

Kent Road Reroute Options

September 2023



Merri-bek
City Council

Kent Road, Cornwall Road to Cumberland Road, Pascoe Vale, was part of a trial of separated bike lanes in 2021 and 2022. At the August 2022 Council meeting, Council resolved to look at alternative alignments for the Coburg to Glenroy bike route.

Why are we looking at alternative routes?

When a transport project interrupts regular traffic patterns, it is common for travel behaviours to adjust over time to suit the new network arrangements. However, in this case, ongoing traffic volumes and behaviours that were expected to lessen over the two-year trial period, have instead continued to remain prevalent. This unexpected side-effect of the trial treatments also suggests that alternative options to the trial infrastructure should be pursued.

After surveying the community between February and May 2023 Council received feedback from a wide range of users of the space to consider (a total of 1083 survey responses). The surveys contained questions to help determine whether the updated design (installed in December 2022) addressed the concerns raised with the initial design (installed in June 2021), as well as understanding respondent connections to Kent Road and basic demographic information.

While there is some positive data from the Kent Road trial, the strength of the negative responses and challenges identified with through traffic, parking traffic, resident access and bins, as well as bike riders dissatisfied with some aspects of the lanes, mean that looking at alternative routes for less confident bike riders becomes important and that when making a decision on the future of the Kent Road lanes.

Changes to planned separated bike lanes on Cumberland Rd

The Glenroy to Coburg bike route was originally envisaged to utilise separated bike lanes on Cumberland Rd, which was to have been delivered as a State Government project. The trial separated bike lanes on Kent Rd would have connected directly to that infrastructure. At the detail design stage of the Cumberland Rd separated bike lane project, it was determined that designing for restricted access B-Double trucks which use Cumberland Rd would have a much greater impact on parking and lane design than originally estimated. As a result, Department of Transport who had originally committed to that project many years earlier recommended against delivering the Cumberland Rd separated bike lanes and instead proposed some improvements for bikes on the Council Roads Derby St and Kent Rd. At the July 2021 Council meeting, it was resolved to accept Department of Transport's delivery of painted bike lanes on Derby St, bike symbols for lane sharing in Kent Rd (sharrows), speed humps and a 40km/h speed limit for these roads where the bikes were being directed. It was noted that the Kent/Derby Road alignment is still not considered to be of sufficient quality to encourage a large cohort of new bike riders sought by Council. Also, that once delivered this section of the link will need to be carefully monitored and, if entirely inadequate, officers will investigate an alternate route on local roads.

What is the current alignment of the Glenroy to Coburg Bike Route?

The current alignment of the Glenroy to Coburg bike route is shown in Figure 1 below. From the Glenroy end, physically separated bike infrastructure has been constructed from Glenroy Station via a shared path along Glenroy Rd, Cardinal Rd and Rhodes Pde, a separated bidirectional bike lane on Northumberland Rd and a shared path through KW Joyce Reserve where it meets the current Kent Rd trial site (Cornwall Rd to Cumberland Rd). From the Coburg end, physically separated bike infrastructure

has been constructed via a separated bike from Bell St along Pentridge Bvd and O'Hea St to Sussex St (the route also crosses the Upfield shared path and has direct links to the Merri Creek shared path). A new physically separated connection is proposed to connect the O'Hea St bike path to Derby St.

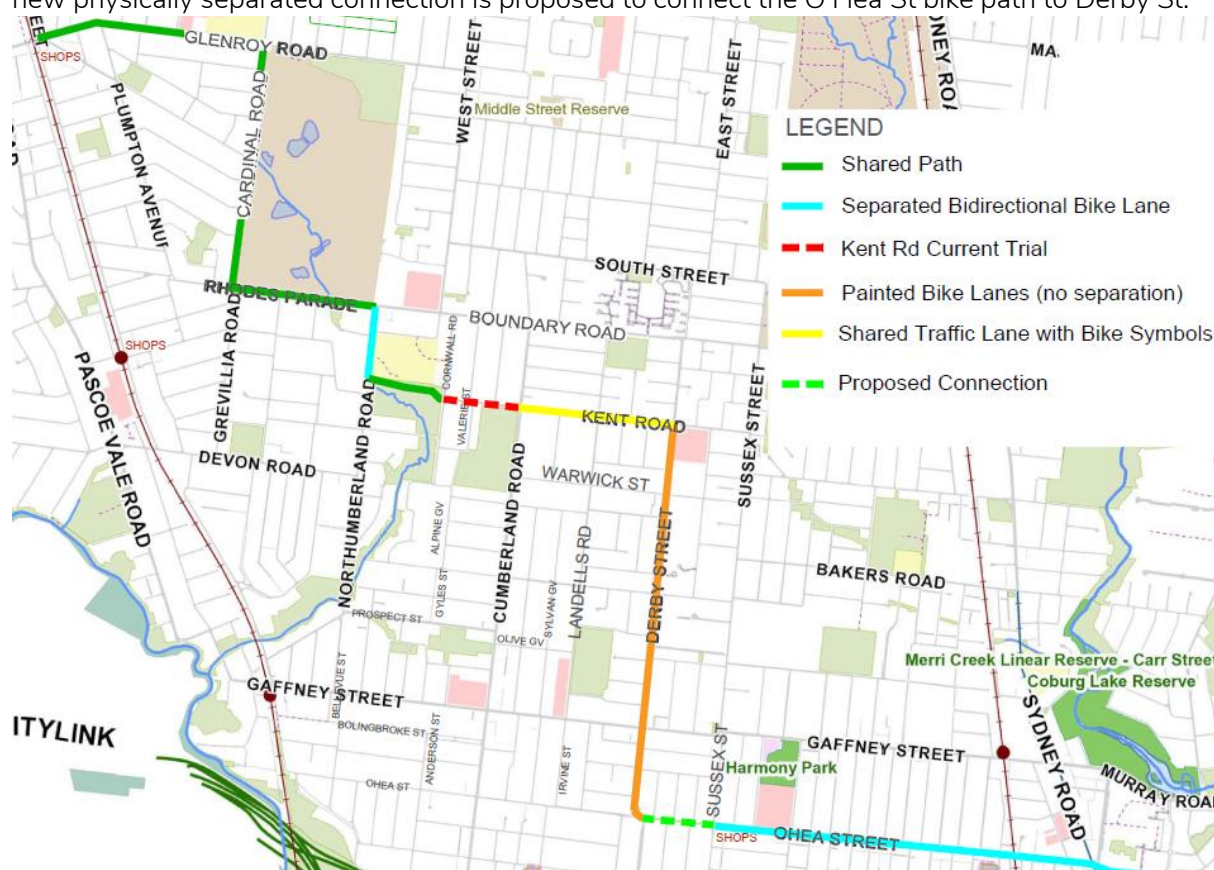


Figure 1 Current Glenroy to Coburg Bike Route

What is the background of the current Glenroy to Coburg bike route and how did arrive at Kent Rd?

The Kent Road trial bike lanes fill one of the few missing links in the bike route planned between Glenroy and Coburg – known as the East/West Route. This was originally explored in 2010 as part of the development of the Moreland Bicycle Strategy, a 10-year strategy which was adopted in 2011. This had included the shared path connection between Kent Rd and Northumberland Rd through KW Joyce reserve (which was constructed in in early 2021) and a subsequent connection along Kent Rd to link to Cumberland Rd and Cole Reserve. Kent Road has remained strategically important in connecting the wider route between Coburg and Glenroy. The Moreland Bicycle Strategy included many nearby deliverable actions for the Glenroy to Coburg route which have now been completed, including:

- the shared path on the north side of Rhodes Parade from West St to Cardinal Rd,
- the separated bike path on Cardinal Road alongside the golf course linking Rhodes Parade to Glenroy Road
- the signalisation of Cardinal Road and Glenroy Road
- the shared path along the north side of Glenroy Rd between Cardinal Rd and Hartington St (at Glenroy station)
- the signalisation of Glenroy Rd and Widford St

The original route planning considered the constraints of traffic, buses, heavy vehicles, and Council's aim to provide a high-quality facility that would be used by novice cyclists, and encourage people who are not currently cycling.

The Coburg to Glenroy Bike route is envisaged to be a connected, safe and efficient route suitable for bike riders of all confidence levels. It connects many major and local destinations including Glenroy and Coburg Activity Centres, local shopping centres, Pascoe Vale Girls Secondary College and open spaces.

The Moreland Bicycle Strategy was superseded by the Moreland Integrated Transport Strategy (MITS) in 2019. For deliverable actions, MITS includes a rolling 10-Year Capital Works Program for Active Travel (Walking and Riding). It is designed to provide the flexibility to adjust the program each year to take advantage of emerging opportunities and changing priorities.

The Kent Road separated bike lanes are on the current 10 year capital works, last formally updated at the 8 June 2022 Council meeting and was also in the previous years adopted list in May 2021. The trial was installed as part of the Covid Trial projects and this site was deemed to have an existing road width that could support a bike lane trial, which meant the inclusion of this link was brought forward from the previous long-term schedule.

What are the start and end points for exploring a re-route for Kent Rd?

Given the existing investments in physically separated infrastructure for the Glenroy to Coburg Route, the re-route proposals will seek to maximise use of the existing infrastructure.

Alternate options were investigated between Rhodes Parade near Northumberland Rd (at the Glenroy end) and the intersection of Derby St and O'Hea St (shown in Figure 2).

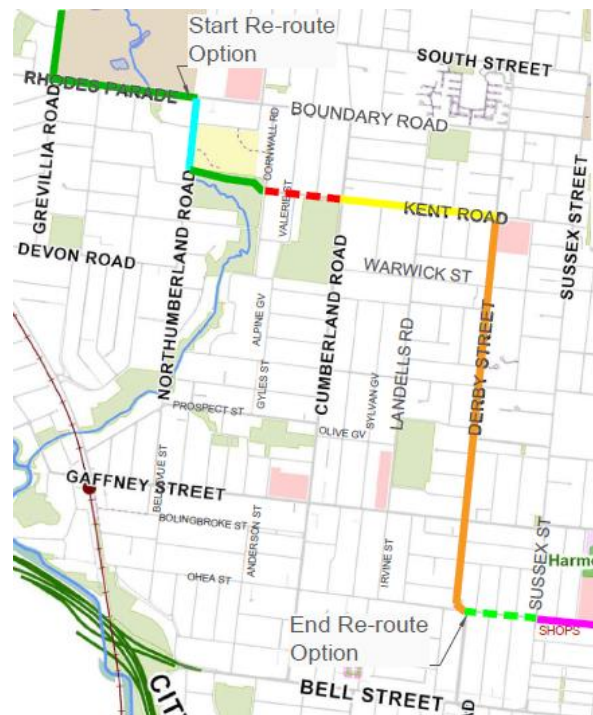


Figure 2 – Re-route option start and end points

Points of comparison for reroute options

When comparing possible routes, we need to look at route distance, topography (how hilly it is and how steep), road width, speed and volume profile, proximity to facilities and destinations, intersections, vehicle crossings and land use (for parking turnover and commercial vehicles).

