New Town Retail Precinct – Provision for bicycle riders

Prepared for City of Hobart

CDM RESEARCH

Contents

Document history and status

Revision	Date issued	Author	Revision type
1	9/10/2017	C. Munro	Issue-1

Distribution of Copies

Revision	Media	Issued to
1	PDF	City of Hobart

Printed:	9 October 2017
Last saved:	28 September 2017 11:58 AM
File name:	0119 Hobart New Town Road - Cycling Provision (Issue-1).docx
Project manager:	C. Munro
Name of organisation:	Hobart City Council
Name of project:	New Town Retail Precinct – Provision for bicycle riders
Project number:	0119

Executive Summary

CDM Research was commissioned by the City of Hobart to provide advice on provision for bicycle riders along the New Town Road corridor. The project forms part of consultation being undertaken with the community with regards to improving the New Town retail precinct. Specific project objectives were to (a) consider how New Town Road fits within the wider cycling network, and (b) propose options for council and community consideration for improving cycling connectivity along the corridor. Moreover, consideration was given to how pedestrians could best be accommodated within the project.

New Town Road has around 15,000 – 17,000 vehicles per weekday and at least 1,000 vehicles per hour between 8 am and 6 pm. The road, along with the Brooker Highway, form the major two road connections between the Hobart CBD and northern suburbs. Moreover, the road serves as a major public transport corridor with regular bus services. There is no realistic prospect of downgrading either the motor traffic or public transport functions of the road. We consider these motor vehicle volumes, and the current speed limit (50 km/h) to be too high for most bicycle riders to be expected to comfortably and safely share the roadway with motorists. Cyclist counts are not available, but it is assumed there is limited existing rider demand on New Town Road given these deterrents.

It is suggested that cyclist provision needs to be considered within the wider network context:

- The Intercity Cycleway to the east provides a generally high-quality connection to the Hobart CBD for those residing in suburbs to the north and east of New Town Road, and is flat, although depending on the riders' ultimate destination in the CBD may be up to 1.3 km longer than using New Town Road.
- Montagu Road and Clare Street onto Augusta Road and then New Town Road provide a quieter alternative for residents living west of New Town Road to navigate through the precinct, although New Town Road south of Augusta Road would remain a significant deterrent to unconfident riders.

It is recommended that, irrespective of what decisions council and the community make with respect to New Town Road itself, that incremental improvements to these alternative corridors are warranted. This may include wayfinding, improved access to the Intercity Cycleway from New Town, and upgraded intersections along the Intercity Cycleway.

While our view is that bicycle rider demand is likely to remain low along New Town Road we suggest what demand does exist, both current and latent, warrants some action. There will always be riders who either prefer New Town Road, or find it more convenient given their trip origin and destination. As an absolute minimum, we recommend the speed limit be reduced to 40 km/h; doing so will improve safety for all road users and will have a negligible impact of motorist travel times. Ideally the speed limit would be reduced both along New Town Road *and* the local street network.

Reducing the speed limit will, of itself, be insufficient to create a high-quality cycling environment. If it is deemed essential that parking be retained on both sides of the road a

bicycle lane in the uphill (southeast) direction would assist riders. However, it is unlikely of itself to encourage any significant shift towards riding. To do so would require the removal of parking on one side of New Town Road, which would then facilitate good quality on-road bicycle lanes in both directions of travel.

Given the modest bicycle demand, and comparative quality of the Intercity Cycleway, it is recommended that council and the community consider pedestrian improvements first for New Town Road, and focus cycling-specific improvements to the corridors to the east and west. Specific improvements on the corridor beyond reducing the speed limit may include:

- provide pedestrian refuges and medians to assist in staged crossings of New Town Road, ideally using high quality materials consistent with improving the public realm, and
- install raised threshold treatments at minor street intersections.

It is acknowledged that improving pedestrian crossing opportunities would increase the likelihood of conflict between motorists and bicycle riders. While this may be partially compensated by the slower speeds and placemaking improvements we suggest this compromise for improved pedestrian access is, on balance, a desirable outcome. Moreover, conditions may be improved for a much wider cohort of bicycle riders if effort is expended improving the Intercity Cycleway.

