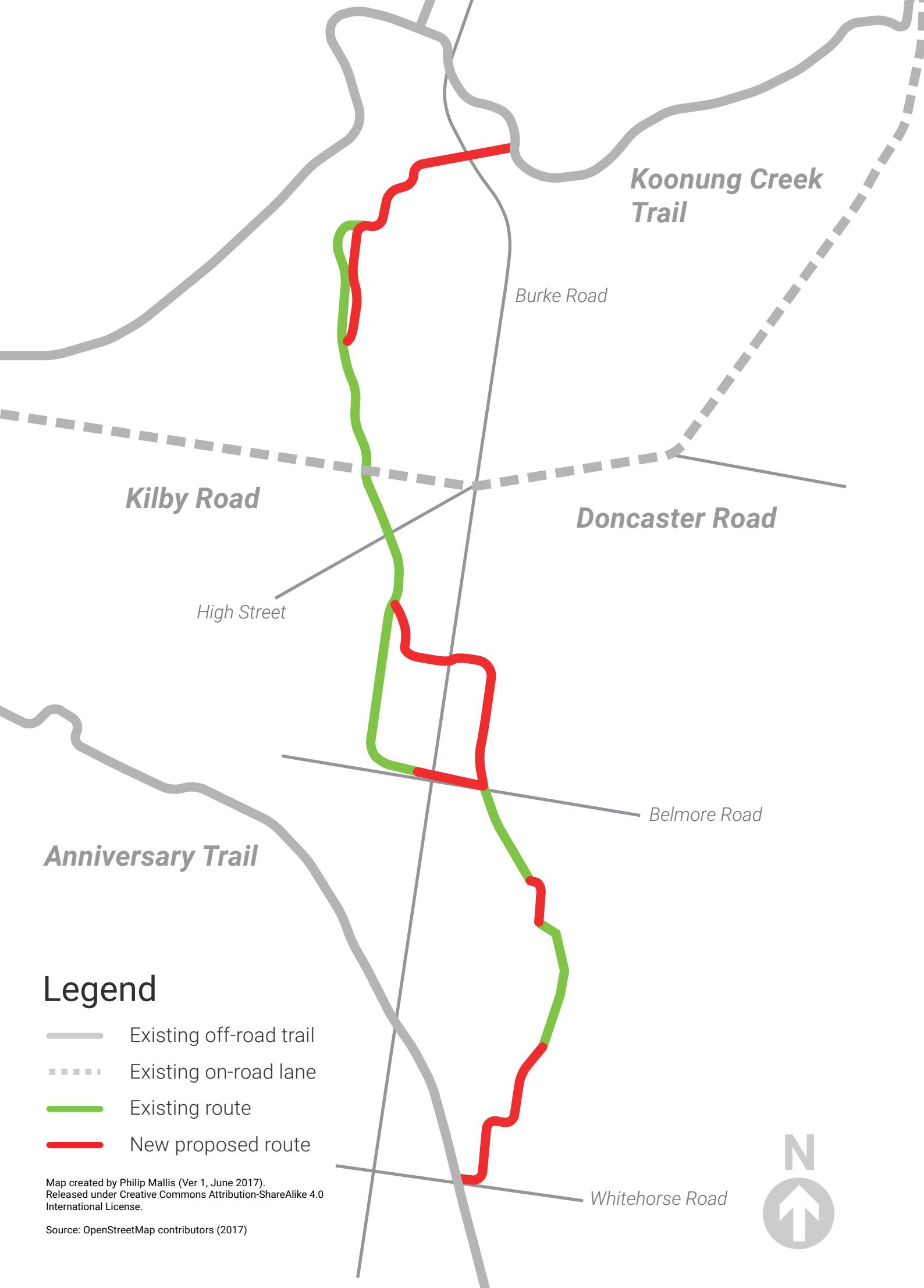




Glass Creek Link

Bicycle route plan
Kew East | Balwyn | Deepdene

Philip Mallis | June 2017



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This plan proposes the creation of a north-south bicycle route linking the Koonung Creek and Anniversary Trails.