Traffic speed and volume profiles will then largely determine the level of separation required for bike riders to use that route safely, which also impacts the amount of road width required and associated impacts to nature strips and street trees, parking and traffic flow.

Re-route Options Reviewed for Glenroy to Coburg Bike Route

A number of potential routes were reviewed, with 6 alignments (including the current route) summarised below in Figure 3 (these routes are shown individually later in the report). It also shows the width of the road pavements (including the gutters) and 20 different facilities, shops and potential destinations in the immediate area.



LEGEND

- | | |
|---|--------------------------------------|
| (1) Cole Reserve - Football, Cricket, Netball | Parks and Ovals |
| (2) Kent Road Shops | Primary School |
| (3) Pascoe Vale Health Medical Centre | Secondary School |
| (4) Lentara UnitingCare Kent Road Kindergarten | Current Glenroy to Coburg Bike Route |
| (5) Westbreen Primary School | Shimmy Route |
| (6) Pascoe St Shops | Alternate Route 1 |
| (7) Cole Reserve Scout Hall | Alternate Route 2 |
| (8) Derby St Shops | Alternate Route 3 |
| (9) Pascoe Vale North Primary School | Alternate Route 4 |
| (10) Boundary Rd Shops | |
| (11) Pascoe Vale Primary School | |
| (12) Cumberland Rd Shops | |
| (13) St Oliver Plunketts Primary School | |
| (14) Coburg North Primary School | |
| (15) Australian International Academy secondary school | |
| (16) Derby St Children's Centre | |
| (17) Pascoe Vale Pool, neighbourhood and community Centre, Maternal Child Health Centre | |
| (18) Raeburn Reserve, Football, Cricket, Bocce and Guides Hall | |
| (19) Childcare Centre | |
| (20) Hallam Reserve | |

Figure 3 Glenroy to Coburg Bike Route Alternative Options Reviewed (with Current Road Widths)

Overview

Distance: most route options are very similar distance (less than 200m difference over 3km between the 6 routes shown in Figures 3 and 5).

Topography: Ideally want the flattest route practical. This was a key factor when comparing routes that are south west of Kent Rd at Valerie St. This is where the contour lines are bunched close together shown in Figure 4.



Figure 4 – Contour Map (1m intervals) around Kent Rd Trial Site

This is due to the Westbreen creek valley that follows KW Joyce Reserve towards Gavin Park and Pascoe Vale Station for our review area. Most options east of Valerie St are suitably flat.

Figure 5 below shows the comparative elevations and distances for all of the investigated routes. Each route is shown on its own later in this report.

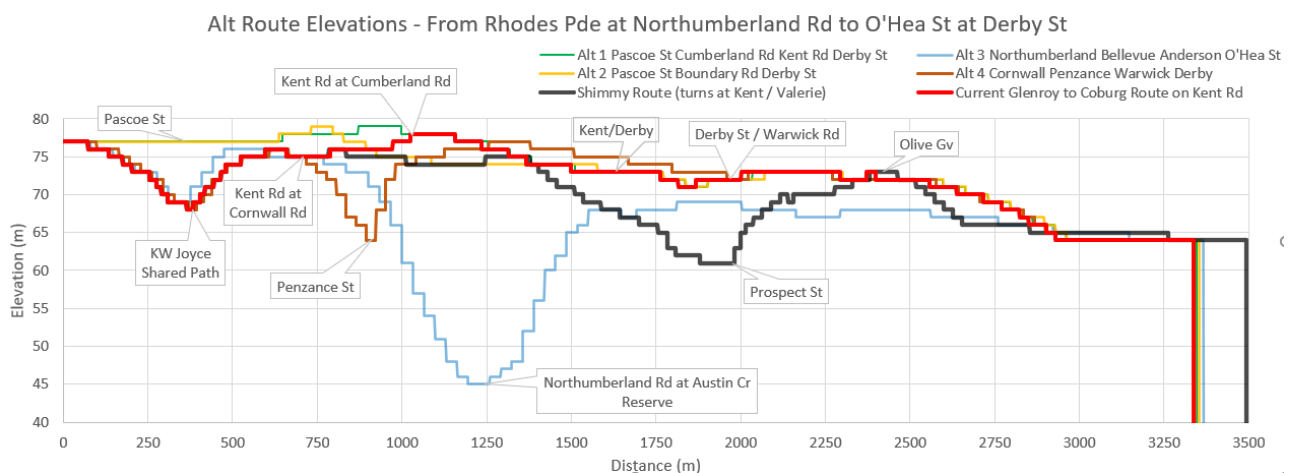


Figure 5 – Elevations and Route Distance - All Six Route Options Reviewed

Road Width: The road widths are labelled (magenta colour) in Figure 3. Most roads are narrower than the current trial section of Kent Rd, which is 12.0m wide between Cornwall Rd and Cumberland Rd. The

exceptions are Cumberland Rd (13.5m wide), Derby St (12.7m wide), Prospect St (12.2m wide) and O'Hea St east of Derby St (12.7m wide).

A minimum width of 14.4m is required to retain kerbside parking either side, 2 traffic lanes on a quiet street without buses (2.8m wide lanes) and separated bike lanes either side (1.5m wide with a 0.8m buffer for car doors). If there is a bus route (Derby St, Cumberland Rd, Gaffney St, Boundary Rd, Rhodes Pde, Pascoe St and sections of Northumberland Rd and O'Hea St), a minimum width of 15.8m is required.

Given the above, physically separated bike lanes on either side of the road can only be delivered on the roads reviewed if parking is banned on one or both sides of the road, the road is reduced to a single lane for traffic (as was done for the Kent Rd trial), or the road is widened (by removing nature strips, likely impacting street trees and expensive utility service relocations).

Road Classification: The general hierarchy for through traffic in descending order is State Arterial Roads, Major Roads, Collector Roads, Local Roads, Laneways. Roads also have place functions as destinations and living spaces in their own right. Further information on those aspects are discussed in DoTP's publications on "Movement and Place".

- **Arterial Roads:** Rhodes Parade, Pascoe St, Boundary Rd, Cumberland Rd and Gaffney St are all State Arterial Roads. State Arterial Roads form the principal routes for the regional movement of people and goods. They have their own planning scheme status and accommodate the bulk of the traffic flow through the area and truck movements. Any proposals on these roads will require support of and delivery by Department of Transport and Planning (DoTP). Since Rhodes Parade, Pascoe St and Boundary Rd are all listed on DoTP's Strategic Cycling Corridors, published on their website, Council will likely advocate for bike improvements to enable safe cycling, but will also need to ensure impacts to abutting residents, schools and businesses are given due consideration in these decisions. State arterial roads are only suitable for the Coburg to Glenroy bike route where full separation is provided.
- **Major Roads:** Derby St, Sussex St and West St are Major Council Roads, all with longstanding through traffic functions for movements across the wider municipality. Major Council roads are identified in the integrated transport strategy for through transport functions, including local bound freight and bus routes. Two way traffic flow is expected to remain unimpeded on these roads (although low speeds may be appropriate). Major Council roads are only suitable to attract less confident cyclists to the Coburg to Glenroy bike route where full separation can be provided.
- **Collector Roads:** Kent Rd (east of Cumberland Rd), Northumberland Rd, Cardinal Rd and O'Hea St are all Council Collector Roads. Collector roads provide links between arterial and local roads. They provide access within a local precinct and to properties. On these roads, local bus routes should be prioritised, as well as pedestrians and cyclists.

In the context of the feedback received on the Kent Rd trial between Cornwall Rd and Cumberland Rd, which is classified as a local road, Kent Rd east of Cumberland Rd will be much less suitable for a treatment that reduces the two way traffic to a single lane. A review of Kent Rd's collector function would likely be required, with measures to redirect or block through traffic currently using this corridor.

Speed and Volume: Higher speed or volume roads will require separation from traffic to be suitable for the Glenroy to Coburg bike route (requires greatest width and likely cost). Unless operating traffic speeds are less than 40km/h and large numbers of cyclists are present, physical separation is recommended as the only suitable treatment for the Glenroy to Coburg Route where there are more than 1500 vehicles per day using the same road.

Intersections & Driveways – all treatments require suitable crossing facilities at intersections, separated facilities can put riders in greater conflict with driveways, as they are often closer to property boundaries and introduce additional lanes to cross.

Trip Generators – we want the route to provide access to as many facilities, shops and parks as practical. 200m by road is considered acceptable.

Land Use – Will influence turnover of parking (issue for car dooring) or high occupancy parking (issue for reallocating road space), as well as number of trucks and commercial vehicles.

Current Glenroy to Coburg Route

Route: Northumberland Rd, KW Joyce Reserve Shared Path, Kent Rd, Derby St, O’Hea St

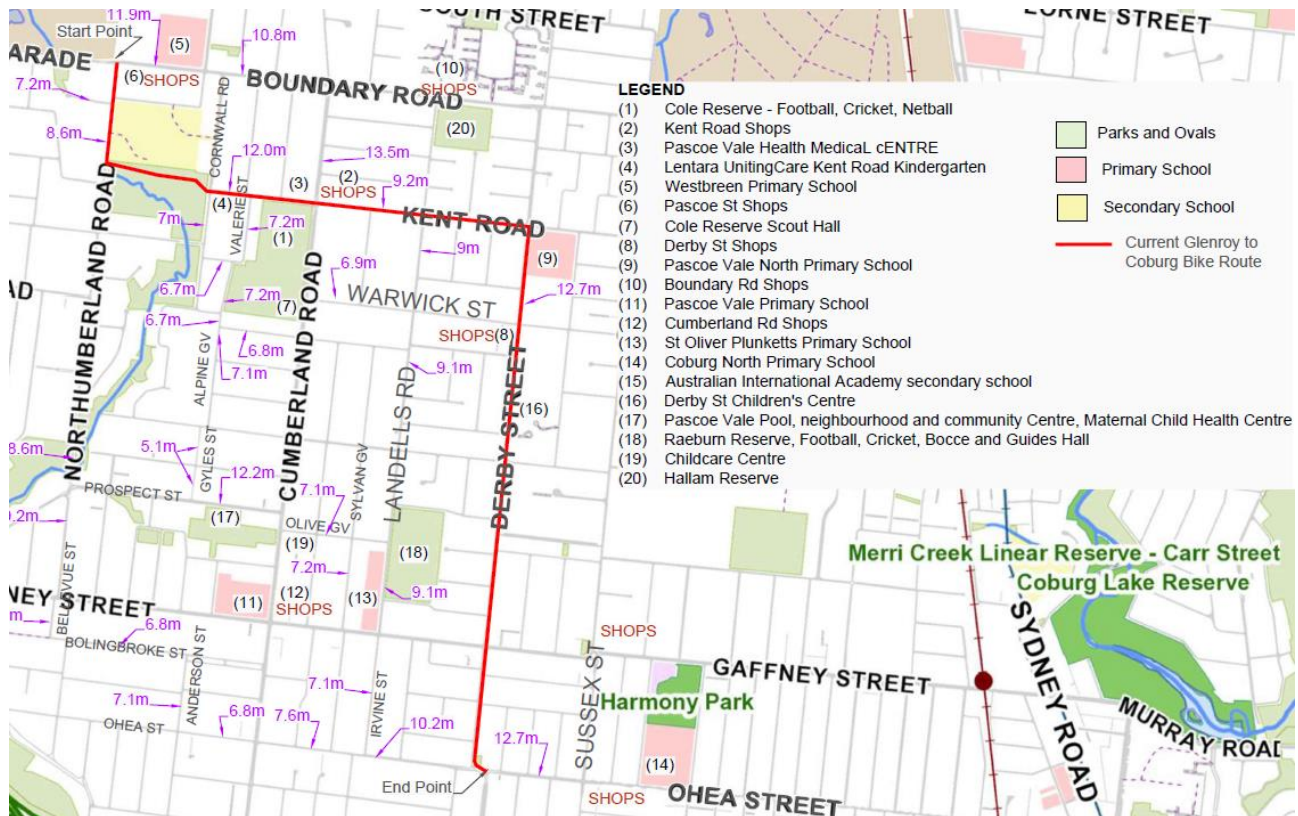


Figure 6 – Current Glenroy to Coburg Bike Route (Re-route Review Section Only)

