GEELONG SALEYARDS PRECINCT PLAN
MOVEMENT AND ACCESS STRATEGY

esr Transport Planning

efficient safe reliable

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PREPARED FOR

CITY OF GREATER GEELONG

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Contents

1 Introduction

1.1 Overview

The Geelong Saleyards on Weddell Road in North Geelong had been in operation since 1869. In 2016 the City of Greater Geelong stopped the sale of sheep and cattle due to significant Occupational Health and Safety issues. Neighbouring the Saleyards is the former Target headquarters site.

The Geelong Saleyards Precinct Plan will investigate options for the future development of the precinct and provide guidance on its future form.

ESR Transport Planning has been engaged to assist Council during preparation of the Precinct Plan with the preparation of this Movement and Access Strategy.

1.2 Referenced Information

- Site inspections and data collection late 2018.
- Plans, data and advice from City of Greater Geelong.
- Greater Geelong Planning Scheme.
- Public Transport Victoria, maps and timetables (www.ptv.vic.gov.au).
- VicRoads traffic volume data and Crashstats data (www.data.vic.gov.au).

1.3 Terms

- CBD Central Business District
- Council / the City / COGG City of Greater Geelong
- kph kilometres per hour
- m metres
- m^2 square metres
- PTV Public Transport Victoria
- vph vehicle movements per hour
- vpd vehicle movements per day

2 Contextual Analysis

2.1 Study Area

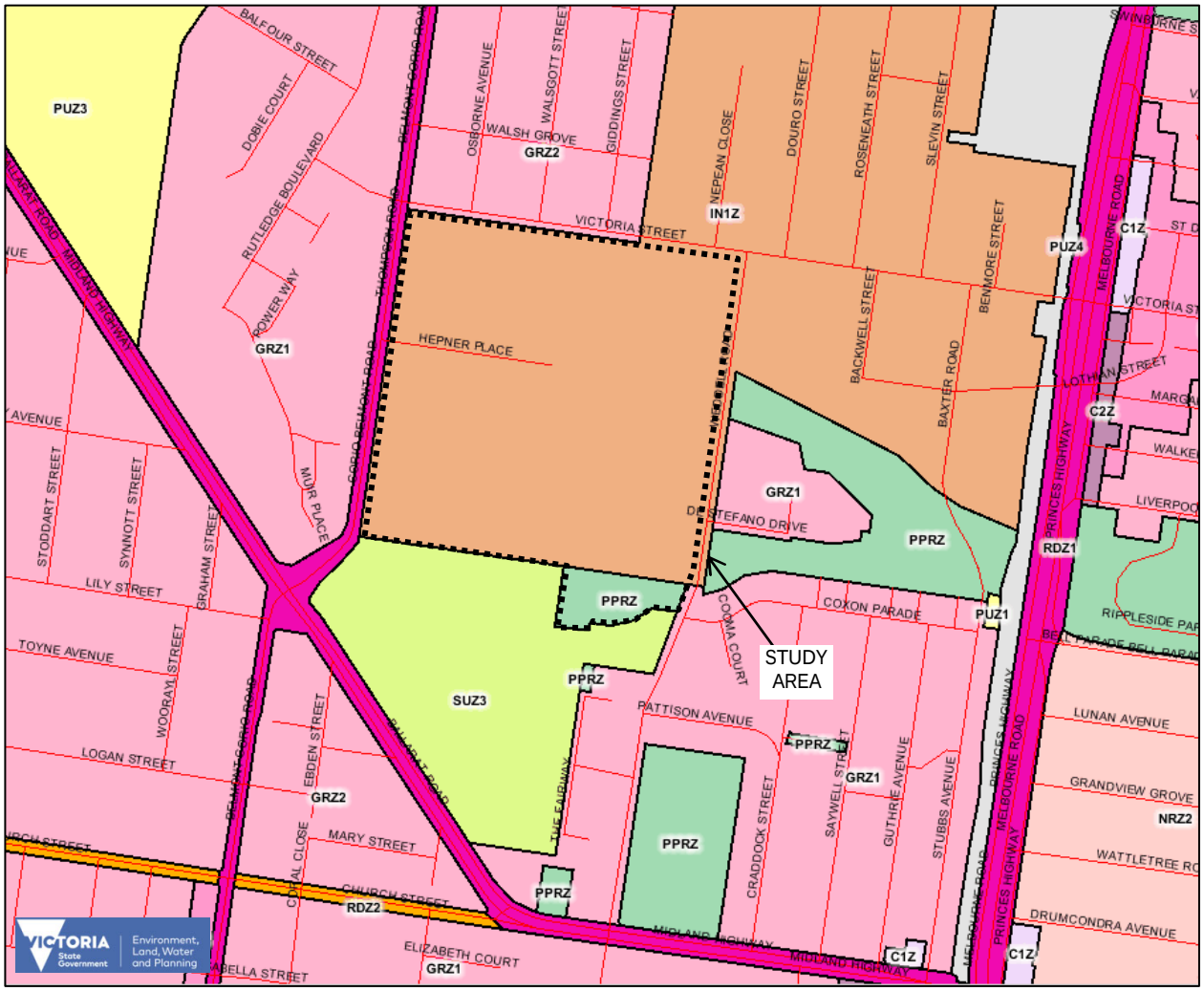
The study area is bound by Thompson Road, Victoria Street, Weddell Road and the Geelong Golf Club. Major destinations all within 3km of the site include Geelong's CBD, North Geelong Station, Pakington Street Activity Centre, Rippleside Park, Geelong Waterfront, various schools and the Geelong Ring Road.

Figure 2.1 Study Area Locality

The northern part of the study area has a mix of established commercial properties which are unlikely to change or be significantly redeveloped. A stormwater harvesting facility immediately north of the former Saleyards is to remain. Crown land is immediately south of the former Saleyards and is to be considered for redevelopment opportunities. The former Target site incorporates a building of approximately 11,000m^2 that up until 2019 was used as Target's head office with approximately 1,000 staff and approximately 610 car parking spaces. The Sphinx Hotel in the precinct's southwest incorporates surplus land at its rear which may be developed in future.

An aged care facility is located on the opposite side of Weddell Road and the Geelong Golf Club is to the south. Apart from the Crown Land, the site is zoned Industry 1 Zone together with land to the northeast. Residential land subject to a General Residential Zone abuts to the west, northwest and southeast.