The Glass Creek Link would serve multiple functions in Kew East, Balwyn and Deepdene including local travel, school transport and recreation. This area is not well-serviced by north-south transport connections and lacks a clear and safe link to the well-used Koonung Creek and Yarra Trails.

This proposal offers a practical and affordable solution to creating the backbone of a sustainable transport network in northern Boroondara and beyond.



Kew East, Balwyn and Deepdene lack bicycle infrastructure that is safely separated from traffic for both pedestrians and cyclists.

SAFETY

Everyone has a right to be safe, regardless of transport mode.

From 2011 to 2017, 34 cyclists were injured in crashes throughout East Kew, Deepdene and Balwyn. Eight of these were classified as 'serious'.

Infrastructure should be provided to separate bicycles and cars. Speed differentials between motor vehicles and cars can be over 300% on 60 km/h roads.

Where possible, pedestrians should also be separated from cyclists on busy commuter routes.

At present, there is no separated on-road infrastructure for bikes in East Kew, Deepdene or Balwyn. This is a major barrier to encouraging utility cycling.

The existing disjointed off-road paths are separated by busy four-lane 60km/h roads with few crossing points.

Some on-road bicycle lanes exist, such as Balwyn Road, but they lack complementary infrastructure. In many cases, they make streets less safe for cyclists.

Designing bicycle routes should include safety as its first concern. Everything else is secondary.



*"Everyone has a right to be safe, **regardless of transport mode**"*

CONNECTIVITY

The existing Glass Creek Trail is disjointed and does not connect well to the wider bicycle network.

The current path terminates in Hays Paddock in the north with limited signage and infrastructure to direct users onto the Koonung Creek Trail near Burke Road.

To the south, the Trail comes to an abrupt end in Stradbroke Park at the intersection of Burke and Belmore Roads.

Segments in between are cut off by busy roads with no safe crossing points.

INFRASTRUCTURE

Wayfinding along the route is non-existent. Clear signage is required for users to follow safe and intended routes.

While much infrastructure is already in place, small connections between the isolated segments is required. Both on and off-road paths require infrastructure to encourage cycling.

This can range from simple bicycle hoops to drink taps and benches.

Most of these initiatives can also be used by other paths users.



A safe and direct bicycle route through Kew East, Deepdene and Balwyn will link communities for both utility and recreation.

The Glass Creek Link would run for 3.9 kilometres through Kew East, Deepdene and Balwyn mainly following the existing Glass Creek Trail.

The Link would provide a direct connection between the Koonung Creek and Anniversary Trails.

It would begin in Muscat Street Reserve and run through parklands and local streets to connect with the Anniversary Trail at Whitehorse Road in Deepdene.

This would be achieved by filling in 'missing links' between existing infrastructure.

The proposal is of low cost but high potential benefit. By improving local connectivity for both cyclists and pedestrians, significant gains can be achieved.



*"Improving local connectivity for both **cyclists** and **pedestrians**"*

OUTER CIRCLE TO BELMORE ROAD

Beginning at the traffic light crossing at Whitehorse Road in Deepdene, a short section of shared path to Creswick Street would be designated on the north side of the street. The single unused driveway at this point makes it ideal for this purpose.

From this point, the route utilises quiet local streets to link the Anniversary Trail with the linear park chain to Belmore Road.

On-road treatments would be required for the route to travel down Creswick Street, Kitchener Street and Wolseley Crescent. This would provide a link with the King Street Chain.

The route follows the existing path through the park to King Street where another short on-road section would be required along Birdwood Street to access the existing path.

This off-road section crosses Head Street before arriving at Belmore Road.

No crossing facilities currently exist at this location. Pedestrian crossing signals, synchronised to the Burke Road intersection, would be ideal. If this is not possible, alternatives exist (discussed further).



BELMORE ROAD TO HIGH STREET

After crossing Belmore Road, the off-road path continues to Nicholson Street.