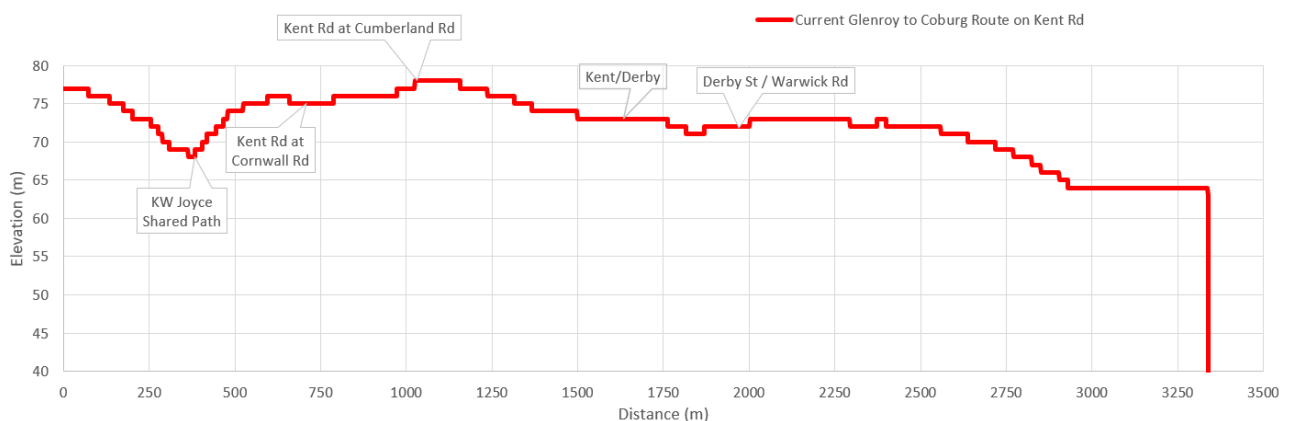


Figure 7 – Elevations and Route Distance – Current Glenroy to Coburg Route (from Rhodes Pde at Northumberland Rd to O’Hea St at Derby St)

Down 9m, Up 8m, Down 1m, Up 3m, Down 7m, Up 2m, Down 1m, Up 1m, Down 9m.

Elevations: 27m down, 14m up

Steepest inclines: 6.0% or 1 in 16.7m Northumberland Rd (3m elevation change over 50m in section between Crowley Ct and KW Joyce Shared Path

4.7% or 1 in 21 (7m elevation change over 150m, a section of KW Joyce Reserve Shared Path between Northumberland Rd and Cornwall Rd).

Distance: 3.3km

Speed, Volume and Road Classification

Table 1 shows that there are problems for the existing Glenroy to Coburg route with all sections along Kent Rd and Derby St having higher volumes than can be accepted for a non-separated bike route. This is also generally the case for speed, but these counts predate recent speed limit reductions to 40km/h along both Kent Rd and Derby St, as well as speed hump installations.

Table 1 Traffic Volume and Speed on Current Glenroy to Coburg Route

Road	Count Location	Road Type	Start Date	Weekday Average Volume	85th percentile speed	Mean speed	Heavy vehicles
Northumberland Rd	btw Crowley Ct and KW Joyce Reserve	Collector Rd	24/03/2022	3160	41.8	36.7	3.07%
Kent Rd	btw Valerie St and Joffre Rd	Local Road	15/06/2022	1949	38.6	33.8	2.47%
Kent Rd	btw Plymouth Ave and Cumberland Rd	Collector Road	15/06/2022	2948	47.2	40.6	3.76%
Kent Rd	btw Lillian St and Heathcote St	Collector Road	16/06/2021	2868	51.5	45.2	5.56%
Derby St	at 185 Derby St south of Kent Rd	Major Road	15/06/2022	7364	54.1	48.5	8.35%
Derby St	btw Gaffney St and O'Hea St	Major Road	15/06/2022	9621	55.9	50	7.36%

Intersections– 6 major crossings (summarised in Table 2), 3 local road crossings, 23 local side streets (7 intersections) passed.

Table 2 Major Road Crossings on Current Glenroy to Coburg Route

Major Road Crossings (includes roundabouts with side streets)	Road Type	Intersecting Road	Facility
Rhodes Pde	State Arterial	Northumberland Rd	Refuge Island (there are scheduled works for a threshold treatment and improvements at Northumberland Rd)
Cumberland Rd	State Arterial	Kent Rd	Roundabout with speed cushions on all approaches and bike symbols in the roundabout
Derby St	Major Council	Kent Rd	Roundabout with speed cushions on all approaches and bike symbols in the roundabout

Derby St	Major Council	Essex St	Roundabout with speed cushions on all approaches and bike symbols in the roundabout
Gaffney St	State Arterial	Derby St	Traffic signals with bike box green linemarking
Derby St	Major Council	O'Hea St	Roundabout with bike lane markings, high deflection reducing vehicle speeds and not all turn movements allowed

Other Road Crossings (+ with right of way, - without right of way): Cornwall Rd/Kent Rd/KW Joyce Shared Path (-), Landells Rd (+), Warwick Rd/Dorset Rd (+).

Side Road intersections: Lake Ave, Crowlet Ct, Kitchener Rd, Valerie St, Joffre Rd, Plymouth Ave, Lillian St, Bawden Ct, Heathcote St, Martin St, Windsor St, Tangyes St, Raeburn St, Attercliffe Ave, Lyking St, Pearcey Gv, Irma Gv, Oakbank Gv, Evelyn St, Sheddon St, Kevin St, Waratah St, Stanley St.

Trip Generators – The current route provides access to **13** facilities, shops and parks (200m by road is considered acceptable for inclusion).

These include (includes the reference numbers from Figure 6 and distance from route if not abutting):

(6) Pascoe St Shops 110m, (5) Westbreen Primary School 120m, Pascoe Vale Girls Secondary School, KW Joyce Reserve, (4), Lentara UnitingCare Kent Rd Kindergarten, (1) Cole Reserve, (3) Pascoe Vale Health Medical Centre, (2) Kent Rd Shops, (9) Pascoe Vale North Primary School, (8) Derby St Shops, (16) Derby St Children's Centre, (18) Raeburn Reserve 160m,

Land Use – Will influence turnover of parking (issue for car dooring) or high occupancy parking (issue for reallocating road space), as well as number of trucks and commercial vehicles. There is high turnover parking at Pascoe Vale Health, Kent Rd Shops, Pascoe Vale North Primary School and Derby St Shops, all of which have parking allowed alongside the bike route. Derby St (between Attercliffe Ave and Essex St) is the only industrial land use in the route review area (also impacts reviewed Alt routes 1, 2 and 4).

Officer Notes: As discussed at the start of the report, the Glenroy to Coburg bike route was originally envisaged to utilise separated bike lanes on Cumberland Rd, and the trial separated bike lanes on Kent Rd would have connected directly to that infrastructure. Due to unforeseen scope of design impacts, Department of Transports instead delivered painted bike lanes on Derby St, bike symbols for lane sharing (sharrows) in Kent Rd east of Cumberland, speed humps and a 40km/h speed limit for these roads where the bikes were being directed. At that time, Council noted that the Kent/Derby Road alignment is still not considered to be of sufficient quality to encourage a large cohort of new bike riders sought by Council. This has removed the intended connectivity of separated bike lanes from the Kent Rd trial separated bike lanes.

The section of Kent Road east of Cumberland Rd has been reviewed with Council's arborists and it has been noted that a large number of healthy significant trees would likely need to be removed to accommodate any road widening or even shared path installation along the property boundaries.

Kent Rd east of Cumberland Rd is classified as a collector road and carries significantly more traffic than the current trial section. A collector road is less appropriate for a reduction to a single lane width for two-way traffic than a local road and can be expected to have the same or more implementation issues than the existing trial site experienced. The road width is also several metres narrower east of Cumberland Rd. As such, separated infrastructure for cyclists could only be delivered along the remainder of Kent Rd by parking bans either side of the road, or by significant impacts to traffic flow on this designated Collector Rd which would require strategic review of its function in the road network (closures, one way or other rerouting of through traffic functions). As such, it is considered unlikely that Kent Rd east of

Cumberland Rd will be feasible for delivery of separated bike infrastructure. High traffic volumes and the presence of high turnover parking along the route indicates that without separation, it is not expected that less confident bike riders would be attracted to ride on this route.

Regardless of the presence of separated bike lanes, Kent Rd will always be part of the bike network, linking Gavan Park, KW Joyce Reserve, Cole Reserve, and the existing on road DTP route to Derby St. It is just unlikely to achieve the level of service sought for less confident bike riders.

