

Epping to Carlingford Cycleway – Route Options Analysis

Route Options Analysis

January 2020



CONTENTS

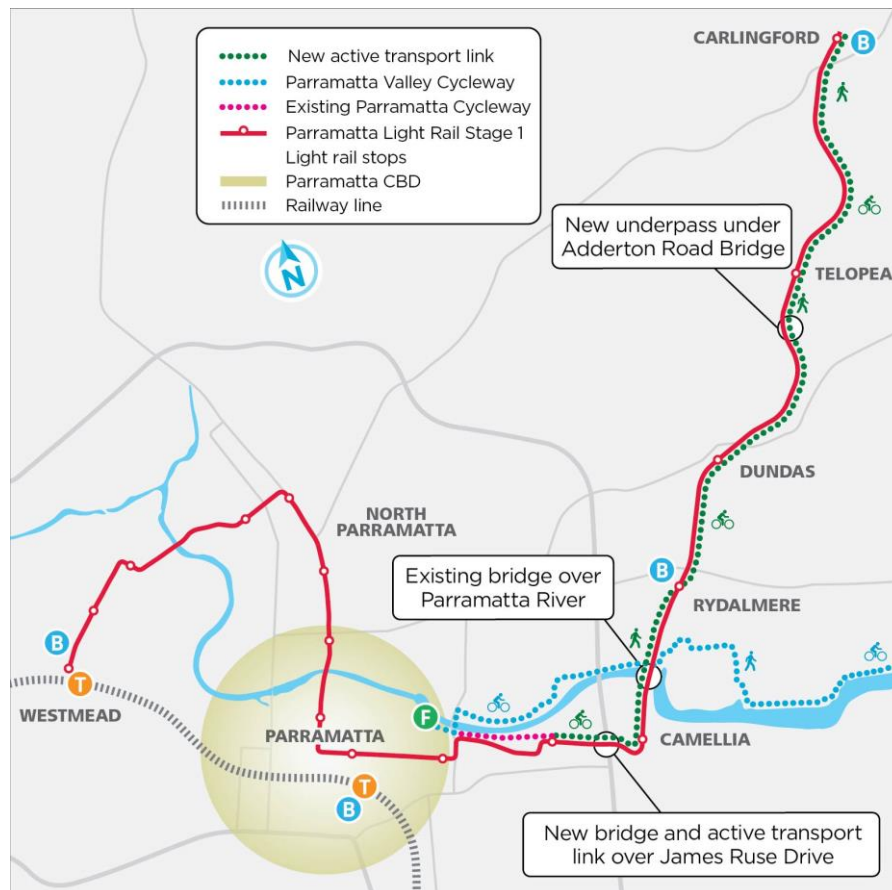
1.1 The purpose of the Cycleway.....	2
1.2 Cycleway start and end points.....	3
1.3 Cycleway Zones.....	3
1.4 Carlingford Zone.....	4
1.5 Epping Zone.....	5
1.6 Western Zone.....	7
1.7 Eastern Zone.....	8
1.8 Conclusion.....	9

Epping to Carlingford Cycleway

This document has been prepared to support the community consultation for the Epping to Carlingford Cycleway. It outlines the route options that were assessed in the initial stages of the project, and provides an insight into how the final route was selected.

1.1. The purpose of the Cycleway

The origin of the Epping to Carlingford Cycleway is as a community nominated project to extend the Parramatta Light Rail (PLR) shared path to Epping. As per the diagram below, the PLR path will provide high quality and safe access for pedestrians and cyclists along the former Carlingford line down to the Parramatta River and CBD.



http://data.parramattalightrail.nsw.gov.au/s3fs-public/ActiveTransportLink_0.jpg?iS05cobt42X5Njk8OOojQe1zZOuV_BHs