At this point, two options are possible. Either the route continues down Nicholson Street and turns left to Maylands Avenue to Burke Road where a new pedestrian crossing would be located. A new shared path could then be built along the southern side of Lawrence Street. Alternatively, cyclists could simply ride along this short on-road section to Stradbroke Park.

This is the preferred option, given that it would also benefit the proposed east-west route through to Macleay and Hislop Parks.

Should a crossing not be possible at Belmore Road, the alternative is to designate a shared path on the northern side of Belmore Road so that path users can use the existing signals to cross at the Burke/Belmore Road intersection.

From this point on, the route uses the existing Glass Creek Trail through Stradbroke Park to reach High Street.

There are some opportunities to separate pedestrians and cyclists at this point.



HIGH STREET TO HAYS PADDOCK

After crossing at the existing pedestrian signals at High Street, Kew East, the route follows the existing path through Harrison Reserve.

The crossing of Glass Street could be improved with a raised pedestrian/cyclist crossing. One has already been recently installed at Belford Road in North Kew.

Crossing Kilby Road at the existing pedestrian crossing, the route enters Hays Paddock and utilises the existing path along the eastern side of the park.

At Newbury Street, there are two route options.

This first option exits Hays Paddock and follows Lister Street north to Keystone Crescent. The second route follows the existing Glass Creek Trail along the shared path running to the east of the sports ovals.

The advantage of proceeding with both options is that icommuter and utility cyclists can use Lister Street as an alternative to riding through Hays Paddock. Such a project would be low in cost given that almost all of the required infrastructure is in place. Signage, access improvements and traffic calming would be the main items required.

HAYS PADDOCK TO KOONUNG CREEK

Following Keystone Crescent to the north would take path users to Old Burke Road.

On-road treatments for this section would be required to indicate the route to path users through the area.

A final connection would be made at the existing shared path running onto Old Burke Road adjacent to the Eastern Freeway.

A dangerous blind corner and lighting in this section will need to be fixed as part of this project.

The path continues underneath Burke Road and connects with the Koonung Creek Trail in Musa Street Reserve.

Signage will need to be improved at the intersection with Koonung Creek to advise path users of potential routes.



CONNECTIVITY

Several key destinations lie within close proximity to the proposed route. These include local shopping centres, education facilities and parkland.

The map and table below show the trip generators that would be covered by the proposed route (within 400 metres).

Linking these destinations primarily allows for increased bicycle usage for utility purposes. Local travel to shops, students travelling to and from school and visits to parks are all enabled by providing safe and direct routes to these areas.



Key destinations within 400 metres of proposed route

Destination	Type
Deepdene Primary School	Education
Deepdene Shopping Centre	Retail
Dickens Corner Shopping Centre	Retail
Glass Street Kindergarten	Education
Harrison Reserve	Recreation
Hays Paddock	Recreation
Kew High School	Education
Our Lady of Good Counsel Primary School	Education
Nicholson Street Reserve	Recreation
Stradbroke Park	Recreation
Stradbroke Shopping Centre	Retail

Key destinations within 400 metres of proposed route



With most infrastructure requirements already in place, implementation of the Glass Creek Link would be cost-effective and timely.

Implementation of the Glass Creek Link would not require significant financial or time investment from Council or other bodies.

As the majority of the route utilises existing infrastructure, most proposed works would improve facilities already in place.

These include installing drink taps, adding bicycle parking and improving path surfaces.

While this report does not seek to be prescriptive on specific project items, there are some aspects that are vital to the success of this project outlined in this section.



"Installing new signage at key decision points and where the route is unclear would be of significant benefit to all path users"

ON-ROAD TREATMENTS

The vast majority of this route would follow existing off-road trails. Some limited sections would require on-road treatments, mostly in residential streets with limited traffic. This could include sharrows and other linemarkings to indicate the presence of cyclists to motorists for safety and wayfinding purposes.

Due to the present situation, additional traffic calming measures are not necessarily required for this route. Most areas where vehicle speed is an issue already has measures in place; for instance the crossing at Gordon Street in Balwyn.

However, to make the project as attractive and safe as possible, traffic calming measures should be implemented.

