Appendix A
Existing Conditions Analysis

Joint Venture

Key character attributes

Urban character areas refer to areas within the Structure Plan Area that possess distinct physical, architectural, cultural and functional characteristics. These areas are typically defined by their physical and land use attributes, which may include natural and man-made features.

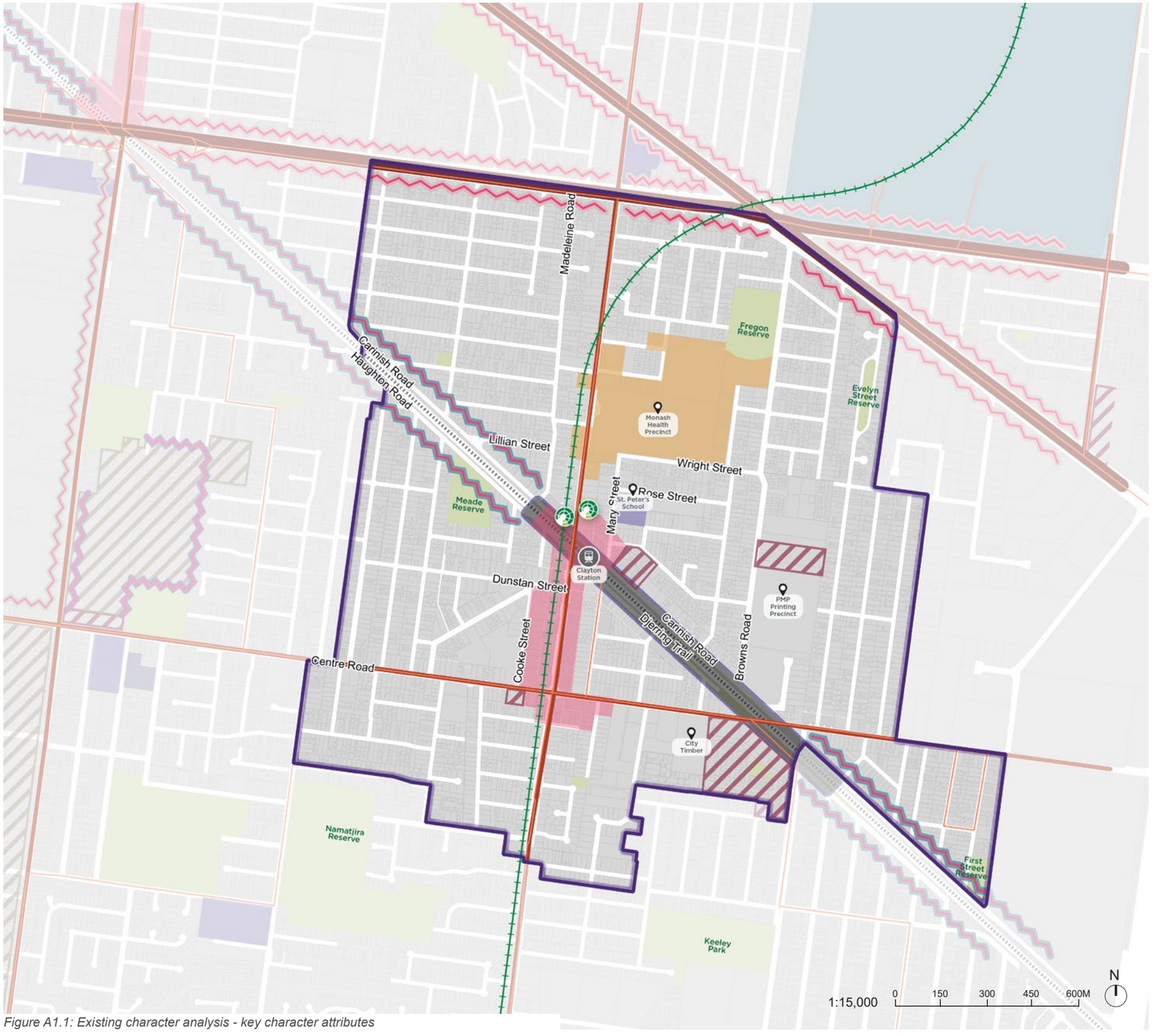


Figure A1.1: Existing character analysis - key character attributes

Legend

SRL station

Structure Plan Area

Land Use

Built Form

Public Open Space

Health / Medical

Education

Mixed Use / Core Activity Centre

Recent Residential Redevelopment

Movement

Existing Bus Route

Highway

Arterial Roads

Level crossing removal

Barriers to crossing: highway

Barriers to crossing: rail line

Summary

Following a review of the background documents and local policy, desktop and site analysis was undertaken to understand the character elements and features within the Clayton Structure Plan Area.

A number of urban typologies and character study areas have been defined. The following is a description of the key character drivers for the Clayton Structure Plan Area.

Land use and key destinations

State and local policy identify Clayton as a Major Activity Centre (MAC), anchored by a major health precinct, and forming part of the Monash National Innovation and Employment Cluster (NEIC).

Further growth is identified to occur generally along Clayton Road within the MAC, adjacent to the Monash Health Precinct, and north to the Monash University campus. These areas of future growth are indicated by the application of the RGZ.

The Clayton Structure Plan Area overlaps with the Monash Structure Plan Area to the north-east, providing opportunity to strengthen the relationship between the two Structure Plan Areas.

Key destinations in the Clayton Structure Plan Area include:

- The existing Clayton Station: the station building is a prominent landmark building, with central location in heart of the Clayton MAC
- Level crossing removal: high quality public spaces including landscape, sport and recreation spaces in linear park form, plus additional parking areas
- Clayton Road: Traditional ‘Main Street’ form of mixed-uses set along main through route on north-west axis linking between other destinations
- Monash Health Precinct: substantial public health destination with variety of health facilities and associated services, centrally located north of the existing Clayton station, accessed from Clayton Road
- Public Parks: a variety of public parks and reserves of different sizes, provide valuable natural features, recreation space and landscape setting for surrounding residential areas
- Industrial area to east of Clayton Structure Plan Area: industrial employment uses between Princess Highway and Centre Road
- Monash University campus.

Urban structure

Clayton Road and the rail line are primary organising elements of the Clayton Structure Plan Area. Clayton Road forms the central spine of the MAC with the heart of the centre to the south of the existing Clayton station. The highways of Princes Highway / Dandenong Road and North Road / Wellington Road intersect and are defining structural elements, that provide for through movement and connections but also create barriers to local movement. Centre Road is a further structural element, an east-west axis, intersecting with Clayton Road.

Key streets

Clayton Road is a key street providing a traditional ‘main street’ with a mix of uses set along the north-west aligned route. Centre Road is of a similar scale on east-west axis. Higher-order, larger-scale roads include highways of North Road/Wellington Road and Dandenong Road/Princes Highway – a key arterial through the Clayton Structure Plan Area, running diagonally through the north-west portion. The Clayton Structure Plan Area also features two east-west running and one north-south running main road corridors providing regional connections.

Topography and natural features

On balance the topography of the Clayton Structure Plan Area is generally flat with no prominent natural features. The topography becomes more challenging between the existing Clayton Station and Monash Health Precinct sloping upwards along Mary Street. Monash Health Precinct forms a localised high point in the Clayton Structure Plan Area.

Built form

The majority of the Clayton Structure Plan Area is developed with 1 to 2-storey dwellings. As there has been limited change in the Clayton MAC, buildings currently range from 1 to 3-storeys. More recent developments are emerging at 3 to 6-storeys along Burton Avenue and the corner of Haughton and Centre Road. Monash Health Precinct also has taller built form ranging in height from 20-50 metres. The majority of industrial and manufacturing building heights range between 8-12 metres.

Activity areas

The main activity area is the Clayton MAC, a highly accessible centre offering a wide range of shops and services. Huntingdale Neighbourhood Activity Centre (NAC) sits just outside the north-west edge of the Clayton Structure Plan Area and services the adjacent community and the Huntingdale Industrial Precinct.

Elements contributing to character

Main drivers of character within the Structure Plan Area for Clayton are presented in analysis in the following pages. The analysis highlights the main contributors to character and their distinguishing characteristics across the Structure Plan Area.

The main character drivers identified are:

- Existing land uses, including predomination of residential use, concentration of mixed-uses on Clayton Road, health and education campuses and industrial areas
- Key destinations that drive activity and movement, including Clayton Station, the main street (Clayton Road), Monash Health Precinct and Monash University
- Key movement corridors that form notable structural elements, including the rail line that dissects the Structure Plan Area diagonally and major highways to the north of the area. While facilitating ease of through movement these corridors also hinder local connectivity
- Changes in topography are limited, but landscape character is important including an array of public parks, the tree-lined character for many residential streets and the rich landscape setting of Monash University campus
- Built form contributes to character including building type, heights, setbacks and age.

The elements with a high and mid influence on character are described on the following pages.

Land use

The Clayton Structure Plan Area is predominantly residential in use.

Key non-residential uses are summarised below:

- Activity Centres: Clayton Major Activity Centre (MAC) offers a substantial commercial and retail area running along Clayton Road, which offer potential for redevelopment
- Health: The Monash Health Precinct comprises a range of health facilities, predominantly to the east of Clayton Road. The built form of health facilities varies from more recent buildings of larger scale and more contemporary architecture, through to smaller-scale buildings, associated servicing, parking and limited landscaping
- Industrial: Substantial areas of industrial land, are located in smaller-medium sized areas within the Structure Plan Area for Clayton and larger areas, on the edges outside the Structure Plan Area. These industrial areas often interface with residential neighbourhoods
- Public Open Spaces: The Clayton Structure Plan Area offers a variety of public open spaces, ranging from smaller parks to larger reserves, with Namatjira Park the largest
- Transport Uses: Clayton rail station is centrally located in the MAC, north of the main street shopping street, shops and services along Clayton Road, and south of the Monash Health Precinct. The rail line, running diagonally through the Structure Plan Area, is an important structural element in the urban form, creating a visual boundary along its route, and provides a high-quality public space in the heart of Clayton. Highways and main roads form further key pieces of transport infrastructure and, structural elements for urban form and uses.

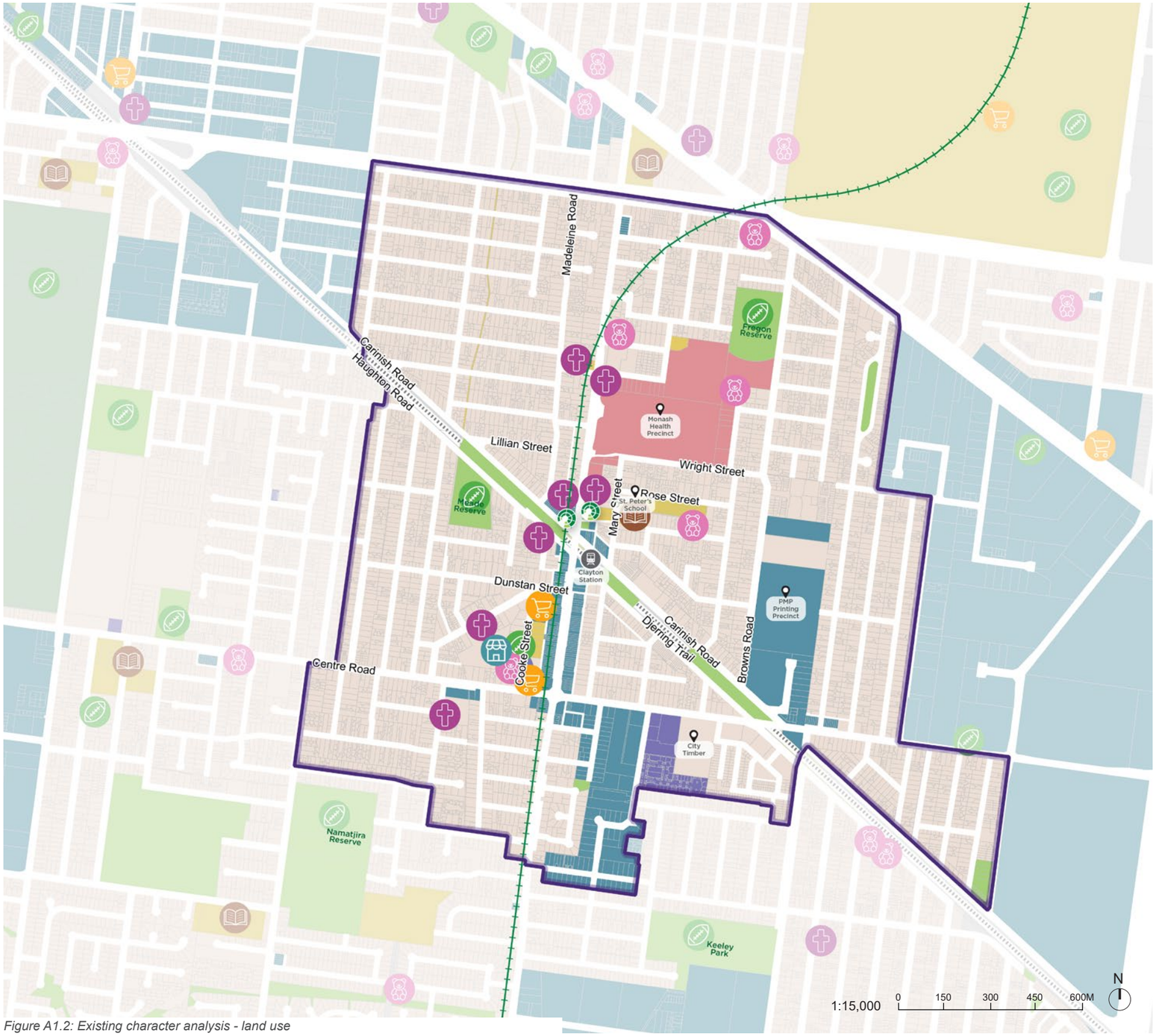


Figure A1.2: Existing character analysis - land use

Legend

- SRL station
- Structure Plan Area

Community Facilities

- Supermarket
- Child Care
- Community Centre
- Place of Worship
- Sports and Recreation Facility
- Primary School

Existing Land Use

- Residential
- Commercial / retail
- Education
- Mixed-use
- Health / medical
- Open space
- Public use

Community facilities

The Structure Plan Area for Clayton has a broad range of community facilities that provide valuable services to the local community, including residents that live in the area, employees that work in the area, students studying in the area and visitors. Facilities also server broader catchments with people traveling from wider areas to access key services including the transport network (such as commuters), health services, and education uses.

Clusters of community uses are located centrally along Clayton Road main street/ activity centre and to the north of the Structure Plan Area on the south side of Dandenong Road. Aside from these groupings, other community facilities are dispersed through the Structure Plan Area, including the following:

Education uses include:

- Monash University campus located to the north-east of the 1600 metres catchment, overlapping with the neighbouring Monash Structure Plan Area
- Three primary schools within the Structure Plan Area including Clayton North Primary at the northern end of Clayton Road, St. Peter's Primary in central Clayton, Clarinda Primary to the west on Centre Road. St. Andrew's Primary to the south of Bald Hill Park, Huntingdale Primary to the west just outside the Structure Plan Area
- Secondary schools include Westall Secondary College and South Oakleigh College (just outside the Structure Plan Area)
- Other education uses, including early learning.

Sport and recreation facilities include:

- Community sports pitches and open space in the under croft of the elevated rail line as part of the level crossing removal
- Children's play areas in reserves and open spaces
- Reserves throughout the Structure Plan Area that provide space for informal and formal sport and active recreation, including leisure routes for active travel
- Reserves with large sports pitches for formal recreation including ovals (cricket, football).

Other community facilities include:

- Community Centres, including Clayton Community Centre, Clayton Community Club/RSL
- Health services – notably concentrated in Monash Health Precinct area adjacent to Clayton Road
- Child Care and early learning
- Places of Worship – several churches of different denominations
- Shops and services including retail, food and drink in activity areas, closely aligned to movement corridors, including access to public transport (rail, buses) on Clayton Road
- Clayton Library.

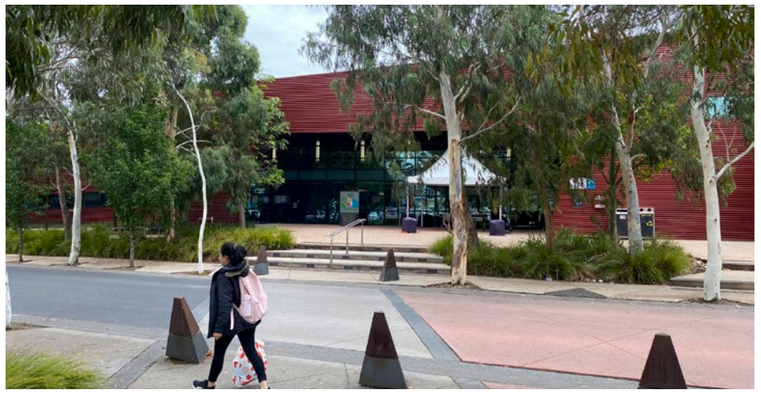


Figure A1.3: Clayton Community Centre

Figure A1.7: St. Peter's Catholic Church, Clayton

Figure A1.4: Recreation and open space, in level crossing removal area

Figure A1.8: Supermarket, set back from the main street, central Clayton

Figure A1.5: Main street shops and services along Clayton Road in Clayton MAC

Figure A1.6: Clayton Community Club / Clayton RSL

Movement and access

Movement through the Clayton Structure Plan Area is facilitated by a network of streets arranged in a broad grid structure. In common with other suburbs, the grid of streets is structured at different scales for different types of movement, including through-movement (for traffic mainly passing through) and local trips (for traffic moving within). More detail on the grid of streets is provided on the next page.