1.2. Cycleway start and end points

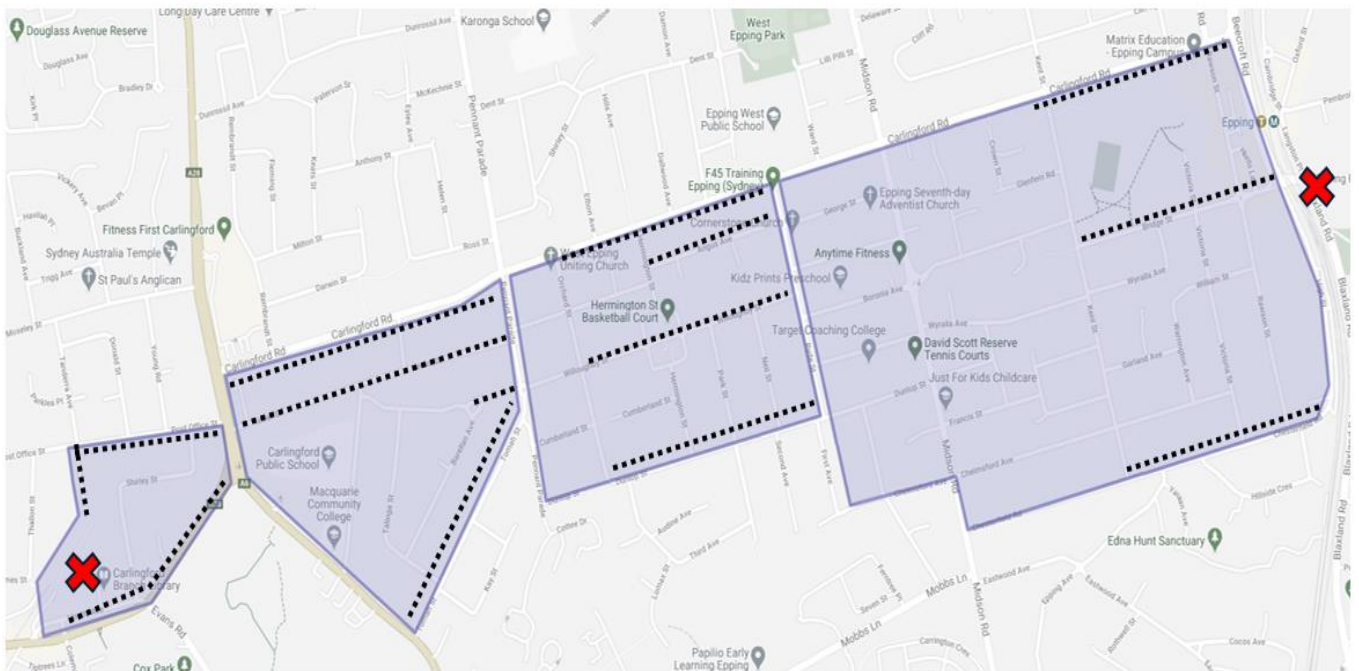
The starting point is at the Carlingford Light Rail Stop where path connections will be provided by PLR to the southern side of Pennant Hills Road, and southern end of Boundary Road.

The end point is at Epping Road over the railway line. It is the only location to connect across the railway line for almost 3km between the underpass near Kandy Avenue and Eastwood Station. Epping Road was also identified on the Bike Plan 2017 for a shared path on the southern verge to connect onwards to Macquarie Park, via the shared paths on Epping Road in Ryde Council.

1.3. Cycleway Zones

Over the length of the Cycleway, it was broken up into four zones, each defined by the limited number of connections that could be achieved east-west. The four zones are shown in the diagram below along with each of their respective connecting streets.

