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Cycling for the Environment, for Health, for Pleasure

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City of West Torrens
165 Sir Donald Bradman Drive
HILTON SA 5033

Thebarton precinct concept/ Holland Street bikeway

The Bicycle Institute of SA has been representing the interests of commuter and utility cyclists for forty years. We would like to submit the following comments on the proposed Thebarton precinct concepts, including the Holland Street bikeway.

We fully understand and applaud the City of West Torrens' desire to improve connectivity, amenity and safety for cyclists and pedestrians. The design vision and intent expressed by the consultants, JPE Design Studio, is similarly admirable.

We think that the location of the precinct, its closeness to the City and good public transport links, the nature of the activities located there, and the way that the street network will not be dominated by through traffic, all add to the potential for this precinct to become one of Adelaide's great places, worthy of careful attention to design.

Having said that, the Adelaide experience in designing high-quality streetscapes based around a concept of pedestrian priority and cyclist needs is still in its infancy. As it happens, the Bicycle Institute has available through its committee experts in the fields of cycling and walking, whose knowledge and understanding of shared street design (in particular) leads traffic engineering practice in this state.

We note that our sister organisation, Bike SA, was consulted in earlier stages of this project. Bike SA represents the interests of recreational cyclists, many of whom commute. Being better resourced than the Bicycle Institute (which is volunteer-only), Bike SA has assisted the cycling community by promoting recreational cycling and training young cyclists, as well as broad-based cycling advocacy. The Bicycle Institute values and respects Bike SA's efforts and is pleased to be able to be in a position to provide the expertise-led feedback in addition to Bike SA's input. We regret that our often lower profile than Bike SA's means that we were not approached in earlier consultation.

We trust that the following design feedback will be of use despite occurring at a late stage in the project. The following comments first draw attention to matters that could be improved in the current designs. We then suggest what the improvements should be.

1) Shared use path with no on-street treatment (Winwood Street south)

It is not clear whether this treatment is intended to extend to Phillips Street. On the basis that it appears to continue south of Anderson Street, continuation to Phillips Street is assumed in the first instance.

We query whether this shared path treatment is appropriate in the absence of on-street treatment, for the following reasons.

User numbers and shared use

Under Austroads' *Guide to Road Design Part 6A: Pedestrian and Cyclist Paths* (2009), shared use paths are recommended only in areas where pedestrian and/or cyclist usage is low (< 10 per hour) and "there is an existing road nearby which caters well for faster cyclists (e.g. has on-road bicycle lanes), to limit the extent of user conflict on the shared path."

In contrast, the diagram shown in the Thebarton Streetscapes Concept Design Report suggests that a 2.5m shared path is suitable for regular commuting and local access. However, this references Austroads 1999 – now superseded by Austroads 2009.

The implications of this can be understood in terms of a study by De Rome et al[1] examining cyclist crashes in the ACT. This found that the crash involvement rate per 1000 cyclists was 11.8 on shared paths compared to 5.8 on cycle lanes (i.e. just over twice as high). Cyclists who crashed on shared paths also had higher Injury Severity Scores compared to those in cycle lanes or footpaths and required more treatment days. (The shared paths in the ACT are typically two-way with a centre line and a minimum 2.5 meter width, as proposed for Holland Street.)

We therefore query the expected use of the shared use path, which is not documented, and reliance on a shared use path as the only cyclist facility in Holland Street. On the basis of De Rome et al, we would suggest that this introduces an unacceptable level of risk for cyclists.

We also query how the use of the shared use path is anticipated to vary over time, and how this will be monitored, noting De Rome et al's observation that many ACT shared paths were designed for lower user numbers and are now inadequate for the usage levels they experience.

Cycling speeds

Section 3.4 of Austroads 2009 notes that where shared paths are converted from footpaths – and hence have driveways and side streets at relatively frequent intervals – such paths are suited only to low cycling speeds of less than 15km/h.