Key connectivity issues include:

- Movement networks in the Clayton Structure Plan Area include provision for public transport, active travel, walking and cycling but the predominant form of movement is vehicular traffic on roads
- The highways in the Structure Plan Area provide clear passage for vehicles moving through, but create substantial barriers to local movement due to the large scale of routes, particularly the highways to the north of the area (North Road-Wellington Road and Princes Highway-Dandenong Road)
- The intersection of the two highways, North Road and Princes Highway, is a particularly busy junction, and are challenging to cross for pedestrians and cyclists. The scale creates a challenge for relating land uses and form on opposite sides
- The regular grid pattern common across the Structure Plan Area facilitates ease of movement in all directions
- The existing Clayton Station is at the heart of the Structure Plan Area, both as a primary form of movement providing connectivity to the wider city region and also as a built form landmark, identifiable with the new station building and associated public realm improvements delivered as part of the level crossing removal project
- The rail line dissects the Structure Plan Area diagonally, running at a 45 degree angle to the rectilinear grid of streets. As such, the rail line creates a barrier to movement, where it runs at-grade towards the south-east edge of the Structure Plan Area, and more notably to the west of Clayton Road from near Madeleine Road. The recent level crossing removal project around the existing Clayton Station includes an elevated section of the rail line and construction of the new Clayton building. The under-croft space creates much enhanced movement and access locally, boosting north-south connectivity in the Clayton Structure Plan Area, with provision of high-quality public space including paths, sport and recreation facilities
- Pedestrian crossings are present at several intervals along the main routes and highway, with four-way crossings at major intersections, shown in the Figure on this page
- Walking and cycling are supported with footpaths on most streets, and some dedicated sections of on-road cycle lanes. Trails run through public parks providing off-street routes of active travel, linked to the footpaths

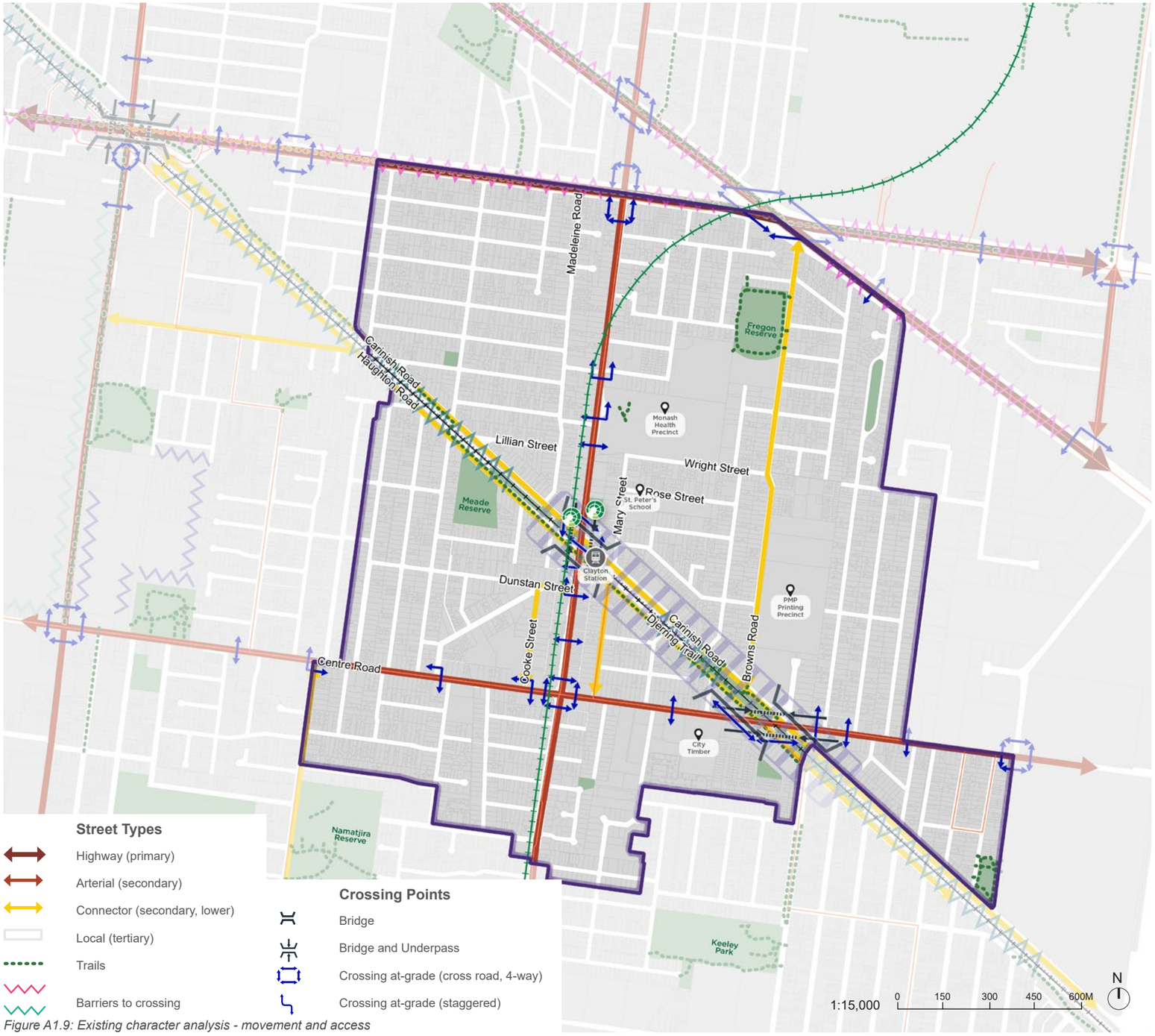


Figure A1.9: Existing character analysis - movement and access

Figure A1.10: Clayton Road, pedestrian crossings, elevated rail and station

Figure A1.11: Clayton Road Activity Centre

Street width

Streets within the Structure Plan Area for Clayton are largely arranged in a grid structure, with a broader grid of wider, higher speed routes, and a finer grain grid for local trips within.

- At the larger scale of the grid, highways and larger-scale streets provide direct connections into the wider city network. These routes are described as Key Streets in the previous sections. The larger scale grid of streets is clearly represented by the grid square of North Road – Clayton Road – Centre Road - Huntingdale Road, with approximately 1.6km between parallel running main routes and intersections
- Within the larger suburban blocks (approx. 1.6km x 1.6km) are networks of lower order streets. Within the Structure Plan Area these smaller scale streets are predominantly arranged in interconnected grids, commonly with more rectilinear blocks for residential and industrial land uses. This 'grid-iron' street pattern is particularly apparent between North Road and Centre Road. In addition to rectilinear residential blocks to the south of Centre Road there are also more cul-de-sacs. To the north of Wellington Road, the movement network has some rectilinear blocks either side of Clayton Road.

Key street types are identified:

- Large main roads and highways are the highest-order (primary) streets. This widest form of street ranges from approximately 40 metres to 60 metres wide. These include the Princes Highway (a 6-lane highway, 3 in each direction, plus service roads) and North Road (6lanes with wide central landscape median, 3 lanes in either direction, plus bus lanes)
- Main roads (secondary, in street hierarchy) include arterial and connector routes ranging from approximately 20 to 25 metres wide, including Centre Road and Clayton Road
- Local streets (tertiary in hierarchy) are lower-order streets for local traffic, approximately 15 metres wide. These include residential streets, and within industrial areas, some tree-lined.

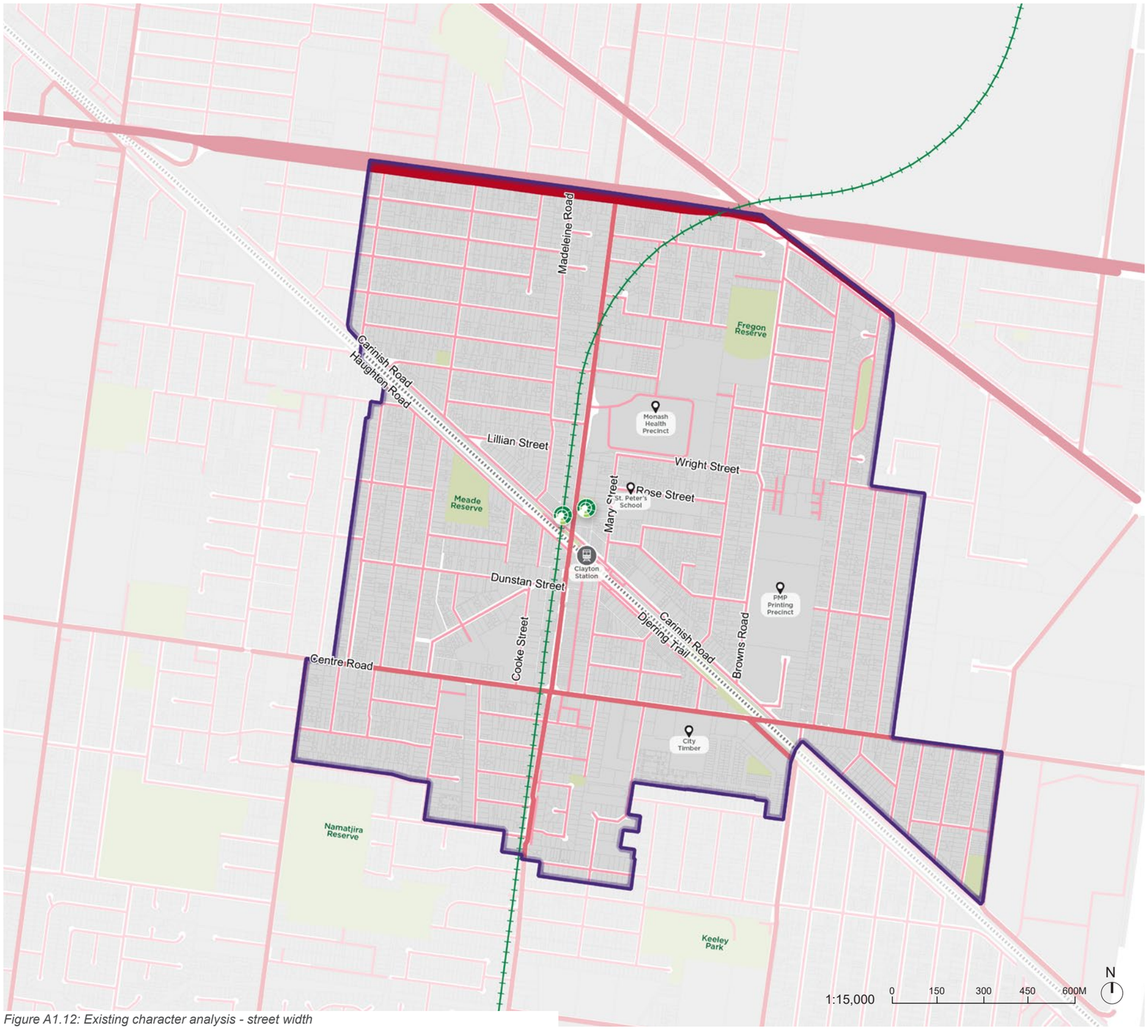


Figure A1.12: Existing character analysis - street width

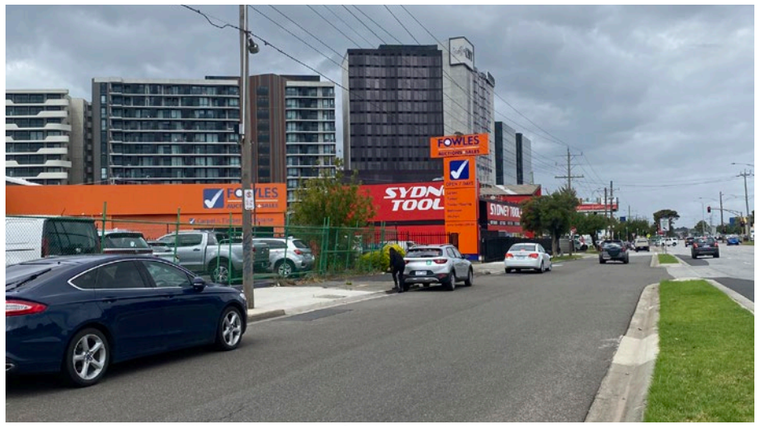


Figure A1.13: Princes Highway, example of widest street (6 lanes central carriageway with adjacent service routes.

Figure A1.14: Main road example, Centre Road

Figure A1.15: Local street example, Mary Street, central Clayton

Key streets

The Structure Plan Area for Clayton contains a relatively well-spaced grid of main roads, summarised below.

Princes Highway / Dandenong Road:

Princes Highway is the highest-order road that dissects the north-east corner of the Structure Plan Area. It has a generous (approximately 60 metres) reserve width, allowing it to accommodate 6 lanes with service lanes (and trees) on either side, and large trees in the central median. The service lanes and vegetation work well to reduce the hostility of what is a 6-lane highway, providing on-street parking for the residential properties that front it. Princes Highway, particularly where it intersects with Wellington Road forms a hard barrier to pedestrian and cyclist movements from Monash University and the rest of the Structure Plan Area. The route is called Dandenong Road north-west of the intersection with North Road / Wellington Road.

North Road / Wellington Road:

North Road is an arterial road that runs east-west through the northern border of the Structure Plan Area, becoming Wellington Road where it intersects with Princes Highway. On balance within the Structure Plan Area, North Road includes 8 lanes including a dedicated bus lane traveling in each direction. The 8 lanes are separated by a wide and substantially vegetated central median with a shared path meandering through it. The shared path terminates at Clayton Road, with a signalised intersection provided to allow pedestrians and cyclists to continue along the north side of North Road, connecting into Monash University.

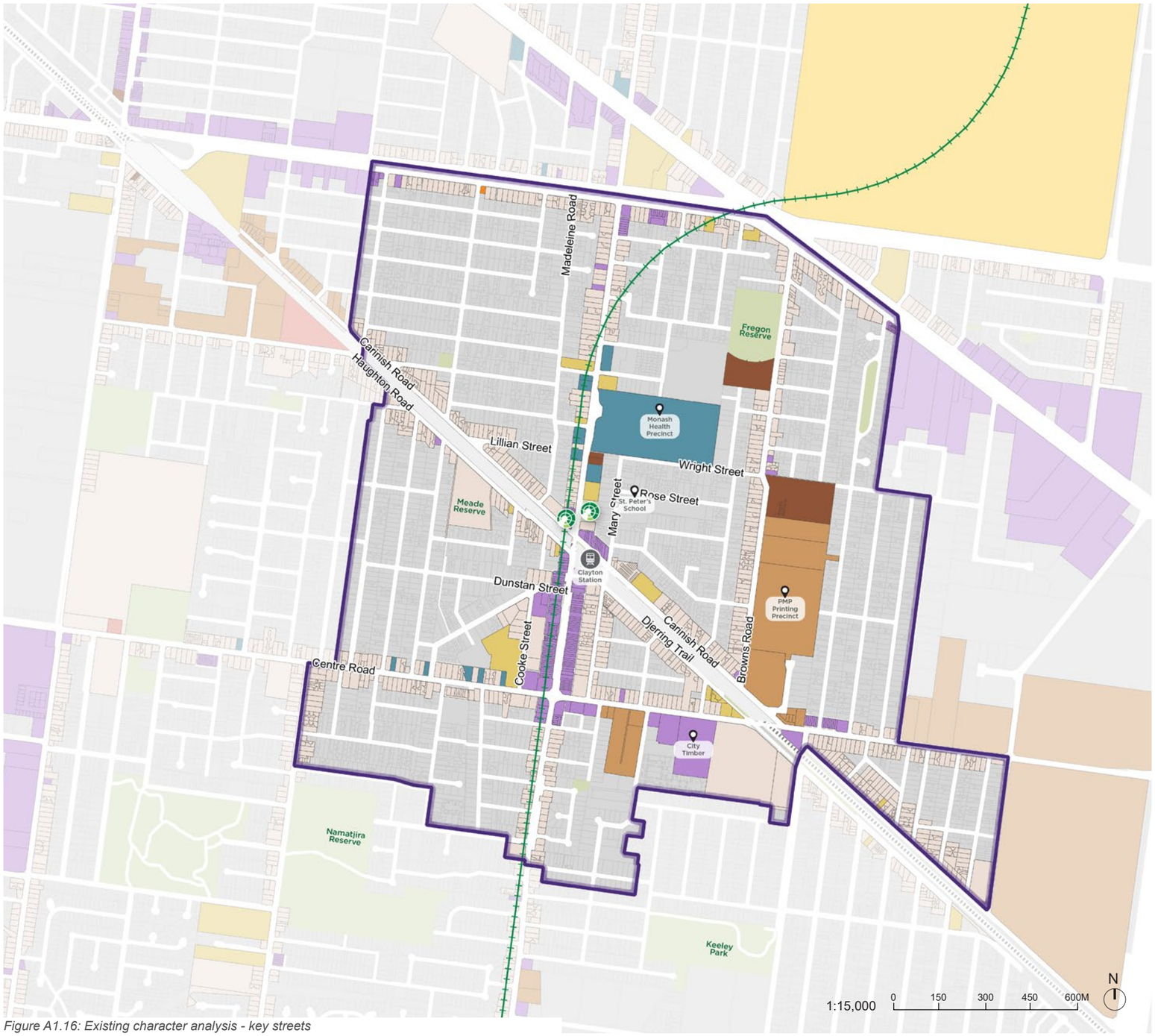


Figure A1.16: Existing character analysis - key streets

Clayton Road:

Clayton Road is a key central spine traveling north-south through the Structure Plan Area. Clayton MAC runs along Clayton Road, with the balance of the main shopping strip located to the south of the rail line, and consisting of fine-grain, 1 to 3 storey shops with angled parking and street trees on both sides. Limited redevelopment intensification has occurred. Clayton Road is a wide main street with a high volume of traffic, creating a disconnect between the eastern and western sides from a pedestrian perspective. Clayton Road is also dissected by an elevated rail line, which has the Djerring Trail running underneath it and connecting cyclists and pedestrians between the existing Caulfield Station and Dandenong.

Centre Road:

Centre Road is another key east-west street traveling through the Structure Plan Area, towards its southern edge. It has a conventional urban main road character, with two traffic lanes in each direction, and residential frontages, footpaths and canopy trees along both sides. This creates a relatively pleasant environment for pedestrians.

Figure A1.17: Clayton Road, looking south.

Figure A1.18: Centre Road, looking east.

Topography and natural features

- The Structure Plan Area for Clayton is relatively flat, particularly to the south-east (Centre Road and adjacent land including industrial areas)
- A relatively level plane extends from the south-east, in a north-west direction running broadly through the centre of the Structure Plan Area, with the rail line aligned in similar form running diagonally through the area
- View corridors include along wider streets and the rail line, that provide opportunity for longer distance views. The rail corridor is notable as it aligns with the central lower plane through the Structure Plan Area. Opportunities for longer views run parallel to the rail line, particularly where tree canopy cover is more sparse
- More subtle variances of topography in the Structure Plan Area create local level features including a relative high point at Monash Health Precinct, from where the topography generally falls to the north and the south. This local topography creates some challenges from an accessibility point of view between the existing Clayton Station and the Monash Health Precinct including for movement along Mary Street and Clayton Road.

