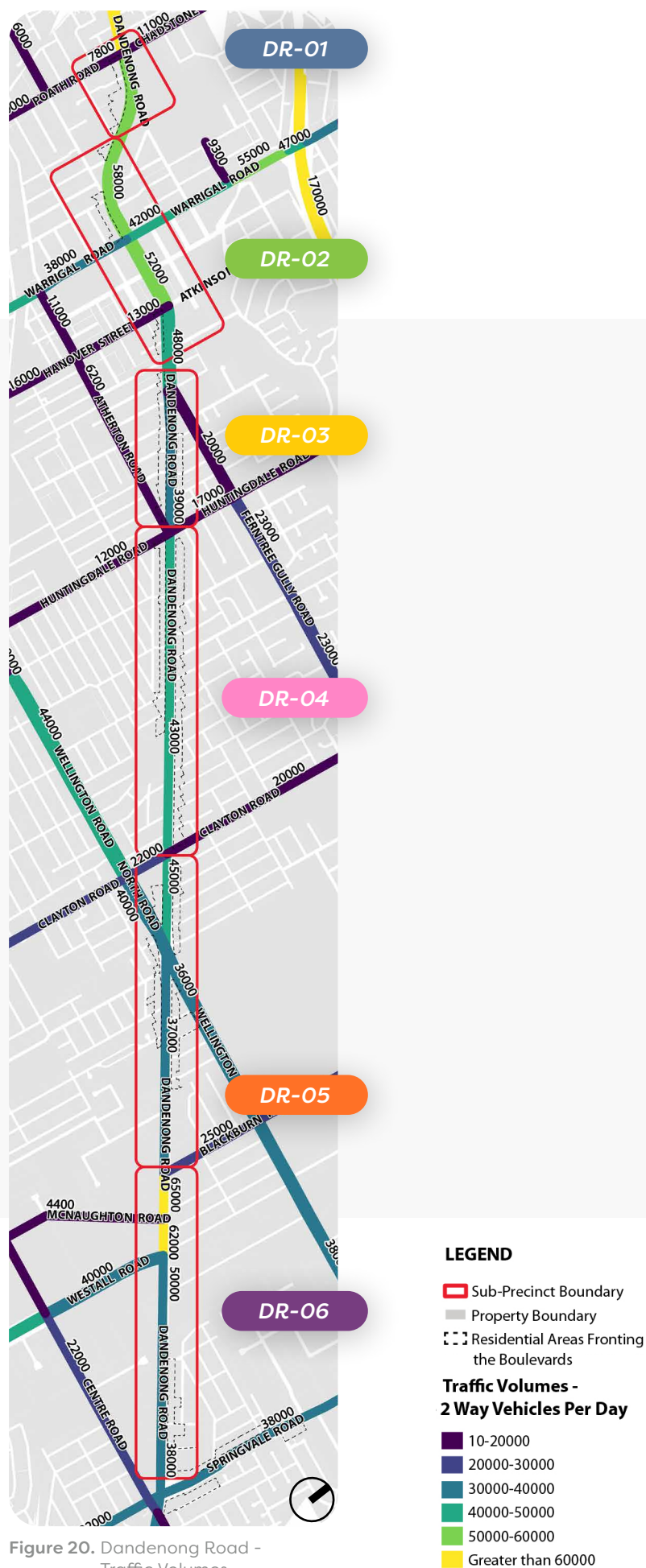
The volume of traffic is noticeable as a pedestrian or cyclist, or as a resident living along or adjacent to the Boulevard. Housing is likely to be more desirable where there are lower volumes of traffic along the Boulevards.

The analysis opposite identifies some of these areas where there is a noticeable reduction in traffic. These include:

- Dandenong Road - Between Ferntree Gully Road and Huntingdale Road.
- Dandenong Road - Between Wellington Road and Blackburn Road. This location is nearby Monash University
- Dandenong Road - Between Westall Road and Springvale Road. This location also benefits from a local activity centre.
- Springvale Road - Between Dandenong Road and Wellington Road

Where the traffic volumes are the highest, the service road will play an important role in providing respite for walkers, cyclists and residents. Similarly infrastructure at pedestrian crossings in these locations should be enhanced to ensure safety and comfort.





# Service Road Opportunities

The analysis outlined in Section 3.3 and 3.4 identifies the opportunities to enhance the service roads along the Boulevards to make them attractive destinations for walkers and cyclists.