Shimmy Route

Route: Northumberland Rd, KW Joyce Reserve Shared Path, Kent Rd, Valerie St, (Penzance St dog leg), Alpine Gv, (Essex St dog leg), Gyles St, Prospect St, Pascoe Vale Swimming Pool Car park and shared Path to Cumberland Rd POS, (Cumberland Rd dog leg), Olive Gv, Sylvan Gv (could be swapped with Landells), (Gaffney St dog leg to POS), Irvine St, O’Hea St

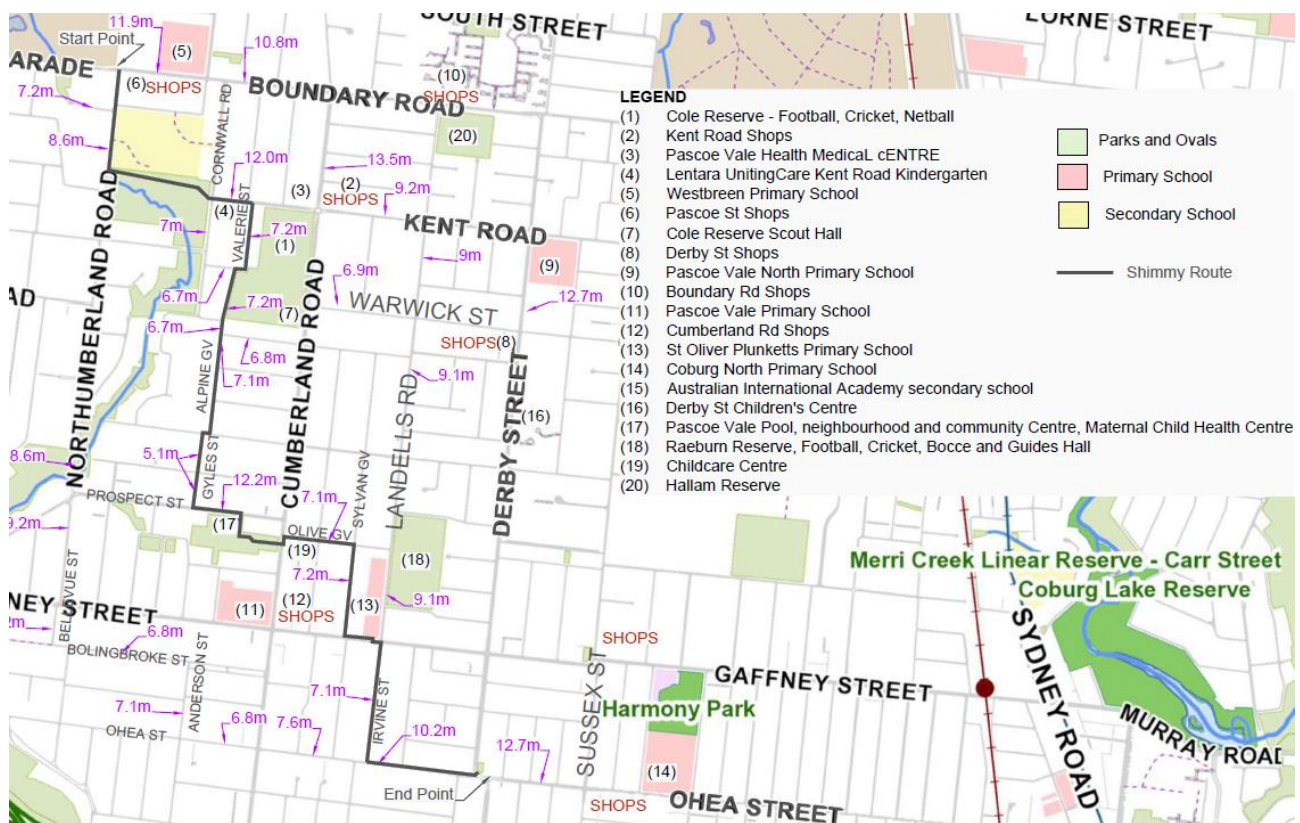


Figure 8 – Shimmy Route Option – Glenroy to Coburg Bike Route

Distance: 3.5km

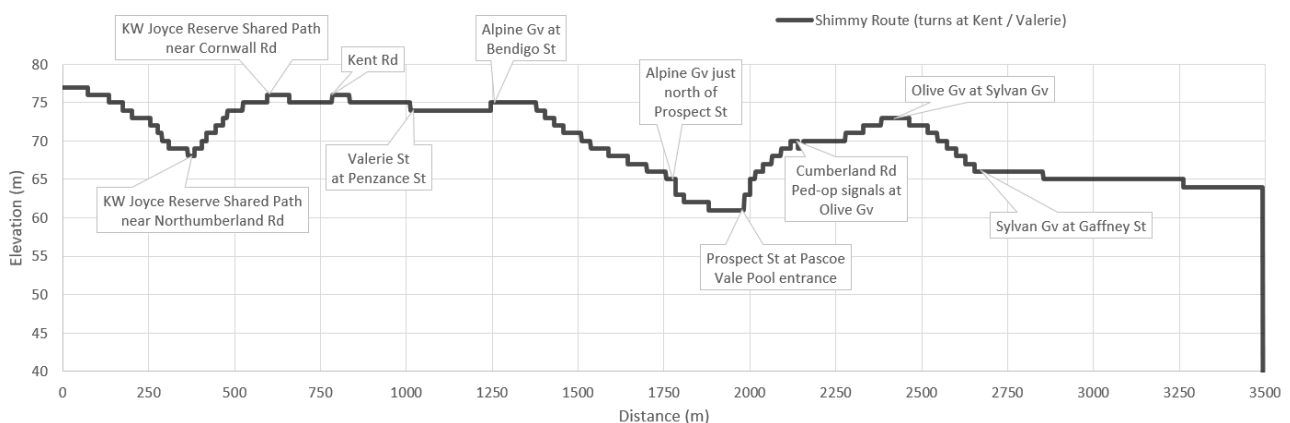


Figure 9 – Elevations and Route Distance – Shimmy Route (from Rhodes Pde at Northumberland Rd to O’Hea St at Derby St)

Increments as shown in Figure 9: Down 9m, Up 8m, Down 1m, Up 1m, Down 2m, Up 1m, Down 14m, Up 12m, Down 9m.

Elevations: 22m up, 35m down

Steepest inclines:

6.1% or 1 in 16.4m Rogers Reserve (7m elevation change over 115m on path between Pascoe Vale Pool entrance and Cumberland Rd

6.0% or 1 in 16.7m Northumberland Rd (3m elevation change over 50m in section between Crowley Ct and KW Joyce Shared Path

4.7% or 1 in 21 (7m elevation change over 150m, a section of KW Joyce Reserve Shared Path between Northumberland Rd and Cornwall Rd).

Distance: 3.5km

Speed, Volume and Road Classification

The shimmy route follows back streets which generally have low speed and volume profiles which can be recommended to less confident cyclists wanting to close the gap between the existing separated bike infrastructure along the route.

Table 3 Traffic Volume and Speed on Shimmy Route Alternative

Road	Count Location	Road Type	Start Date	Weekday Average Volume	85th percentile speed	Mean speed	Heavy vehicles
Northumberland Rd	btw Crowley Ct and KW Joyce Reserve	Collector Rd	24/03/2022	3160	41.8	36.7	3.07%
Kent Rd	btw Valerie St and Joffre Rd	Local Road	15/06/2022	1949	38.6	33.8	2.47%
Valerie St	btw Kent Rd and Penzance St	Local Road	15/06/2022	267	39.9	33.9	4.07%
Alpine Gv	btw Daley St and Bendigo St	Local Road	18/03/2018	492	37.5	30.4	3.77%
Gyles St	btw Essex St and Pleasant St	Local Road	28/08/2010	403	37.6	32	3.42%
Prospect St	btw Northumberland Rd and Archibald St	Local Road	18/11/2021	1889	46.2	40.9	4.94%
Olive Gv	btw Cumberland Rd and Hazel Gv	Local Road	29/04/2014	965	41.7	34.9	2.55%
Sylvan Gv	Midblock btw Gaffney St and Olive Gv	Local Road	18/11/2021	663	48.3	41.7	2.97%
Irvine St	btw Gaffney St and O'Hea St	Local Road	18/03/2018	1090	48.6	40.9	1.57%
O'Hea st	btw Cumberland Rd and York St	Collector Road	23/02/2017	5305	54.7	47.8	4.87%

Intersections– 4 major crossings (summarised in Table 4), 9 local rd crossings, 9 local side streets (T intersections) passed.

Table 4 Major Road Crossings on Shimmy Route

Major Road Crossings (includes roundabouts with side streets)	Road Type	Intersecting Road	Facility
Rhodes Pde	State Arterial	Northumberland Rd	Refuge Island
Cumberland Rd	State Arterial	Olive Gv	Pedestrian Operated Signals
Gaffney St	State Arterial	Sylvan Gv	Pedestrian Operated Signals
Derby St	Major Council	O'Hea St	Roundabout with bike lane markings, high deflection reducing vehicle speeds and not all turn movements allowed

Other Road Crossings (+ with right of way, - without right of way): Cornwall Rd/Kent Rd/KW Joyce Shared Path (-), Kent Rd/Valerie St, Valerie St/Penzance St/Alpine Gv, Essex St at Alpine Gv/Gyles St (-), Pleasant St/Gyles St (-), Prospect St/Gyles St/Pascoe Vale Pool car park (-), Olive Gv/Hazel Gv (-), Olive Gv/Sylvan Gv, Irvine St/O'Hea St

Side Road intersections: Lake Ave, Crowley Ct, Kitchener Rd, Cornwall Rd (at Alpine Gv), Bendigo St, Daley St, Coane St, Ray St, Hatter St.

Trip Generators – The shimmy route provides access to **14** facilities, shops and parks (200m by road is considered acceptable for inclusion).

These include (includes the reference numbers from Figure 8 and distance from route if not abutting):

(6) Pascoe St Shops 110m, (5) Westbreen Primary School 120m, Pascoe Vale Girls Secondary School, KW Joyce Reserve, (4), Lentara UnitingCare Kent Rd Kindergarten, (1) Cole Reserve, (3) Pascoe Vale Health Medical Centre 92m, (7) Cole Reserve Scout Hall 195m, (17) Pascoe Vale Pool/Neighbourhood community centre/Maternal Child Health Centre, (11) Pascoe Vale Primary School 155m, (12) Cumberland Rd Shops 150m, (19) Childcare Centre, (13) St Oliver Plunketts Primary School, (18) Raeburn Reserve 110m

Officer notes: Most of the roads along the route already have suitably low traffic volume to recommend use by less confident bike riders, and are significantly lower than the other routes investigated. The volumes in Table 3 for the shimmy route do indicate that additional infrastructure support will likely be required for short connecting lengths in Kent Rd (Cornwall Rd to Valerie St), Prospect St (Gyles St to Pascoe Vale Pool) and O'Hea St (Irvine St to Derby St). The speeds indicate that Sylvan Gv and Irvine St would likely require traffic calming devices such as speed humps to regular operating speeds to below 40km/h.

This route is considered suitably flat (despite having more up and down than some routes), and provides the most direct access of all routes to the community hub at Rogers Reserve (with Pascoe Vale Pool/neighbourhood centre/maternal child health centre), Pascoe Vale Primary School, Cumberland Rd shops and St Oliver Plunketts Primary School of all the routes.

It does not provide good access to Pascoe Vale North Primary School and Derby St shops (which are better served by routes using Derby St).

The route provides good (within 200m) access to a number of high parking turnover locations, without having the bike route directly alongside the high parking turnover locations. This includes 4 schools, 2 neighbourhood shopping precincts (Pascoe St and Cumberland Rd) and Pascoe Vale Health.

The pedestrian operated signals used to cross Cumberland Rd and Gaffney St will require lantern upgrades and either shared path or on road adjustments to support their use in connecting a formal bike route.