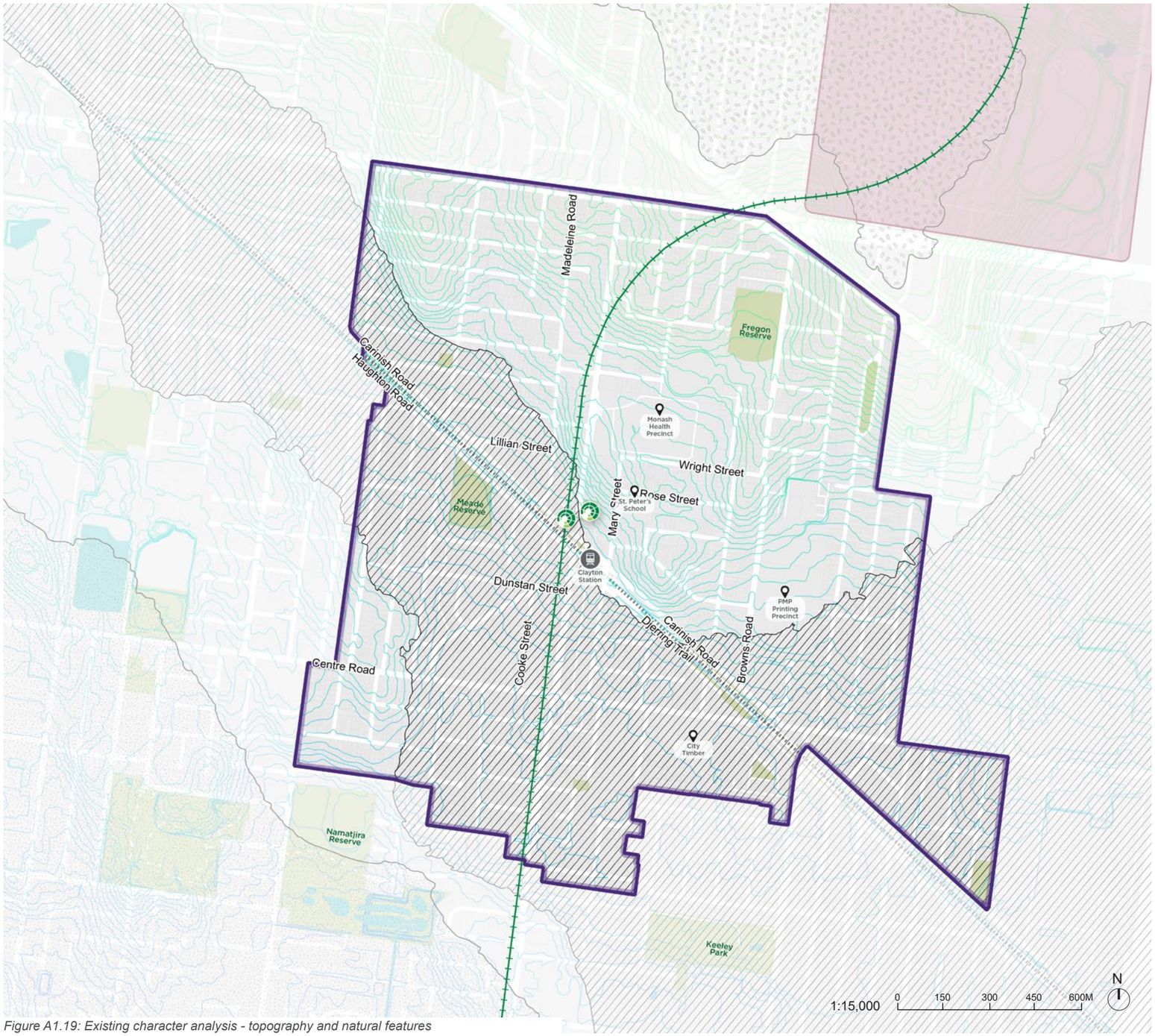


Figure A1.19: Existing character analysis - topography and natural features

Legend

- SRL station
- Structure Plan Area
- Trails
- Open Space

Features

- Low Lying Area
- High Lying Area

Topography

- 35 - 40
- 45 - 50
- 55 - 60
- 65 - 70
- 75 - 80
- 85 - 90
- 95 - 100

Figure A1.20: Flat topography in residential areas

Figure A1.21: Mary Street - relatively more challenging topography between Clayton Station and Monash Health Precinct.

Figure A1.22: Namatjira Park, lower ground, including Namatjira Wetlands

Landscape character

Components of the landscape character in the Clayton Structure Plan Area are described as follows:

- Landscape features in suburban blocks – Suburban residential is the predominant land use in the Structure Plan Area and landscape features contribute to this form. Suburban streets are commonly tree-lined with street trees planted at regular intervals in landscape verges between the footpath and carriageway. Lower density suburban forms contribute to landscape character particularly through landscape features to within the front setback, noting the cumulative contribution of front setback landscape features, trees and planting in residential front gardens
- Landscape features aligned to major streets and roads – Highways including North Road and Princes Highway are tree-lined with tall, mature trees creating a strong landscape edge to otherwise hard carriageways. North Road is notable for the tree-lined central median
- Landscape features associated with the rail line – The rail line is a defining structural element, cutting diagonally through the Structure Plan Area. The central area around the existing Clayton Station provides substantial new public open space including planting, verges, sports, play and recreation facilities set in the under croft of the new elevated rail line and continuing adjacent to the new section of elevated track. Beyond this central feature of new landscape design the rail line has sections of mature trees aligned to the rail line and adjacent streets
- Public open spaces make a strong contribution to the landscape setting, particularly public parks and reserves throughout areas of suburban housing that provide valuable assets for activity and landscape settings for surrounding development
- Recreation space at primary schools contributes to a sense of landscape character and openness, particularly to neighbouring streets and properties
- The Clayton MAC in the heart of the Clayton Structure Plan Area is defined by hard landscape features, and civic amenities including benches, signage, street trees
- Smaller community assets contribute to landscape character including the remaining trees in the Avenue of Honour on Carinish Road, near Clayton RSL.

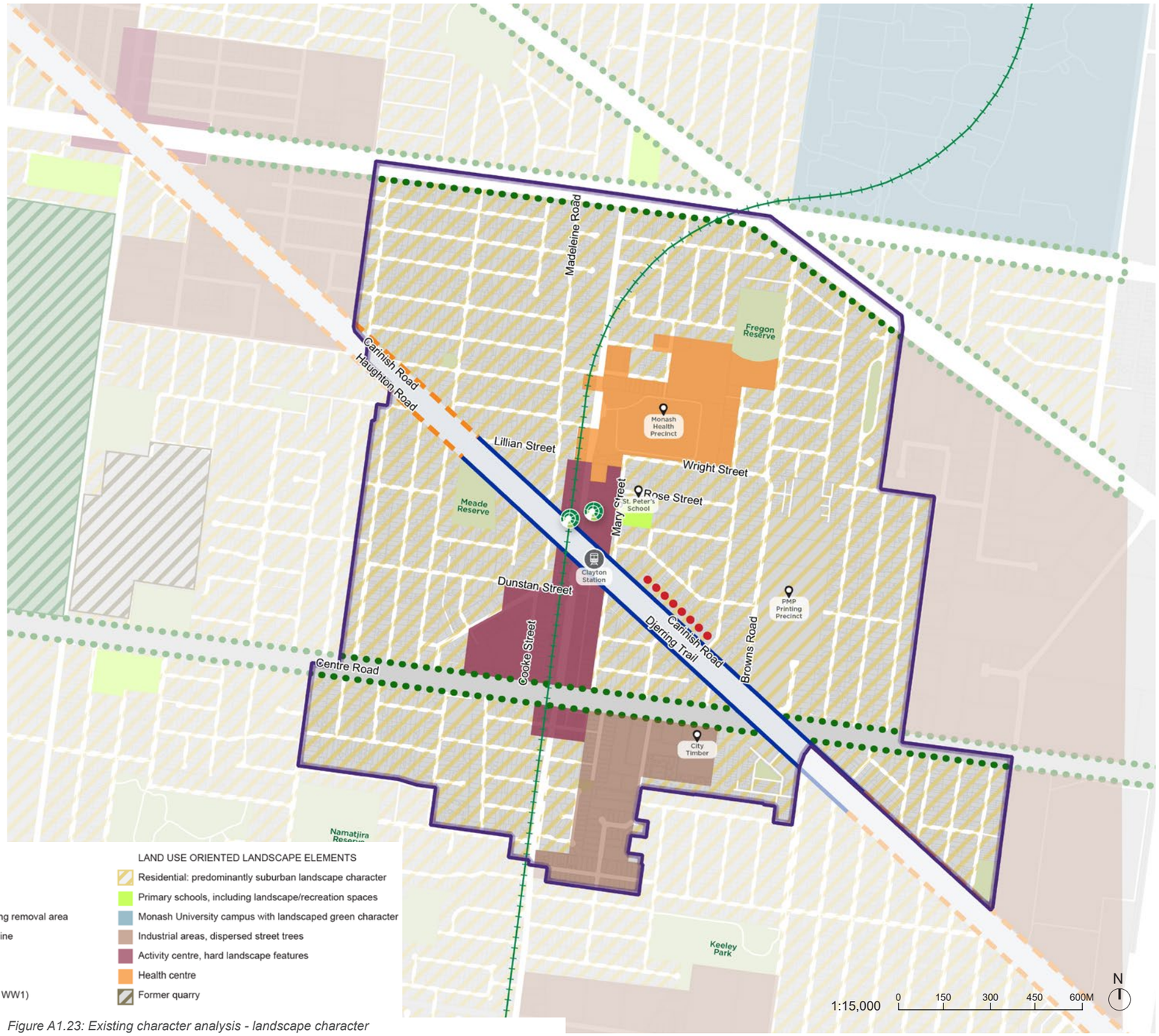


Figure A1.23: Existing character analysis - landscape character

Canopy cover

The Clayton Structure Plan Area has a relatively low level of tree canopy cover, but canopy cover features include:

- Most streets in residential areas are tree lined, some front gardens also contain landscape features that further contribute to greening the street scene
- Other public open spaces and parks also have canopy cover, but commonly to the perimeter, with trees around the edges of sports fields and recreation space. Examples include Fregon Reserve and Meade Reserve
- Linear corridors of canopy cover are aligned to transport corridors, including the tree-lined highway of Princes Highway/Dandenong Road and the highway of North Road that has a wide central landscape median with mature trees
- Pockets of canopy cover adjacent the rail line corridor including larger, older trees parallel to Haughton Road and more recent tree planting associated with new public realm created in the level crossing removal project at the existing Clayton Station
- There are substantial areas within the Monash Health Precinct that have no trees, where larger buildings and associated hard surfacing (parking and access) dominate the environment.

Figure A1.27: Dispersed street tree planting along Clayton Road.

Figure A1.26: Predominant residential suburban form contributes to landscape character, on street and in private gardens, Raleigh Street.

Figure A1.28: Large canopy trees in residential area.

Figure A1.24: Landscape character on street (street trees, verges), in private space (gardens) and public space, Springs Road near Namatjira Park.

Figure A1.29: Limited street tree planting in industrial area.

Figure A1.25: A remaining section of WWI Avenue of Honour, Clayton, on Carinish Road. The Carinish Road avenue was a short extension of a broader Avenue, but the Clayton Road Avenue was lost to development in 1940s.

Urban evolution and heritage

The Bunurong Land Council Aboriginal Corporation is the Registered Aboriginal Party for the Clayton Structure Plan Area (in accordance with the July 2021 determination of the Victorian Aboriginal Heritage Council).

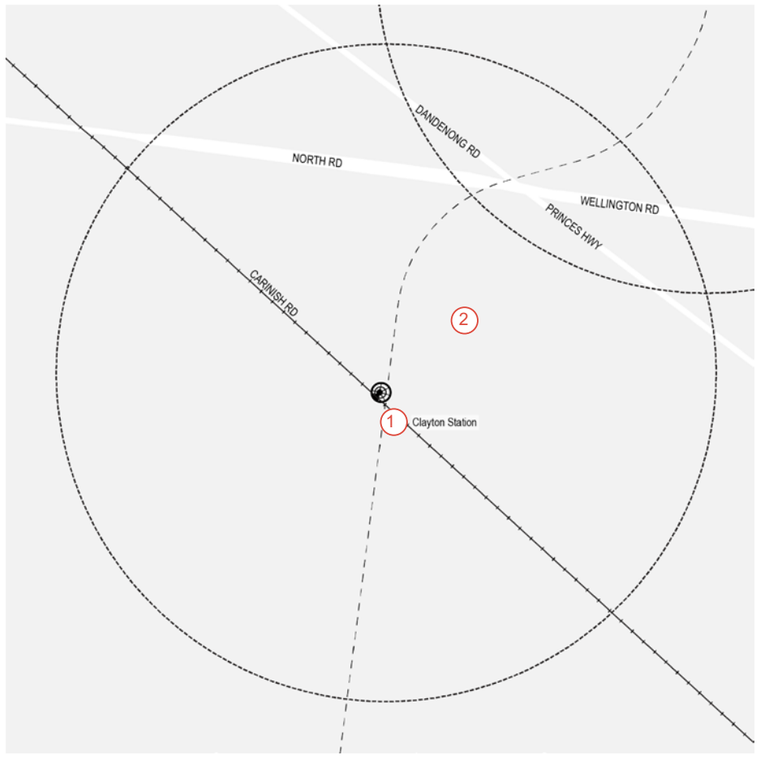
The Traditional Owners have lived sustainably in the region for thousands of years, moving within their lands while making use of seasonal plant and animal resources and sharing similarities in speech, burial practices, initiation, kinship marriage ties and religious beliefs.

The Traditional Owners continue to be custodians of the region today, maintaining their connection to their Country.

Housing styles have varied throughout the years, with early houses built by owner-occupiers before 1960 favouring weatherboard dwellings. The housing boom of the 1960s, saw an abundance of double and triple-fronted brick veneer dwellings throughout the Structure Plan Area.

Industrial land uses were one of the main drivers of residential growth within the Structure Plan Area, providing affordable housing close to employment.

Use this legend above for the following Urban Evolution and Heritage maps. Note that the following maps are only indicative of the development patterns experienced across the Clayton Structure Plan Area.



Pre-European Settlement

The Wurundjeri Woi Wurrung People are the Traditional Owners of the land in which the Clayton SRL Structure Plan Area is located. They have been the traditional custodians of the land for more than 40,000 years. The traditional language of the Wurundjeri People is Woi Wurrung.

Research into the culture and heritage of the Traditional Owners in the Structure Plan Area should be explored through a separate specialist report.

POST-EUROPEAN SETTLEMENT - 1920

The first European occupation of this area was in the early 1840s by squatters. In the early 1850s, the government revoked squatters' licenses and the old squatting runs were divided and land auctioned to selectors. These auctions were the beginning of extensive European settlement in the area and the gradual transformation of heathland into farmland. Between 1852 and 1856, small farmers, land speculators and market gardeners bought parcels of land and slowly cleared the scrub and cultivated the soil.

In the second half of the 19th century Oakleigh South, Clarinda and Clayton South were part of one of the largest horticultural districts in Victoria, producing large quantities of vegetables for Melbourne.

In 1853 the Oakleigh township was surveyed and allotments sold. Industrial uses were becoming popular and timber cutting was the main industry.

The completion of the Oakleigh-Dandenong rail line in 1877 increased access to the north-eastern parts of Clayton. Railway stations were built at Clayton and Springvale in 1883 and 1884 and blocks of land were sold in the vicinity of these stations. Subdivisions gradually spread south from the cluster settlement around the Clayton station and west from Springvale - although the focus of settlement remained around the railway stations. Two years later its extension from Oakleigh to South Yarra was completed.

1920 - 1950

In the 1920s, Oakleigh, nestled between sand and clay extractive industries, developed into a working-class suburb due to favorable conditions and flat land, with rapid growth from 1924 to 1927 driven by electrification of the railway. New stations at Hughesdale and East Oakleigh highlighted the accessibility of subdivisions. Clayton grew alongside Hughesdale and East Oakleigh but retained market gardens. By 1922, Clayton marked the south-east limit of development along the Gippsland rail line.

In the 1930s, Oakleigh had few sizable buildings, notable for brickworks excavations. Brick manufacturing expanded rapidly, along with the emergence of tile and pipe industries by 1939. The area north of Broadwood became an industrial hub, but Oakleigh's industrial focus persisted around the railway. Despite business shifts, development patterns around Oakleigh station remained substantial.

Clayton South is situated in Melbourne's sand belt country and has two large landfill sites resulting from sand extraction. The area was also used for market gardening, although there was a considerable amount of swampy or unimproved land when the Forest Hill Golf Club acquired an area for its Spring Valley golf course in 1948. The golf course is one of several in the sand belt country, extending from Huntingdale to Dingley Village.

1950 - 1960

During the decades following the end of WWII, Melbourne's development continued to spread and flowed into semi rural land. The east was rapidly expanded and new residential streets were laid, houses constructed and services established. Although often services such as drainage, sewerage and road surfacing came many months after the occupation of housing, creating the notorious 'heartbreak' streets of the late 1950s.

At the western edge of Clayton the Oakleigh high school was opened in 1955 and a second primary school opened next year at Clayton South.

Rapid suburban expansion in the 1950s and 1960s was a reaction against the almost complete stagnation of the building industry during the war and the depression of the 1930s. This combined with attitudinal changes, which emphasised ideals of home ownership, space and affordable car ownership, which made life in suburbia an attractive proposition for Melburnians.

Yet it was changes in the industrial and demographic environment of Melbourne which most dramatically transformed the landscape of the Clayton South, Clarinda, Oakleigh South. In the three decades following WWII, Melbourne's industry base decentralised, relocating from the inner suburbs to the fringes of suburbia where land was cheap and there was more space for the construction of modern factories.

1960 - 1980

The 1960s saw the rapid disappearance of market gardens as urbanisation advanced, although they were still a key industry. Melbourne's second metropolitan university, Monash, was opened at Clayton North in 1961. Primary schools at Westall and Clayton West opened in 1961 and 1962, and high schools at Westall and Monash (Clayton North) in 1963 and 1965.

Residential settlement and industrial growth of Clayton South began during the late 1950s. Notable developments were the Volkswagen assembly plant adjoining the Westall railway Station, and cable-making and bakery establishments. Clayton South primary school had opened in 1929 for the farming community, but the post-war residential growth required the opening of Westall primary and high schools in 1961 and 1963.

In the 1950s to 1970s Oakleigh was at the forefront of urban change. In 1960 the Chadstone drive-in shopping centre was opened on the border of Oakleigh, about 1.5km from the Oakleigh shopping centre. Although trading in the three or four active streets in the Oakleigh shopping centre was maintained with one way traffic and pedestrianisation, the contrast with climate-controlled Chadstone was apparent. In the early 1980s the railway goods yards were redeveloped for the Oakleigh central shops. Australia's first motel was opened on Dandenong Road, Oakleigh East (1956) and the first 7-Eleven convenience store was opened on Warrigal Road (1977).