1 Introduction

1.1 Background

The New Town local retail precinct along New Town Road from Risdon Road to Pirie Street serves the local community as well as providing a significant transport function for motorists and bus passengers. As part of a wider project being undertaken by the City of Hobart, a consortium led by MRCagney developed concept plans for the precinct that recommended the intersection of New Town Road with Valentine Street and Cross Street be closed to traffic and converted into a local plaza. Subsequently, the council has been consulting with the community more broadly on their perceptions towards the retail precinct and possible improvements.

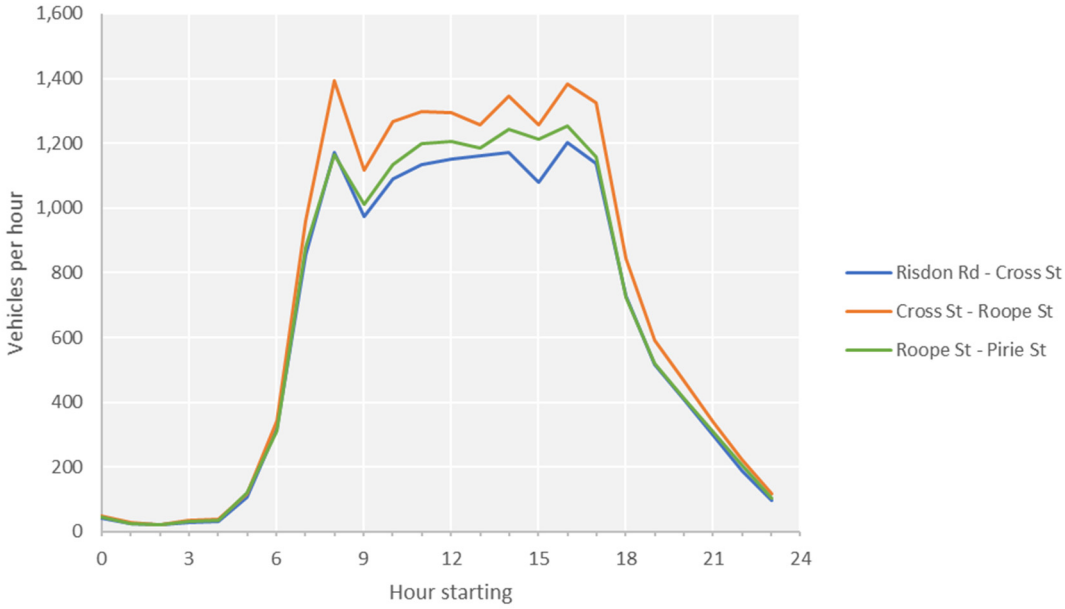
The purpose of the present report is to provide an independent view of the potential for improvements for bicycle riders to and through the corridor as part of the streetscape upgrade project. Given the numerical dominance of pedestrians in the corridor, and that treatments for one may affect the other, we have also considered improvements for pedestrians.

1.2 Context

The retail precinct extends over around 900 m from Risdon Road south to Pirie Street and has a variety of small businesses fronting New Town Road interspersed with residences. There is a Woolworths supermarket at the northern end of the precinct, and a Coles supermarket and Kmart immediately east of the precinct along Risdon Road.

The road reserve extends over around 17.2 m between property boundaries. Within this road reserve is a footpath and a roadway of around 12.6 m from kerb-to-kerb. Kerbside parking is permitted over most of the length of the road. There are central traffic islands and pedestrian refuges near Roope Street and farther north near the Woolworths supermarket. Pedestrian operated signals (POS) are located east of Cross Street and 470 m farther east at Pirie Street. Additionally, there is a pedestrian crossing at the signalised intersection with Risdon Road 470 m west of the Cross Street POS. The road has a 50 km/h speed limit and no dedicated provision for bicycle riders.

Recent vehicle counts were available from three automatic counters positioned between Risdon Road and Cross Street, Cross Street and Roope Street, and Roope Street and Pirie Street. The average weekday count was between 15,000 and 17,000 vehicles per day. Traffic volumes were consistently above 1,000 vehicles per hour between 8 am and 6 pm (Figure 1.1).