Again, this is different to the (superseded) Austroads 1999 guidelines referenced in the Concept Design Report, which suggests a shared path is appropriate at speeds of up to 20km/h. The speed difference may seem small, but represents a 33% higher speed and would be noticeable to pedestrians.

In fact, in De Rome et al's study, over a third of cyclists injured on shared use paths estimated their travel speed was in excess of 25km/h. (The typical situation for shared paths in the ACT is that these are not provided adjacent to an on-road alternative.)

In the absence of on-street treatment attracting higher speed cyclists, we are concerned that the shared path will be used by cyclists at inappropriate speeds – commuter cyclists often travel at speeds of up to 30km/h. It is naïve to expect or force such commuter cyclists to reduce speeds in order to use the shared use path, since such behaviour would lead to inconvenience and delay.

Providing a facility on only one side of the road could also have impacts for cyclists who need to cross Holland Street to access streets and destinations on the other side of the street. The design with rollover kerb would make mid-block access to the shared path easy, but this could have negative impacts on safety as cyclists cross Holland Street in an opportunistic and unpredictable way.

A two-way cycle path

We have concerns regarding providing a cycle path on one side of the road for two directions of travel.

Our experience is that drivers tend not to expect cyclists to come from both directions of travel at intersections and will overlook cyclists travelling in the contra-flow direction to the motorist.

[1] Liz De Rome , Soufiane Boufous , Thomas Georgeson , Teresa Senserrick , Drew Richardson & Rebecca Ivers (2014) *Bicycle Crashes in Different Riding Environments in the Australian Capital Territory*, Traffic Injury Prevention.

Thomas and DeRobertis'[2] 2013 review of the international research has confirmed that one-way cycle tracks are safer at intersections than two-way.

Other

It is not particularly clear from the Concept Design Report why the parallel parking is intended to be accessed from the carriageway level via rollover kerb. This effectively places parking at the same level as the shared path. Any lack of parking discipline would result in cars and/or their doors intruding into the transition zone (the 'red line') between parking and the shared path. If this design feature is intended to make use of existing drainage and thus minimise costs, we would prefer to see a half-height kerb separation between the transition zone and a shared path (or footpath) to prevent such incursion.

At 6.2m, the proposed carriageway width seems excessive. We are sure that, as with other council areas, the City of West Torrens has other streets in its jurisdiction having narrower carriageways, which function perfectly safely. We further point out that in terms of legal liability, the use of appropriate local standards satisfies risk management criteria better than an unthinking application of Australian Standards – noting that a wide carriageway can give rise to inappropriately high speeds. Further, drivers have a responsibility to drive appropriately to the conditions. These considerations may open the way for reconsidering widths, enabling superior design outcomes.

We also note that in the artist's impression (p20), the western footpath appears generous. However, from the plans, this would appear to be much less the case. Given the desire to link to the Meeting Place and University Gym, we would hope that a better result could be found for pedestrians.

2) Bikeway side street crossings

The concept designs for Holland Street indicate that the two-way shared paths will be ramped down to side street level and continued across the side streets using coloured pavement and, at the crossing of Winwood Street, a brick band.

We strongly urge against this treatment as it is ambiguous in a way that is likely to increase conflict.

The continuous pavement would suggest to pedestrians and cyclists that motorists should yield to path users. However, being at road level, it would suggest to motorists that path users should yield. We are aware of safety issues with similarly ambiguous situations in Adelaide.

The preferred approach would be to continue the footpath across the side streets, which creates an unambiguous situation – plateaux slow traffic, footpaths are road-related areas under the Australian Road Rules and plateaux reinforce the need for motorists to yield. In European experience, these types of treatment have been associated with a halving in pedestrian crash risk. (Being footpaths, no delegated authority needs to be sought from DPTI for this treatment.)