Figure 2.2 Zone Map

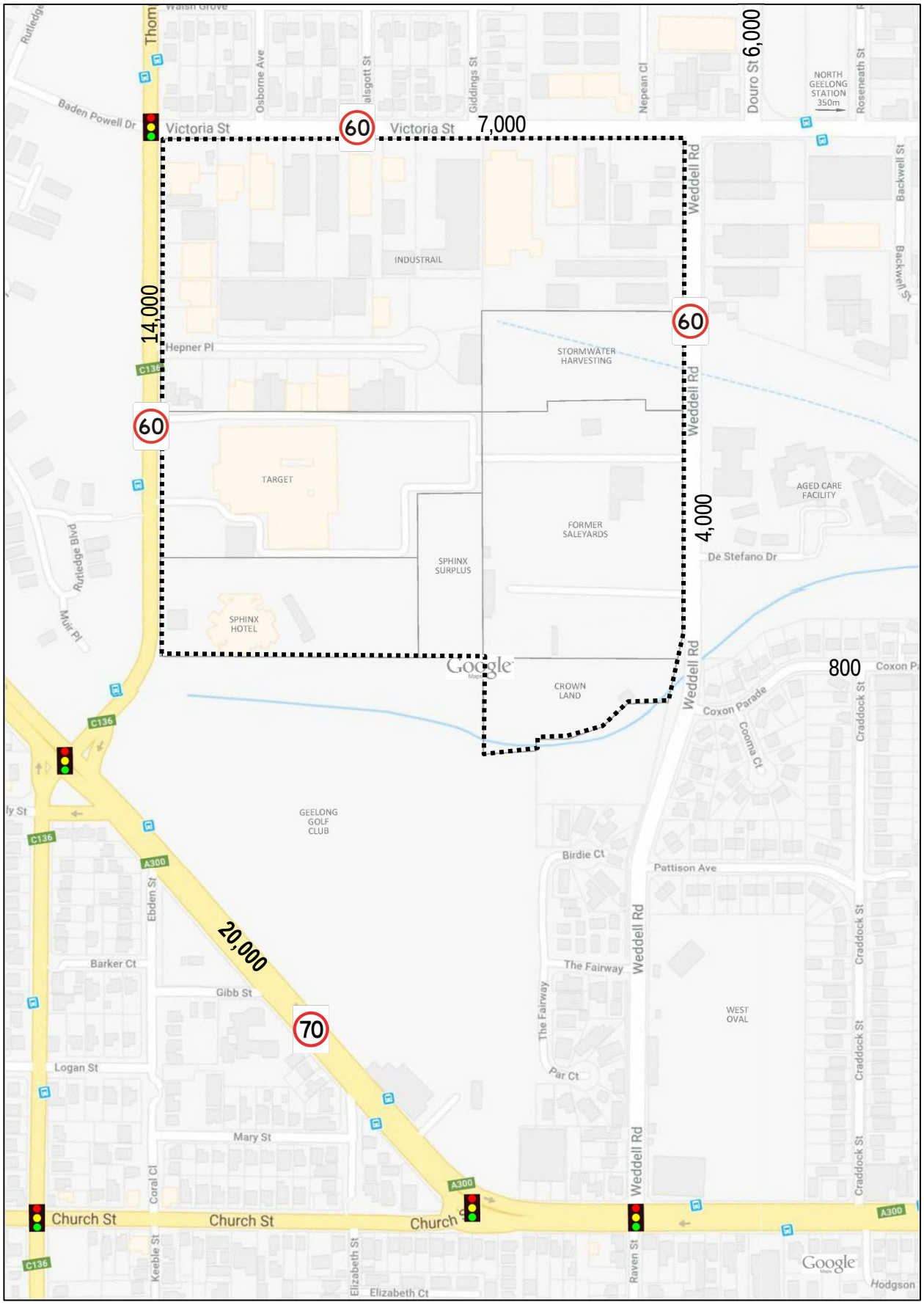


2.2 Road Network

The nearby road network encompasses the VicRoads managed Primary Arterial Road of Ballarat Road (also known as Midland Hwy) with a 70kph speed limit and the Secondary Arterial Road of Thompson Road with a 60kph speed limit. Victoria Street, Weddell Road and Douro Street are classified as Collector Roads (Main Distributors) with 60kph speed limits while most other nearby roads are classified as Access Roads with 50kph speed limits.

Figure 2.3 shows the location of nearby traffic signals together with indicative daily traffic volumes (recorded 2019 or prior when the Target office was in use) and speed limits. Other nearby intersections are priority controlled.

Figure 2.3 Surrounding Road Network with Indicative Daily Two-way Traffic Volumes



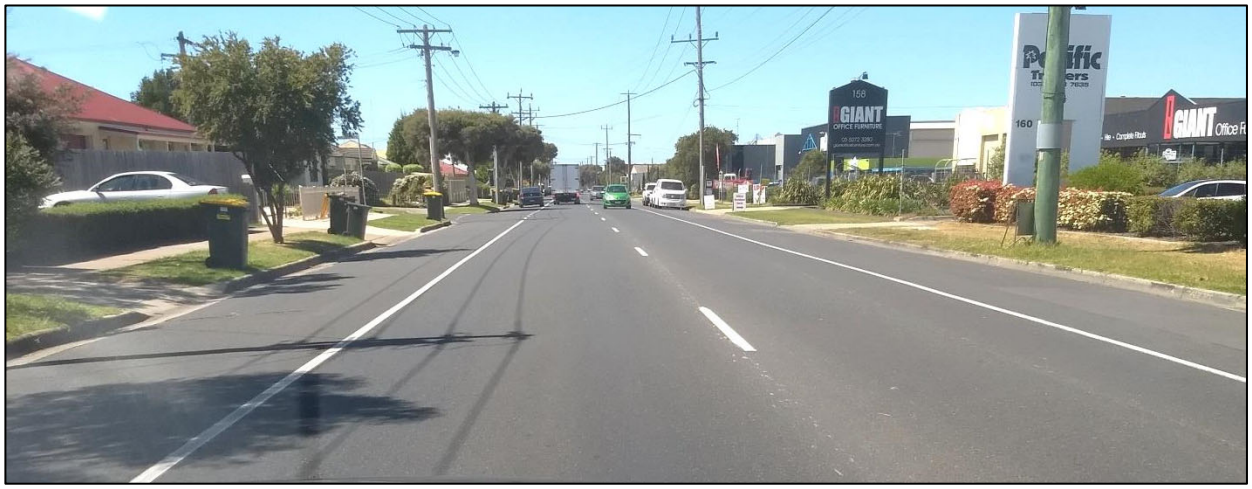
Data sources: VicRoads databases (www.data.vic.gov.au), Council survey data 2010-2015.

Thompson Road has a 20m road reserve and its carriageway provides 2 traffic lanes in each direction without kerbside parking[1], plus central right turn lanes at key locations.

Figure 2.4 Thompson Road, facing south

Victoria Street and Weddell Road have 20m road reserves with an approximately 12.5m wide carriageway accommodating a through traffic lane in each direction and kerbside parallel parking on both sides.

Figure 2.5 Victoria Street, facing east



[1] No Standing signs are located along the east side. Limited No Standing signs are located along the west side (where land use doesn't front the roadway).

Figure 2.6 Weddell Road, facing north

VicRoads has advised[2] that there are currently no planned major changes to the nearby road network.

2.3 Accident History

A review of road accidents in the site's vicinity has been undertaken using VicRoads Crashstats database[3], which is a record of accidents reported to police which resulted in personal injury within the last 5 years. Several accidents have occurred along nearby roads, with many around the high traffic volume intersection of Ballarat Road / Thompson Road. Other accidents were scattered across various locations. Most accidents involved motor vehicles only rather than vulnerable road users (pedestrians & cyclists).

2.4 Car Parking

On-street car parking is permitted on most nearby roads except Thompson Road.

Based on Nearmap aerial photo records and site visit observations, on-street parking demands are typically low along nearby roadways. Exceptions are Hepner Place which typically experiences high demands during the daytime.