■ **Figure 1.1: Average weekday vehicle count by hour and road segment (August 2017)**

Motorist speed statistics are summarised in Table 1.1. Median speeds varied from 41.5 km/h between Cross Street and Roope Street to 46.5 km/h between Roope Street and Pirie Street. Up to one quarter of motorists were exceeding the 50 km/h speed limit.

■ **Table 1.1: Speed statistics**

Location	Median speed	85th percentile speed	% exceeding 50 km/h
Risdon Rd – Cross St	42.8	52.3	21.6%
Cross St – Roope St	41.5	46.7	4.4%
Roope St – Pirie St	46.5	51.9	25.0%

Pedestrian crossing volumes were measured on one day using video observations and manual post-processing. There were around 267 at and near the POS east of Cross Street, and somewhat lower volumes farther southeast where there is only near the pedestrian refuge (Figure 1.2).

■ **Figure 1.2: Pedestrian crossing activity, 7 am - 7 pm Thu 3 Aug 2017**

There are no cycling counts available on New Town Road, although it seems reasonable to expect that cycling demand will be low. The Intercity Cycleway to the north and east provides a high-quality connection to the Hobart waterfront, while the bicycle lanes on Argyle Street and Campbell Street south of Burnett Street provide connections into the CBD from the north.

■ Figure 1.3: New Town Road looking northwest from Pirie Street

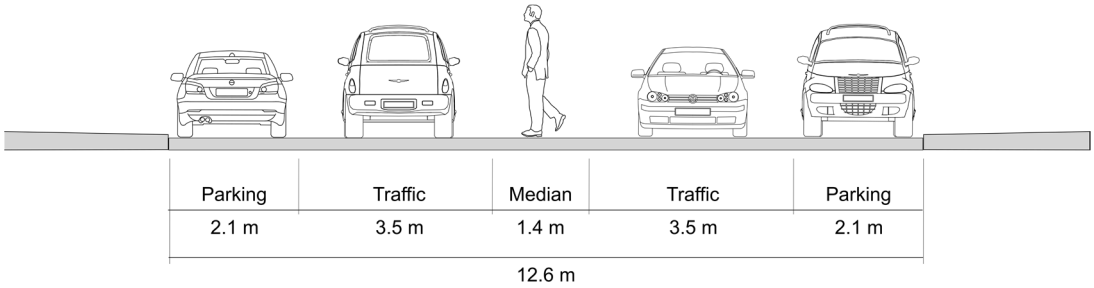
■ Figure 1.4: Typical bicycle rider and motorist interactions on New Town Road (note bicycle rider in "dooring" zone and overtaking motorist crossing centreline)

2 Options

In this section we consider three options for reconfiguring New Town Road to better provide for bicycle riders and/or pedestrians.

2.1 Option 1: Central median

In this option a central median is installed using a combination of raised islands and linemarking. The median would provide a location for pedestrians crossing the road to wait for traffic in the farside lane to clear, thereby facilitating a two-stage crossing. This is an extension of the configuration that currently exists near Woolworths. The median could also accommodate street trees or plantings. In some locations, such as already exists southbound approaching Woolworths, the median can be widened to accommodate right turning vehicles – although this would preclude the use of this space by pedestrians.