1980 - TODAY

As late as the early 1980s, large tracts of land in Clayton South, Oakleigh South and Clarinda remained as either market gardens, rough vacant land awaiting development or sand quarries. One of the last residential subdivisions was in the area around Bourke Road, most of which was settled in the late 1970s. The early residents in each subdivision experienced a lack of services and facilities but as houses were built and occupied, schools, shops, child health centres and some public transport was gradually constructed.

Today, industrial land is still a prominent character driver throughout the Clayton Structure Plan Area. The residential areas that were established in the 1960s along and around the rail line have remained generally intact. Some of these areas have begun to intensify through unit developments and residential subdivisions.

Built form

The Clayton Structure Plan Area is generally characterised by low-rise, residential building forms, with a small number of pockets with larger buildings, as summarised below.

- Housing developments before 1945 were mostly of the inter-war and post-war architectural styles and featured brick and weatherboard construction. These houses were single-storey detached dwellings with generous front and side setbacks with landscaping. However, many of these original houses have been replaced or substantially altered through the years
- Between 1945 and 1960, the post-war architectural style was dominant in the area and featured single-storey, brick and weatherboard homes. Brick veneer from local industry became a popular material choice in the late 1950s
- Post 1960s houses began to grow in size and brick veneer continued to be a common material choice
- Residential built form, suburban in character, is the predominant form across large areas. Single-storey detached dwellings are the most common building typology, with moderate site coverage. Two-storey detached homes are also common, increasing common where lots have been subdivided and redeveloped as multi unit development / strata properties
- Subdivision of original residential properties is common across the Structure Plan Area, increasing density as more homes with reduced private garden space, are developed within what were previously pots for single detached homes with larger gardens
- The Clayton Structure Plan Area includes several larger-scale residential developments, with townhouses and / or apartments developed on medium-sized sites, commonly with frontage to main roads. These more recent residential developments have higher site coverage, with townhouse typologies at times rising to 3 storeys (for instance opposite the existing Clayton station on Carinish Road)

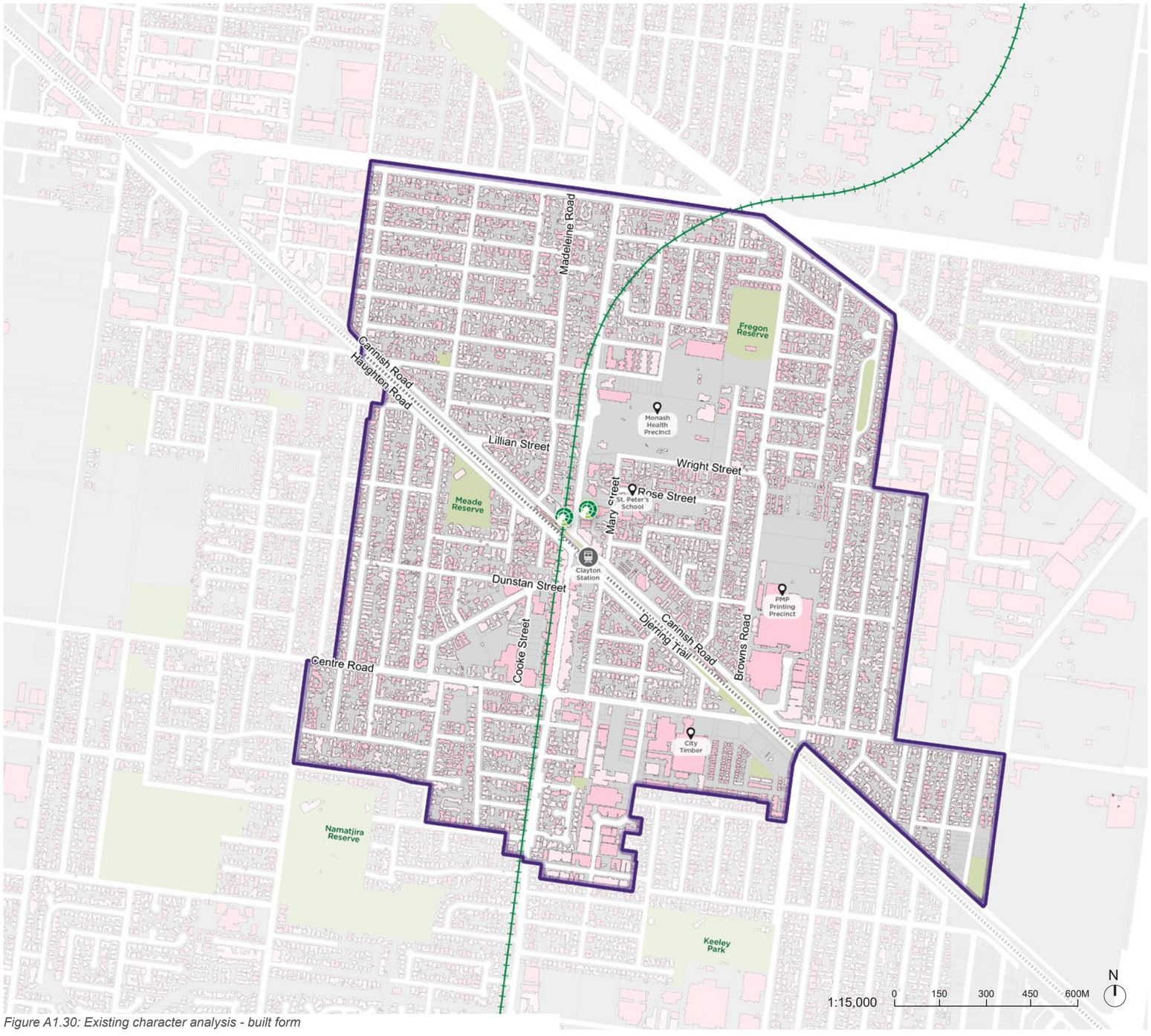


Figure A1.30: Existing character analysis - built form

- Larger-scale residential built form, with apartments in taller building forms (3+ storeys), have been recently developed including east of Browns Road/north of the former PMP Printing works (2 to 3 storey town houses and 4 storey apartment blocks) and the corner of Centre Rd/Haughton Rd (4-10 storey apartment buildings, with of 2 to 3 storey townhouses)
- Activity centres, with a focus on retail uses, are characterised by fine-grain, 1 to 3 storey commercial buildings. These areas have capacity for taller buildings, although amalgamation may be required to achieve high density development outcomes
- Monash Health Precinct includes larger-scale buildings, broader building footprints, taller form (reaching 5 storeys high), dispersed in layout
- In the commercial and industrial areas, the buildings are larger in footprint and often attached, with heights on balance rising to 3 storeys
- Monash University has some of the tallest buildings in the area, contained in a landscape-rich setting.

Figure A1.31: Original 1950s post-war dwelling in Clayton.

Figure A1.32: Residential building, corner of Centre Road and Clarinda Road.

Figure A1.33: New residential building, corner of Centre Road and Haughton Road, example of denser built form, mass and greater height.

Figure A1.34: Low-rise residential dwellings, most common built form across the Clayton Structure Plan Area.

Floor area ratio (FAR)

The Clayton Structure Plan Area is characterised by a mix of developments of medium to high scale (high FAR) throughout the commercial, and health facilities buildings, and developments of low scale (low FAR) in the residential surrounding areas.

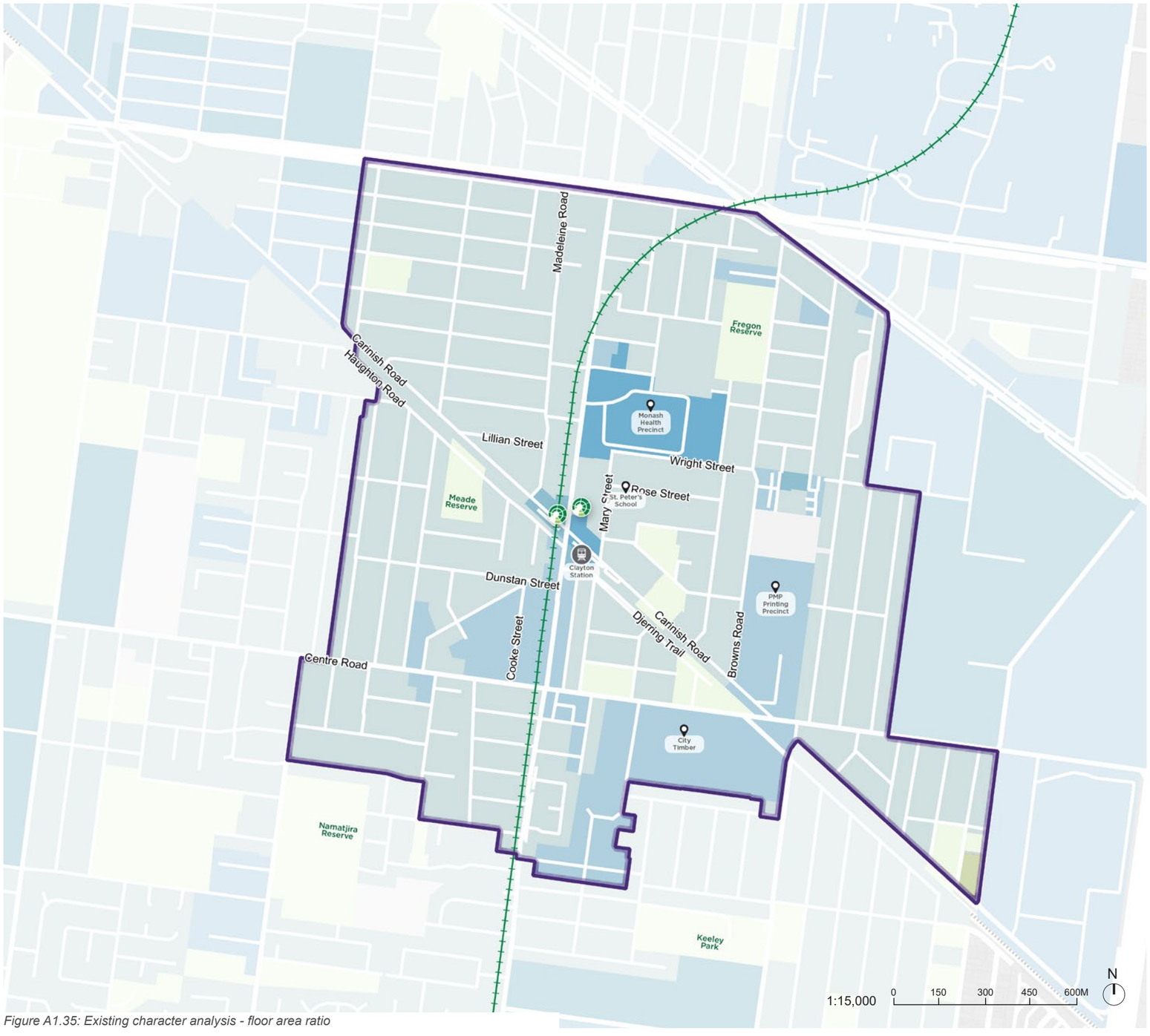


Figure A1.35: Existing character analysis - floor area ratio

Legend

- SRL station
- Structure Plan Area

FAR

- 0 - 0.2
- 0.2 - 0.5
- 0.5 - 1
- 1 - 2
- 2 - 3
- 3 - 5
- 5 +

Lot sizes

Within the Clayton Structure Plan Area there are a range of lot sizes, with larger lots commonly associated with education and health institutions and industrial land uses. In contrast, smaller lots are generally associated with residential land uses and subdivided lots.

The commercial shopping areas are mostly small lots below 400 square metres, such as along Clayton Road. Larger lots are commonly found at the rear of shopping areas where car parking is provided.

Lots below 800 square metres are commonly found in established residential areas with a regular block structure. These residential areas can have larger lots, although they are uncommon. These medium-sized residential lots often feature generous private gardens with 1 to 2-storey detached dwellings.

Monash Health Precinct and industrial areas generally have large lot sizes greater than 1600 square metres.

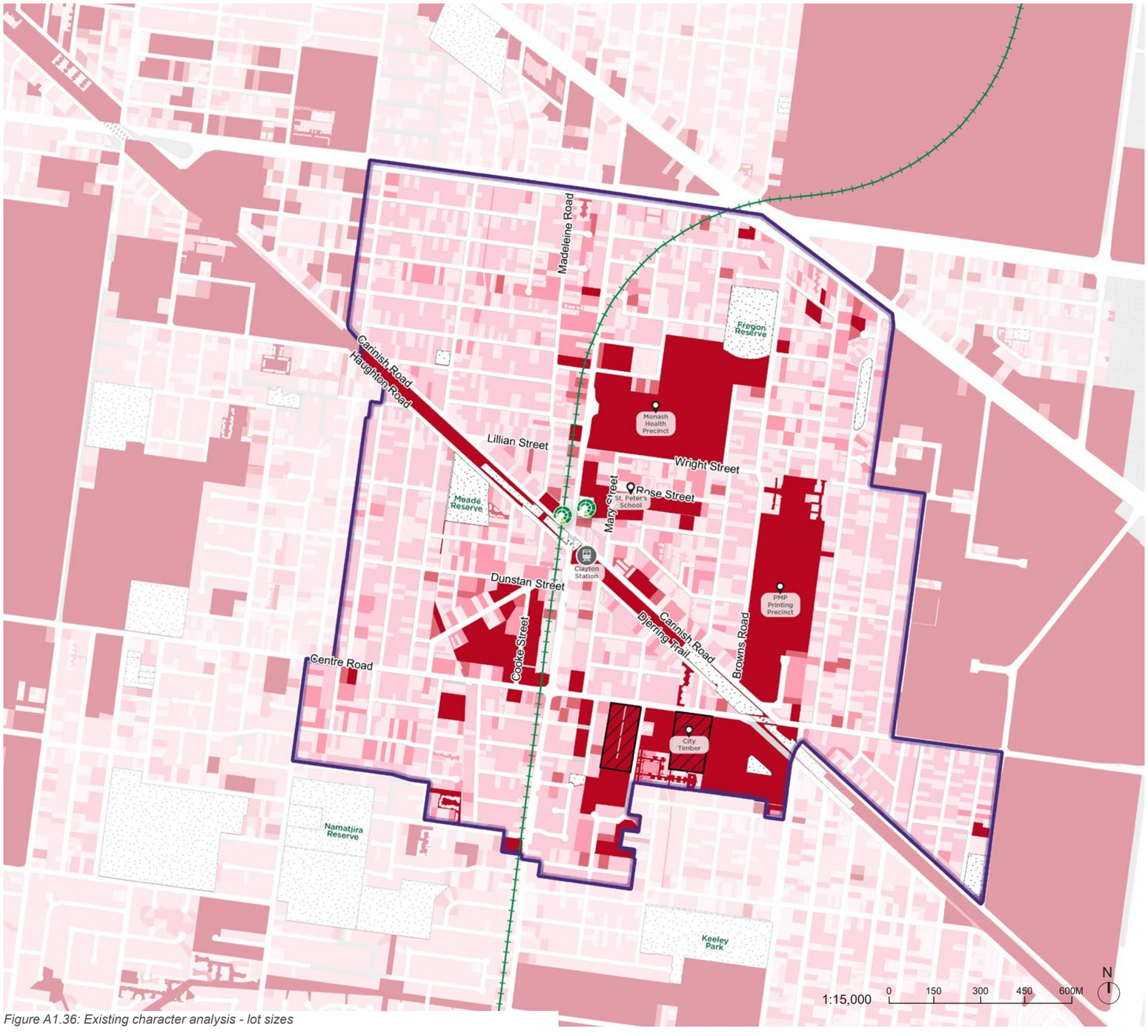


Figure A1.36: Existing character analysis - lot sizes

Legend

- Clayton Station
- Structure Plan Area
- Open Space

Lot Size

- 0 - 400sqm
- 400sqm - 800sqm
- 800sqm - 1200sqm
- 1200sqm - 1600sqm
- 1600+ sqm

Large opportunity sites for further investigation

Block structure

Analysis of the cadastre reveals that the Structure Plan Area for Clayton contains a variety of different block types, summarised below.

- The health facilities are large, inward-facing blocks that preclude or (explicitly or implicitly) discourage through movement
- The industrial blocks are large and vary between inward-facing and irregular, with through movement discouraged. There are opportunities to create connections to improve the urban structure
- The majority of the residential area is in the form of regular blocks - some more than 200 metres long and some less. These support walking and cycling through a high degree of permeability and legibility, and minimise congestion by distributing traffic evenly
- There are also large residential pockets with irregular blocks, including cul-de-sacs. These reduce permeability and legibility, and concentrate traffic on fewer streets. Some of these (shown in orange, in the Clayton Structure Plan Area block structure map, on the right) have the potential to be 'repaired' to form regular blocks.