The Target site has a provision of approximately 610 car parking spaces and it is understood that at times weekday demands fully occupied the carpark.

The Sphinx hotel has large areas of car parking that are anticipated to cater for peak customer demands.

[2] Consultation with VicRoads officers Nov.-Dec. 2018.

[3] VicRoads Crashstats Last 5 Years database (www.data.vic.gov.au).

2.5 Public Transport

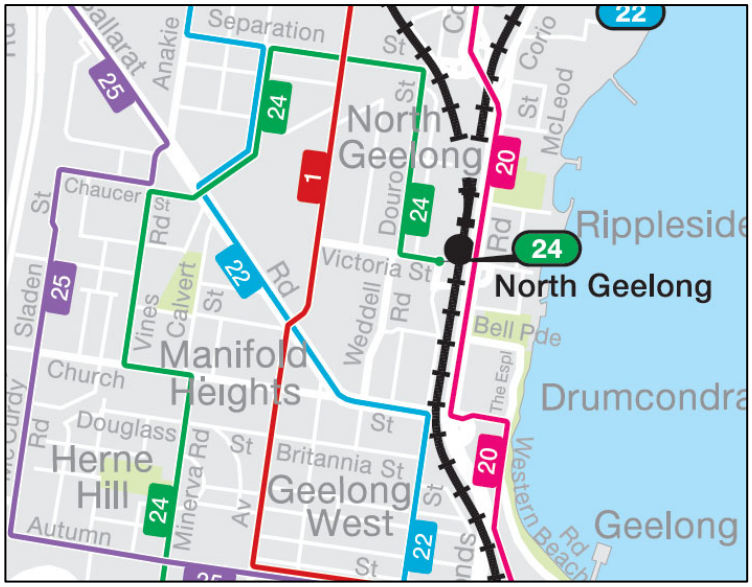
Route bus services operating along nearby roads include the following:

- Route 1 - North Shore Station to Deakin University via Geelong City (along Thompson Road).
- Route 22 - Geelong Station to North Shore Station via Anakie Road (along Ballarat Road).
- Route 24 - Geelong Station to North Geelong Station via Newtown (along Victoria Street and Douro Street).

North Geelong rail station is a walk distance of approximately 1km from the centre of the site.

Public Transport Victoria (PTV) has advised[4] that there are currently no planned major changes to the nearby bus network.

Figure 2.8 Bus Route Map



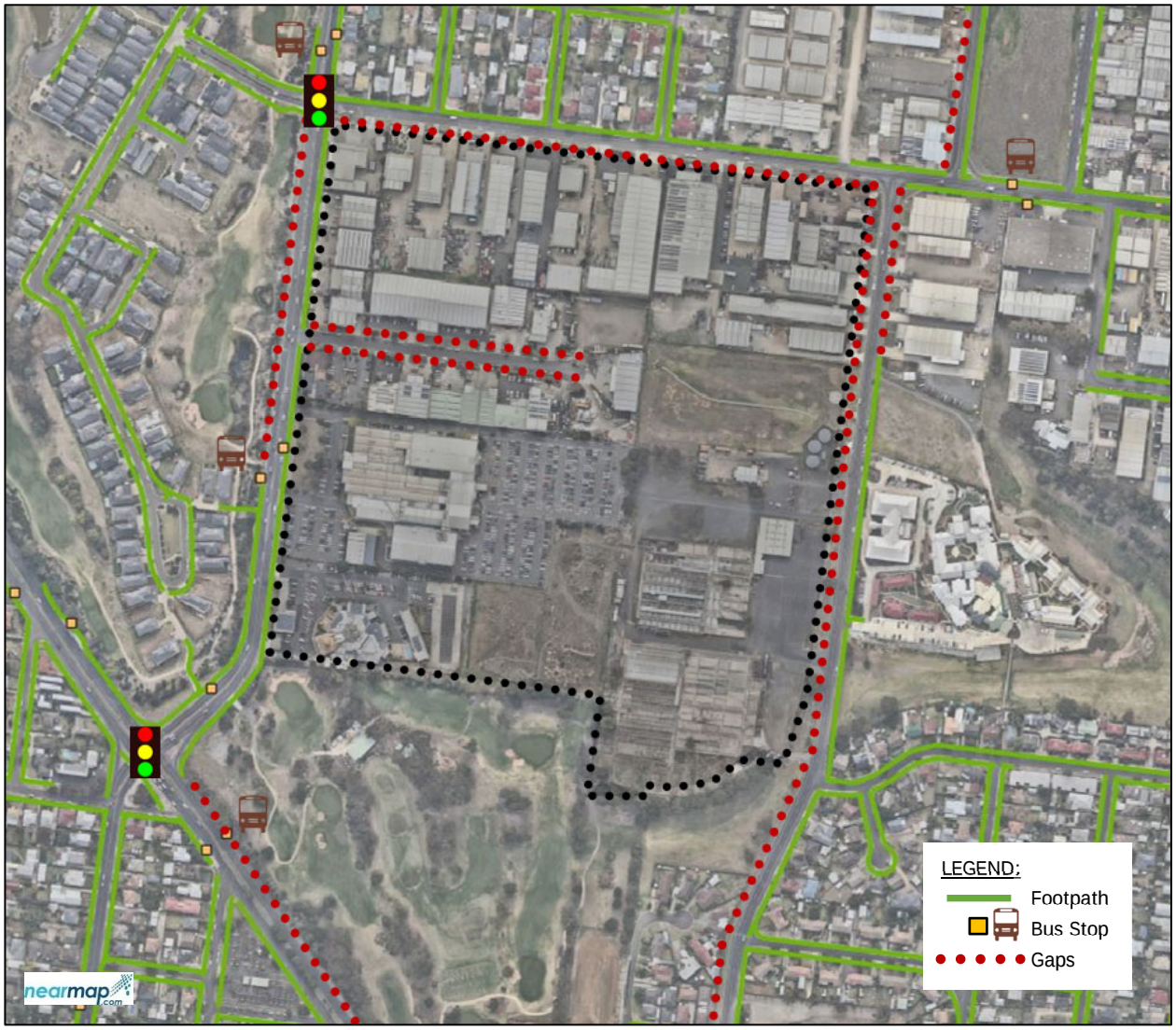
Source: Public Transport Victoria

[4] Consultation with Public Transport Victoria Nov. 2018.