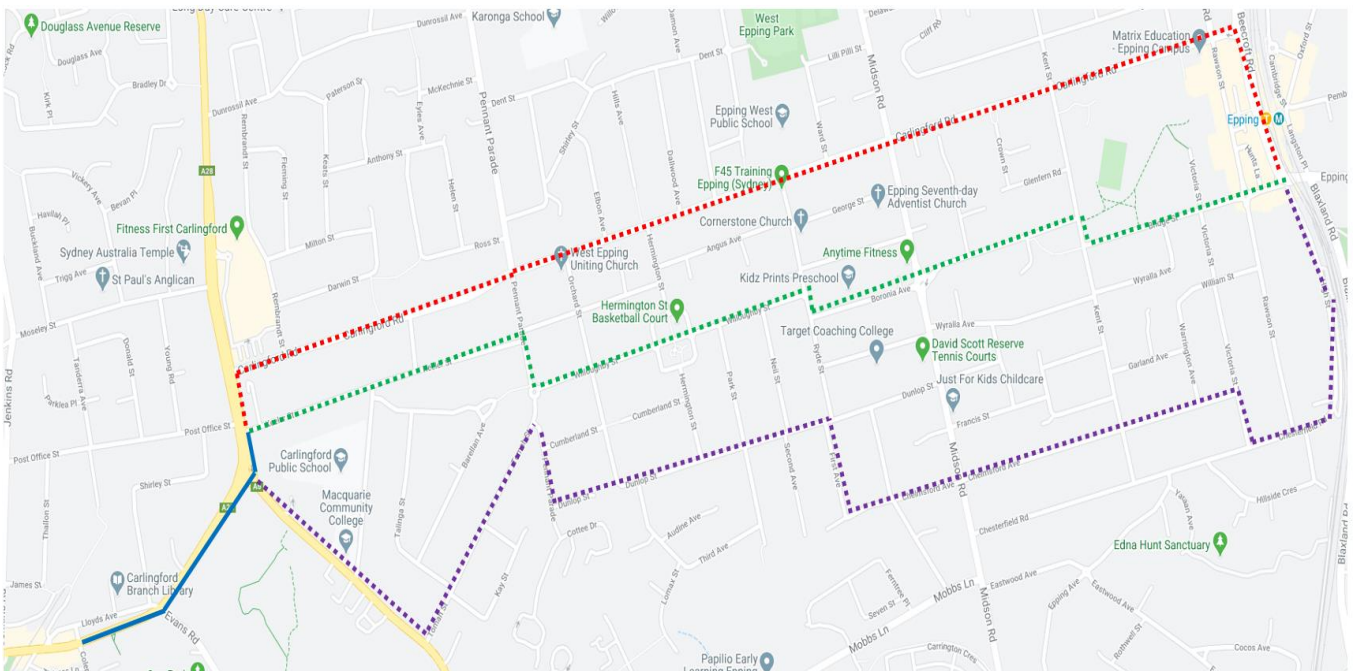
- The most constrained is the **Carlingford Zone**, where it is either an existing Shared Path on Pennant Hills Road, or Post Office Street.
- The **Epping Zone** has three streets: Carlingford Road, Bridge Street and Chesterfield Street that connect to the east.
- The **Eastern Zone** has four streets: Carlingford Road, Angus Avenue, Willoughby Street and Dunlop Street.
- The **Western Zone** has four streets: Carlingford Road, Keeler Street, Borellan Cut-Through and Tomah Street.



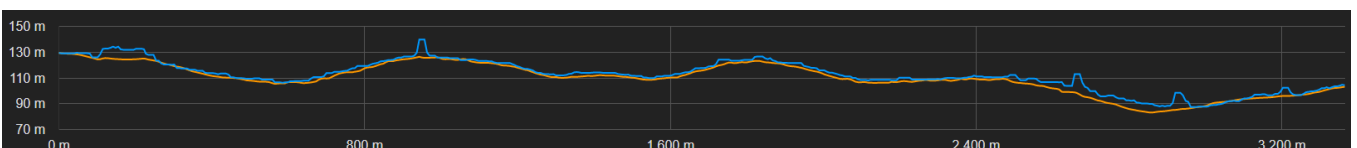
1.4. Carlingford Zone

In the Carlingford Zone, the existing Pennant Hills Road Shared path was selected as it is existing infrastructure and therefore requires no additional investment. Recent capital works by Council (unrelated to the cycleway project) widened the existing refuge island at Evens Road.

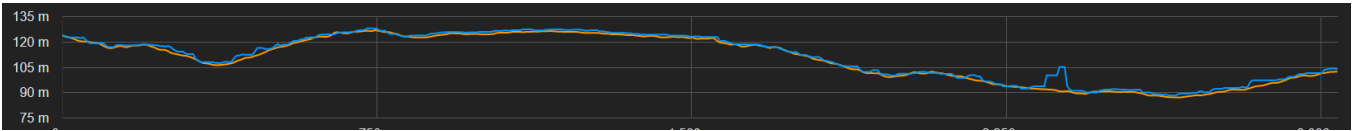
The baseline routes through the zones are shown below, and reflect the most direct routes from the three available connections in the most constrained Zone: Epping.



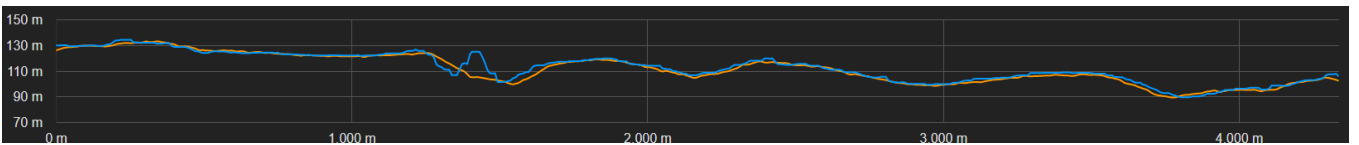
Carlingford Road is the busiest east-west vehicle route in the area and has undulating topography with approximately 160m change in altitude (shown below). The volume of traffic would require physical separation from vehicles, preferably on the southern side. The total distance is 3.3km, and at a number of locations around Midson Road and Ryde Road, the verge has inadequate width and challenging cross falls that would prevent installation of a shared path. It is highly unlikely that TfNSW would support removal of a general traffic lane to install a bicycle path.