WAYFINDING

The existing wayfinding for the Glass Creek Trail is poor or non-existent. Installing new signage at key decision points and where the route is unclear would be of significant benefit to all path users.

Such signs can include key destinations and distances.

No signage currently exists for the Glass Creek Trail. New wayfinding infrastructure will need to be implemented.

MAIN ROAD CROSSINGS

The two crucial unsafe crossing points on the proposed route are at Belmore and Burke Roads. Both are 60 km/h four-lane arterials without any crossing facilities.

Without creating safe crossing facilities at these points, the proposed route cannot succeed.

As outlined previously, there are several options for consideration. The preferred option is to install new signalised crossings to create the greatest benefit possible.

While this is an area controlled by VicRoads, Council has a significant role to play in advocacy. In particular, putting forward the case for such signals as part of the overall strategic network rather than as piecemeal projects.

BICYCLE PARKING

Areas designated for parking bicycles have significant benefits when positioned correctly. Bike racks, particularly in covered areas, encourage people to visit local shops and facilities.

These are inexpensive and easy investments in the designated areas along the route.

Boroondara has already significantly increased the provision of public bicycle parking throughout the municipality.

Continuing this rollout by strategically locating parking along or near the proposed route would encourage usage.

SAFETY IMPROVEMENTS

Some existing infrastructure along the route is unsafe or not fit for purpose.

This includes long sections of path without lighting, metal grates and lack of 'pram ramps' from paths onto streets.

Cheap and simple improvements can be made while making a significant difference to the safety and comfort of all path users.

A safety audit of the existing conditions should be undertaken before detailed works are undertaken.

SEATS AND TAPS

The provision of seating and drinking fountains is important for all path users.

At present, the only drinking fountains along the route are located in Stradbroke Park and Nicholson Street Reserve. Where possible, water taps should be installed to encourage path usage.

Benches providing resting spots. These are particularly important for elderly or disabled path users.

Boroondara has recognised this with constant installation of benches and the successful 'Walk, Rest, Talk' project.



The Glass Creek Link is a practical and exciting opportunity to improve safety and connectivity in northern Boroondara.

This report has presented a clear case for implementing the Glass Creek Link.

The impending launch of Active Transport Victoria and the release of \$100 million of state government funding for walking and cycling represents a fantastic opportunity to leverage this resource.

Even if such money is not forthcoming, the relatively low cost of this project makes it a practical proposal.

The role of the Glass Creek Link would be to serve both as a local thoroughfare and as part of the wider strategic bicycle network across Melbourne and Boroondara.

Small connections like this one may seem insignificant. But in time, similar projects across Boroondara and metropolitan Melbourne would play significant roles in improving cycling for all.



The project website for this proposal may be accessed at:
<https://tinyurl.com/glasscreeklink>



BIKEABILITY TOOLKIT ROUTE BASED CHECKLIST

The Route Based checklist is designed to review a specific route within a municipality. It will allow local government or other organisations to identify any issues that may exist and highlight where improvement can be made for different categories of cyclists.

It is recommended that you review this checklist, ride the route ('saddle survey'), then complete the checklist.

For potential solutions to issues identified by the checklist, refer to relevant sections of Austroads Part 14 (www.austroads.gov.au) and/or your state Cycle Notes or Guidelines (download Resources for details).

The checklist will ask questions which require an answer as indicated in the column heading.

Answers may vary for each category of cyclist. Complete the checklist for each category if possible.

To allow for future review of the checklist, it is recommended that this first section be completed by the person undertaking the checklist. This will provide a reference point for future updates.

Local Government Area (or areas if route crosses municipalities)

	Town or city	City of Boroondara
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Person completing checklist

	Date	2017-05-20
	Name	Philip Mallis
	Organisation	None
	Position	None

Description of Route taken to complete checklist (Please enter description of route being checked.)

	Origin	Anniversary Trail/Cotham Road, Deepdene
	Destination	Koonung Creek Trail, Musca St Reserve, Balwyn North
	Via	Glass Creek Trail

Major intersections or features along route

Belmore Road, Burke Road

How to use this Guide

Complete by entering the most appropriate response to each question as indicated in the column heading.