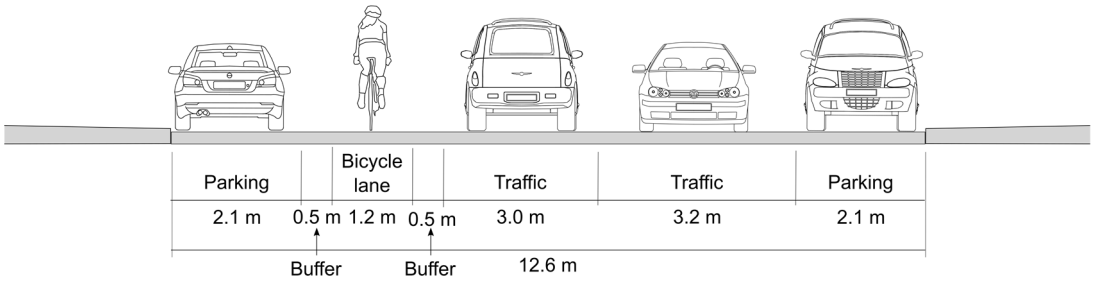


■ **Figure 2.1: Central median**

While beneficial to pedestrians crossing the road, this design would have negative repercussions for bicycle riders. Dedicated bicycle lanes could not be accommodated in this design in either direction. Moreover, the presence of the median would restrict the ability of motorists to give bicycle riders sufficient lateral clearance when overtaking. In addition, there is a risk, particularly in the uphill direction, that impatient motorists may attempt overtaking of bicycle riders within a 3.5 m traffic lane. Doing so, assuming there is parking along the kerb, would very likely lead to overtaking clearances of less than one metre. Such clearance distances are likely to be perceived as unsafe by riders, and present little margin for error. Moreover, bicycle riders may feel pressured to track far to the left alongside parking, thereby exposing themselves to the risk of collision with opening car doors. This “car dooring” collision risk is elevated in cases where there are likely to be high rates of parking turnover. Moreover, these collisions can lead to serious or fatal injuries to bicycle riders, particularly if (as is likely) the rider strikes the open door then falls into the traffic lane.

2.2 Uphill bicycle lane

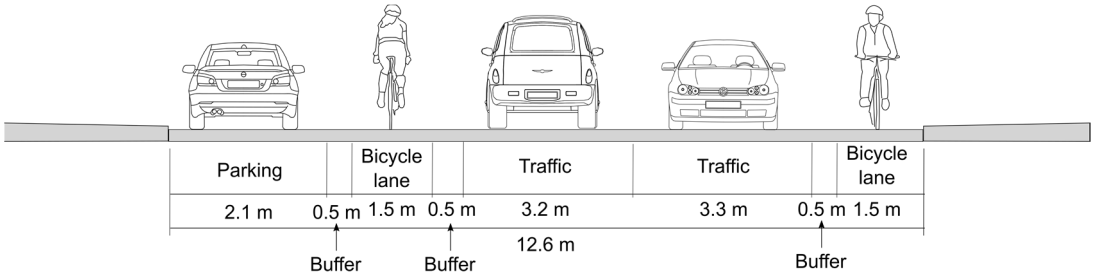
New Town Road slopes downhill fairly consistently from the intersection of Argyle Street and Elizabeth Street heading north to Risdon Road through the precinct. It seems reasonable to expect that experienced bicycle riders would be able to maintain a travel speed only marginally slower than motorists in the downhill direction, particularly if a lower 40 km/h speed limit were introduced. In this situation it could be argued lane sharing between motorists and bicycle riders is a viable option, although we would emphasise that this only applies for experienced riders – inexperienced or cautious riders are unlikely to find such a situation safe or comfortable given the volume of motorists. In the uphill direction the situation would be rather different; it is likely the typical rider would be travelling at speeds from 15 to 20 km/h uphill, or substantially slower than motorists. As such, this option provides for a buffered bicycle lane in the uphill direction only (Figure 2.2). The buffer is assumed to consist of a painted chevron treatments, similar to that used along Campbell Street and Argyle Street in the Hobart CBD. It is suggested that a buffer both from moving traffic and parking be provided. Kerbside parking would be unaffected by this design. However, it would probably be necessary to remove the existing pedestrian refuges near Woolworths and Roope Street, thereby making it more difficult for pedestrians to cross the road. The traffic lanes would be narrow by Hobart standards, but there are numerous examples of roads with similar traffic volumes and bus/truck demand that operate with similar widths. In the uphill direction the presence only of a painted buffer (rather than physical separator) would allow wide vehicles to encroach onto the buffer where absolutely necessary.