Service roads generally follow the length of the Boulevards on both sides of the road. They are regularly designed to be

larger than is needed, leaving substantial areas of unoccupied pavement.

The options on this page investigate what changes could be made to the existing service road (Figure 22) network along the Boulevards, in order to provide a higher amenity environment for pedestrians and cyclists, without having a detrimental effect on vehicle

movements. Some locations are not suitable to be reconfigured, due to truck movement requirements that would compromise safety of other road uses and pedestrians. Whilst these options will not be applicable along the entire length of the Boulevards, certain elements of each option could be applied in suitable locations.

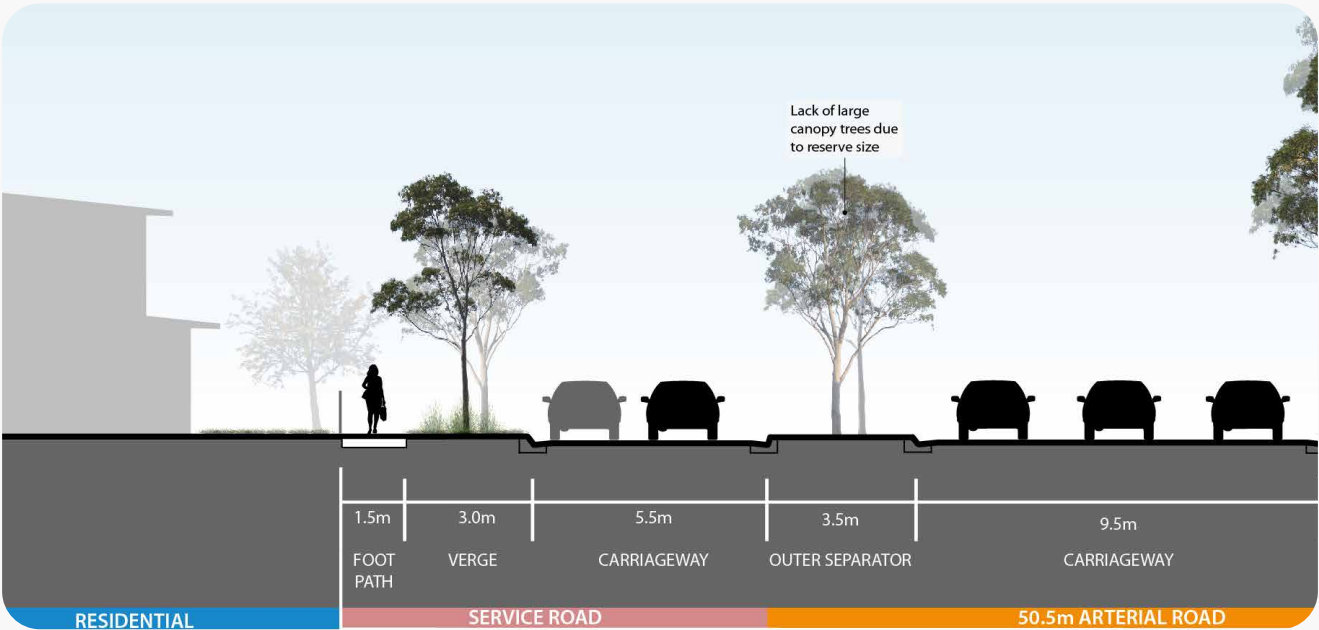


Figure 22. Existing Service Road (Typical)