You can complete the checklist from the perspective of different 'types' of cyclist to ensure that facilities are suitable for most cyclists.

Add your notes in the comments box. Use reverse side of form if insufficient space available.

Download and review resource materials to provide further information and assistance.

Assessment is through counting frequency of responses - not a good or bad score!

The Bikeability Checklist is not designed to evaluate your Local Government, but to enable a review and to identify areas of potential improvement.

Refer to the downloadable resources and glossary documents to assist you where necessary.

Appendix A - Audit of Existing Conditions

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Criteria	Commuting / Utility	Recreation	Primary School Student	If problem, then what and where is it?	Notes / Comments
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Ratings: S (Satisfactory) I (Issues) NA (Not Applicable)

Criteria	Commuting / Utility	Recreation	Primary School Student	If problem, then what and where is it?	Notes / Comments
Please evaluate each criterion for the route from the point of view of these different types of cyclists. Page 5 of AUSTROADS Part 14 provides characteristics of these types of cyclists					Explain location and what problem is. For each question, enter any notes/ comments.
	Rating	Rating	Rating		
	S (Satisfactory)	S (Satisfactory)	S (Satisfactory)		
	I (Issues)	I (Issues)	I (Issues)		
	NA (Not Applicable)	NA (Not Applicable)	NA (Not Applicable)		

Coherence

1 Can cyclist speed be maintained for the majority of the route?	I	I	I	Path surface is unstable in gravel sections (entire path). Path is disjointed.	
2 Is parking banned in onroad bike lanes?	N/A	N/A	N/A		
3 Are bicycle lanes or left traffic lane widths adequate to accommodate cyclists?	N/A	N/A	N/A		
4 If the route is in a rural area, are wide paved shoulders on roadway provided?	N/A	N/A	N/A		
5 Is the route supported by co-ordinated systems such as signs and markings that are clear and easy to follow?	I	I	I	No signage is present along the route.	
6 Are necessary pavement markings provided and clearly visible and effective for likely conditions?	I	I	I	No markings are present along the route.	
7 Are necessary regulatory, warning and direction signs provided and located appropriately?	I	I	I	No signage is present along the route.	
8 Is route free from redundant/unnecessary signs?	S	S	S		
9 Are there signs and linemarking on shared paths to encourage users to share the path e.g. 'keep left'?	I	I	I	Some signage to this effect exists in some parks. Others, such as King St Chain, contain limited signage.	

Directness

10 Is the route as direct as practicable given hills and major intersections?	S	S	S		
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Appendix A - Audit of Existing Conditions

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Criteria	Commuting / Utility	Recreation	Primary School Student	If problem, then what and where is it?	Notes / Comments
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Ratings: S (Satisfactory) I (Issues) NA (Not Applicable)

11	Does the route link with other parts of the network?	I	I	I	Disjointed paths do not connect with each other.
12	Does the route provide direct/continuous links to activity centres and recreational facilities?	I	I	I	Disjointed paths do not connect with each other.
13	Does the route provide continuous and convenient links to adjacent streets?	I	I	I	Lack of pram ramps onto King St. Lack of signage directing users onto streets.

14	Are steep climbs & descents minimised?	S	S	S	
15	Are the number of stops required along the route acceptable?	S	S	S	
16	Are there suitable alternative routes to choose from?	S	S	S	Other side streets can be used.
17	Is an alternative route indicated when earthworks disrupt the main route?	N/A	N/A	N/A	None present.

Comfort & Convenience

18	Is the riding surface and the edges of consistent quality e.g. smooth and free of defects which could affect the stability of cyclists or cause wheel damage?	I	I	I	Multiple sections where path surface is affected by washed up gravel and erosion, such as King St Chain.
19	Are sealed shoulders at least as smooth as traffic lanes?	N/A	N/A	N/A	
20	Are paths wide enough for the pedestrian and cyclist volume expected over the life of the facility?	S	S	S	Some sections could be widened, but not essential.
21	Are paths usable by cyclists on wider or larger bicycles such as tandems or cyclists towing trailers?	I	I	I	Tight turns at King and Gordon Streets are unsuitable.
22	Is a centre line marked on the pathway to reduce conflict between cyclists and pedestrians?	S	S	S	Only sealed section in Harrison Reserve has centre line.
23	Are smooth and flat gutters/channels provided at stormwater drain inlets?	I	I	I	Metal drain off Gordon St is dangerous.