2.6 Walking & Cycling

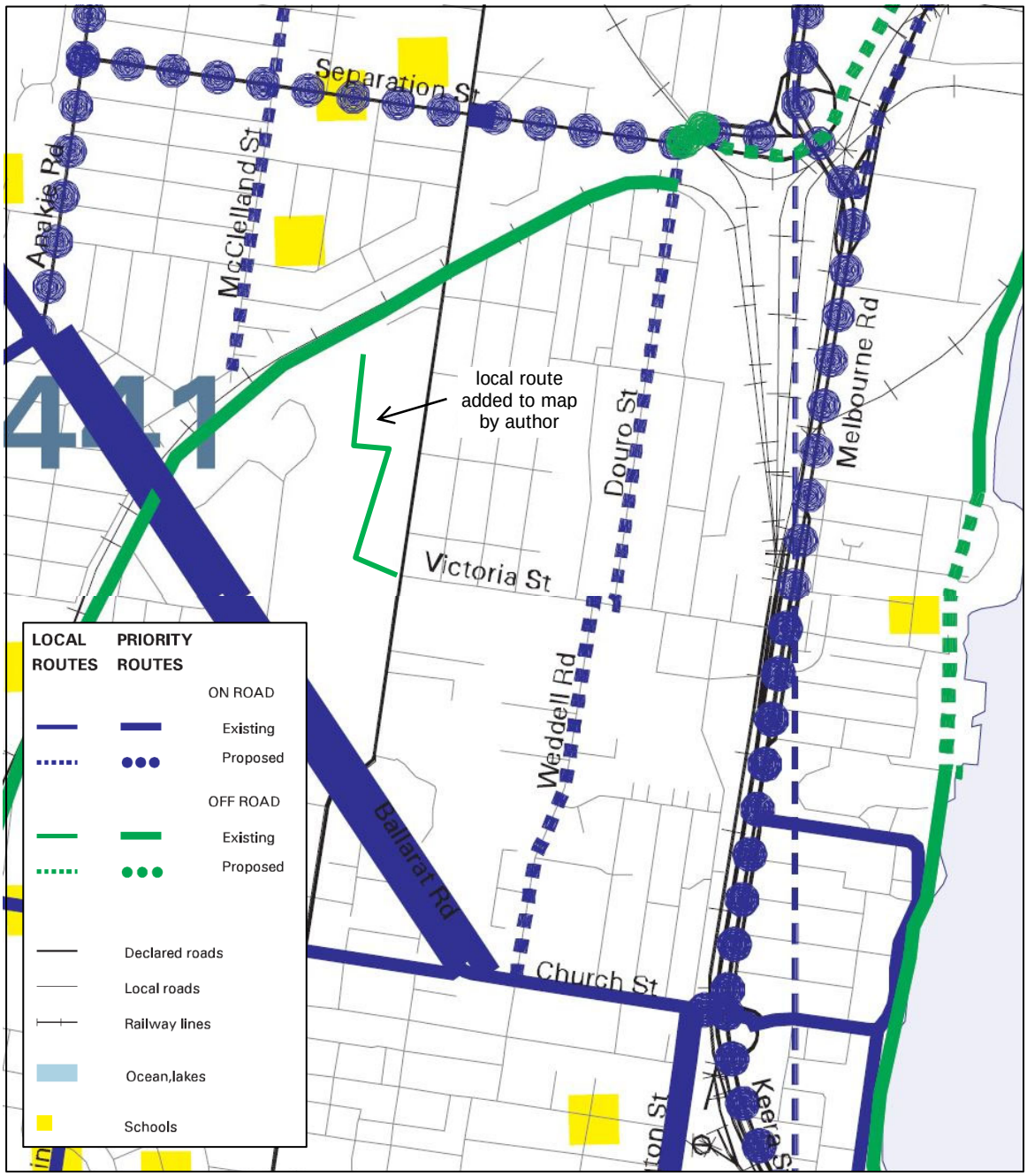
The provision of roadside footpaths around the precinct is mixed with footpaths provided along the east side and parts of the west side of Thompson Road, the north side of Victoria Street and partly along the east side of Weddell Road.

Figure 2.8 Footpath Network



The wide kerbside parking lanes along Victoria Street and Weddell Road provide informal on-road cycling routes. Ballarat Road has a marked bicycle lane north-westbound and cyclist provision within a paved shoulder south-eastbound.

Figure 2.9 Municipal Bicycle Network Map



Source: VicRoads

2.7 Travel Behaviour

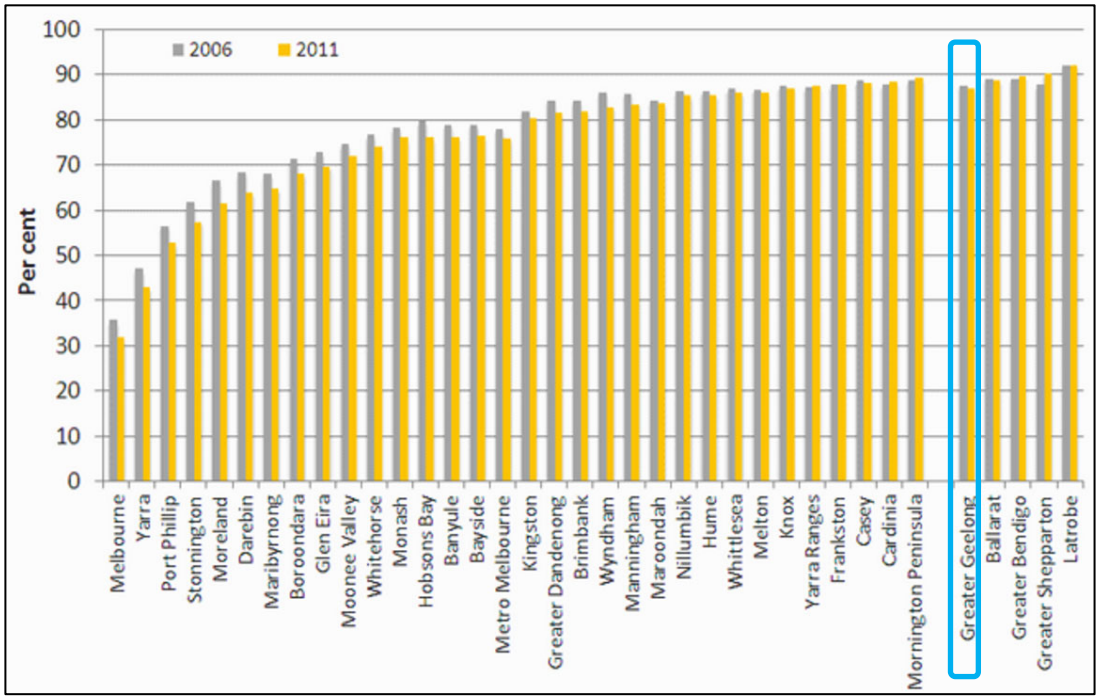
In Geelong, cars are the predominate mode choice (as is the case for other non-metro areas). Census data indicates work journeys are predominately undertaken by car (87%), public transport is used for 6% of journeys and bicycles are used for 1% of journeys.

Table 2.1 Method of Travel, Work Journeys from Greater Geelong

	1996	2001	2006	2011	*1996*	*2001*	*2006*	*2011*
Car as driver	45,912	50,316	56,743	63,411	*79%*	*80%*	*81%*	*81%*
Car as passenger	5,069	4,692	4,597	5,037	*9%*	*7%*	*7%*	*6%*
Public transport (any mention)	2,542	2,991	3,224	4,746	*4%*	*5%*	*5%*	*6%*
Walk only	1,967	2,120	2,611	2,622	*3%*	*3%*	*4%*	*3%*
Bicycle only	876	839	889	913	*2%*	*1%*	*1%*	*1%*
Motorbike / Motor scooter	348	259	315	296	*<1%*	*<1%*	*<1%*	*<1%*
Other	1,147	1,734	1,664	1,685	*2%*	*3%*	*2%*	*2%*

Source: 2011 Census Data, Journey to Work, Victorian Travel Atlas report.