Alternate Route 1

Route: Pascoe St, Boundary Rd, Cumberland Rd, Kent Rd, Derby St, O'Hea St

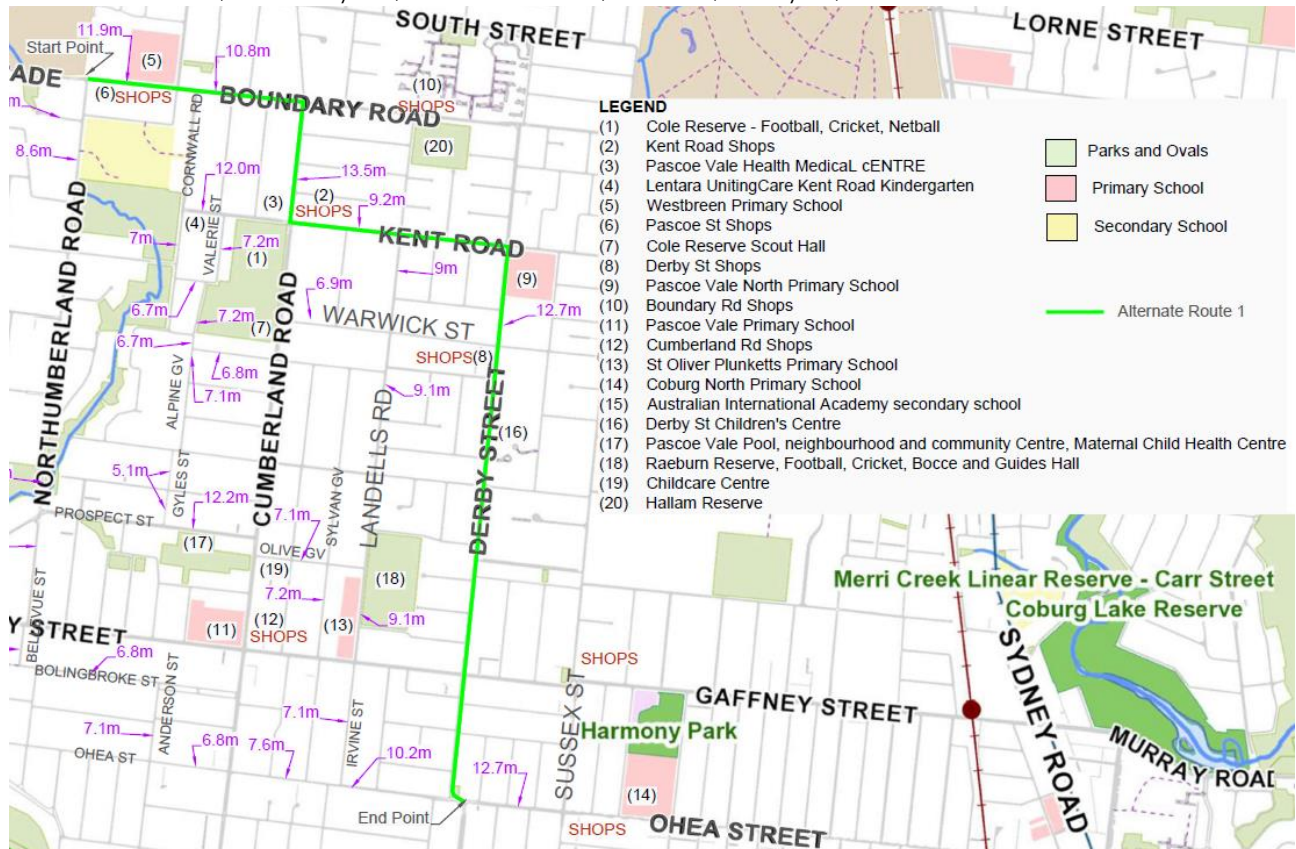


Figure 10 – Alternative Route 1 Option – Glenroy to Coburg Bike Route

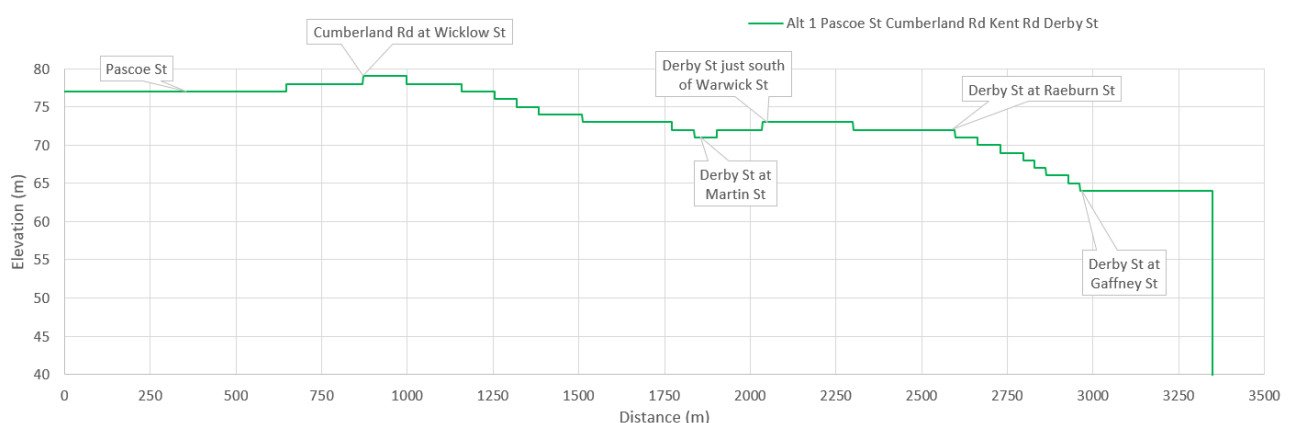


Figure 11 – Elevations and Route Distance – Alternative Route 1 (from Rhodes Pde at Northumberland Rd to O'Hea St at Derby St)

Increments as shown in Figure 11: Up 2m, Down 8m, Up 2m, Down 9m

Elevations: 4m up, 17m down

Steepest inclines:

2.0% or 1 in 49.1m Derby St (8m elevation change over 393m on path between Raeburn St and Gaffney St)

Distance: 3.3km

Speed, Volume and Road Classification

Road	Location	Road Type	Start Date	Weekday Average Volume	85th percentile speed	Mean speed	Heavy vehicles
Pascoe Street	midblock between Northumberland Road and West Street	Arterial Road	18/03/2019	11899	49.5	40.9	3.22%
Cumberland Rd	Between Gaffney St and Kent Rd	Arterial Road	>10 years	6200	-	-	-
Kent Rd	btw Plymouth Ave and Cumberland Rd	Collector Road	15/06/2022	2948	47.2	40.6	3.76%
Kent Rd	btw Lillian St and Heathcote St	Collector Road	16/06/2021	2868	51.5	45.2	5.56%
Derby St	at 185 Derby St south of Kent Rd	Major Road	15/06/2022	7364	54.1	48.5	8.35%
Derby St	btw Gaffney St and O'Hea St	Major Road	15/06/2022	9621	55.9	50.0	7.36%

Table 5 Traffic Volume and Speed on Alternative Route 1

Intersections– 8 major road crossings (summarised in Table 6), 2 local road crossings, 25 local side streets (T intersections) passed.

Major Road Crossings (includes roundabouts with side streets)	Road Type	Intersecting Road	Facility
Rhodes Pde	State Arterial	Northumberland Rd	T-intersection without bike lanes (gap in line marking)
Pascoe St	State Arterial	West St and Lake Ave	Traffic signals without bike lanes (except for east leg)
Boundary Rd	State Arterial	Cumberland Rd	Traffic signals with bike box green linemarking, but no approach lanes.
Cumberland Rd	State Arterial	Kent Rd	Roundabout with speed cushions on all approaches and bike symbols in the roundabout
Derby St	Major Council	Kent Rd	Roundabout with speed cushions on all approaches and bike symbols in the roundabout
Derby St	Major Council	Essex St	Roundabout with speed cushions on all approaches and bike symbols in the roundabout

Gaffney St	State Arterial	Derby St	Traffic signals with bike box green linemarking
Derby St	Major Council	O'Hea St	Roundabout with bike lane markings, high deflection reducing vehicle speeds and not all turn movements allowed

Table 6 Major Road Crossings on Alternative Route 1

Other Road Crossings (+ with right of way, - without right of way): Landells Rd (+), Warwick Rd/Dorset Rd (+).

Side Road intersections: Cornwall Rd, Kitchener Rd, Bristol Rd, Joffre Rd, Alexandra St, Wicklow St, Shanley St, Plymouth Ave, Lillian St, Bawden Ct, Heathcote St, Martin St, Windsor St, Tangyes St, Raeburn St, Attercliffe Ave, Lyking St, Pearcey Gv, Irma Gv, Oakbank Gv, Evelyn St, Sheddon St, Kevin St, Waratah St, Stanley St.

Trip Generators – The shimmy route provides access to **10** facilities, shops and parks (200m by road is considered acceptable for inclusion).

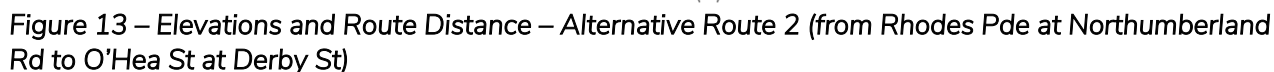
These include (includes the reference numbers from Figure 10 and distance from route if not abutting):
 (6) Pascoe St Shops, (5) Westbreen Primary School, Pascoe Vale Girls Secondary School 110m,
 (1) Cole Reserve, (3) Pascoe Vale Health Medical Centre, (2) Kent Rd Shops, (9) Pascoe Vale North Primary School, (8) Derby St Shops, (16) Derby St Children's Centre, (18) Raeburn Reserve 160m.

Officer Notes: Route explores the most direct re-route of Kent Rd separated bike lane trial, whilst working in with the recent extent of DoTP works, which included painted bike lanes on Cumberland Rd (and reduced speed limit of 50km/h), prior to re-joining current route. Route goes in front of Westbreen Primary school, would expect high turnover shop parking on the south side of Pascoe St, which will be a problem for delivery of separated lanes. This route including Pascoe St and Cumberland Rd would only be suitable for the Glenroy to Coburg bike route with physically separated bike infrastructure. This would likely require a ban of all parking along Pascoe St, with possibly less impacts to the east where the road widens on Boundary Rd east of West St.

Pascoe St, Boundary Rd and Cumberland Rd are State Arterial roads, and as such decisions relating roadscape allocation and traffic impacts rely on DoTP support for any proposal. DoTP have included Boundary Rd, Pascoe St and Rhodes Pde on their Strategic Cycling Corridor (SCC) route, However Council is not aware of any current projects that would align these state roads with that status. Regardless of future projects, Council still needs to provide a bike route for less confident cyclists to the large number of facilities, schools, shops and parks between the SCC bound area (Upfield shared path, Craigiburg rail line with path in planning, Boundary Rd and O'Hea St).