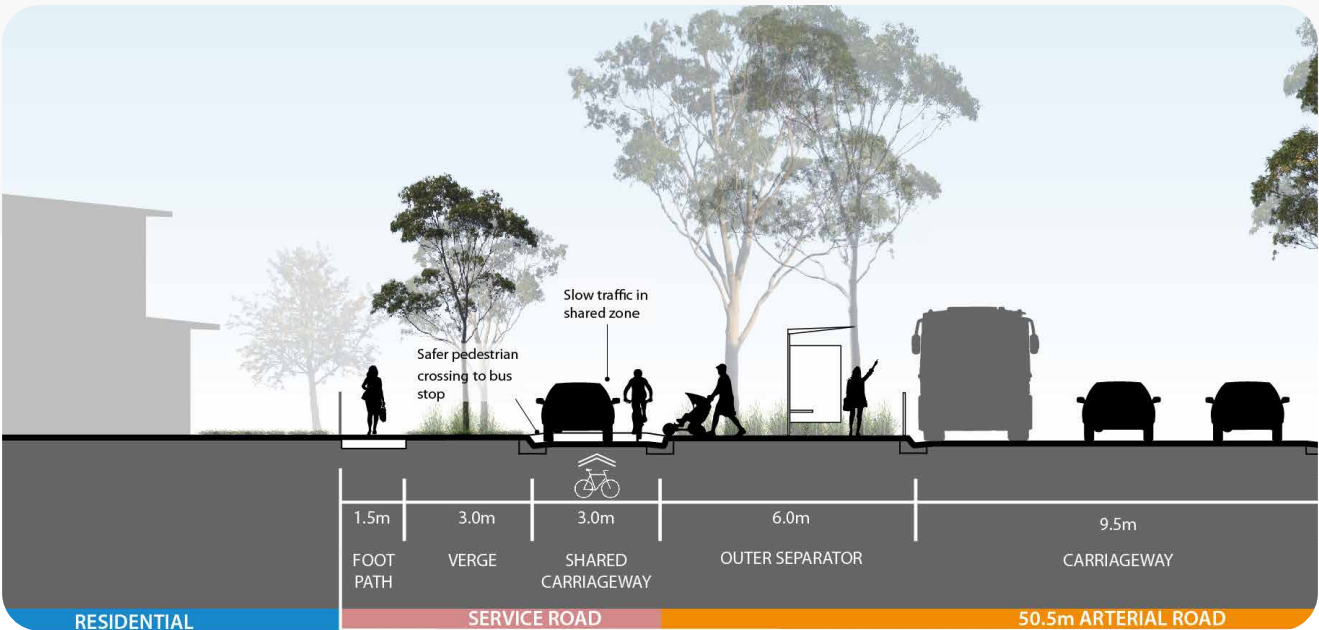


Figure 23. Reconfigured Service Road - Option 01



### Option 01

See Figure 23. In key locations, the service road could be narrowed to facilitate safe crossing into the outer separator, in order to access public transport stops. A larger refuge could be provided whilst waiting against the busy road. Raising the crossing would also help to prioritise pedestrians over the vehicle, and calm traffic, allowing for a shared cycle/vehicle zone to be created with painted sharrows.

### Option 02

See Figure 24. In key locations, there may be the opportunity to increase the presence of greening and open space by narrowing the carriageway, and widening the adjacent verges. Additionally, the footpath could meander through the verge, within a corridor of trees. This could be accommodated where lot consolidation has occurred, and frequent driveway crossover is not required.

### Option 03

See Figure 25. In some locations, this option already exists along the Boulevards. A shared carriageway enables cyclists and slow moving vehicles to use the road, whilst a linemarked dedicated cycle path on the outer separator side of the service road provides for cyclists travelling in the opposite direction. Safety can also be improved by installing flexible bollards between the painted cycle lane and the carriageway.