Keeler, Willoughby, Boronia and Bridge Streets are along the route currently identified in the Bike Plan 2017 to connect Carlingford and Epping on road. They carry moderate amounts of traffic and buses, and not all types of cyclists would feel safe riding mixed with traffic. It is the most direct route at 3.05km and has the least variation in altitude at approximately 80m (shown below).



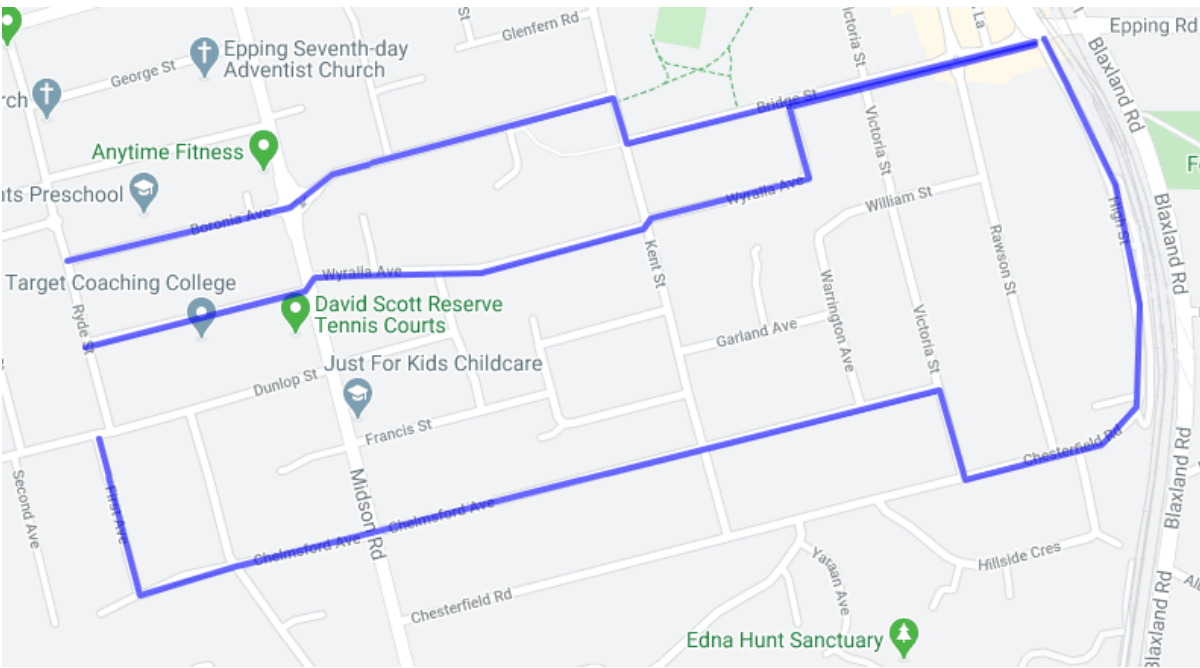
Tomah, Dunlop, Chelmsford and High Streets carry moderate amounts of traffic and buses and not all types of cyclists would feel safe riding mixed with traffic, and is the least direct route at 4.35km. Marsden Street carries a very large volume of vehicles including a higher percentage of heavy vehicles and would require a shared path or bicycle path to physically separate cyclists from general traffic. The western end of Dunlop Street has the steepest grades of any of the options and would be best avoided, and the total variation in altitude is approximately 140m.



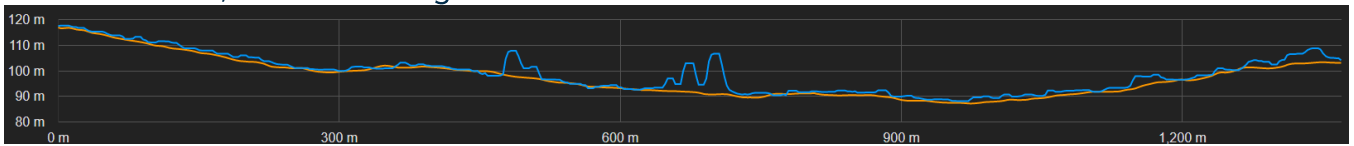
Conclusion

A cycling route along Carlingford Road is the most coherent (least turns) but would require a separation from traffic along the entire 3.5km length rendering it prohibitively expensive. It may not be able to fit within the verge at locations and includes the greatest amount of altitude change. A route that incorporates the quieter streets south of Carlingford Road would be better value for money, and would be a more enjoyable experience, provided the route felt safe on busy streets, avoided the worst of the topography and minimised diversion from the shortest route.