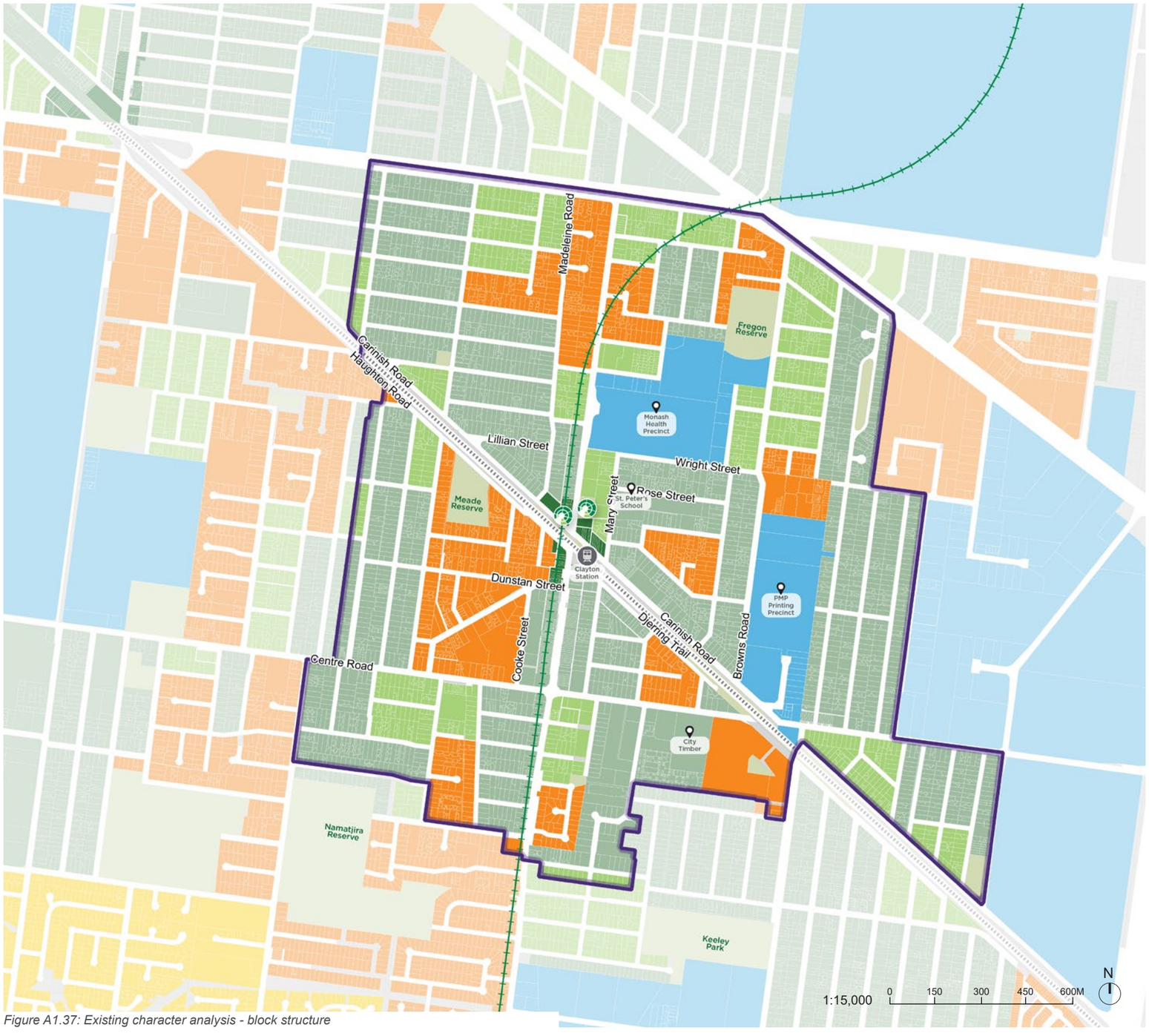


Figure A1.37: Existing character analysis - block structure

Legend

SRL station

Open Space

Structure Plan Area

Block structure

Category 1: Large blocks with limited through connections and interfaces

Category 2: Irregular blocks discontinous connections

Category 3: Regular blocks discontinous mid block connections

Category 4A: Regular street block - Length greater than 200 metres

Category 4B: Regular street block - Length between 120 metres and 200 metres

Category 4C: Regular street block - Length less than 120 metres (or length divided by laneways)

Figure A1.38: Regular block

Figure A1.39: Large inward facing block

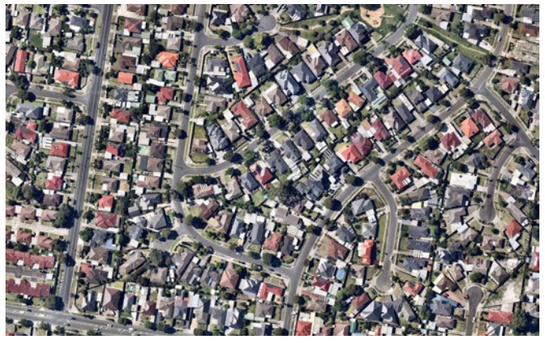


Figure A1.40: Irregular block pattern in Clayton South

Subdivision patterns

The Structure Plan Area for Clayton is generally made up of independent titles, with subdivided properties commonly found. Strata-titled properties are mostly used for residential purposes, with some commercial and business land uses.

There has been considerable development of traditional houseblocks for 2 to 4 strata-titled units. These unit-developments provide for an increased density within a low-rise residential setting. The trend for multi-unit developments has been occurring since the 1970s and has caused many of the original 1950s and 1960s dwellings to be removed and replaced with multiple dwellings. This type of subdivision occurs fairly evenly within the Clayton Structure Plan Area, with a slight concentration north-south either side of Clayton Road.

The industrial and commercial pockets appear to have less strata-titles and so the character of these areas is generally connected to the public realm, rather than to an internal street network.

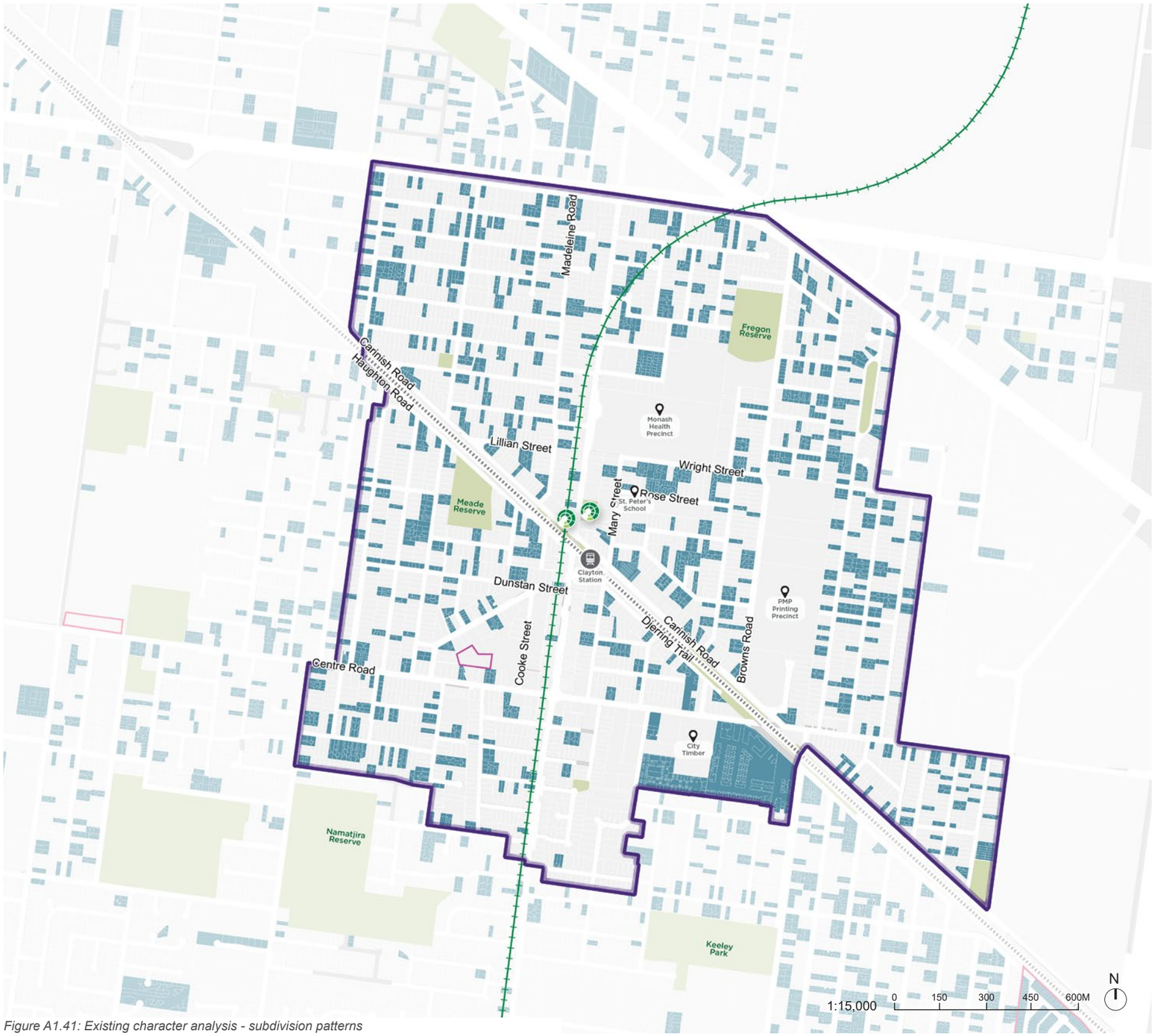


Figure A1.41: Existing character analysis - subdivision patterns

Legend

- SRL station
- Structure Plan Area
- Open Space
- Strata Titled Sub-divisions
- Large insular aged care development

Setbacks

Most buildings within the Clayton Structure Plan Area are set back from the front boundary, except for commercial and industrial areas which are dispersed throughout the Structure Plan Area.

Front setbacks within the Clayton Structure Plan Area commonly reflect a residential character with dwellings set back from the street to allow for front gardens and often driveways. These setbacks range from 4-9 metres within the centre of the blocks, and reduce to 1 to 3 metres on corner lots. These setbacks create a consistent residential suburban feel, with front landscaping providing a buffer between the public street and private property.

Along the North Road / Wellington Road and Dandenong Road / Princes Highway, a range of front setbacks can be observed. These setbacks provide for a range of features including landscaping and at-grade car parking. Generally, along these key roads, commercial and industrial land uses have smaller front setbacks than residential properties.

The shopping area along Clayton Road has zero or very shallow front setbacks, with buildings commonly built to the street edge. This traditional shopping strip condition can also be seen in the smaller shopping areas dispersed throughout the Clayton Structure Plan Area.

Very deep front setbacks are a common condition for educational and health buildings, and industrial or business areas. These areas include Monash Health Precinct, and the industrial to the east.

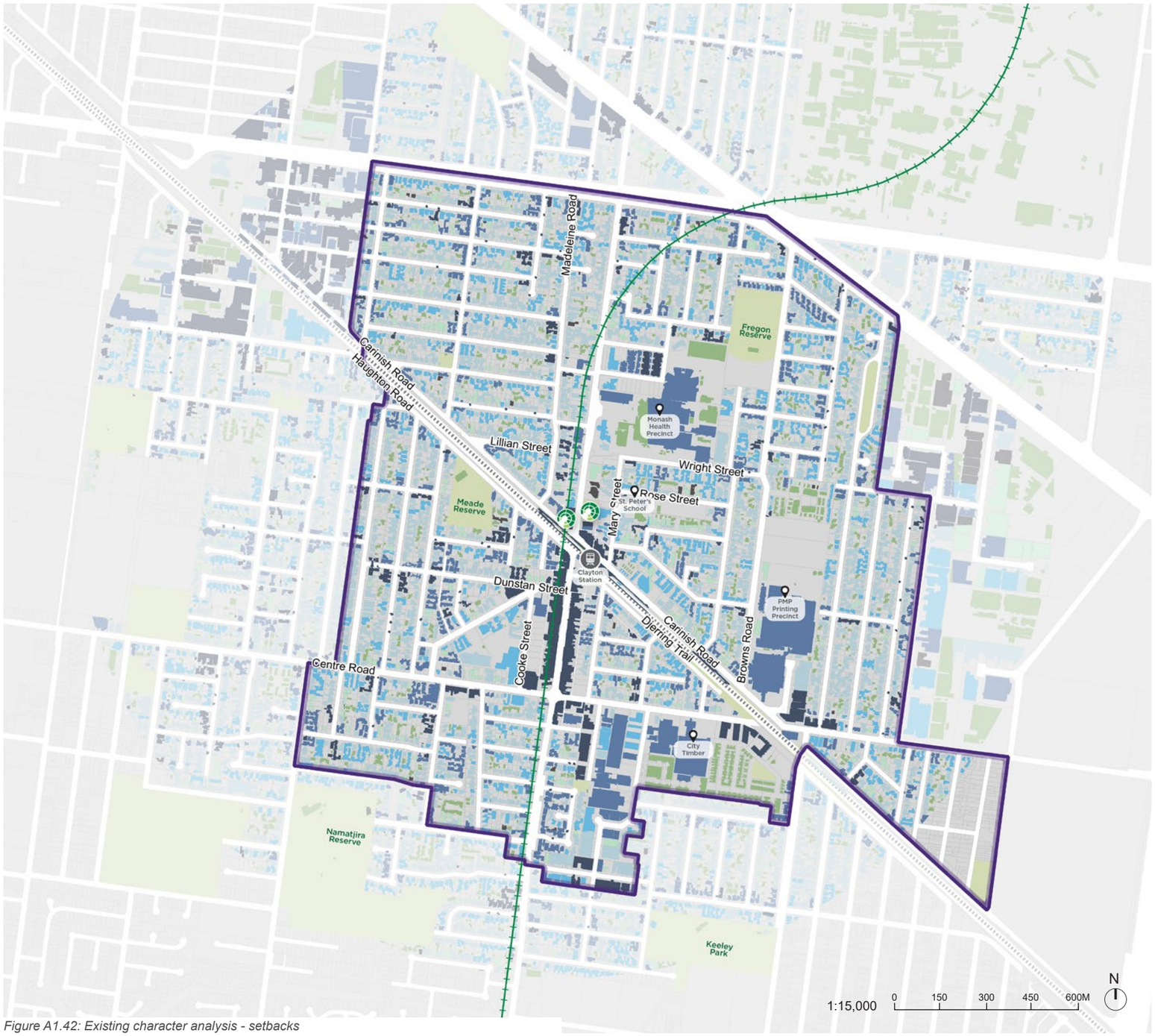


Figure A1.42: Existing character analysis - setbacks

Existing character areas

The character assessment has identified a change in character across the Structure Plan Area for Clayton related to existing uses, building form and function, in the context of movement networks and landscape framework. The character study areas vary in size and include both defined, and more nuanced, differences.

The main physical features that distinguish the character study areas are:

- Land use
- Building typologies
- Built form, scale mass
- Density of development
- Transport and access including strategic movement corridors (rail and highways)
- Public realm - street types and public open space
- Landscape character including street trees, parks, open spaces.

The existing character areas are summarised on the following pages, and as follows:

- Clayton Road South Activity Centre
- Clayton Inner
- PMP Printing
- Industrial
- Clayton Residential
- Monash Health Precinct

Legend

- SRL station
- Structure Plan Area

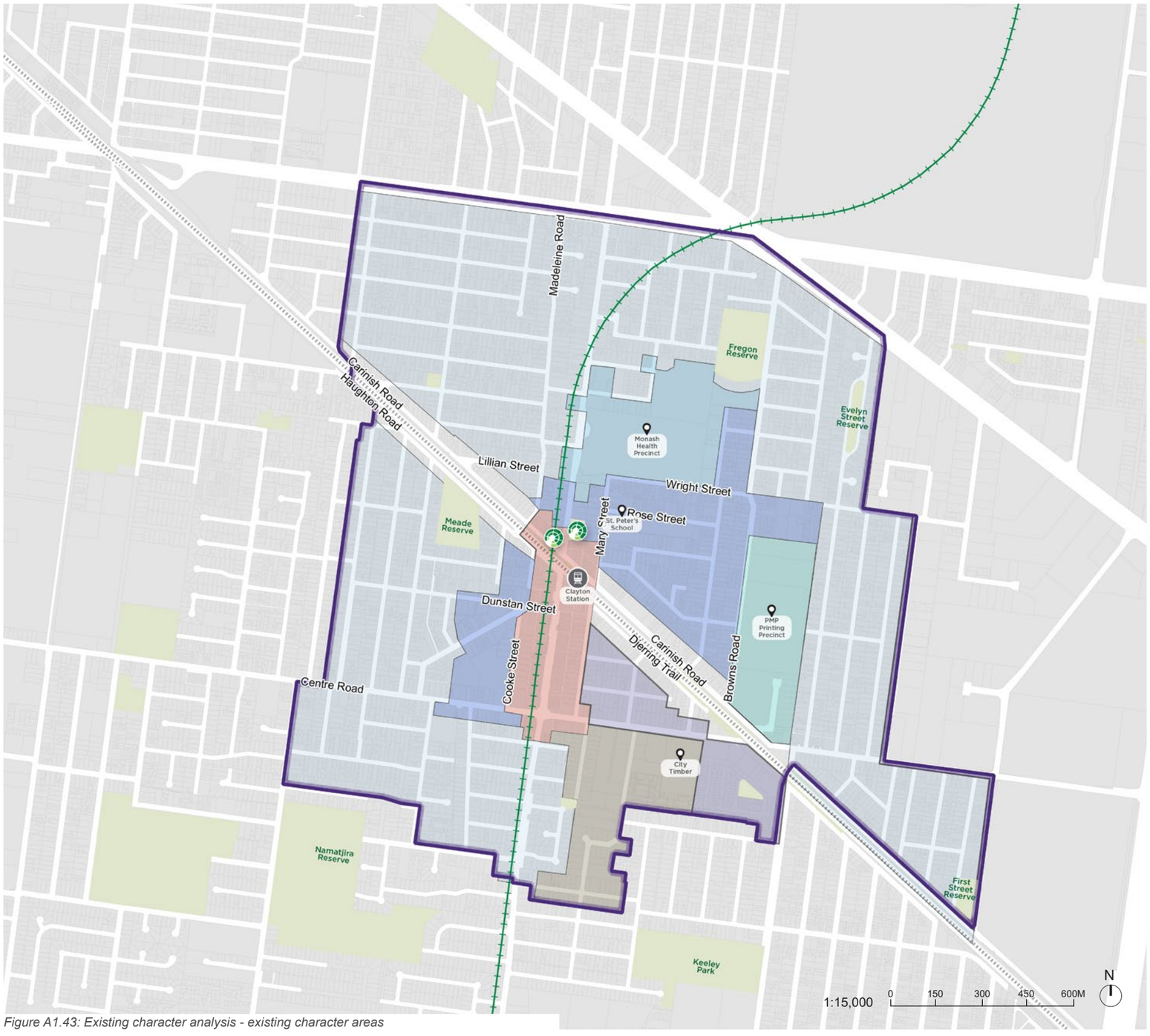


Figure A1.43: Existing character analysis - existing character areas

Clayton Road South Activity Centre

Clayton, designated as a Major Activity Centre, is characterised by the traditional ‘Main Street’ along Clayton Road, functioning the primary north-south route adorned with retail and community destinations. The elevated and distinctive contemporary design of the recently redeveloped Clayton Station serves as a prominent destination and landmark, anchoring the northern end of the main street within the Clayton Structure Plan Area.

Clayton Inner

Situated at the Clayton Structure Plan Area’s core, this area’s character is shaped by inner urban blocks enveloping Clayton Main Street (A) and the Monash Health Precinct (C). It extends along key movement corridors like Clayton Road and the rail line, incorporating recent public realm improvements underneath the rail line. The character is primarily driven by an inner urban environment, featuring a mix of residential, community, retail, and educational land uses, with diverse building types and scales indicative of a transitional area.

PMP Printing

The area is characterised by a 13.5-hectare north-south aligned rectilinear block, primarily light industrial with surface car parking in the northern portion. Recent urban infill development includes a 2-hectare residential block featuring apartments, townhouses, and link-detached homes, denser than surrounding suburban residences. The industrial land uses, defined by the rail line to the south, consist of larger-scale units and smaller light industrial lots. Access is limited east-west, and the landscape is marked by trees on parking area edges and streets defining the east and west boundaries.