■ **Figure 2.2: Uphill bicycle lane**

2.3 Bicycle lanes

In this option bicycle lanes are provided in both directions of travel (Figure 2.3). However, to accommodate these lanes parking on one side of the road would need to be prohibited. Given the additional road width parking removal would provide it is conceivable pedestrian refuges could also be provided under this option, thereby benefitting both bicycle riders and pedestrians. Furthermore, it is possible parking could be removed from alternating sides of the road depending on local parking demands.



■ **Figure 2.3: Bicycle lanes**

3 Recommendations

Our general view with regard to cycling provision in the corridor is as follows:

- New Town Road has a major traffic and bus transport function, has limited road width and there is only one viable north-south alternative vehicle route (Brooker Highway), such that it is unlikely it can serve as a high-quality cycling corridor unless on-street parking can be removed on one side of the street,
- there are alternative routes, at least in part, which provide reasonable north-south cycling connections through the corridor,
- effort should be expended improving these alternative connections in the first instance, and
- efforts to improve road safety more generally in the corridor, and for pedestrians specifically, are likely to provide at least some benefit to those bicycle riders who use New Town Road now, and may continue to do so.

Furthermore, we would suggest the following with regard to pedestrian amenity and placemaking:

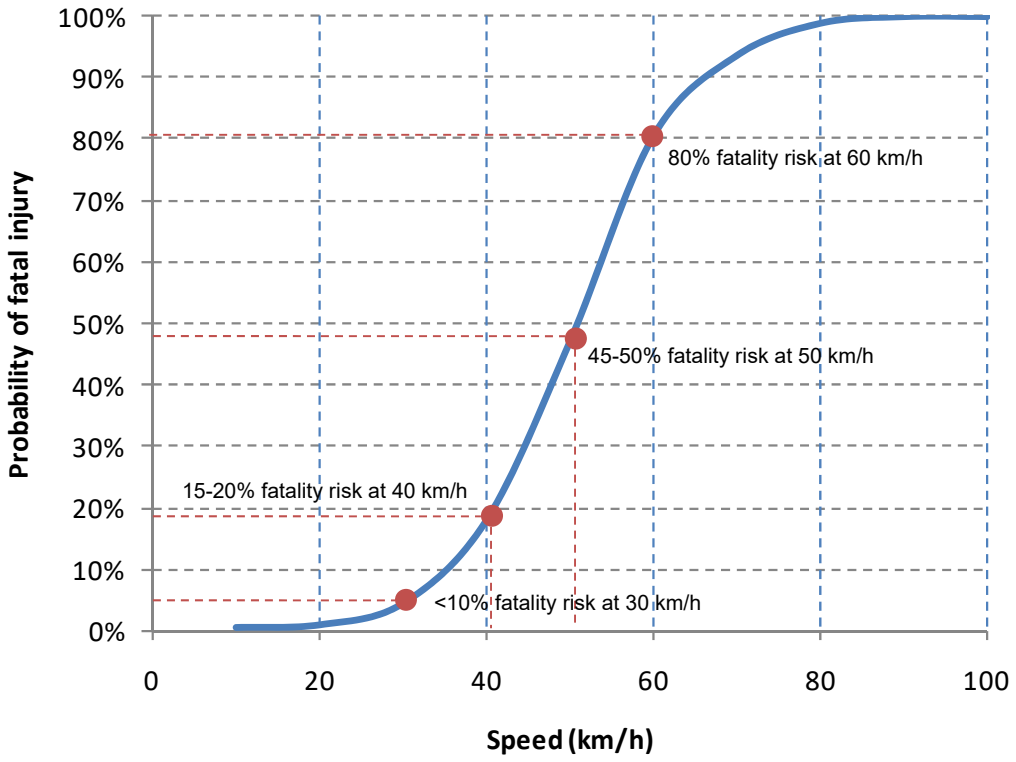
- the evidence is overwhelming that a speed limit of 40 km/h or less will provide substantial safety benefits to pedestrians, as well as other road users,
- lower traffic speeds are likely to provide incremental noise and amenity benefits which will attract and encourage pedestrians to linger in the precinct, and
- there would be merit in providing a continuous central median through the precinct to facilitate multistage pedestrian crossings away from the signalised crossings.