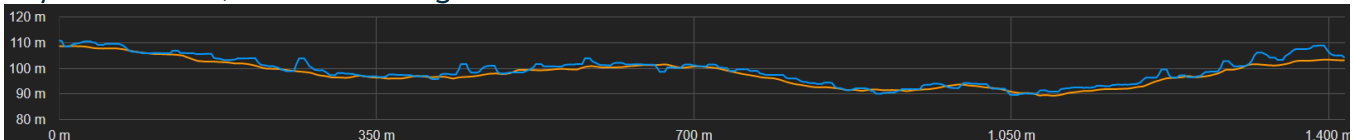
1.5. Epping Zone



Boronia 1370m, altitude change 45m



Wyralla 1420m, altitude change 45m



Chelmsford 2160m, altitude change 70m



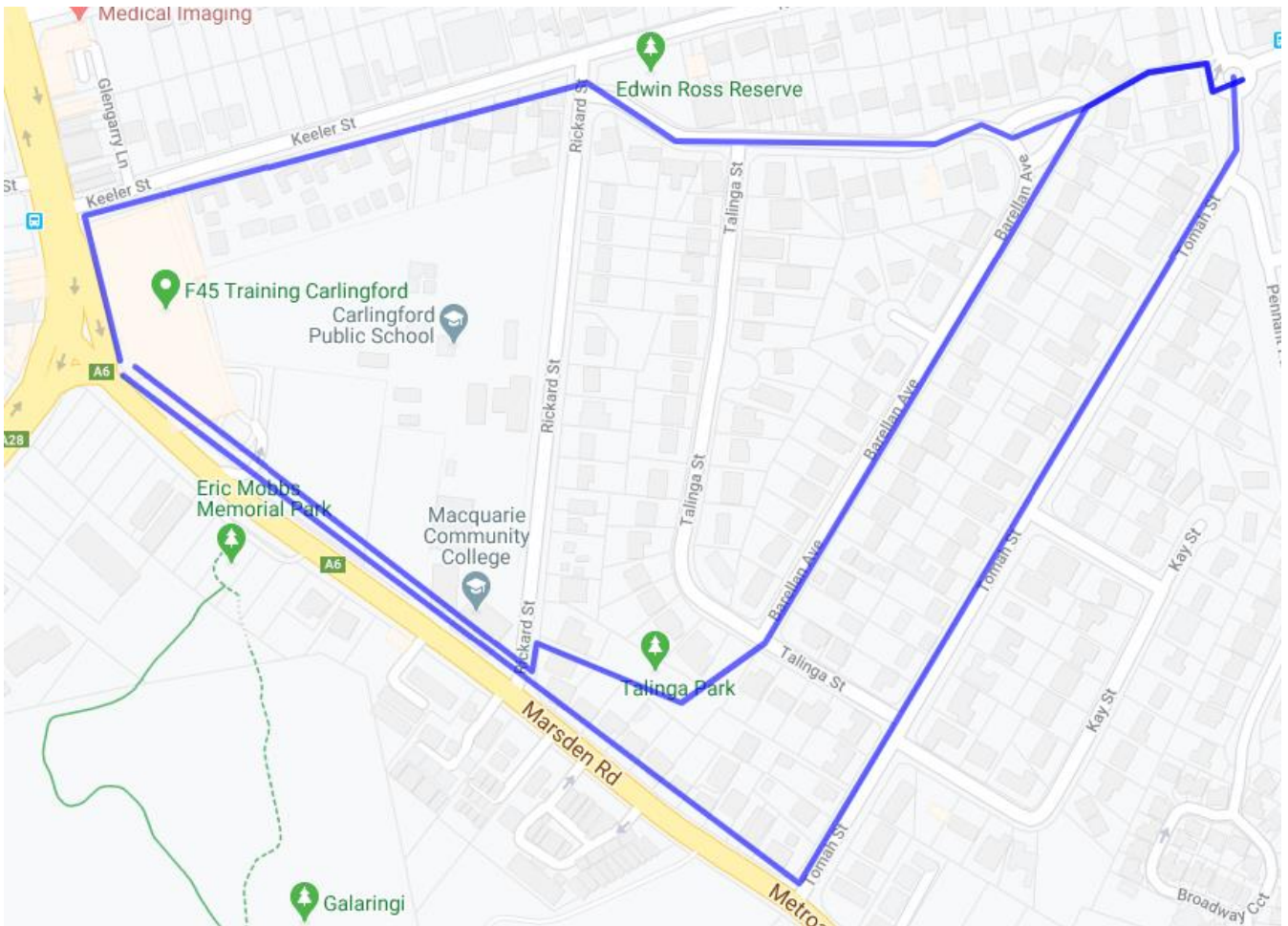
The three options through the Epping Zone vary in road type, topography and distance. The route with least distance and altitude change is Boronia Avenue, but it carries the greatest volume of traffic, and would therefore require physical separation from vehicles. This would require significant investment and it would not fit within the existing roadway without significant impact to the existing streetscape on Boronia Avenue.