Route: Pascoe St, Boundary Rd, Derby St, O’Hea St

Route: Pascoe St, Boundary Rd, Derby St, O’Hea St



Elevations: 4m up, 17m down

Steepest inclines:

2.0% or 1 in 49.1m Derby St (8m elevation change over 393m on path between Raeburn St and Gaffney St)

Distance: 3.3km

Speed, Volume and Road Classification

Road	Location	Road Type	Start Date	Weekday Average Volume	85th percentile speed	Mean speed	Heavy vehicles
Pascoe Street	midblock between Northumberland Road and West Street	Arterial Road	18/03/2019	11899	49.5	40.9	3.22%
Derby St	at 213 Derby St north of Kent Rd	Major Road	24/03/2022	7044	55.7	49.9	5.39%
Derby St	at 185 Derby St south of Kent Rd	Major Road	15/06/2022	7364	54.1	48.5	8.35%
Derby St	btw Gaffney St and O'Hea St	Major Road	15/06/2022	9621	55.9	50.0	7.36%

Table 7 Traffic Volume and Speed on Alternative Route 2

Intersections– 8 major crossings (summarised in Table 8), 1 local road crossing, 25 local side streets (T intersections) passed.

Major Road Crossings (includes roundabouts with side streets)	Road Type	Intersecting Road	Facility
Rhodes Pde	State Arterial	Northumberland Rd	T-intersection without bike lanes (gap in line marking)
Pascoe St	State Arterial	West St and Lake Ave	Traffic signals without bike lanes (except for east leg)
Boundary Rd	State Arterial	Cumberland Rd	Traffic signals with bike box green linemarking, but no approach lanes.
Boundary Rd	State Arterial	Derby St	Complex 4-way intersection with traffic turn lanes and no bike lanes. Refuge island on east side of intersection.
Derby St	Major Council	Kent Rd	Roundabout with speed cushions on all approaches and bike symbols in the roundabout
Derby St	Major Council	Essex St	Roundabout with speed cushions on all approaches and bike symbols in the roundabout
Gaffney St	State Arterial	Derby St	Traffic signals with bike box green linemarking
Derby St	Major Council	O'Hea St	Roundabout with bike lane markings, high deflection reducing vehicle speeds and not all turn movements allowed

Table 8 Major Road Crossings on Alternative Route 2

Other Road Crossings (+ with right of way, - without right of way): Warwick Rd/Dorset Rd (+).

Side Road intersections: Cornwall Rd, Kitchener Rd, Bristol Rd, Joffre Rd, Princess St, Landells Rd, Sage St, Dixon St, Karadoc Ave, Collings Ct, Wonga Ave, Martin St, Windsor St, Tangyes St, Raeburn St, Attercliffe Ave, Lyking St, Pearcey Gv, Irma Gv, Oakbank Gv, Evelyn St, Sheddon St, Kevin St, Waratah St, Stanley St.

Trip Generators – The shimmy route provides access to 9 facilities, shops and parks (200m by road is considered acceptable for inclusion).

These include (includes the reference numbers from Figure 12 and distance from route if not abutting):
 (6) Pascoe St Shops, (5) Westbreen Primary School, Pascoe Vale Girls Secondary School 110m,
 (20) Hallam Reserve, (10) Boundary Rd Shops, (9) Pascoe Vale North Primary School, (8) Derby
 St Shops, (16) Derby St Children's Centre, (18) Raeburn Reserve 160m.

Officer Notes: Route explores flattest and most direct alignment from Rhodes Pde but misses a number of trip generators and has the highest traffic volumes and speeds of all of the routes.
 Misses Kent Rd shops, Cumberland Rd shops, Pascoe Vale PS and the Pascoe Vale Pool and centre.
 Good access to Westbreen PS, Pascoe Vale North PS, Pascoe St shops, Boundary Rd shops, Derby St Shops, Hallam Res and is still close to Raeburn Res,
 Equally as flat as Alternative route 1, and would connect to existing painted bike lanes on Boundary Rd (although issues with parking again, unless nature strip options pursued). Existing intersection of Boundary Rd and Derby St is not currently bike friendly and would likely require traffic signals as a minimum. Same issues with Pascoe St as alternate route 1. Goes in front of a school. High turnover shop parking on south side of Pascoe St will be problem for separated lanes. Most likely to require ban of all parking until road widens on Boundary Rd east of West St. Comments generally the same as Alt route 1.

Alternate Route 3 Northumberland Rd (full length)

Route: Northumberland Rd, Bellevue St, Bolingbroke St, Anderson St, O'Hea St

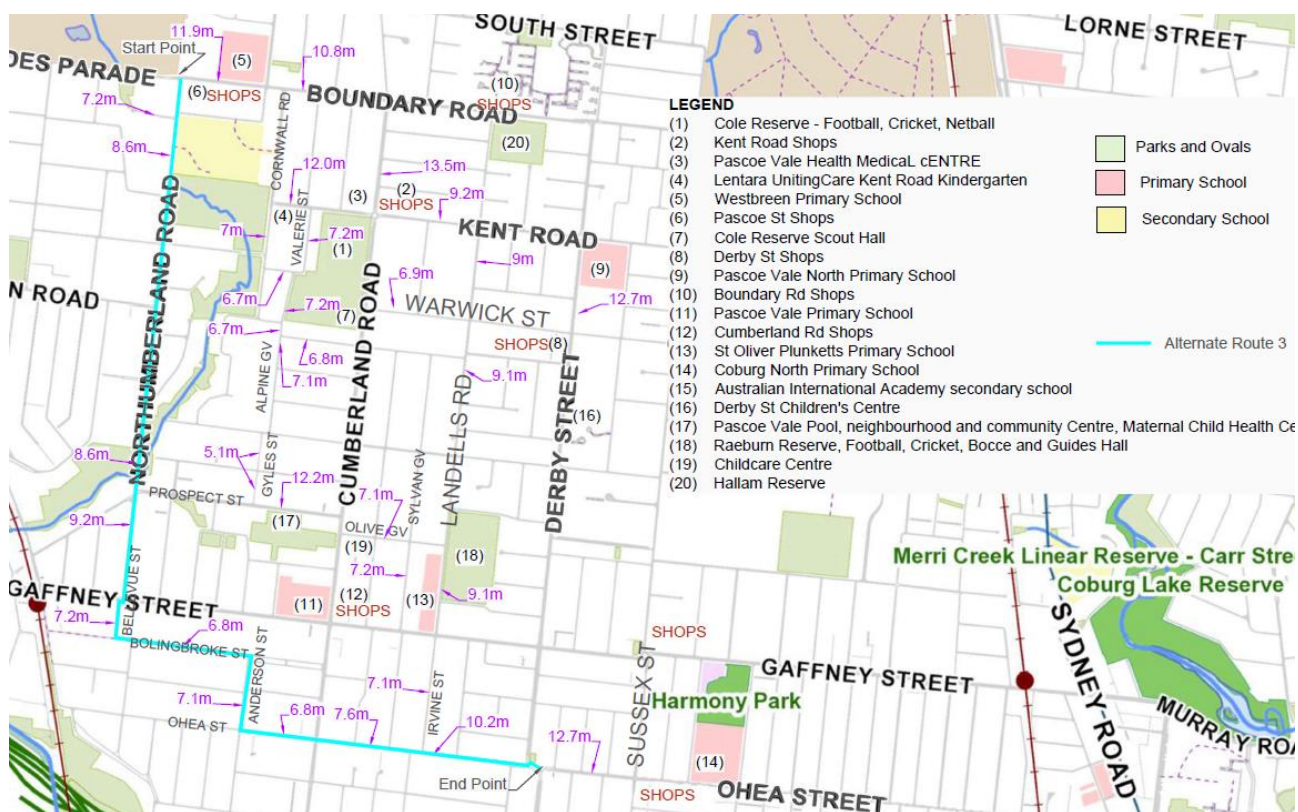


Figure 14 – Alternative Route 3 Option – Glenroy to Coburg Bike Route

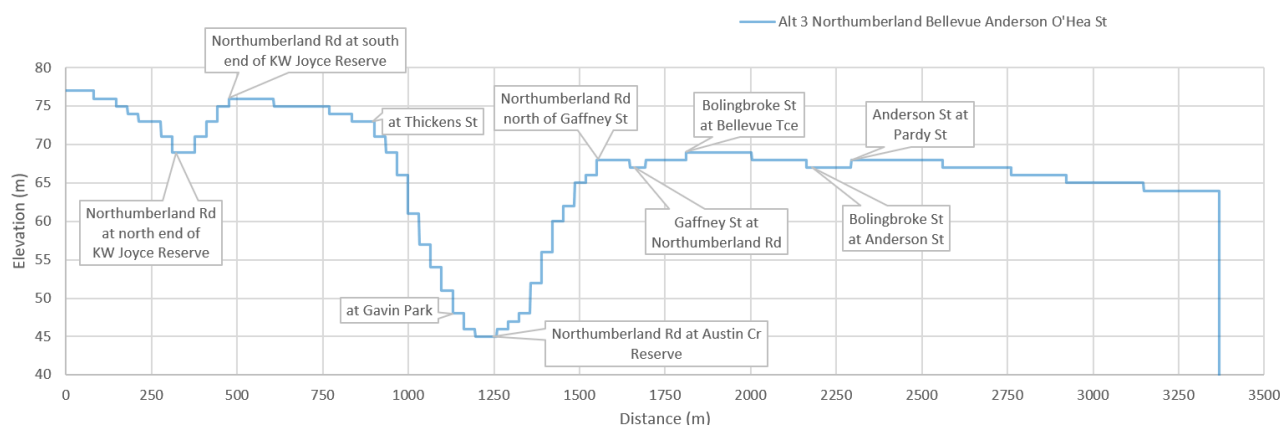


Figure 15 – Elevations and Route Distance – Alternative Route 3 (from Rhodes Pde at Northumberland Rd to O'Hea St at Derby St)

Increments as shown in Figure 15: Down 8, Up 7, **Down 31, Up 23**, Down 1m, Up 2m, Down 2m, Up 1m, Down 4m

Elevations: 33m up, 46m down

Steepest inclines:

10.6% or 1 in 9.4m Northumberland Rd (25m elevation change over 235m in section between Thickens St and Gavin Park)

7.6% or 1 in 13.2m Northumberland Rd (23m elevation change over 304m in section between Austin Crescent Reserve and a point 200m north of Gaffney St)

6.0% or 1 in 16.7m Northumberland Rd (3m elevation change over 50m in section between Crowley Ct and KW Joyce Shared Path)

Distance: 3.4km

Speed, Volume and Road Classification

Road	Count Location	Road Type	Start Date	Weekday Average Volume	85th percentile speed	Mean speed	Heavy vehicles
Northumberland Rd	btw Crowley Ct and KW Joyce Reserve	Collector Rd	24/03/2022	3160	41.8	36.7	3.07%
Northumberland Rd	btw Fawkner Rd and Longview St	Collector Rd	2/11/2022	3546	49.4	43.7	6.45%
Bolingbroke St	btw Northgate St and Anderson St	Local Rd	15/08/2022	984	47.3	40.8	5.43%
Anderson St	btw Westgate St and Easy St	Local Rd	18/03/2019	1020	44.0	37.5	2.84%
O'Hea St	btw Anderson St and Cumberland Rd	Local Rd	16/06/2021	1375	45.9	39.0	3.59%
O'Hea St	btw Cumberland Rd and York St	Collector Rd	23/02/2017	5305	54.7	47.8	2.37%

Table 9 Traffic Volume and Speed on Alternative Route 3

Intersections– 5 major crossings (summarised in Table 10), 6 local road crossings, 13 local side streets (T intersections) passed.