We consider further these specific issues below.

3.1 Speed limit

There is overwhelming evidence to indicate that the risks of fatal and serious injuries among pedestrians and bicycle riders are halved when vehicle speeds are reduced from 50 km/h to 40 km/h (Figure 3.1). We suggest the existing 50 km/h speed limit is manifestly incompatible with the Safe System principles enshrined in the Tasmanian and National Road Safety strategies that require that speeds be set at levels that are below the survivable threshold in collisions between road users. Moreover, we suggest the change in travel time for motorists as a result of reducing the speed limit would be small to negligible; around half of motorists are already travelling at 40 km/h through the precinct and in any case travel times in urban environments are largely dictated by delays at intersections. In other words, irrespective of how fast one travels between intersections it is the frequency and duration of red signal phases that will dominate travel times. Effective motorist speeds[1] along New Town Road during peak periods are likely to be in the order of 30 km/h, and will not increase to much beyond 40 km/h during the quietest times of day.

[1] That is, the average travel speed taking into account delays at intersections and due to traffic congestion.



■ **Figure 3.1: Probability of pedestrian/cyclist fatality by motor vehicle speed**

3.2 Parking demand

Many residences and retailers along New Town Road have some off-street parking, or have parking available on nearby local streets or via rear access. Moreover, parking demand appears to be modest except on the southwest side of the road between around 122 and 138 New Town Road[2]. Parking demand by road segment for four periods is shown in Table 3.1 based on aerial imagery. At all times, and in all locations, parking demand is well below what could theoretically be accommodated on-street.

■ **Table 3.1: On-street parking demand**

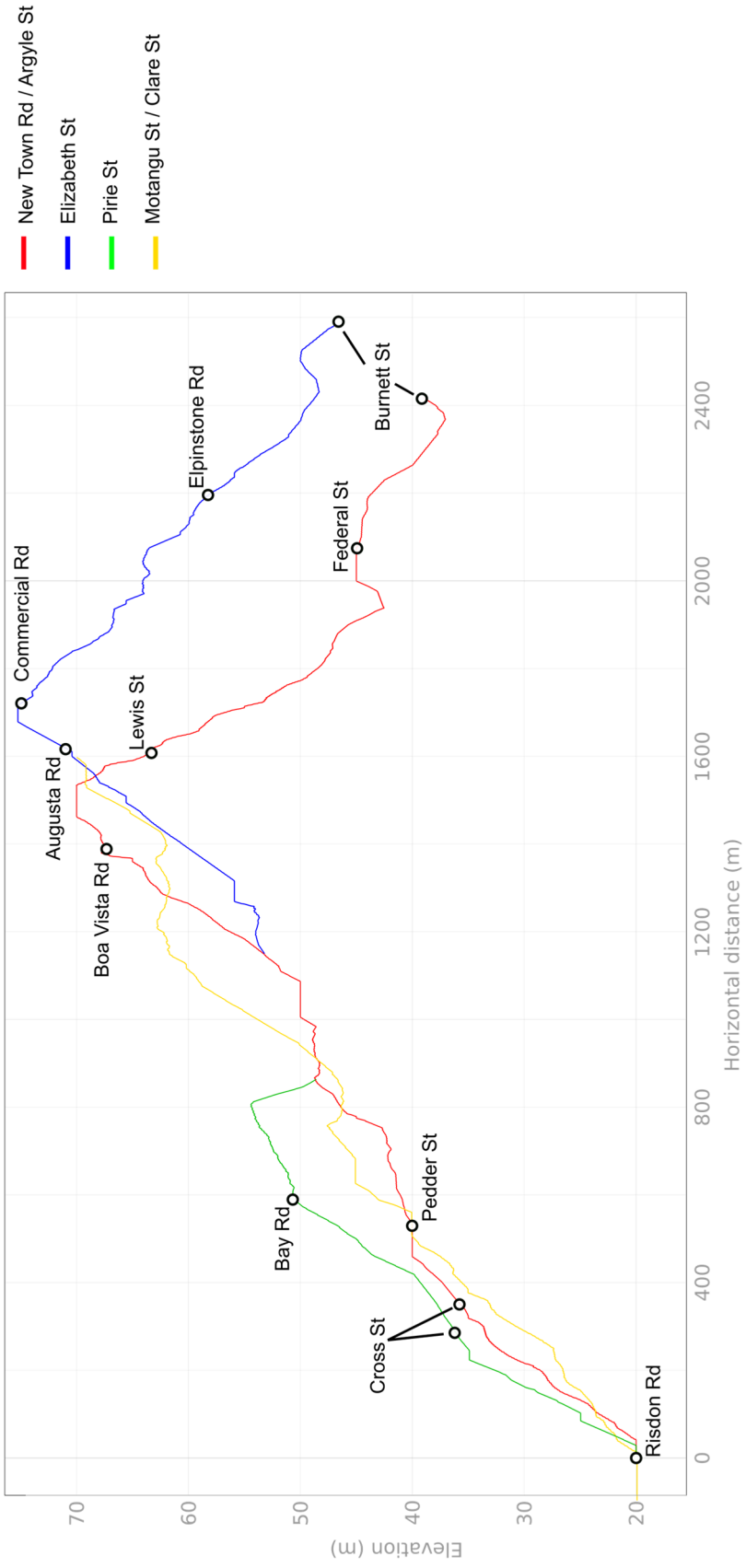
		Location		
Date	**Time**	**Risdon Rd – Cross St**	**Cross St – Roope St**	**Roope St – Pirie St**
Sun 26 Feb 2017	1:30 pm	12	1	14
Thu 8 Oct 2015	11:30 am	16	2	39
Thu 6 Feb 2015	2:30 pm	17	3	46
Sun 6 Mar 2011	4:30 pm	3	1	7