Wyralla Avenue is approximately the same length as Boronia with the same altitude difference, but is a very quiet and narrow local access only street and is ideal for mixed traffic cycling. However, the crossing of Midson Road is difficult and would require investment. Both Wyralla and Boronia routes follow Bridge Street (Wyralla shorter by a third) and would require physical separation from vehicles.

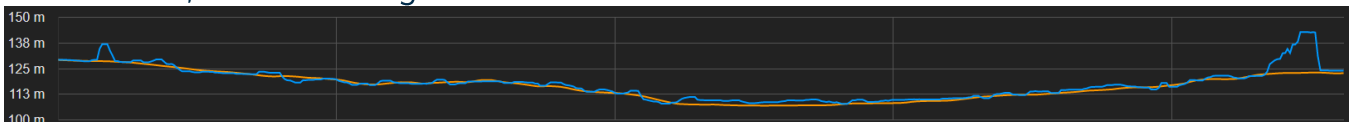
The Chelmsford route is the longest by 700m and has the greatest change in altitude and the crossing of Midson Road would require investment. For most of the length, Chelmsford Avenue is a quiet local street but both Chesterfield Road and High Street would likely require physical separation from general traffic.

The Wyralla Avenue alignment is the quietest, has the least hills, is one of the shortest and is the most cost-effective route that would appeal to the greatest range of cyclists.