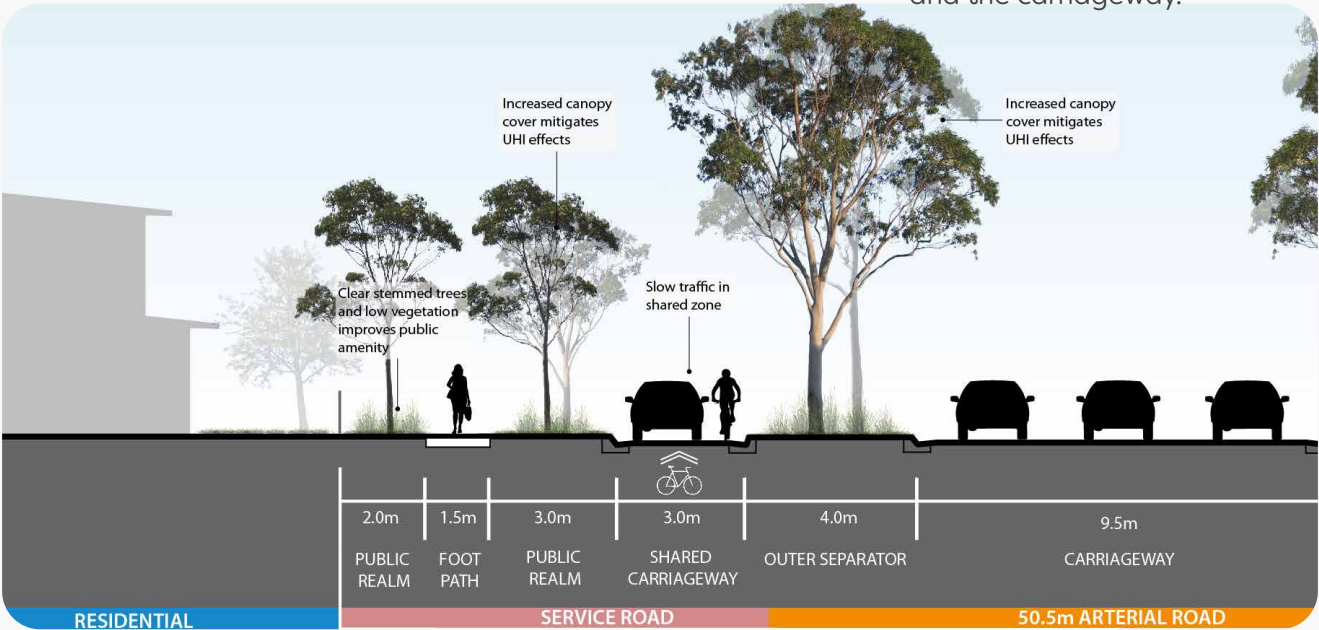


Figure 24. Reconfigured Service Road - Option 02

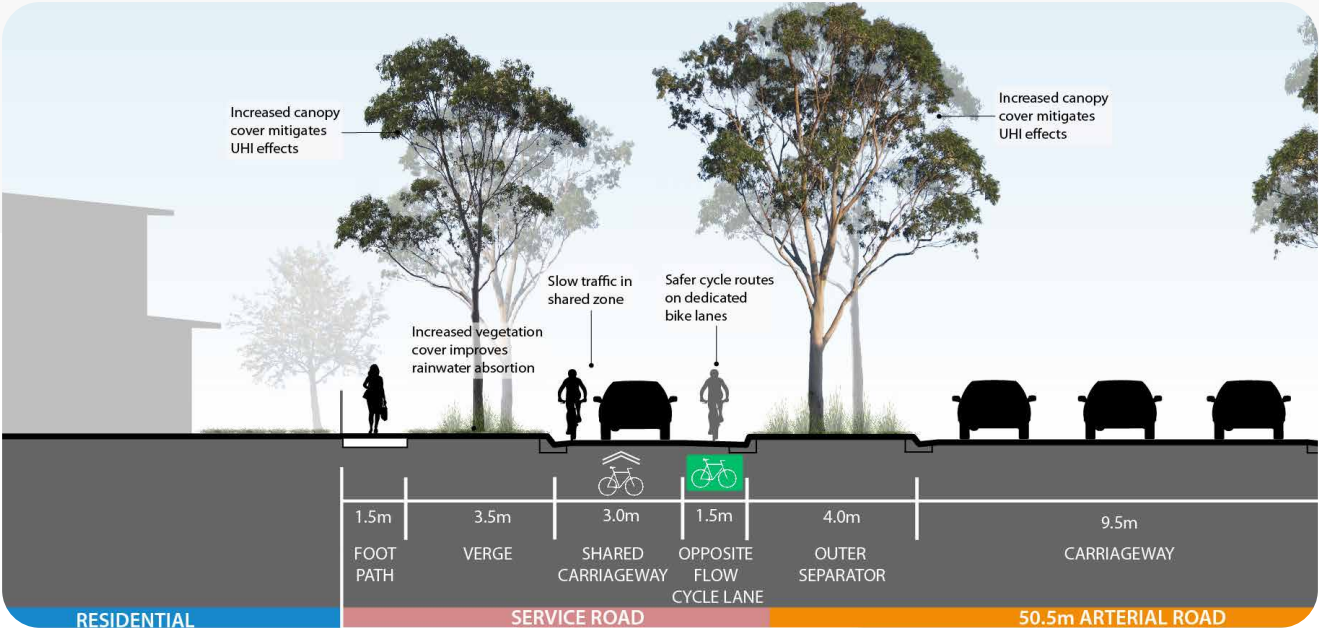
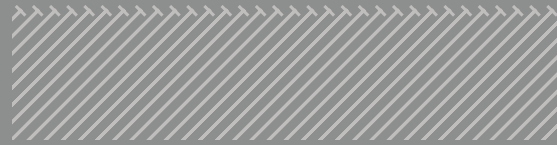


Figure 25. Reconfigured Service Road - Option 03



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