3.3 Topography

All routes through the precinct are subject to varying degrees of hilliness. The only route that would largely avoid climbs would be the Intercity Cycleway to the east. However, from the intersection of Risdon Street and New Town Road to the Davey Street and Campbell Street intersection in the CBD the Intercity Cycleway would be around 1.3 km longer[3]. Routes involving Elizabeth Street to the south of the New Town precinct require the greatest elevation gain, while Pirie Street as an alternative to New Town Road would involve steeper gradients and marginally greater climbing (Figure 3.2). An alternative route running west of New Town Road along Montagu Street, Clare Street and Augusta Road to Elizabeth Street would not require any additional climbing than New Town Road, but nor would it reduce the gradients. We conclude from this analysis that Pirie Street is highly unlikely to offer a viable alternative route for bicycle riders travelling through the precinct, but that Montagu Street and Clare Street could conceivably do so.

[2] Parking here appears to be a mix of residential parking for homes with no or limited off-street parking, for the dental surgery and the greenstore café.

[3] The Intercity Cycleway route would be 4.8 km compared to 3.5 km along New Town Road, Burnett Street and Campbell Street.



■ **Figure 3.2: Route elevations**

3.4 Network improvements

As noted in Section 3.3 there do not appear to be feasible local street alternatives to New Town Road for bicycle riders immediately east of the precinct, although there is the Intercity Cycleway farther east for those willing to divert. To the west Montagu Street and Clare Street seem to be a viable alternatives, being no more than around 100 m longer in distance than New Town Road between Risdon Road and Augusta Road.

Given the challenges along New Town Road we would recommend, should on-street parking removal be impractical, that council consider improvements to Montagu Street / Clare Street as a western route and the Intercity Cycleway as an eastern route. This may be achieved by some combination of the following:

- local street speed limit reduction to 40 km/h to safely accommodate motorists and bicycle riders within the same roadway,
- wayfinding, such as signs and (ideally) road pavement markings to indicate to motorists, bicycle riders and the wider community that Montagu Street and Clare Street provide a fair quality riding route, and
- opportunistic improvements to these local streets by replacing existing roundabouts with radial geometries and providing kerbside planters and buildouts as a preference to central islands[4].