Major Road Crossings (includes roundabouts with side streets)	Road Type	Intersecting Road	Facility
Rhodes Pde	State Arterial	Northumberland Rd	Refuge Island
Devon Rd	Collector Rd	Northumberland Rd	T-intersection of two Collector Roads
Gaffney St	State Arterial	Northumberland Rd/Bellevue St	Stop controls
Cumberland Rd	State Arterial	O'Hea St	Traffic signals
Derby St	Major Council	O'Hea St	Roundabout with bike lane markings, high deflection reducing vehicle speeds and not all turn movements allowed

Table 10 Major Road Crossings on Alternative Route 3

Other Road Crossings (+ with right of way, - without right of way): Arndt Rd (+), Prospect St/Fawkner Rd (+), Bellevue Tce/Bolingbroke St, Bolingbroke St/Anderson St, Anderson St/O'Hea St, Pardy St (+)

Side Road intersections: Lake Ave, Crowley Ct, Snell Gv, Arnold Ct, Thickins St, Longview St, Northgate St, Dale Ave, Kinross St, York St, Irvine St, Ray St, Hatter St.

Trip Generators – Alternative route 3 provides access to 7 facilities, shops and parks (200m by road is considered acceptable for inclusion).

These include (includes the reference numbers from Figure 14 and distance from route if not abutting):

(6) Pascoe St Shops 110m, (5) Westbreen Primary School 120m, Pascoe Vale Girls Secondary School, KW Joyce Reserve, (4), Gavin Reserve, Austin Crescent Reserve, Gaffney Village (Pascoe Vale Station precinct) 195m

Officer Notes: Route links to the smallest number of facilities (compared to the other routes reviewed). It is the closest to Pascoe Vale Station and the Gaffney Village shops, however those facilities are already well connected by the Westbreen creek trail that crosses Northumberland Rd at Austin Crescent Reserve.

Much steeper hills than other options due to Northumberland Rd, which dips alongside KW Joyce Res and has the deepest valley at Austin Crescent Reserve (option exists to follow shared path along Westbreen creek rather than Northumberland Rd north of Austin Crescent Res).

Gaffney St crossing to Bellevue St is at a hill crest and could be problematic for sight distance and design of an appropriate crossing facility. Northumberland Rd south of Fawkner Rd is a bus route with limited road width and Collector road traffic volumes, which would likely make separated bicycle infrastructure unfeasible.

Alternate Route 4 Warwick St via Cole Reserve Concept Shared Path

Route: Northumberland Rd, KW Joyce Reserve Shared Path, Cornwall Rd, Penzance St, Cole Reserve concept shared path, Cumberland Rd, Warwick Rd, Derby St

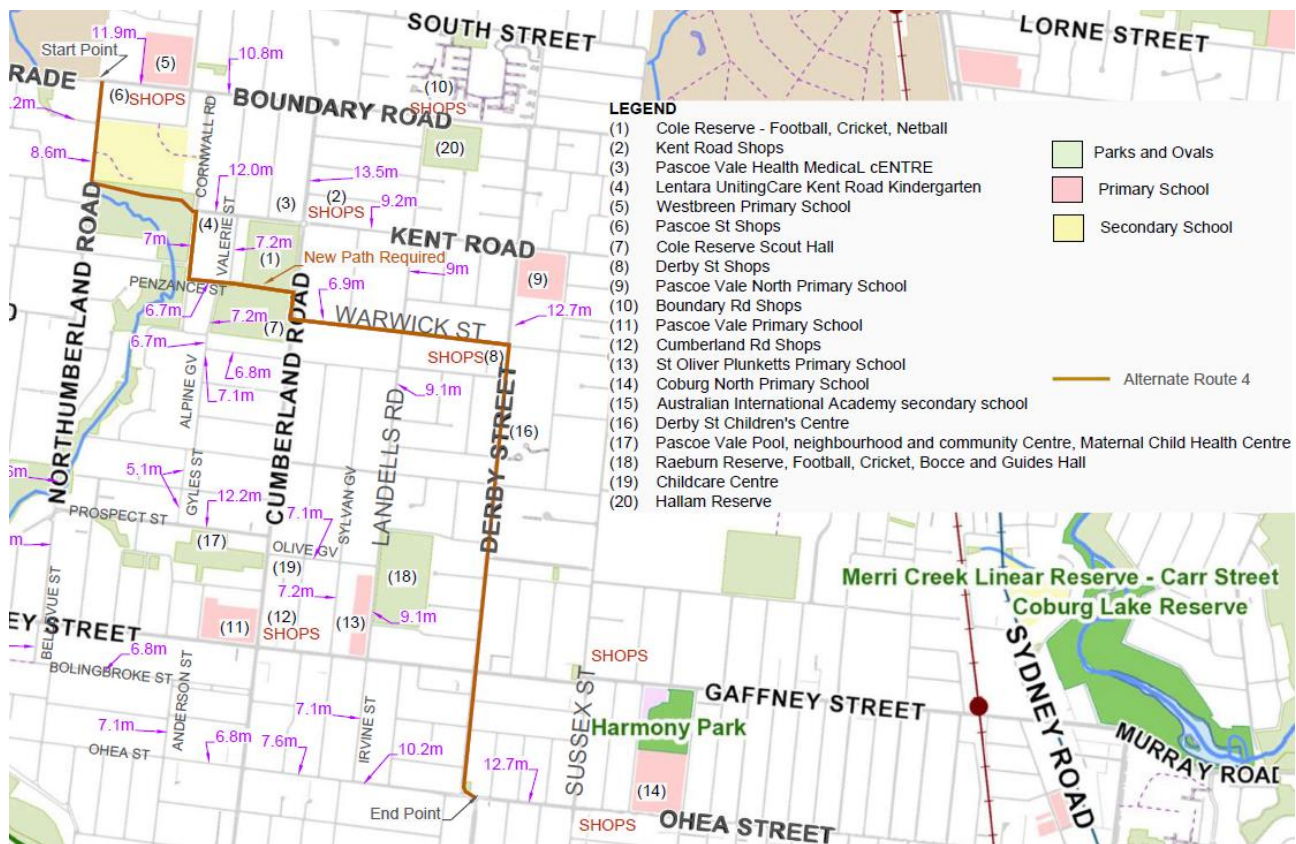


Figure 16 – Alternative Route 4 Option – Glenroy to Coburg Bike Route

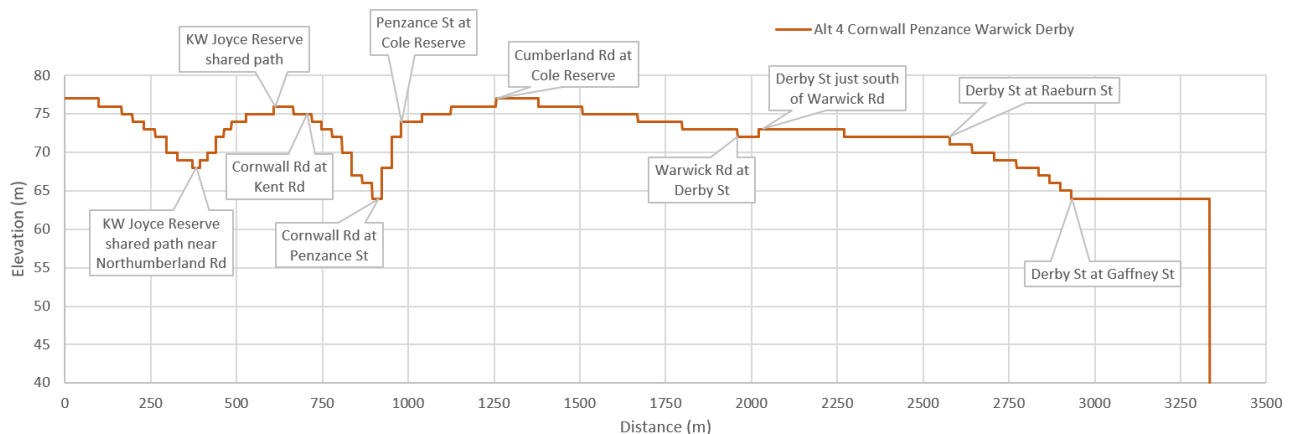


Figure 17 – Elevations and Route Distance – Alternative Route 4 (from Rhodes Pde at Northumberland Rd to O'Hea St at Derby St)

Increments as shown in Figure 17: Down 9m, Up 8m, Down 12m, Up 13m, Down 5m, Up 1m, Down 9m

Elevations: 22m up, 36m down

Steepest inclines:

16.7% or 1 in 6m Penzance St (10m elevation change over 60m between Kent Rd and Penzance St)

6.1% or 1 in 16.4m Rogers Reserve (7m elevation change over 115m on path between Pascoe Vale Pool entrance and Cumberland Rd)

6.0% or 1 in 16.7m Northumberland Rd (3m elevation change over 50m in section between Crowley Ct and KW Joyce Shared Path)

5.1% or 1 in 19.5m Cornwall Rd (11m elevation change over 215m between Kent Rd and Penzance St)

Distance: 3.3km

Speed, Volume and Road Classification

Road	Count Location	Road Classification	Start Date	Weekday Average Volume	85th percentile speed	Mean speed	Heavy vehicles
Northumberland Rd	btw Crowley Ct and KW Joyce Reserve	Collector Rd	24/03/2022	3160	41.8	36.7	3.07%
Cornwall Rd	btw Zenith St and Penzance St	Local Rd	3/12/2018	544	52.9	46.3	2.29%
Valerie St	btw Kent Rd and Penzance St	Local Road	15/06/2022	267	39.9	33.9	4.07%
Warwick Rd	midblock between Derby Street and Landells Road	Local Rd	20/07/2012	660	51.4	43.9	1.90%
Derby St	at 185 Derby St south of Kent Rd	Major Road	15/06/2022	7364	54.1	48.5	8.35%
Derby St	btw Gaffney St and O'Hea St	Major Road	15/06/2022	9621	55.9	50	7.36%

Table 11 Traffic Volume and Speed on Alternative Route 4

Intersections– 6 major crossings (summarised in Table 12), 4 local road crossings, 18 local side streets (T intersections) passed.