Appendix A - Audit of Existing Conditions

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Criteria	Commuting / Utility	Recreation	Primary School Student	If problem, then what and where is it?	Notes / Comments
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Ratings: S (Satisfactory) I (Issues) NA (Not Applicable)

24	Are kerb crossing ramps ('pram ramps') provided where the route includes transitions from roads to paths?	I	I	I	No pram ramp at King St. No pram ramp at Belmore Road on either side. No pram ramp at Burke Road.	Pram ramps at High St crossing do not align with path.
25	Does the riding surface have adequate skid resistance, particularly at curves, intersections, bridges and railway crossings?	S	S	S		Hays Paddock wooden path has slip resistance.
26	If rumble strips are installed along the roadway, is the shoulder beyond the rumble strip smooth and sealed?	N/A	N/A	N/A		
27	Is there adequate lighting along the bike route?	I	I	I	Most sections have no lighting: King St Chain, Nicholson St Reserve, Stradbroke Park, Hays Paddock, Musca St Reserve.	Some spillover light in Stradbroke Park and Hays Paddock.

28	Does the route allow for less confident/less experienced cyclists to use low traffic streets, off-roads paths or footpaths?	I	I	I	Current conditions do not allow for this to occur at Burke or Belmore Rd.	
29	Is the riding surface generally free of areas where ponding or flow of water may occur?	I	I	I	Flooding issues in Gordon St Chain and King St Chain.	
30	Is the route free of weeds and tree route intrusions?	S	S	S		
31	Is the route free of construction or maintenance equipment?	S	S	S		
32	If holding rails or bollards are provided, are they positioned so they don't unduly interfere with access for cyclists and other users?	I	I	I	Fence at High St crossing does not align with path.	

Safety

33	Where paths are located adjacent to roads, is there sufficient separation and/or protection from the roadway?	N/A	N/A	N/A		
34	Are special provisions for cyclists provided along curving roads? Such as advisory/ warning signs, linemarking etc.	I	I	I	No such treatments exist on any on-road section.	

Appendix A - Audit of Existing Conditions

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Criteria	Commuting / Utility	Recreation	Primary School Student	If problem, then what and where is it?	Notes / Comments
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Ratings: S (Satisfactory) I (Issues) NA (Not Applicable)

35	Are sharp turns minimised?	S	S	S	
36	Are signs, bus shelters and street furniture sited to avoid obstructing the passage of cyclists?	S	S	S	
37	Do drivers generally allow room for cyclists along the route?	S	S	S	
38	Do drivers generally acknowledge cyclists at intersections along the route?	S	S	I	On-road sections are not treated to make them safe for children.
39	Does the route provide a safe personal environment, especially for women and children?	S	S	I	On-road sections are not treated to make them safe for children. Lack of lighting in some places, particularly parks.
40	Does landscaping allow adequate clearances, sight distance etc?	S	S	S	
41	Can utility service covers, grates, drainage pits etc. be safely negotiated by cyclists?	S	S	S	

42	Are fixed objects close to or on the road (trees, fences, holding rails, bollards, etc) treated to ensure visibility at night?	I	I	I	No fenceposts have reflectors where paths enter/exit near main roads.
43	Are stopping sight distances adequate for all traffic, accounting for paths, roads, driveways, railways etc?	S	S	S	
44	Are sight lines clear of obstacles such as signs, trees, fences and parked cars?	S	S	S	

Other Components of Route: Intersections

45	Do intersections provide clear sight lines - around corners and across roundabouts?	S	S	S	
46	Are signalised intersections suitable for cyclists e.g. separate bicycle phases, bicycle detectors and cycle lamps?	N/A	N/A	N/A	
47	Are waiting areas ('bike boxes') provided for cyclists that stop at intersections?	N/A	N/A	N/A	