Industrial

The area south of Centre Road, east of Clayton Road, is characterised by existing light industrial land uses well-integrated into the street network, particularly along Audsley Street, connecting Centre Road to Clayton Road via Murdock Street. Industrial lots directly abut residential lots, with varying scales of building types and lot sizes. The predominant light industrial character coexists closely with surrounding residential land uses, featuring limited landscaping, occasionally with trees along the street edge.

Clayton Residential

This area is characterised by suburban residential housing, predominantly low-rise with medium to lower density. The residential streets form an interconnected orthogonal grid, creating perimeter blocks and some cul-de-sacs. Situated on the borders of the Structure Plan Area, the area features public parks interspersed through residential areas. The streets exhibit a strong landscape character with landscaping in public and private realms.

Monash Health Precinct

The character of the area is defined by the Monash Health Precinct, a concentration of health facilities clustered mainly to the east of Clayton Road, with some buildings also located immediately to the west of Clayton Road. Key drivers of the area’s character include its dense built form, intensive use within a confined space to accommodate a growing array of health services, and the defining presence of health buildings, car parking, and associated utility infrastructure.

Clayton Road South Activity Centre

Clayton is defined as a Major Activity Centre with the Clayton Road traditional ‘Main Street’. Mixed-uses run along the through-route on the north-west axis linking destinations. The redeveloped Clayton Station is a major destination and landmark, in the heart of the Clayton Structure Plan Area and anchors the northern end of the main street.

Main drivers of character:

- Clayton Road as main north-south route through the Clayton Structure Plan Area, lined by retail and community destinations in the form of a traditional main street shopping parade
- Two-storey building height on Main Street with zero setbacks, direct street frontage. Consistent building typology of ground floor shops / food / drink with first floor accommodation (residential, office or storage)
- The new Clayton Rail station is a destination and local landmark, elevated in height, with the elevated rail line and distinctive contemporary building form
- Views channeled through Clayton Road (north-south) and diagonally along the rail line.

Considerations for change:

- Although the close proximity to the SRL station at Clayton represents a substantial potential to change, the sequence of small lot sizes represents a constraint for development
- Finer urban grain, smaller lot sizes, and consistent low building height contribute to a distinctive main street character which should be retained
- Limited landscape character.

Clayton Inner

Uses include inner residential blocks, with retail and community uses interspersed.

Main drivers of character:

- Inner urban character, driven by residential and other land uses including community facilities, retail, education, and public open space
- There is a variety of building types, scale and lot size (400-1600 square metres plus) indicative of an area of transition. The residential form comprises 1 to 2-storey detached homes interspersed with denser infill including 3 storey townhouses, larger urban infill sites (Centre Road / Haughton Road) apartments (up to 9 storeys), townhouses (3-storey) and attached (2-storey)
- Clayton Community Centre is around 9 metres high and has a modern and civic architecture.

Considerations for change:

- Regular lot sizes and block structure will encourage lot consolidation
- The linear park under the elevated rail line facilities greater north-south permeability within the core
- The residential growth zone (RGZ) extents north and south of the Monash Health Precinct and might encourage low scale development in the short term, which could restrict future development potential
- There is opportunity to extend the Avenue of Honour street trees (many original trees have been lost)
- There is development and open space opportunity on existing at-grade parking surrounding Cooke Street and the existing community centre.

PMP Printing

The majority of this area is light industrial, with the northern portion accommodating surface car parking and recent urban infill development site.

The recent residential development (approx. 2 hectares) comprises a mix of apartments, townhouses and link-detached houses, delivering a new residential block in denser form than surrounding suburban residential houses.

Main drivers of character:

- Industrial land uses are distinct in character from surrounding suburban residential land uses
- The rail line defines the southern boundary
- Industrial buildings include a variety of larger-scale units and smaller light industrial lots
- Access is from the surrounding street network with limited movement east-west
- Landscaping is limited to trees on the edges of parking areas and on streets defining east and west edges.

Considerations for change:

- There is substantial potential for urban infill redevelopment site which is currently being undertaken by the Victorian Planning Authority
- Opportunity to improve east-west connectivity with new street network, stitching the neighbourhood back together.

Industrial

This area has a similar industrial character to Character Area D, with a notable difference in connectivity. Area D is relatively well integrated into the surrounding network of streets with routes continuing through the industrial area, linking to neighbouring residential streets. Audsley Street is the main through-route, linking Centre Road to Clayton Road, via Murdock Street. Industrial lots immediately neighbour residential lots, back-to-back in some instances with land use splits through the centre of blocks.

Main drivers of character:

- There is a predominant light industrial character, noting the close proximity to surrounding residential land uses
- There is a mixture of scales of industrial building types and lot sizes, ranging from larger industrial sheds with large lot coverage to smaller units with several neighbouring frontages to streets
- There is limited landscaping, with occasional trees to the street edge.

Considerations for change:

- There is redevelopment opportunity for intensified industrial or employment uses
- There is potential for addition of residential uses to increase night-time and weekend activity
- There is opportunity to connect the streets into the surrounding network.

Clayton Residential

This area is located in the borders of the Structure Plan Area of the Clayton Structure Plan Area wrapping around Clayton Inner Core (B), Monash Health Precinct (C), Browns Road East (D) and Audsley Street Industrial (E).

Main drivers of character:

- There is an interconnected grid of streets with lower density suburban residential land uses
- There is a predominance of attached dwellings, detached units on a strata lot and one to two storey apartment buildings, indicating intensification
- There is a substantial amount of one and two storey detached dwellings, but redevelopment for more intensive use has introduced greater variety of housing types, within the original street structure
- There are public parks interspersed through residential areas
- Weatherboard and brick are the most common building materials for homes
- Residential streets have a strong landscape character with public and private realm landscaping present.

Considerations for change:

- There is a uniform medium-low-density character, with original 1960s dwellings and properties zoned GRZ may restrict development potential
- North-south permeability is restricted by the rail line which divides the area.

Monash Health Precinct

Built form in this area is greater in scale and mass than the surrounding residential blocks, with health centre buildings generally ranging from 3-5 storeys. Buildings accommodate a variety of health services and are served by multistorey or surface car parking.

Main drivers of character:

•There is a dense built form, intense use of a relatively contained area, accommodating a growing range of health services

• Health buildings, car parking and associated utility infrastructure and access defines the appearance

• Access is from Clayton Road, with internalised routes not intended for through movement, rather to serve the health services

• The landscape character is enhanced by street trees but limited room for open spaces.

Considerations for change:

• There is potential opportunity to intensify density of use through development of surface car parking and / or redevelopment of some existing buildings

• There is a slight change in topography between health campus and station which could restrict active transport connections to the area

• Generous land surrounds the main hospital, including at-grade car parking and multi-storey car parking provides opportunities for redevelopment.

Appendix B
Development Conditions Analysis

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Heritage

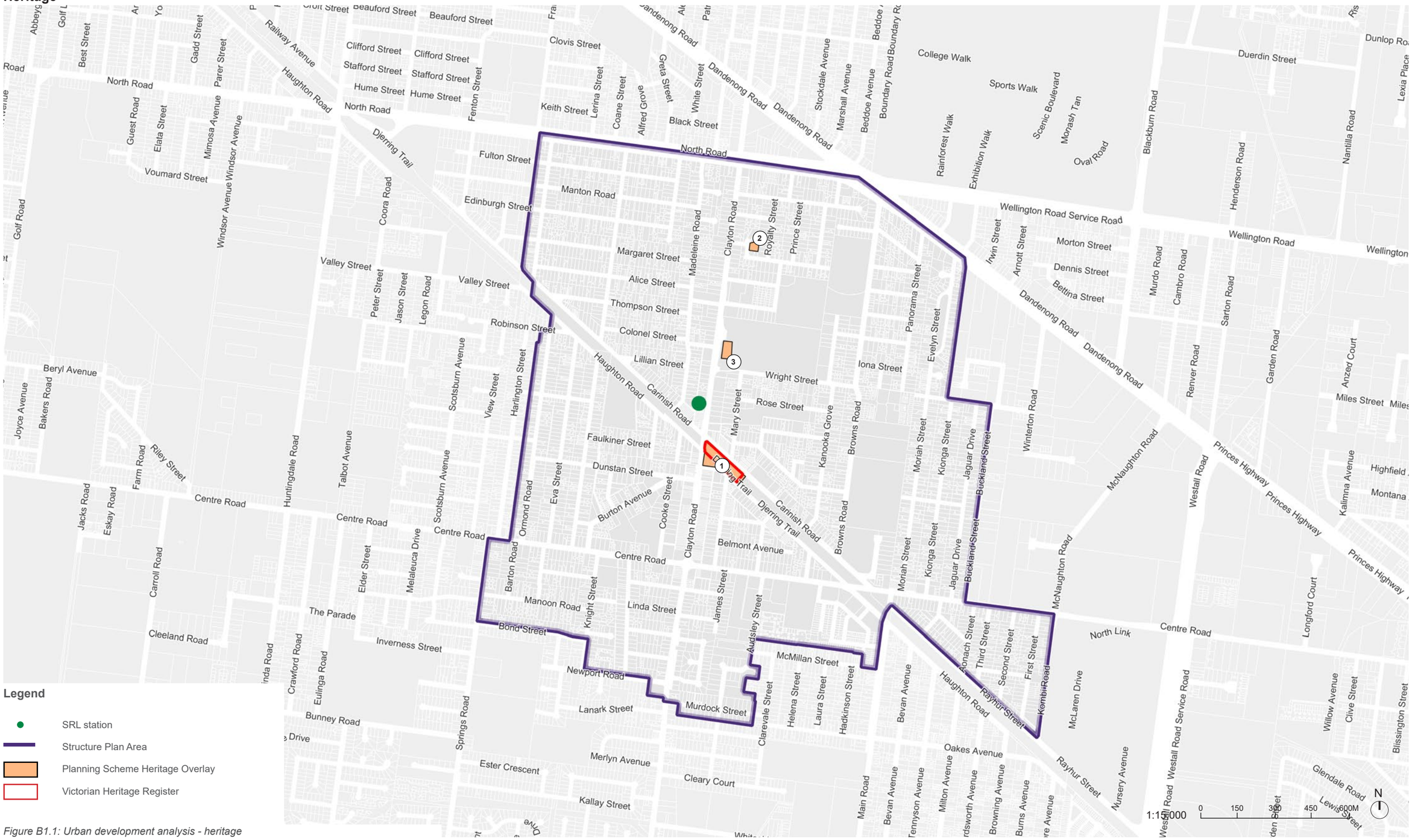


Figure B1.1: Urban development analysis - heritage

The Clayton Railway Station buildings are of architectural significance as a fine representative example of the modular style of station buildings and serve as a key contributor to the development of this typological group. This style of timber station buildings were of a basic modular design combining a booking office, general waiting area and a ladies waiting room which were primarily constructed at suburban locations and using similar detailing. The Clayton Railway Station is of historical importance for its potential to yield information on the changing nature of railways, locomotive technology and public transport use in Victoria. The two station buildings at Clayton indicate the hierarchy of railway stations, which were designed by the Railways Department, and represent the more modest station buildings. Although simple structures, they demonstrate the tendency for designers in the Victorian era to decorate even the most humble of buildings.

Monash Health Precinct has a proud history of providing health care to the people of Victoria reaching back to the mid-1800s. McCulloch House, which opened in 1888, is a purpose built 16-bed, level 3 inpatient palliative care / hospice unit.

Source: Victorian Heritage Database Report, and Monash Health “Our History”

1 *Clayton Railway Station Shelter*

2 *HO42 - 7 Hourigan Avenue, Clayton - Single-storey villa*

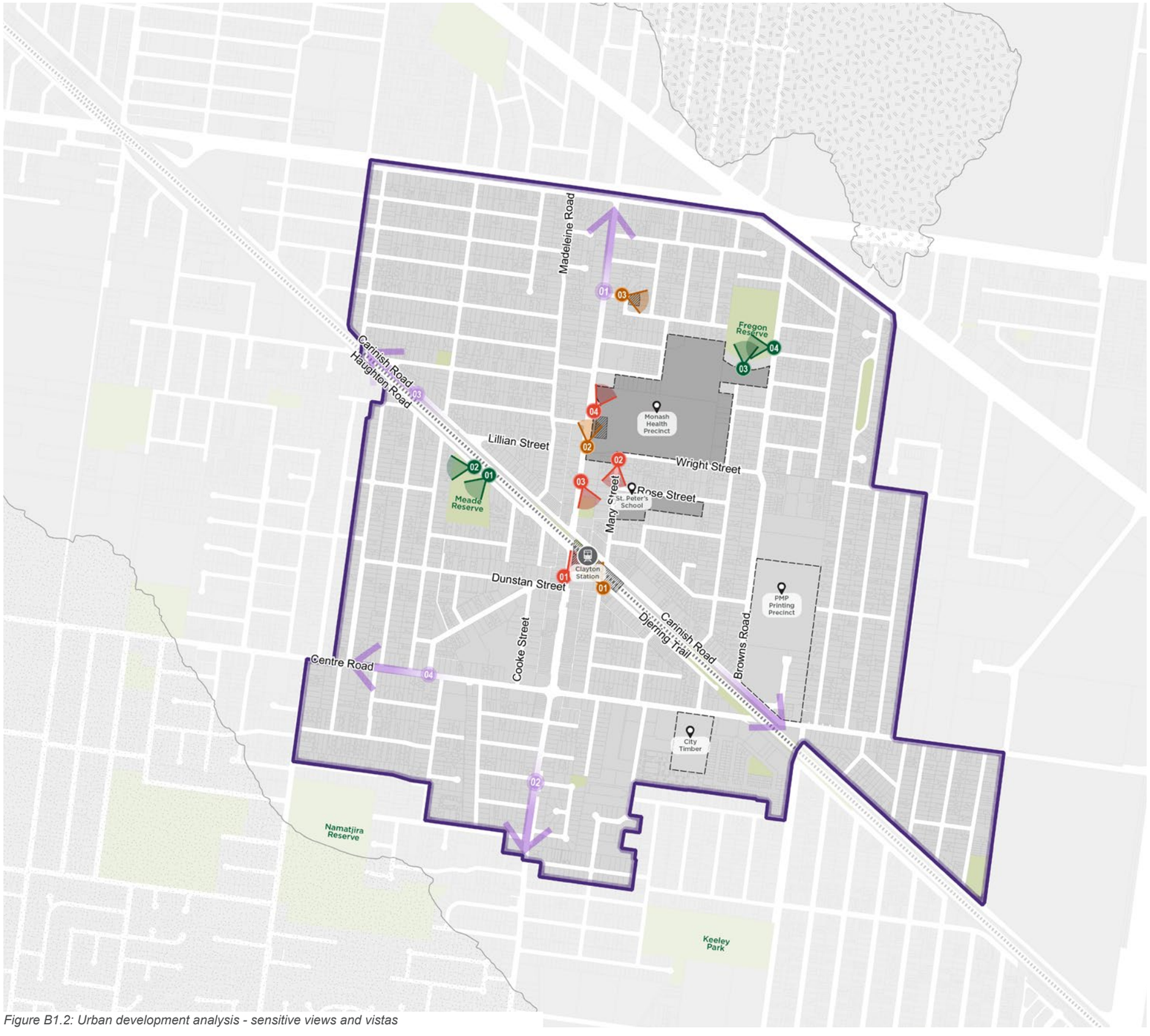
3 *McCulloch House*

Sensitive views and vistas

Substantial views and vistas have been recorded in order to assess any views which might constrain development. Upon review, no sensitive views were identified.

Within the Clayton Structure Plan Area, key views to major open spaces, heritage places and landmarks occur along existing streetscapes, not posing substantial constraints to future development. Long views are channeled through Clayton Road (north-south), Centre Road (east-west) and diagonally along the rail line.

The VHR-listed Clayton Railway platform building enjoys secure visibility owing to its strategic location adjacent to the Clayton railway station, surrounded by open space. In contrast, the McCulloch House, notable for its local presence, is only partially visible along Clayton Road due to the presence of walls fencing the site and mature vegetation.