Figure 2.10 Mode Share Car Journeys to Work for Metropolitan and Regional Municipalities



Source: 2011 Census Data, Working Population Profile.

3 Development Concept Plan

The City has resolved to support mixed use development in the precinct, which will focus mainly on housing and smaller scale commercial (e.g. retail). Housing is consistent with Council's polices to support more infill housing in existing suburbs close to train stations and activity centres. Open space is to be incorporated into the Precinct Plan and the existing stormwater harvesting facility in the northern part of the precinct will remain.

Site analysis indicates that as a medium density housing precinct, the site could accommodate up to approximately 660 residential dwellings (maximum dwelling scenario). With a mixed use precinct nominated with 1800m^2 retail floor space. Excluding the Target site, up to approximately 390 residential dwellings could be accommodated.

4 Traffic Generation

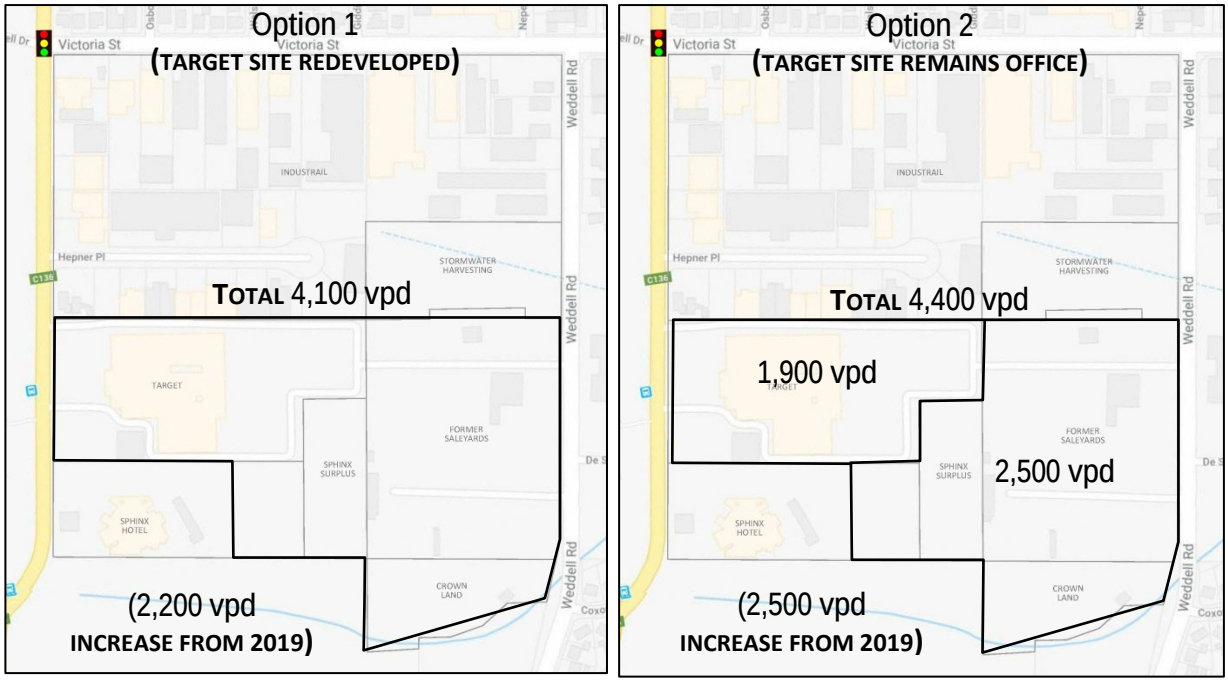
The former use of the saleyards would have generated significant traffic activity concentrated along Weddell Road, including truck traffic, which no longer occurs.

The volume of traffic generated from future housing within the precinct will depend on the number of dwellings. Based on the maximum dwelling scenario described in Section 3, empirical analysis indicates residential and retail traffic volumes would be in the order of 4,100 vehicle movements per day, or 2,500 vehicle movements per day if the Target site remained as an office use. Peak hour traffic volume would represent approximately 10% of daily traffic volumes.

The Target site generated significant traffic activity and if a new office tenant occupies the building, traffic activity could be expected to be at similar levels. Compared to sources of empirical data, parking demands that occurred on-site were comparably very high. Accordingly, traffic movements are likely to also correspond with the high end of empirical traffic generation rates, such as approximately 2.5 vehicle movements per 100m^2 floor area (peak hour) and approximately 17 vehicle movements per 100m^2 floor area (daily). This equates to the site generating approximately 275 vehicle movements (peak hour) and approximately 1,900 vehicle movements (daily). Office site traffic is predominately in during the morning and out during the evening.

On the basis of the traffic generation assessments above, Figure 4.1 shows the daily traffic volumes (order of magnitude) that could be expected to be generated by anticipated future development scenarios.

Figure 4.1 Daily Traffic Generation of Future Development (Maximum Number of Dwellings Scenario)



5 Transport Infrastructure Provision

5.1 Objectives

The Planning Scheme provides a range of objectives for new transport networks. A summary of some key objectives to guide decision making for the precinct are listed as follows:

- Promote the use of sustainable transport.
- Provide safe and convenient walking and cycling movement networks.
- Provide connectivity and permeability through and between neighbourhoods.
- Provide appropriate levels of traffic dispersal.
- Provide direct routes for all modes of transport.
- Integrate all modes of transport.
- Minimise adverse impacts on existing transport networks.
- Minimise adverse residential amenity impacts.
- Provide a safe environment for all modes of transport.

5.2 Road Network Hierarchy and Layout

Given the precincts location within the wider road network and the levels of traffic activity likely to be generated by its future development, the precincts future roads should incorporate Access Roads and lower order roadways to provide local access functionality. Collector Roads (through routes) would be unnecessary.

A grid based road layout would align with the precincts boundaries and provide a network that is easily navigated and enables direct, safe and convenient movement for all road users. As well as being efficient for lot yield.

To manage vehicle speeds, road segments should be generally less than 240m in length. For this reason and to discourage through traffic, roadway links between Thompson Road and Weddell Road should be broken up by changes in alignment or roundabout intersection control.

A road network layout that can be staged is required that has the ability for future extensions into adjacent land holdings. If the Target site remains as is, the rear of the site (eastern boundary) should be provided with roadway access to maintain the current ability for vehicles to access the site's car parking from Weddell Road.

5.3 Road Cross Sections

Planning Scheme Clause 56.06 provides design requirements for new residential subdivision roadways, and these are considered suitable for residential development of the site.

The images below provide examples of typical Access Road and Access Lane cross sections.

Figure 5.1 Example of a Residential Access Road

Figure 5.2 Example of a Residential Access Lane (rear access to properties)

Parts of the study area are likely to require other types of road cross section. Such as providing car parking clear or traffic lanes and wider footpaths in retail or commercial precincts, or cross sections for efficient traffic flow purposes on approaches to busy intersections (e.g. near Thompson Road). Other urban design matters such as landscaping may influence road cross sections.