Major Road Crossings (includes roundabouts with side streets)	Road Type	Intersecting Road	Facility
Rhodes Pde	Arterial Rd	Northumberland Rd	Refuge Island
Cumberland Rd	Arterial Rd	Warwick Rd	Refuge Island
Derby St	Major Council	Warwick Rd	Give Way, also refuge island immediately north of intersection
Derby St	Major Council	Essex St	Roundabout with speed cushions on all approaches and bike symbols in the roundabout
Gaffney St	Arterial Rd	Derby St	Traffic signals with bike box green linemarking

Derby St	Major Council	O'Hea St	Roundabout with bike lane markings, high deflection reducing vehicle speeds and not all turn movements allowed
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Table 12 Major Road Crossings on Alternative Route 4

Other Road Crossings (+ with right of way, - without right of way): Cornwall Rd/Kent Rd/KW Joyce Shared Path (-), Cornwall Rd/Penzance St, Valerie St/Penzance St/Cole Reserve Path, Landells Rd (+),

Side Road intersections: Lake Ave, Crowley Ct, Arndt Rd, Alpine Gv, Plymouth Av, Windsor St, Tangyes St, Raeburn St, Attercliffe Ave, Lyking St, Pearcey Gv, Irma Gv, Oakbank Gv, Evelyn St, Sheddon St, Kevin St, Waratah St, Stanley St.

Trip Generators – Alternative route 4 provides access to 11 facilities, shops and parks (200m by road is considered acceptable for inclusion).

These include (includes the reference numbers from Figure 8 and distance from route if not abutting):

(6) Pascoe St Shops 110m, (5) Westbreen Primary School 120m, Pascoe Vale Girls Secondary School, KW Joyce Reserve, (4), Lentara UnitingCare Kent Rd Kindergarten, (1) Cole Reserve, (7) Cole Reserve Scout Hall, (9) Pascoe Vale North Primary School 150m, (8) Derby St Shops, (16) Derby St Children's Centre, (18) Raeburn Reserve 160m.

Officer Notes: Route between KW Joyce Reserve shared path to Cole Reserve, via Cornwall Rd and Penzance St, has only been done to illustrate the steep hill which can be avoided by travelling via Kent and Valerie St to the same point. Cyclists would not be expected to follow this route when they can avoid this hill (which is the steepest incline of all of the routes explored).

There is also a proposed shared path across Cole Reserve, however with expanding sporting facilities at the site and existing trees around the ovals, this may not be a simple or even feasible option and would require design in collaboration with the facility managers and arborists. None the less, there is likely a desire line for a path that connects Valerie St at Penzance St to Cumberland Rd and a potential crossing point at Warwick Rd.

This route misses Kent Rd shops but explores a potential desire line along Warwick Rd which connects Cole Reserve at the playground entrance on Cumberland Rd, to the Derby St shops.

This concept could be altered to use the start of the shimmy route at Valerie St to avoid the Cornwall Rd and Penzance St Hill (avoiding the steepest incline and hills, without changing the route distance.

Recommendations for the future of the Coburg to Glenroy Bike Route

It is recommended that the trial in Kent Road be declared complete and a decision be made to remove the existing infrastructure.

It is further recommended that Council endorses consultation with the community on an alternative route (see shimmy route highlighted black in Figure 18 below), which would utilise a small part at the western end of the subject section of Kent Road. This would then feed at Valerie Street into a formalised "Pascoe Vale Shimmy" route through backstreets to the south with appropriate treatments on these low volume roads to reinforce low traffic speeds, help for bike riders crossing busier roads and infrastructure to protect bike riders along O'Hea Street until the route ultimately joins the currently defined Coburg to Glenroy bike route at O'Hea and Derby Streets. This route is highlighted in black in Figure 18 below.

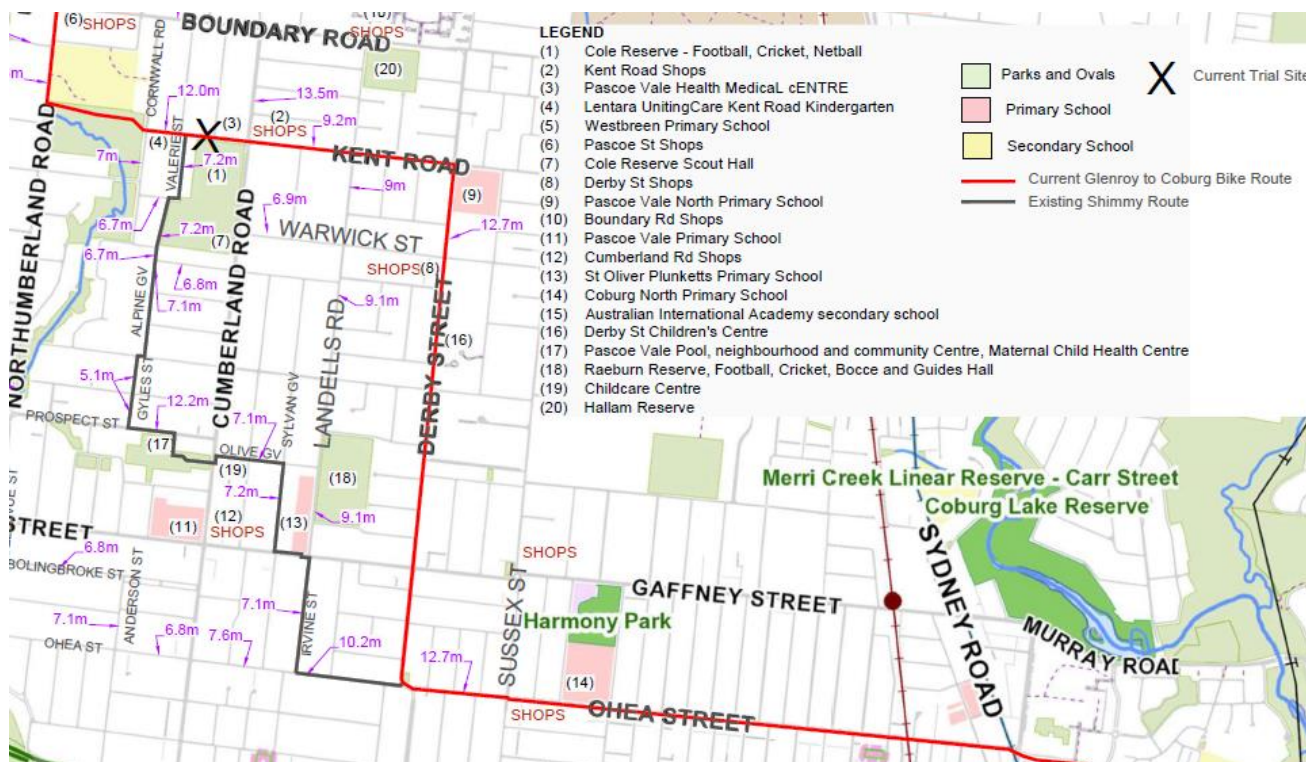


Figure 18 Current Glenroy to Coburg Bike Route and Proposed Shimmy Route Alternative

The western end of the subject section of Kent Road (between Cornwall Rd and Valerie St), is recommended to be redesigned to host on the southern kerb a bidirectional bike lane. This is indicated in Figure 19 below.

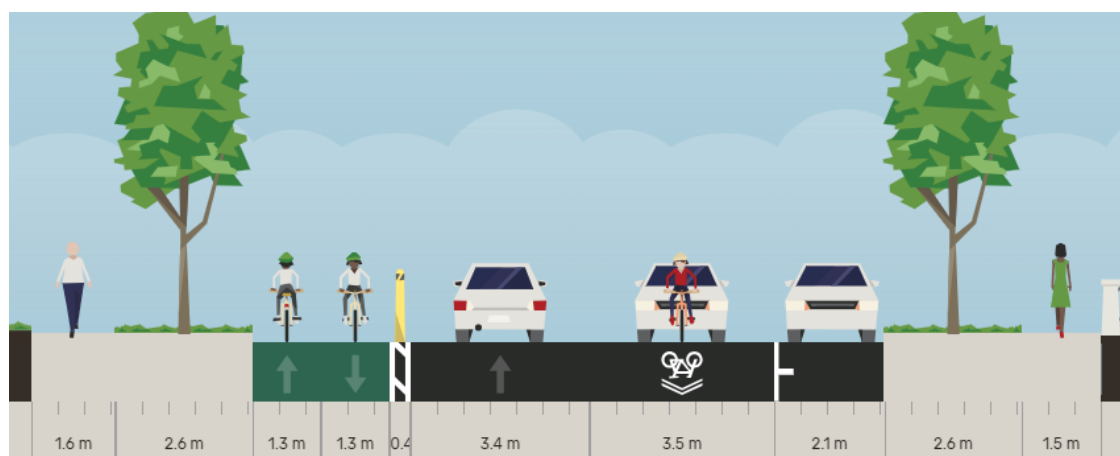


Figure 19 Proposed Cross section of Kent Rd (Cornwall Rd to Valerie St)

In addition, officers recommend traffic measures to assist bike and pedestrian crossing alignments at the Cornwall Road / Kent Road intersection.

More confident riders may choose to continue to use the Kent Road route, including the section east of Cumberland Road that has been treated with Sharrows (shared lane bicycle symbols) by the Department of Transport and Planning, and directly south on the Department's painted bike lane treatment in Derby Street, ultimately joining the currently defined Coburg to Glenroy bike route at O'Hea and Derby Streets. To this end, officers will recommend that the subject section of Kent Road features similar Sharrows at the time of the removal of the current trial infrastructure (as indicated in Figure 20 below).

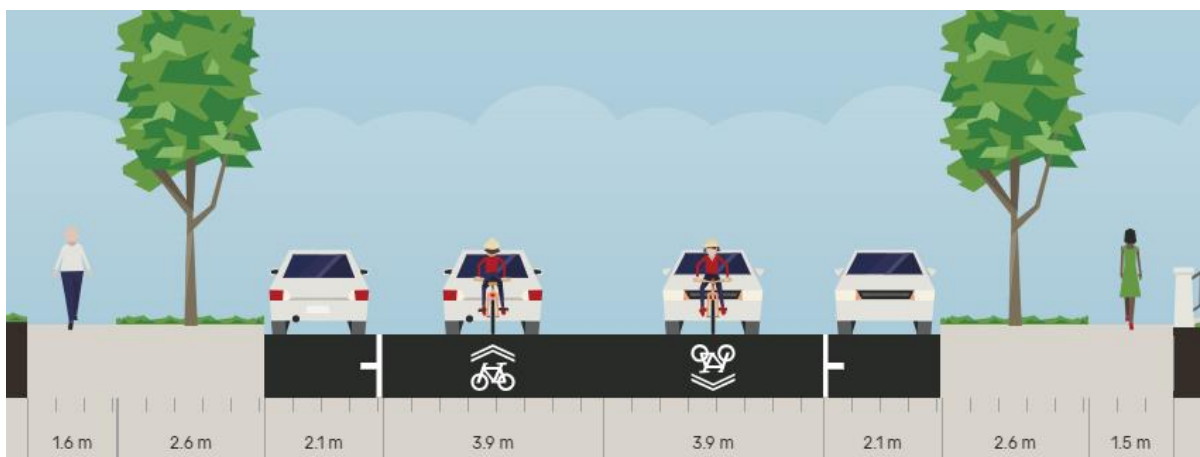


Figure 20 Proposed Cross section of Kent Rd (Valerie St to Cumberland Rd)