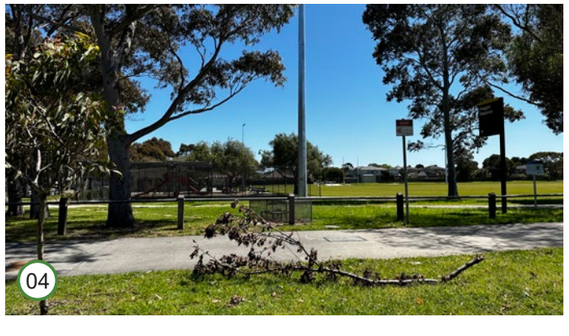
Legend

- SRL station
- Structure Plan Area
- Heritage places
- Low lying area
- High lying area
- Long range views
- Views to key open spaces
- View to key heritage places
- Views to key landmarks

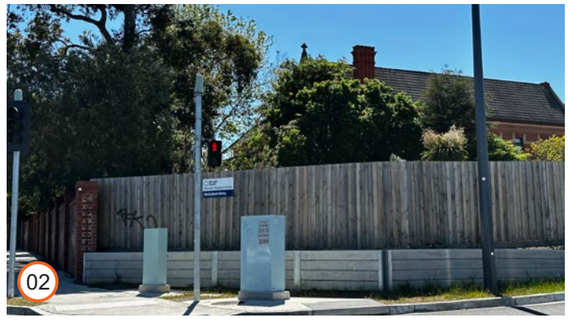
Figure B1.2: Urban development analysis - sensitive views and vistas

Long range views

Views to key open spaces



Views to key heritage built form



Views to key landmarks

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Small lots (excluding strata titled lots)

Legend

- SRL station
- Structure Plan Area
- Small lots: 0-200 sqm
- Small lots: 200-400 sqm
- Small lots: 400-600 sqm

Figure B1.3: Urban development analysis - small lots

Strata-titled lots

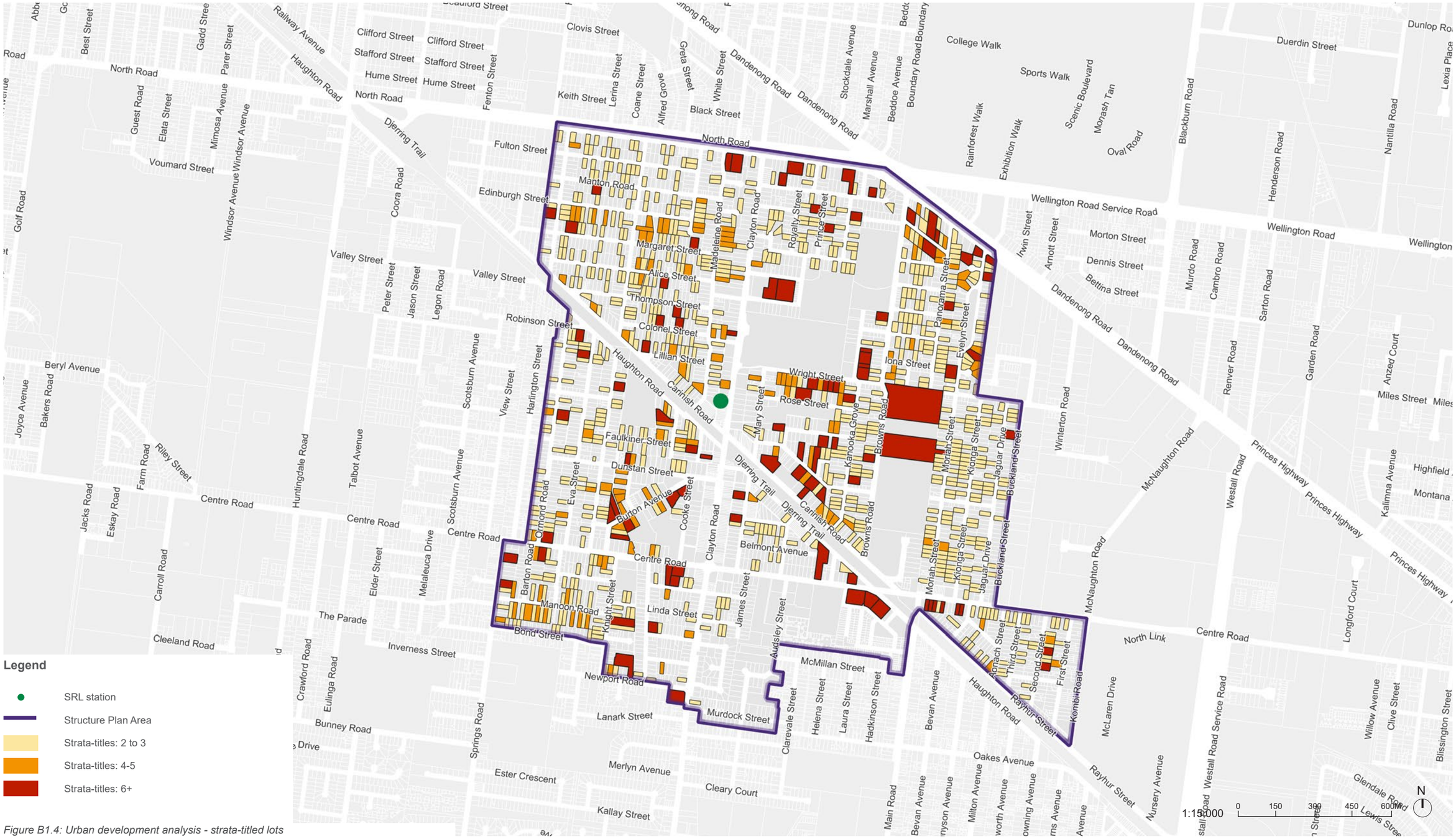

Figure B1.4: Urban development analysis - strata-titled lots

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Areas subject to flooding

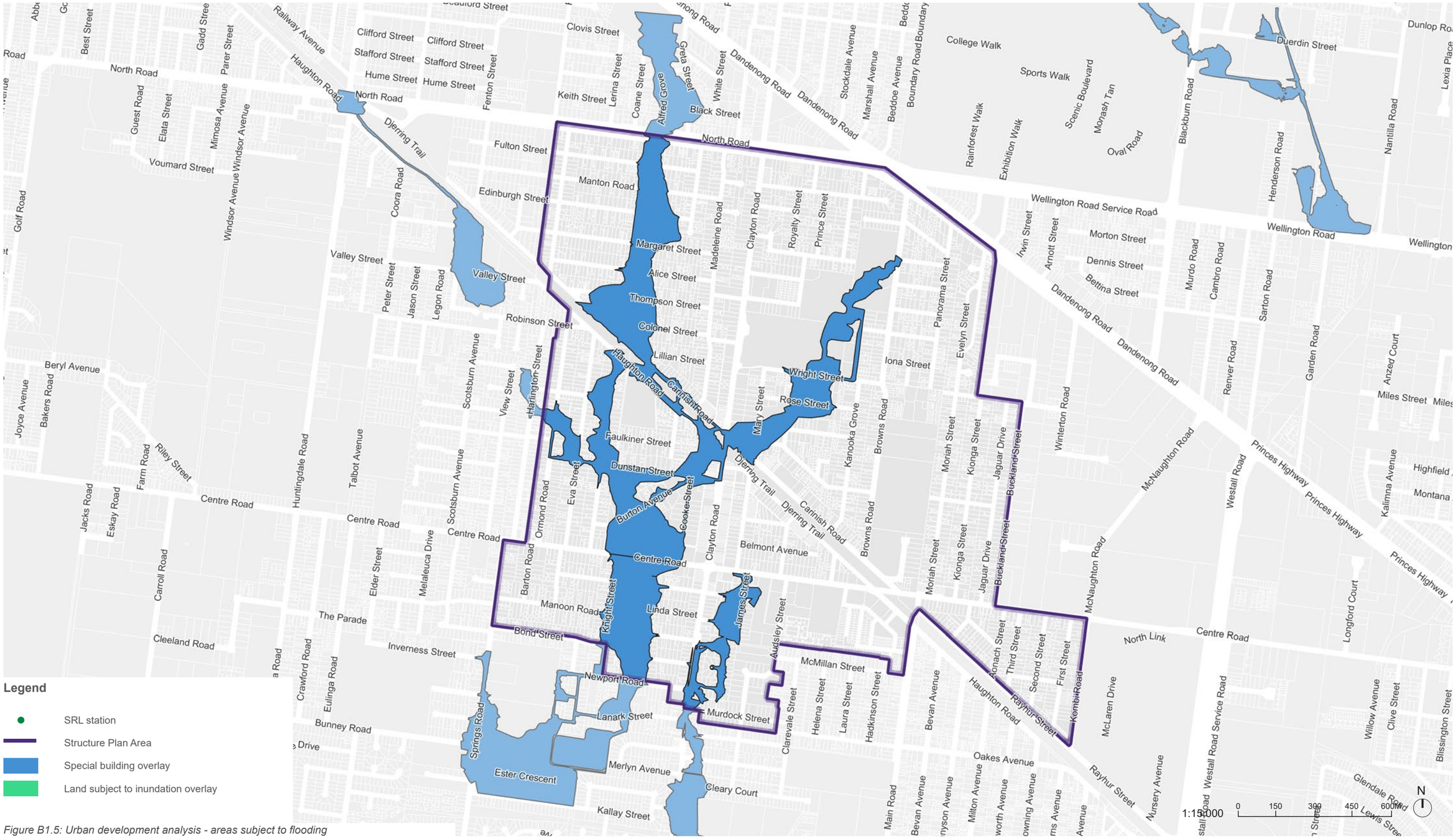

Figure B1.5: Urban development analysis - areas subject to flooding

Valued landscape character (significant landscape overlay)

Figure B1.6: Urban development analysis - valued landscape character (significant landscape overlay)

Valued character (neighbourhood character overlay)

Figure B1.7: Urban development analysis - valued character (neighbourhood character overlay)

Building height

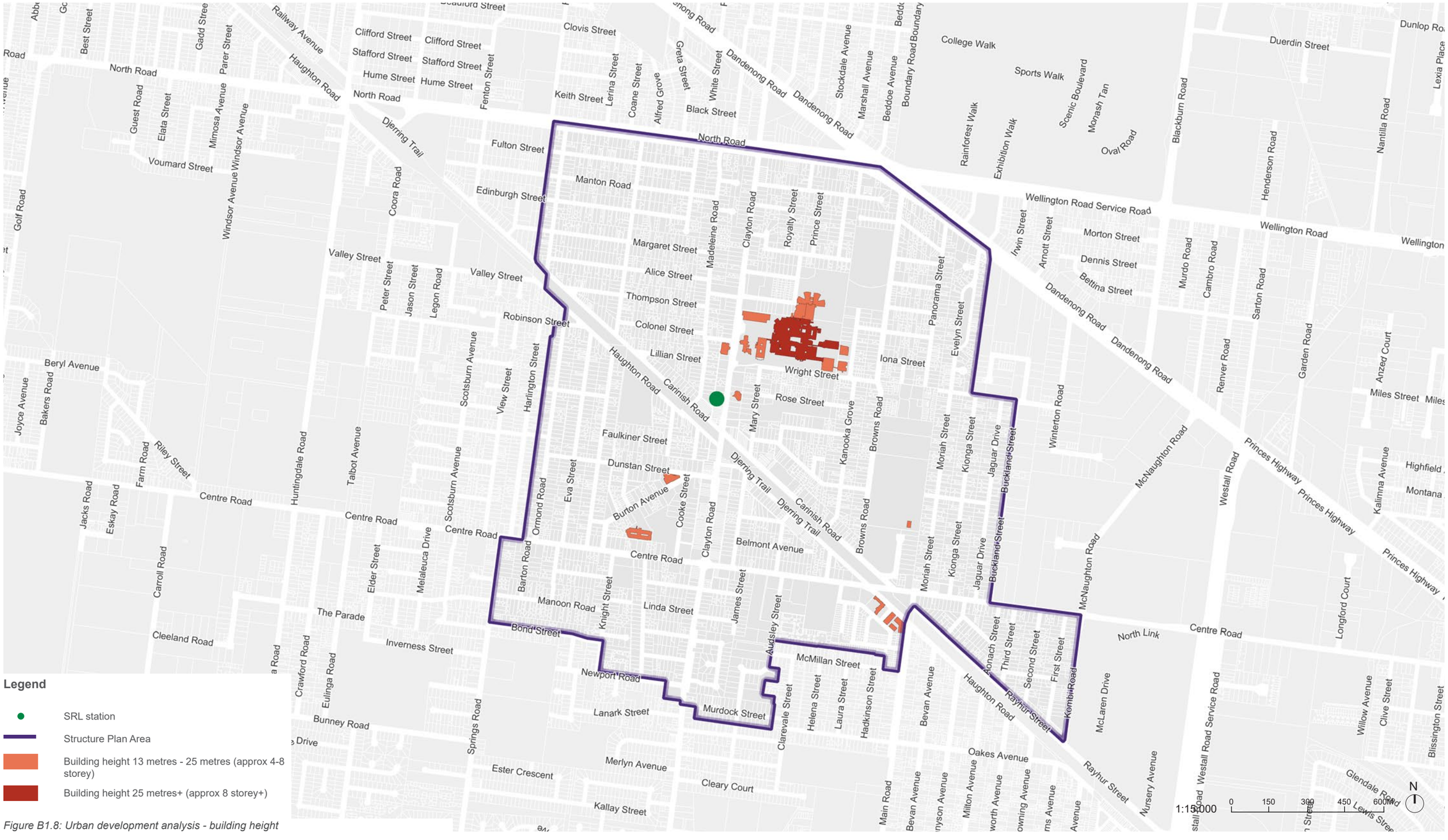

Figure B1.8: Urban development analysis - building height

Recent building approvals

Figure B1.9: Urban development analysis - recent building approvals

Slope

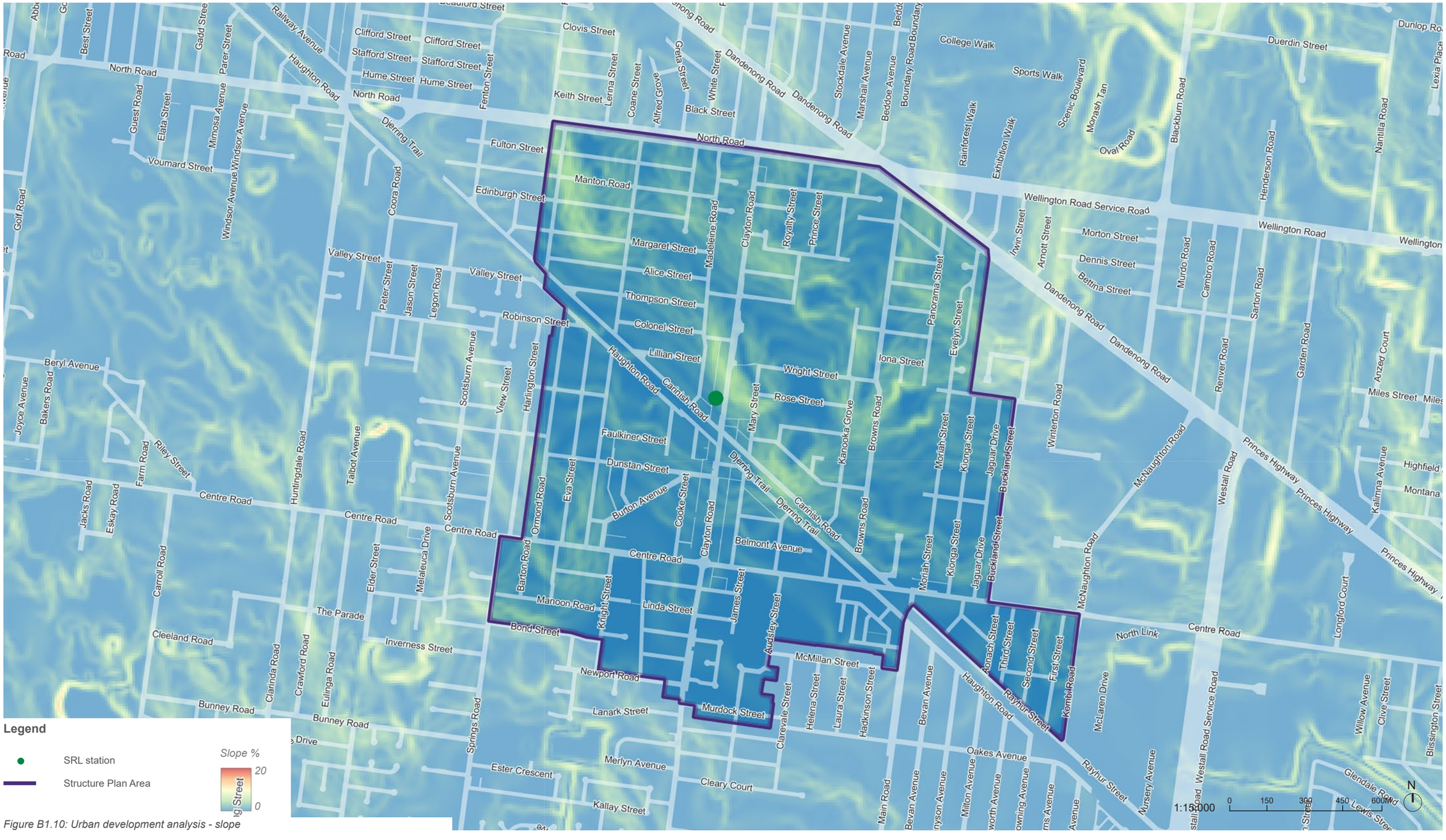

Figure B1.10: Urban development analysis - slope

Appendix C
Street Network and Public Realm Quality Analysis

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Street Network and Public Realm Quality Analysis to inform the Structure Planning Urban Design Report included:

- Public Space and Public Life Study - Urban Baseline Study (2023) by Gehl (see SRL East Structure Plan - Gehl Public Space and Life Study - Attachment B)
- Open Space Assessment (prepared by AJM Joint Venture for Suburban Rail Loop Authority 2024)
- Structure Planning Urban Design Report – street quality assessment.

These are discussed more below.

Alignment with the Gehl 'Public Space and Public Life Study'

In 2023 Gehl, a globally recognised urban design and research consultancy, completed in-depth public space and public life analysis on selected streets and spaces in the SRL East Structure Plan Areas.

The Gehl study provided an understanding of the public space quality and people's experience of selected key public spaces through data collection and analysis using a tool with a 12-quality criteria rating system.

The findings of this study can be found in SRL East Structure Plan - Gehl Public Space and Life Study - Attachment B.

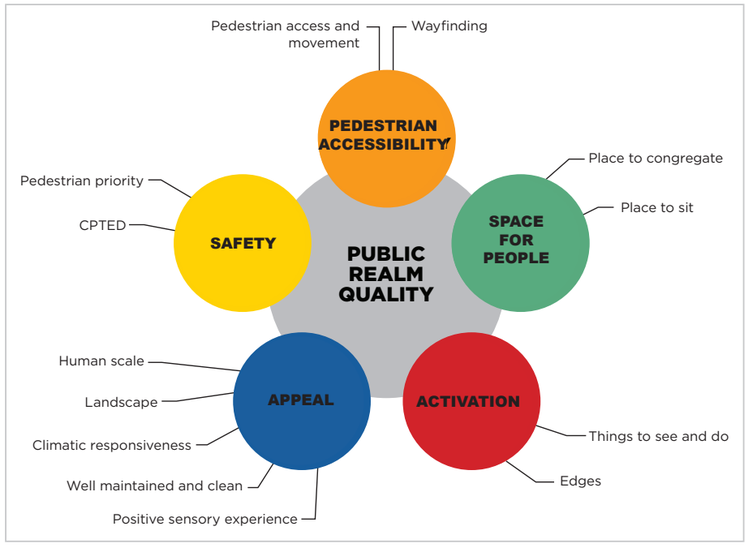
Open Space Assessment (prepared by AJM Joint Venture for Suburban Rail Loop Authority 2024)

The Open Space Assessment report was prepared to inform structure planning. This report included a quality assessment of existing open spaces within the 1600 metre radius of the SRL station which considered the Gehl study findings.

Structure Planning Urban Design Report – street network quality analysis

To inform the findings of this report, research was undertaken of various standards for permeability, along with analysis of the walkability, street block perimeters, and bock lengths of the Structure Plan Area. Further quality site assessments were also conducted to rate every street within the Structure Plan Area. As this assessment used different criteria to the Gehl study, the results differ in nuance, but generally align with similar levels of quality.

The summary research and analysis is outlined in the sections following.



Streets and Public Realm Quality Assessment Research for this Report (see Appendix)

Protection
Without this, most people will not come

Protection against traffic and accidents - *feeling safe*
- Protection for pedestrians
- Eliminating fear of traffic

Protection against crime and violence - *feeling secure*
- Lively public realm
- Eyes on the street
- Overlapping functions day/night
- Good lighting

Protection against unpleasant sensory experiences
- Wind
- Rain/snow
- Cold/heat
- Pollution
- Dust, noise, glare

Comfort
Without this, most people will not stay

Opportunities to walk
- Room for walking
- Interesting facades
- No obstacles
- Good surfaces
- Accessibility for everyone.