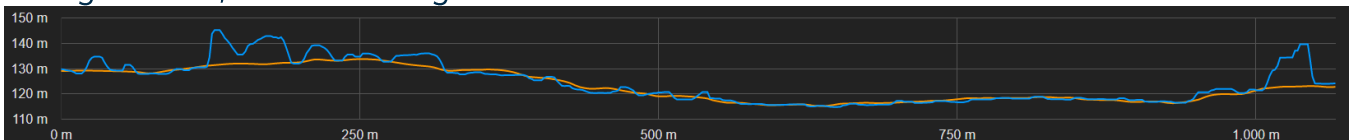
1.6. Western Zone



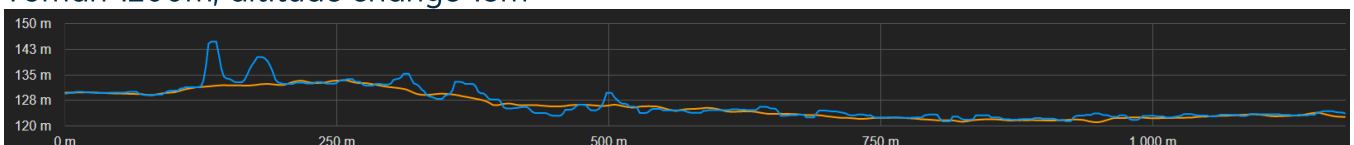
Keeler 924m, altitude change 38m



Talinga 1065m, altitude change 24m



Tomah 1200m, altitude change 18m



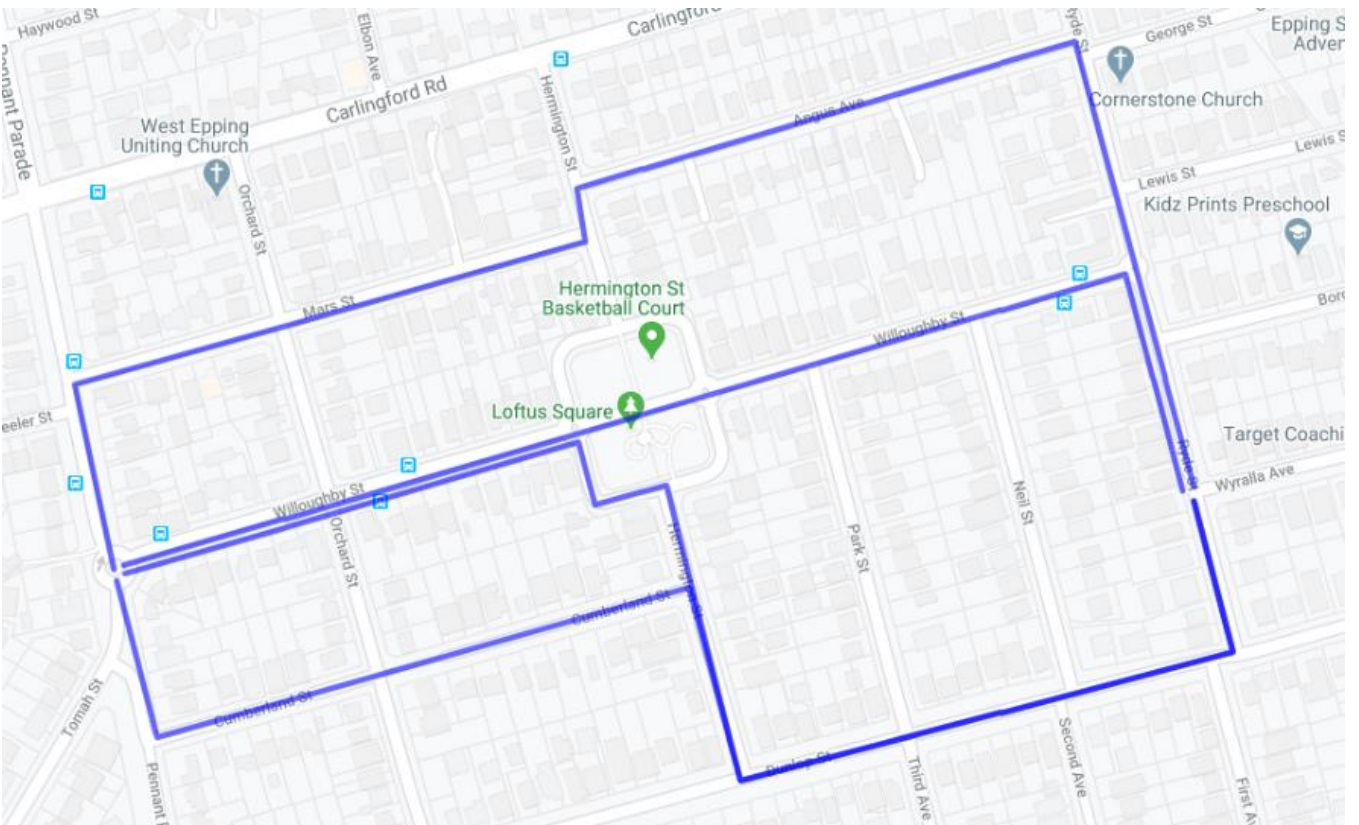
The three options through the Western Zone vary in road type, topography and distance. The shortest of the three is Keeler Street, but it has the greatest change in altitude, and is very narrow between Rickard Street and Cumberland Highway. To retain existing parking,

cycling mixed with traffic would be required downhill, and a 1.5m wide uphill cycling lane would fit on the southern side.

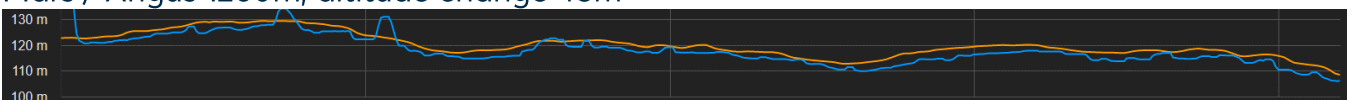
The latter two routes would require a shared path on Marsden Road due to vehicle volumes. The southern and northern sides of Marsden Road were reviewed, the north had two additional signalised legs to cross at Pennant Hills Road, however there were 8 driveways compared to 2 on the northern side. Therefore, the northern side was selected for further analysis.

The Tomah Street alignment was the longest, but followed a ridgeline and therefore was flattest. However, it would require a shared path on Marsden across another 8 residential driveways and Tomah Street would also require physical separation from vehicles, both requiring significant investment. Barellan Ave is a very quiet and narrow local access only street. With a short section of shared path either end through Talinga Park and the eastern cut through, it would allow a majority of the route to be mixed traffic on road cycling.