Figure 5.3 Other Cross Section Examples

5.4 Walking, Cycling and Access to Public Transport

As part of future development, new roads should include footpaths along development frontages (typically both sides of a roadway).

Residential neighbourhoods desirably have 95% of dwellings not more than 400m walking distance from a bus stop and 800m walking distance from a rail station. The northeast of the precinct is within 800m walking distance to North Geelong Station and much of the precinct is

within 400m walking distance to a bus stop with buses operating along Thompson Road, Ballarat Road and Victoria Street.

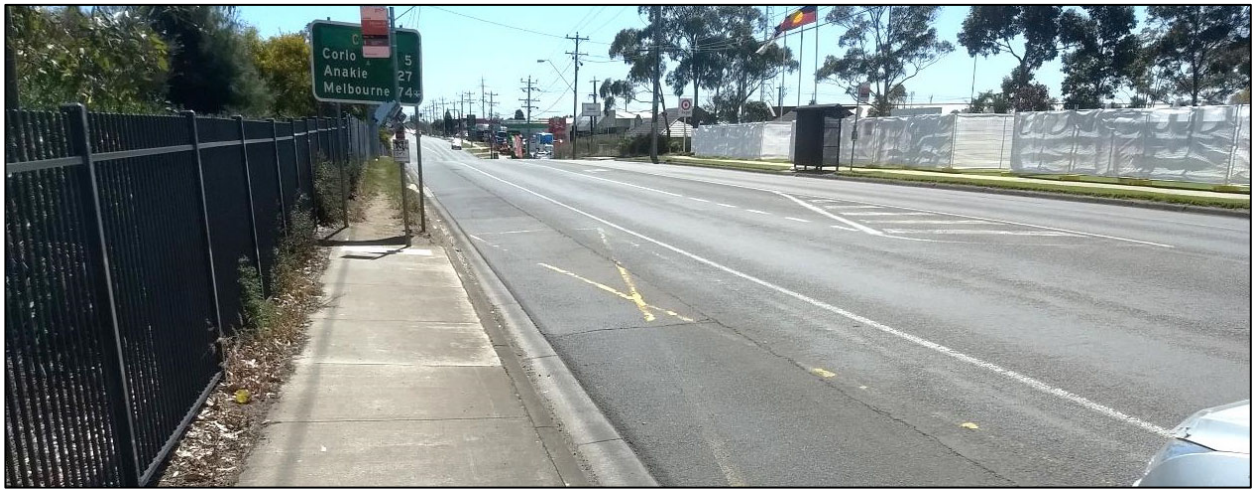
Key criteria for bus route alignment is efficient travel between neighbourhoods and high patronage capture. As such, bus routes are often aligned along Arterial and Collector Roads.

It is expected that bus routes will most likely adapt to the precincts development with route changes that maintain travel along the bounding Arterial and Collector Roads, rather than through the precincts internal road network. While unlikely, there potentially could be a bus route aligned east-west through the precinct between Thompson Road and Weddell Road. To future proof the precinct, it may be prudent that the road network plan incorporate an east-west route with road geometry capable of accommodating bus services, while other roadways need not be capable of accommodating buses. However, note that as described in Section 5.2, any connecting route should be designed to discourage through traffic.

Importantly, convenient walking routes through the precinct to bounding roadways, bus stops and the North Geelong Station should be a priority.

Pedestrian amenity for access between the precinct and the Thompson Road northbound bus stop adjacent Target is poor due to a need to cross the 4-lane busy arterial and that the nearest safe crossing is approximately 300m to the north or south at the signalised intersections. Also, the bus stop hardstand area is not generous given the distance between kerb and property boundary fence is narrow (approximately 2m) . There is no shelter provided and no footpath northwards from this stop. Improving pedestrian access to this stop and providing an improved waiting environment will be a significant challenge.

Figure 5.4 View North from the Bus Stop on Thompson Road Opposite the Target Site



One option is to consider changing stop locations, with stops on the departure of Ballarat Road and approach to Victoria Street, being closer to existing signalised crossings. Another option would be to utilise the non trafficable painted median in the centre of the Thompson Road carriageway to provide a pedestrian refuge island. The highest pedestrian amenity treatment would be to provide pedestrian operated signals or a signalised crossing as part of a signalised intersection with a precinct roadway.

Figure 5.5 Example of Central Island Pedestrian Refuge

As discussed in Section 2.6 and shown in Figure 2.8, there are numerous lengths of roadside which do not have a footpath provided. An aspiration of the Precinct Plan should be the provision of new and upgraded footpaths along nearby roads, with a focus on improving access to public transport.

Figure 5.6 Footpath Ends 60m Short of the Bus Stop on Ballarat Road (Southeast of Thompson Road)

Figure 5.7 No Footpath Along Victoria Street (South Side)

Examples of transport infrastructure that contribute to safe and convenient walking movement networks are shown below.

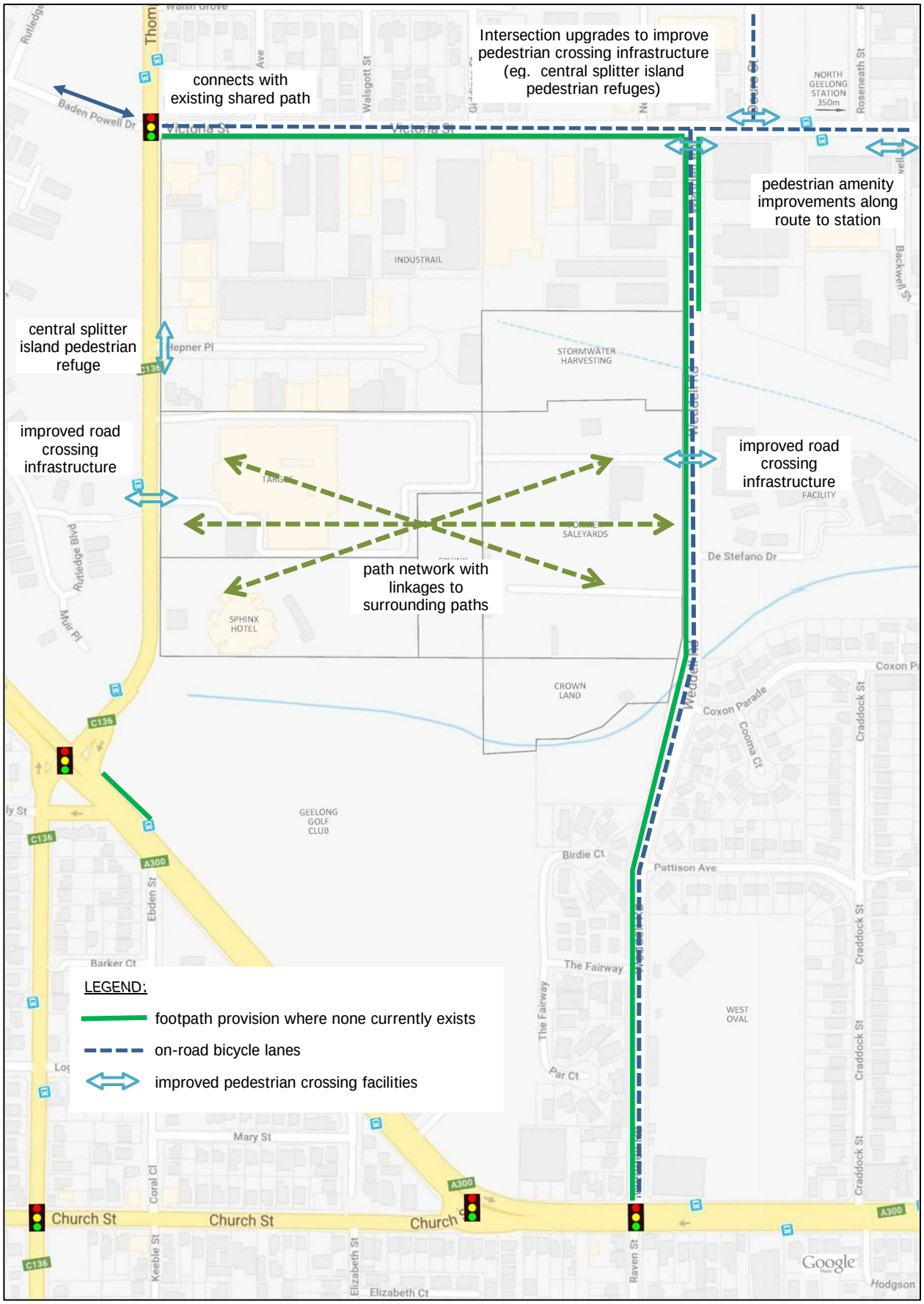
Figure 5.8 Examples of Infrastructure with High Pedestrian Amenity