There are places to stand for a rest
- Edge effect / attractive zones for standing / staying
- Supports standing / staying
- Facades with good details that invite staying

There are places to comfortably sit
- Zones for sitting
- Utilising advantages: View, sun, people
- Good places to sit
- Benches for resting

There are plenty of things to look at
- Reasonable viewing distances
- Unhindered views
- Interesting views
- Lighting (when dark)

There are opportunities to play or exercise
- Physical activity, exercise
- Play and street entertainment
- By day and by night
- In summer and winter

I could easily have a conversation
- Low noise levels
- Street furniture that provide 'talkscapes'

Enjoyment
The difference between a good place and a great place

The space relates to my (human) scale
- Buildings and spaces designed to human scale

The space allows me to enjoy the positive aspects of climate
- Sun/shade
- Heat/coolness
- Shelter from wind/breeze

I like the aesthetic qualities and sensory experiences
- Good design and detailing
- Good materials
- Fine views
- Trees, plants, water

Gehl Public Space and Public Life Study (2023) Criteria

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Permeability standards

The aspiration for walkability in SRL East station Structure Plan Areas is to:

- Support and enhance convenient and desirable access to everyday services, facilities and key destinations within a 20-minute walking distance from home including reducing walking distances to and from the station and within core urban zones.

This can be delivered through the following:

- Offering a fine-grain urban structure to provide a network of pedestrian connections
- Improving the current pedestrian linkages, streets and spaces in the station Structure Plan Areas and supplement these where required with high quality, activated and appealing linkages.

This will be achieved by identifying appropriate targets in terms of permeability and applying them with a practical lens by analysing current permeability within the structure planning area.

Research has been undertaken into best practice permeability standards which is summarised in the table adjacent.

Source	Standard	Applicability to SRL East Precincts
Urban Design Guidelines for Victoria	Create a permeable block layout with block dimensions ranging from 120 m to 240 m long and 60 m to 120 m wide.	Provides overarching parameters and maximum block length as a generic approach. Consideration of best practice targets for urban conditions below provide more applicable targets for SRL precincts.
	A block perimeter of around 600 m provides for good pedestrian and vehicular access and an efficient subdivision pattern of the block. Smaller blocks may be appropriate in more intense urban areas.	Perimeter of 600 metres is too large to ensure pedestrian permeability adjacent to new stations.
Melbourne Planning Scheme DD01	100 metres maximum block length Within 100 metres of rail station pedestrian connections less than 70 metres apart	Urban condition applicable to some areas within SRL East precincts subject to ultimate land use and density outcomes. 100 metres maximum block length provides optimal outcome in areas surrounding rail station to maximise permeability.
City North Structure Plan and Melbourne DDO61	Pedestrian through block connections should be provided where the average length of a street block exceeds 100 meters. For street blocks exceeding 200 metres in length at least two connections should be provided	Urban condition applicable to some areas within SRL East precincts subject to ultimate land use and density outcomes. 100 metres maximum block length provides optimal outcome in areas surrounding rail station to maximise permeability.
NSW Movement and Place – Network Planning in Precincts Guide	'Create a permeable network with a grid-like structure, short block length and high intersection density' Less than 250 metres block lengths with a recommended block length of 120 metres-180 metres	A good benchmark for consideration within SLR East precincts which provides a range in block length to respond to desired outcomes and conditions.
Westbrook PSP (completed May 2022)	Street block lengths should not exceed 240 metres	Urban condition not comparable to SRL East precincts given provision of transit.
Case studies	**Dimensions**	**Applicability to SRL East Precincts**
Melbourne CBD	600 m perimeter: 100 m x 200 m with minimum 1 pedestrian through connection.	Pedestrian through-connection increases permeability, but not consistently activated, resulting in some "back-of-house" pedestrian experiences and poor perceived pedestrian safety.
Fitzroy, VIC	Approximately 75 x 80 m blocks	Fine-grain and highly walkable with a variety of land use and density outcomes.

Table 1-1 Permeability research findings

Walkability analysis

The walkability analysis and measure has been derived from a comparison of the 800 metres walkable catchment vs an 800 metres radial catchment. For the purpose of this study the walkable catchment has been derived using GIS by measuring a 800 metres distance along walkable paths from station entrances. The 800 metres radius represents an 'as the crow flies' distance from the centre of the station. A comparison of these areas gives an indication of the level of permeability achieved within the station precinct. It is noted that a 100 per cent outcome is not achievable in a logical urban block arrangement that is comprised of a gridded system.

Figure C1.1: Walkability analysis

Legend

- SRL station
- Structure Plan Area
- 400 metres radial catchment (from centre of station)
- 800 metres walkable catchment from station entries
- 800 metres radial catchment

Street block perimeter analysis

The following street block perimeter analysis shows the distance to walk around an urban block. This is an indicator of urban grain and demonstrates the areas that lack permeability.

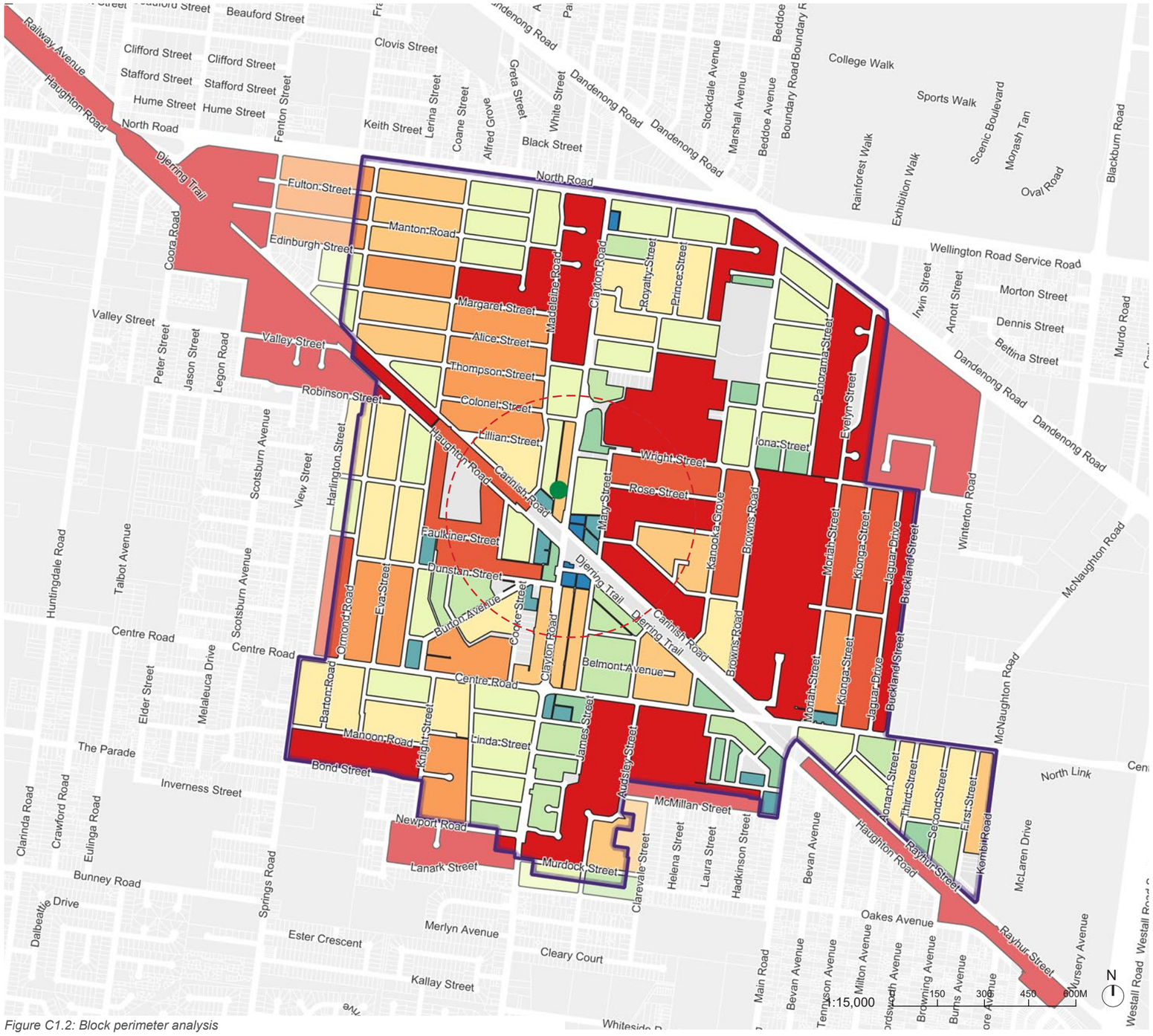

Figure C1.2: Block perimeter analysis

Legend

- SRL station
- Structure Plan Area
- 400 metres radial catchment

Street block perimeter length

- 0 metres to 200 metres
- 200 metres to 300 metres
- 300 metres to 400 metres (5-minute walk)
- 400 metres to 500 metres
- 500 metres to 600 metres
- 600 metres to 700 metres
- 700 metres to 800 metres (10-minute walk)
- 800 metres to 900 metres
- 900 metres to 1000 metres
- 1000+ metres (>12-minute walk)

Block length analysis

The following analysis highlights the existing urban block length within the structure planning area. Areas with urban block length in excess of the agreed targets present barriers to walkability and create issues to be considered within the public realm strategy.

Note: privatised / internal pedestrian linkages (not open 24 hours) exist currently which are not represented for the purpose of this mapping

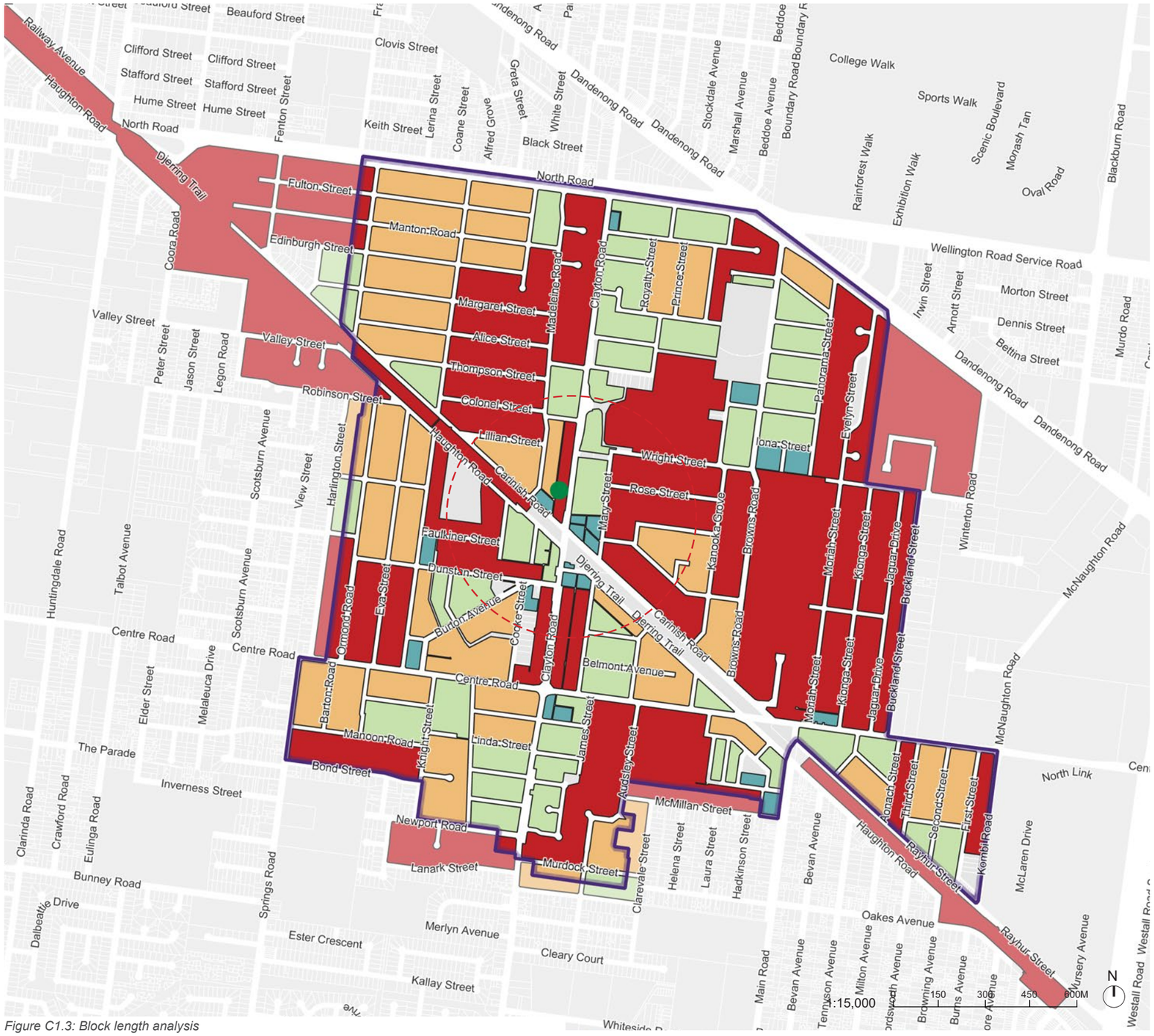

Figure C1.3: Block length analysis

Legend

- SRL station
- Structure Plan Area
- 400 metres radial catchment
- Block length 0 metres - 100 metres
- Block length 100 metres - 200 metres
- Block length 200 metres - 300 metres
- Block length 300 metres +

Public realm quality standards

The following analysis focuses on assessing the quality of the public realm with a focus on the pedestrian experience. This assessment provides the following:

- A rating against 5 themes with reference to 12 criteria for all streets and spaces within the study area that records performance under the assessment values identified below
- An overview of the current performance of streets and spaces within the context of the current land use pattern. It does not assess against the future intended use
- Land use factored into the assessment through the score provided. Retail streets will score a higher degree of activation than residential streets. It does not offer separate rating scales for street typologies
- Spaces that do not have a pedestrian function or are privatised have been excluded from the assessment
- Functionality of open space does not form part of the assessment. Open space is assessed against the experience for a pedestrian, not performance against community needs.

Public realm quality criteria

A set of criteria have been developed to assess public realm quality focusing on the pedestrian experience. These have been derived with reference to established public realm quality criteria including:

- The Public Life Diversity Toolkit, Gehl Institute
- Public space site-specific assessment, UN Habitat
- Pedestrians first, Institute for Transportation and Development Policy.

The criteria offer themes and issues for consideration by the urban design team to assess the quality of the public realm within the structure plan boundary. This will provide a baseline position to understand what areas require upgrades to optimise outcomes for the structure plan.

The following pages spatially map the findings of the public realm quality assessment across a range of themes.

Methodology

The assessment of the public realm was conducted through site visits to each precinct. These visits aimed to evaluate the quality of streetscapes and public open areas based on the criteria established. During these precinct site visits, an assessment was conducted for every street, road, activity centre, and public space encompassed within the structure plan boundary.

Streets and public realm quality assessment research

Table 1-1 Streets and public realm quality assessment checklist

1. SAFETY	2. PEDESTRIAN ACCESSIBILITY	3. SPACE FOR PEOPLE	4. ACTIVATION	5. APPEAL
Pedestrian priority • Are pedestrians protected from traffic? • Are there safe opportunities for pedestrians to cross? **CPTED – perception of safety** • Is there adequate lighting? • Are there 'eyes on the street / space' (windows / balconies / ground level entries / passing traffic etc)? • Are there any entrapment points?	**Pedestrian access and movement** • Is it easy to get around as a pedestrian? • Are pathways clear from obstruction? **Wayfinding** • Is legibility intuitive and can people find their way around easily? • Is their adequate provision of signage and wayfinding?	**Variety of places** • Is there space to stand / linger / lean? • Where appropriate, are there places to sit or gather? • Are there opportunities for human interaction? • Does the public realm support a diverse range of community activities and needs?	**Activities / things to engage with / look at** • Are there engaging things to look at / public art? • Where appropriate, are there things to do (such as play equipment in parks)? **Edges** • Are edges engaging (active frontage / lots of entries and elements / blank walls)?	**Human scale** • Are there any overbearing structures? Appropriate street wall height? • Is it a highly-exposed / over-scaled space? **Landscape** • Are there street trees and planting? • Balance of hardscape and softscape? **Climatic responsiveness** • Can you enjoy the positive aspects of climate? • Is there protection from sun in summer / wind and rain protection? **Well maintained / clean** • Are there public rubbish bins? Is there a lack of rubbish in the public realm? • Is the planting maintained / cared for (no weeds, lawn mowed)? • Are the footpaths and surfaces in good condition? **Positive setting / sensory** • Are there no unpleasant noises dust, pollution or smells?

Streets quality assessment - Safety

The safety of streets is assessed through the lens of the pedestrian experience and includes factors such as the protection from traffic and provision of safe crossing opportunities. Safety also includes CPTED factors such as the provision of adequate lighting and the degree of passive surveillance and lack of entrapment points.

Figure C1.4: Streets quality assessment - Safety

Streets quality assessment - Pedestrian accessibility

Pedestrian accessibility provides an assessment of the ease of pedestrian movement and the provision of adequate pedestrian paths and circulation. Pedestrian pathway widths are a factor as well as the inclusion of signage and intuitive wayfinding.

Figure C1.5: Streets quality assessment - Access

Legend

- SRL station
- Structure Plan Area

Poor — Lacking — Satisfactory — Reasonable — Good

Streets quality assessment - Space for people

Space for people relates to the opportunity for people to sit, stand or gather, fostering human interaction and creating an environment for social engagement. This includes the provision of urban furniture items such as benches and chairs as well as providing areas where people can pause and interact without creating an obstruction in the street.

Figure C1.6: Streets quality assessment - Space for people

Legend

- SRL station
- Structure Plan Area

Poor | Lacking | Satisfactory | Reasonable | Good

Streets quality assessment - Activation

Activation relates to the presence of engaging things to look at, elements to interact with, and edges that help drive a sense of activity, such as retail frontages, building entrances and facades that have visual interest. Inactive edges and dead zones negatively affect activation.

Figure C1.7: Streets quality assessment - Street activation

Legend

- SRL station
- Structure Plan Area

Poor | Lacking | Satisfactory | Reasonable | Good

Streets quality assessment - Appeal

Appeal relates to attractiveness of built form, the presence of vegetation and street trees, the use of high quality and well-designed materials, and the maintenance and upkeep of a space. Appeal relates to the senses with poor amenity relating to smell, sound or sight negatively affecting the rating. The degree of human scale or sense of exposure also relates to appeal, which concerns the presence of overbearing structures, spaces of refuge, as well as protection from climatic factors such as sun, wind and rain.

Legend

- SRL station
- Structure Plan Area

Poor — Lacking — Satisfactory — Reasonable — Good

Figure C1.8: Streets quality assessment - Appeal

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