Similarly, to the east of the corridor we suggest there are incremental improvements that can be made to the Intercity Cycleway:

- provide path priority crossings at local streets – this can be achieved up placing the crossing on a raised table in a distinctive colour and, optionally, using speed cushions on the road approaches to ensure slow motorist speeds,
- improve connectivity from the local street network to and from the Intercity Cycleway, specifically through pram ramp crossings from local streets onto the cycleway – existing entries along Bellevue Parade east of Bishop Street[5] and Oldham Avenue[6] are examples of poor cycling and pedestrian connectivity as they present a full height kerb and (in the case of Bishop Street) stairs to the cycleway, and
- wayfinding and signage from the New Town precinct onto the cycleway, ideally including an indication of the (short) distance the cycleway is from the city.

[4] Kerbside provision provides shading for the footpath and can allow for larger trees than in central islands. Moreover, central islands preclude motorists from overtaking bicycle riders in the farside lane thereby increasing the risk of aggressive or confrontational driving, or unduly close overtaking events. The disadvantages of this approach are potential impacts on drainage and loss of car parking.

[5] https://goo.gl/maps/n3uENV8B8Cv

[6] https://goo.gl/maps/hwUToVbKd222

3.5 Pedestrian provision

Our understanding is that a major point of concern for the community is the barrier that New Town Road presents to pedestrian movement across the roadway. Given the traffic volumes and speeds, and the limited pedestrian provision, this seems a legitimate concern. Given the overall placemaking objective of the project, and the comparatively higher number of pedestrians than bicycle riders, our sense is that it would be warranted for council to ensure pedestrian amenity is improved as part of the project. Some, but not all, of these options would offer ancillary benefits to bicycle riders on New Town Road. These include:

- reducing the speed limit to 40 km/h will both improve safety for pedestrians and bicycle riders and provide marginal noise and amenity benefits,
- a full-length central median to allow staged crossings, as per Section 2.1, although this would likely hinder bicycle rider movements, and
- raised threshold treatments to provide continuous at-grade crossings for pedestrians (and full legal priority over motorists), as well as slowing motorists entering and leaving side streets (thereby improving safety for all road users, including bicycle riders).

Our view is that a central median should be more than simply a painted median, but rather consist of a central island, ideally also with vegetation. Doing so should assist in the placemaking function. Furthermore, at the "natural" entries to the precinct near Pedder Street to the south and Risdon Road to the north some form of gateway treatment would be desirable. This could consist of kerb outstands to create a visual sense of narrowing and differentiation from the link function the road serves either side of the precinct. These treatments should all help reinforce the speed limit reduction by sending a message to road users that this section of the road is not simply a thoroughfare.

Examples of raised threshold treatments from Melbourne are shown in Figure 3.3. The key feature of these treatments is the continuous footpath extending across the roadway at footpath grade. In terms of the road rules the raised threshold is treated as a footpath, and therefore a road-related area across which motorists must give way to pedestrians.[7] This differs from the standard situation, where motorists turning into the minor street must give way to pedestrians but not motorists emerging from the minor street. We suggest these designs, when implemented appropriately, offer a number of benefits to all road users:

- they provide a convenient, smooth crossing for pedestrians that avoid the trip hazards associated with having to navigate pram ramps and gutters in a conventional design (this is particularly important for mobility impaired pedestrians),
- they provide physical and visual clarity and consistency as to whom has right of way, as opposed to the complicated and poorly understood road rules that apply to conventional designs,

[7] An example of interstate guidance on these designs is provided by RMS: http://www.rms.nsw.gov.au/trafficinformation/downloads/td13_05.pdf.

- they slow motorists entering the major road, thereby improving the likelihood they will both *look* and *see* pedestrians on the footpath, and in the worst case scenario where there is a collision the speeds are more conducive to only minor injuries, and
- slowing motorists entering the major road offers the additional benefit of increasing the likelihood motorists will *look* and *see* bicycle riders on the major road, and therefore give way (this scenario where motorists emerging from minor streets fail to give way to bicycle riders on the major road is a major crash contributor).

(a) Continuous footpath with bluestone pitchers on ramps and no line marking

(b) at-grade footpath in concrete with hump linemarking

■ Figure 3.3: Raised thresholds