Bicycle network plans envisage on-road cycling routes along Weddell Road (and Douro Street). Weddell Road has an existing carriageway width in the order of 12.5m. To retrofit bicycle lanes would necessitate narrow traffic, parking and bicycle lanes (e.g. 3.0m, 2.1m & 1.2m respectively). Given the character of Weddell Road this type of allocation of road space could function satisfactorily.

Figure 5.9 Representation of On-Road Bicycle Lanes along Weddell Road

Ideally, Victoria Street would also provide on-road cycling lanes to make a connection between the North Geelong rail station and a shared path that extends northwest from the study area through a residential neighbourhood. Victoria Street has higher traffic activity and route bus services (i.e. wide vehicles stopping kerbside). Carriageway width appears to differ along its length and more detailed design investigations would be required to review the feasibility of retrofitting bicycle lanes.

Figure 5.10 Walking, Cycling and Access to Public Transport Plan



5.5 Road Access Intersections

General

The provision of at least 2 roadway accesses from the precinct to the surrounding road network would provide satisfactory traffic dispersal. This would ensure future traffic volumes on precinct roads are in the order of 2,000 vehicle movements per day or less, therefore within Indicative Maximums for Access Roads and consistent with a high standard of residential amenity.

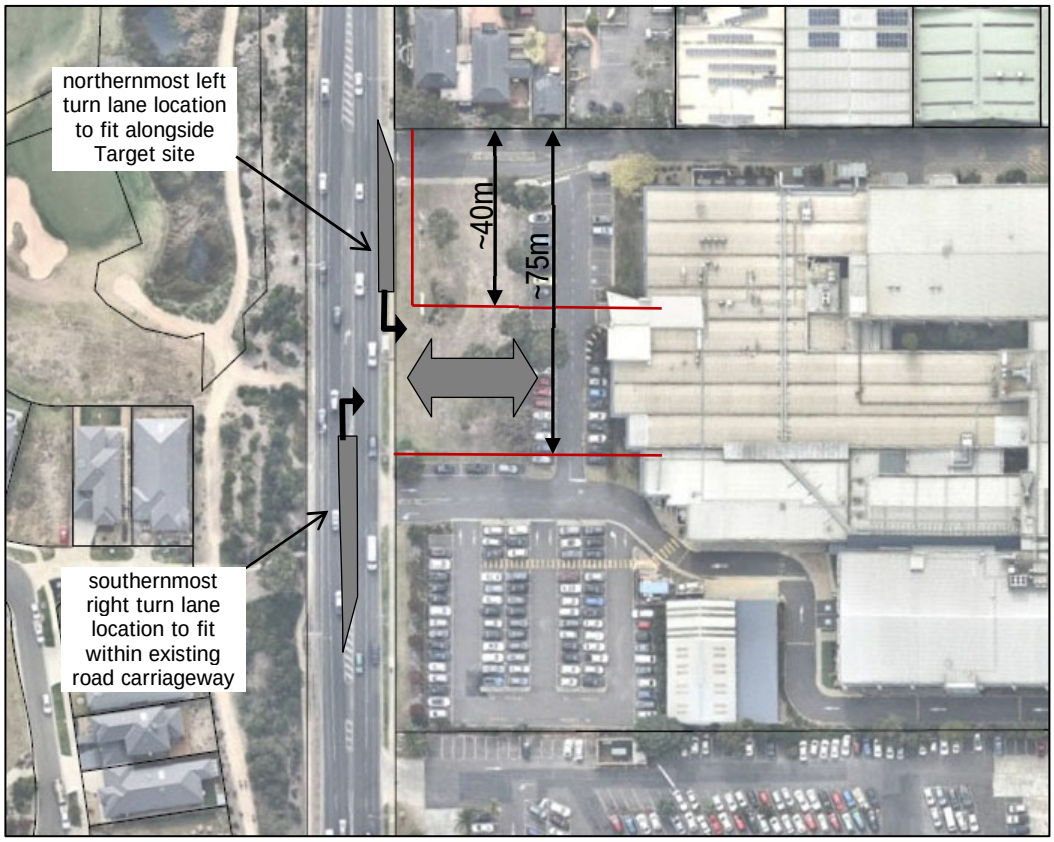
It would be ideal that the precincts future road network connect with both Weddell Road and Thompson Road, assuming the Target site is redeveloped. This would aid traffic dispersal and provide direct linkages and a permeable road network.

Thompson Road carries significantly higher traffic volumes than Weddell Road and is managed as a Secondary Arterial Road. It will be important that any roadway access to Thompson Road does not unreasonably impede its functionality as a safe and efficient through traffic route. Therefore, the precincts road network should promote Weddell Road for access. Also, direct property access to Thompson Road should be discouraged.

Thompson Road Access Intersection

The Target site has two vehicle crossings to Thompson Road. Along its frontage, the Thompson Road carriageway is slightly wider (approximately 14.5m) than up and downstream due to the right turn lane into the site. Further road widening for additional lanes is not possible within the existing road reserve. There is an ideal location for any new road connection to Thompson Road that enables a right turn lane to be provided within the existing widened carriageway and ensures a left turn lane into the precinct could be provided with road widening impacting only the Target site. Although it is noted that a left turn lane may not be a necessity. This ideal location is road reserve boundaries within approximately 40m and 75m of the Target site's northern boundary as shown in Figure 5.11.