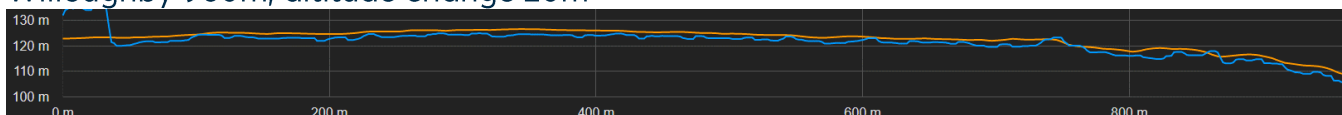
1.7. Eastern Zone



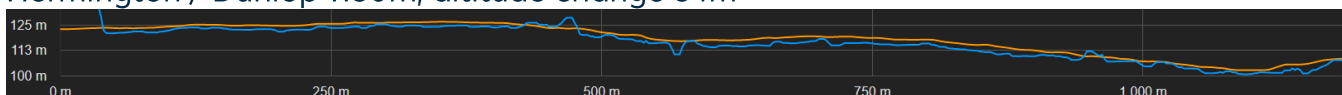
Mars / Angus 1260m, altitude change 48m



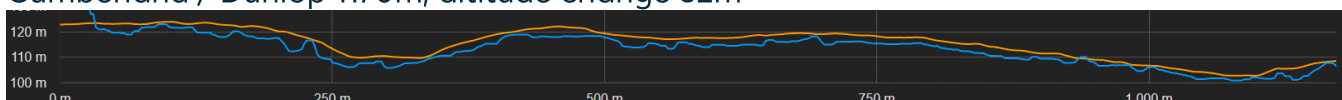
Willoughby 960m, altitude change 20m



Hermington / Dunlop 1180m, altitude change 34m



Cumberland / Dunlop 1170m, altitude change 52m



The four options through the Epping Zone vary in road type, topography and distance. The shortest and equal least altitude change of the three is Willoughby Street, but it carries the greatest volume of traffic, and would require physical separation from vehicles, requiring significant investment.

The Mars / Angus alignment is the longest, has the greatest altitude change, and requires cyclists to ride on two of the busier north-south streets that would likely require separation from vehicles.

The Hermington / Dunlop alignment is between the two in distance and altitude, but would require separation from traffic on a portion of Willoughby Street, requiring significant investment.

The Cumberland Street alignment has the least traffic but the greatest change in altitude, and is very steep on both Pennant Parade and west of Orchard Street that will discourage a large proportion of potential cyclists when a flatter alternative is available.

The Hermington / Dunlop alignment presents the best compromise between distance, altitude, cost and coherence. It allows the bike path to be on the southern side of Willoughby Street and avoid affecting any roundabouts, and is not so steep as to preclude cyclists from riding the alignment.

1.8. Conclusion

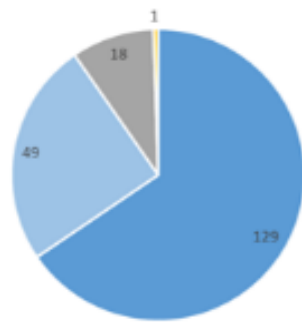
Overall, a more coherent route that had the least changes in altitude route would follow the full length of both Bridge Street and Willoughby Street. However, this would require a much greater investment. The proposed route reduces the use of these two key streets to just the essential connections where no viable alternative exists.

The proposed alignment with a Keeler/Barellan option was put on community consultation in 2017, and of the 200 responses, a majority preferred the Barellan alignment. The Barellan

alignment is also likely to feel safer to a broader range of cyclists who may not feel comfortable riding in traffic on Keeler Street.

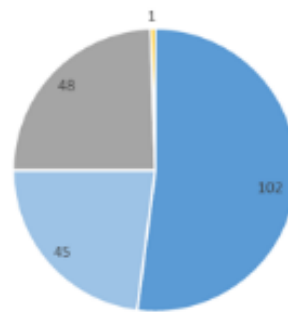
Of those who responded, a majority preferred separation for cyclists, pedestrians and vehicles on both Willoughby and Bridge Streets. However, constructing a separated bike path in Bridge Street would require the removal and replacement of the existing mature trees lining the southern edge of Bridge Street. Therefore, a wide shared path that retains the existing trees is proposed for Bridge Street.

Preferred bike path for Bridge Street



■ Separated cyclway ■ Shared path ■ Bicycle logo ■ Unspecified

Preferred bike path for Willoughby Street



■ Separated cyclway ■ Shared path ■ Bicycle logo ■ Unspecified

Preferred alignment for further consultation