Appendix A - Audit of Existing Conditions

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Criteria	Commuting / Utility	Recreation	Primary School Student	If problem, then what and where is it?	Notes / Comments
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Ratings: S (Satisfactory) I (Issues) NA (Not Applicable)

Other Components of Route: Off-Road Paths (if applicable)					
48 Are fixed objects close to or on the path (trees, fences, holding rails, bollards, etc) treated to ensure visibility at night?	I	I	I	Trees in King St Chain in path are not visible at night.	
49 Are provisions for car parking near the path satisfactory in relation to the operation and safety of path users e.g. cars cannot encroach onto path?	I	I	I	No signage controlling parking over any pram ramps, except High St, Lister St, Old Burke Rd and Kilby Rd.	
50 If the path is subject to flooding & other hazards, have warning signs been provided and located appropriately?	I	I	I	No warning signs in flood-prone linear parkland around King and Gordon Streets.	
51 Is the presence of intersections obvious to path users?	S	S	S		
52 Is there adequate lighting along the route?	I	I	I	See No. 27.	
53 At intersections with busy roads, are appropriate facilities provided to allow path users to safely cross?	I	I	I	No crossing facilities at Burke or Belmore Roads.	
54 Are automatic sprinkler systems timed to avoid periods of significant path use?	N/A	N/A	N/A		Unknown
55 Do sprinklers spray away from the path rather than across it?	N/A	N/A	N/A		Unknown

Other Components of Route: End of Trip Facilities

56 Are there secure access lockers or compounds available?	I	I	I	None provided within proximity to path.	Opportunity for mini-'park and ride' at High St tram stop and Kilby Rd bus stop.
57 Are bicycle parking facilities available close to major destinations such as schools, sports facilities, shopping centres?	I	I	I	Path passes within 500m of major destinations but very limited bike parking.	
58 Are bicycle parking facilities secure or at least in highly visible areas?	S	S	S		The few bike racks present are located on main roads.

Appendix A - Audit of Existing Conditions

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Criteria	Commuting / Utility	Recreation	Primary School Student	If problem, then what and where is it?	Notes / Comments
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Ratings: S (Satisfactory) I (Issues) NA (Not Applicable)

59	Are bicycle parking facilities well lit?	S	S	S	The few bike racks present are located on main roads.
60	Are bicycle parking facilities clean?	S	S	S	
61	Are bicycle parking facilities protected from weather?	I	I	I	No bike parking protected from weather.
62	Are bicycle facilities placed at airports, bus and rail stations/ interchanges?	I	I	I	No bike parking at bus or tram stops.
63	Are bicycle facilities provided at your workplace (if applicable)? Eg: secure parking facilities, lockers, showers, irons, etc	N/A	N/A	N/A	Unknown

Route Based Checklist Summary

This part is for information only.

YOUR RESULTS	No. of Responses	Percentage	Star Rating
	A	B	C
Total Satisfactory (S)	70	45.45%	***
Total Issues (I)	84		
Maximum Score	154		

STAR RATING GUIDE
***** = 85% or above
**** = 60 - 84%
*** = 45% - 59%
** = 30% - 44%
* = 15% - 29%
O = 14% or less

REMEMBER: The Bikeability Checklist is not designed to evaluate or pass judgement on your Local Government in any way. Rather, it is a tool for reviewing and identifying areas of potential improvement.

Scoring and assessment instructions

1. Add the number of responses in each category, e.g. the number of 'Satisfactory' responses for this Checklist. Ignore 'Not Applicable' responses.
2. Write the number of responses in each category in the appropriate box in Column A.
3. Add the number of 'Satisfactory' and 'Issues' responses to get the Maximum Score for this Checklist.
4. Divide the total number of 'Satisfactory' responses by the Maximum Score and make this a percentage.
5. Look up the Star Rating corresponding to this percentage in the Guide and record it in the box.