Figure 5.11 Ideal Location of Road Access to Thompson Road to Facilitate Turn Lane Provision



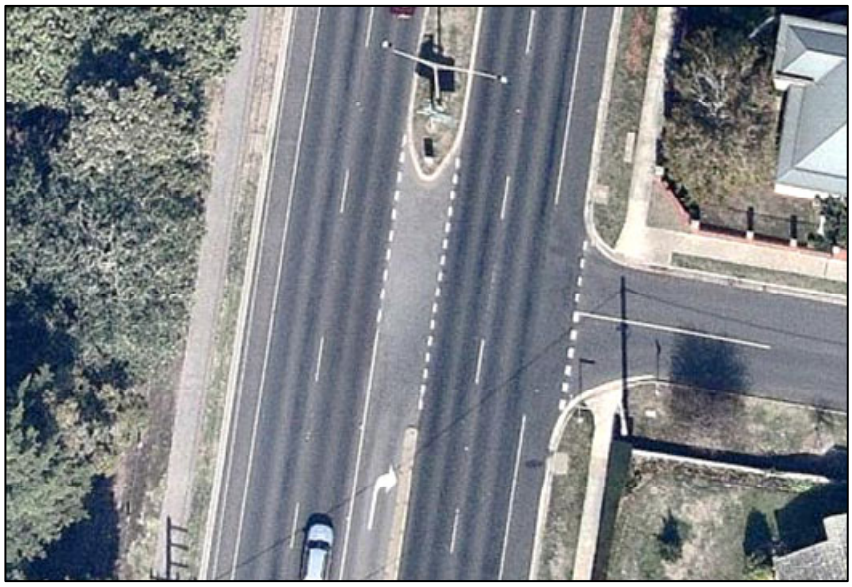
As stated above, as part of any right turn lane provision into the precinct, a pedestrian refuge island could be incorporated to improve road crossing pedestrian amenity.

A roadway intersection with Thompson Road is likely to satisfactorily accommodate anticipated volumes to / from the precinct as a give-way priority T intersection. Such arrangements are similar to the Hepner Place intersection to the north and consistent with the wider road network configuration.

However, the provision of a signalised intersection would provide greater safety and pedestrian amenity but would be relatively expensive and would introduce delays to through traffic. Pedestrian demands will be influenced by future location of the bus stop which may be better located elsewhere.

Either option for intersection control may be appropriate, these alternatives each have advantages and disadvantages and the most suitable option may change depending on the bus stop location and the intensity of precinct development that is realised. Resolution will therefore require further detailed assessment and stakeholder consultation in future as part of any development approval.

Figure 5.12 Example of Unsignalised T-Intersection Layout for Thompson Road



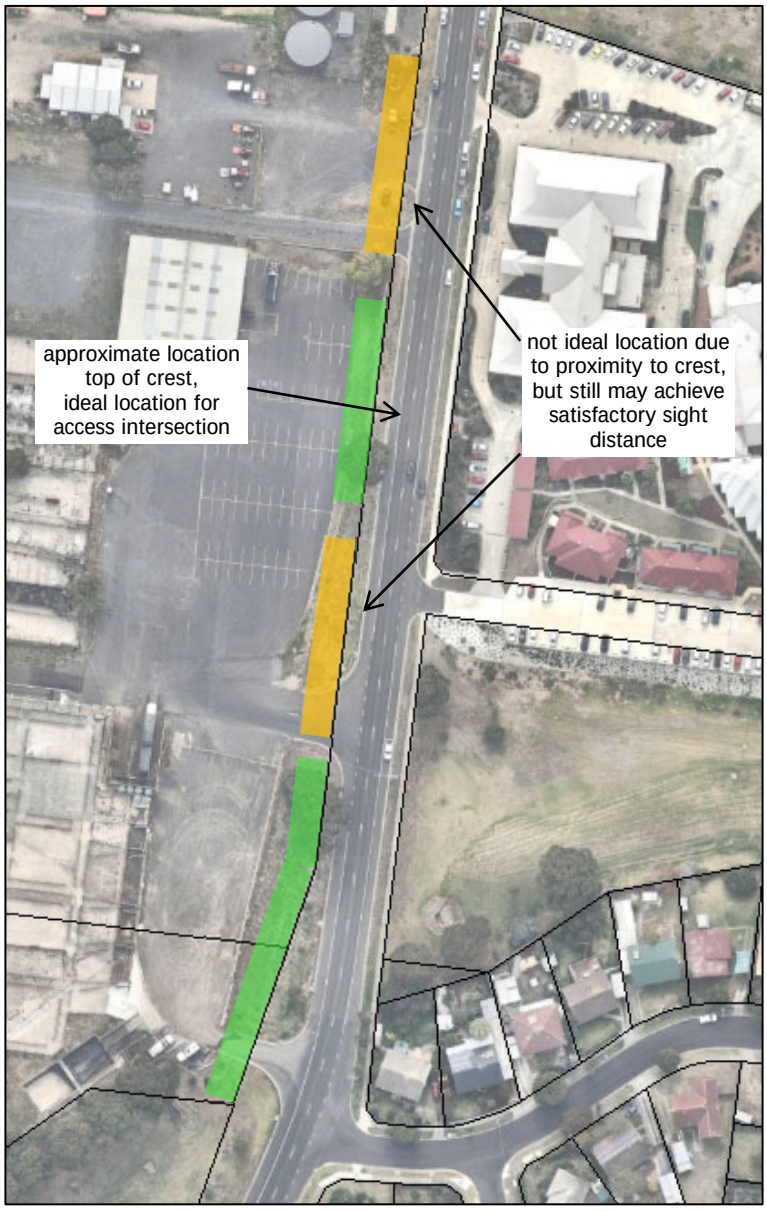
Weddell Road Access Intersection(s)

There are no major barriers to the provision of new intersections along Weddell Road.

One consideration will be available sight distances due to a crest approximately midway along the former Saleyards frontage and a bend near the south of the precinct. Grades to the crest appear to be relatively flat such that an intersection either side of it may still achieve suitable sight distances. However, it would be ideal that any new intersections are located at the crest or greater than approximately 100m either side of it.

Figure 5.13 View North along Weddell Road from Existing Saleyards Access

Figure 5.14 Approximate Locations of Road Access to Weddell Road



It is likely that typical local street give-way T intersection geometry (without turning lanes) will be appropriate for anticipated traffic volumes. However, this will need to be confirmed with detailed traffic impact analysis of any future development.

Figure 5.15 Example of Unsignalised T-Intersection Layout for Weddell Road

5.6 Car Parking

Guidance around the level of car parking to be provided as part of development proposals is already contained within Planning Scheme Clause 52.06. No further specific policy directions are considered necessary.

5.7 Victoria Street / Weddell Road / Douro Street Intersection

Weddell Road and Douro Street intersect with Victoria Street at give-way T intersections. Significant traffic volumes are accommodated along these roads. At the intersections, a significant proportion of side road traffic is expected to be travelling right turn out, left turn in between Weddell Road and Douro Street. Give-way intersections with high traffic volumes can result in high delays which can contribute to less rational driver behaviour and associated road safety risks. High vehicular activity at un-controlled intersections also leads to difficulties for pedestrian crossing movements and these intersections are part of the likely route between the precinct and North Geelong Station. As the precinct is developed, these intersections will experience an increase in vehicular and pedestrian activity. An aspiration of the Precinct Plan should be improvements to this intersection. Traffic signals would provide a high degree of road safety and pedestrian amenity improvement.