3) Stirling Street shared space/zone

Stirling Street is identified as a shared zone on about p19 of the Concept Planning Report, presenting over-views of the streetscape concept designs for Stirling, Winwood and Holland Streets. However this is later termed 'shared space' where Stirling Street is further detailed (approx. p26). A shared zone has legislated meaning and impact under the Australian Road Rules. A shared space or shared use space is undefined and clarity is sought on which is intended. This becomes even less clear when Winwood Street is identified as a 'shared zone link', with no obvious difference in design philosophy applied to the latter street and, indeed, no justification for such a difference.

[2] Beth Thomas, Michelle DeRobertis (2013), *The safety of urban cycle tracks: A review of the literature*, Accident Analysis and Prevention, Volume 52, 28 March 2013, Pages 219-227.

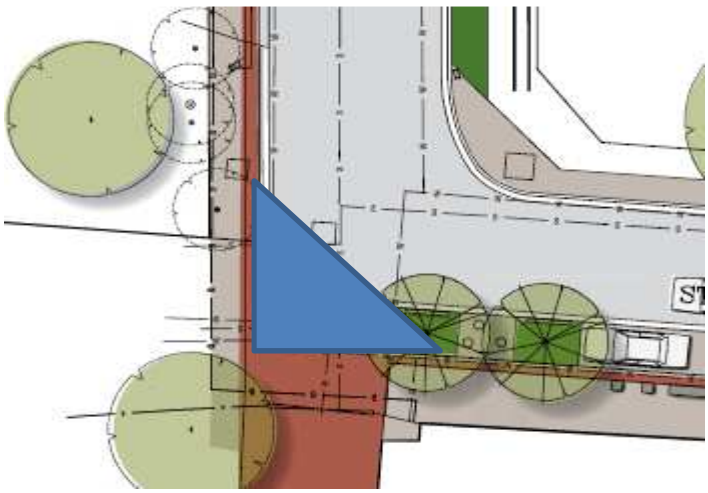
While we are supportive of shared zones and shared spaces, the Stirling Street design does not achieve either. It maintains a strong visual demarcation between the carriageway and footpaths/ parking which is at odds with these concepts, and a kerb on the eastern side that is even more at odds with either concept.

We also query a carriageway width that seems wide enough for two cars to pass side-by-side (from the artist's impressions, though the plan and consultation feedback would indicate two-way travel, despite a northbound arrow in the plan view). Without dimensions, it is difficult to see how generous this carriageway width actually is.

Or is parking proposed on the east? If so, given that this edge presents an inactive frontage with wide footpath, this could be a good opportunity to introduce (possibly in conjunction with kerb extensions) locations for activity e.g. tables and seating – preferably with some form of shade. In many ways, this would be more appropriate than introducing seating on the western footpath as views to the Faulding Building would be better. Replication of shading on the eastern side would create an overall level of shade and feeling of containment that would be welcome in this street and enhance the feeling of a street for pedestrian use.

We query the provision of the large square 'blocks' adjacent to the on-street car parking, possibly in an attempt to prevent cars from intruding into the footpath. First, at the height shown, these would interfere with car doors opening and would require the width given to car parking to be increased by about 0.6m, leading to a larger vehicular space than would otherwise be required. Second, these effectively reduce the footpath space by their width, reducing the space available to pedestrians. While the eastern footpath appears generous in the artist's impressions, this is much less so the case on the plan – especially with stobie poles retained – and a generous western footpath is desirable. No kerb ramps are shown at the northern end of the eastern footpath and should be provided if a kerb is maintained, or tactile ground surface indicators if a kerb is not provided.

The Stirling Street/ Winwood Street intersection seems excessively 'square' on the north-western side. It would appear (though it is not entirely obvious) that Winwood Street does not continue west of Stirling Street, so vehicle access is not required at this point. We would therefore suggest that this area be cut off or chamfered to create a triangular space that could be used for introducing more greenery and/or seating, as shown in the following diagram. (In this figure, Winwood Street runs to the top of page and Stirling Street to the right.) Or, if access is possible at this point, some form of threshold treatment between Stirling and Winwood Streets, and particularly between one-way and two-way movement.



No detail is given for the road design south of the Faulding Building, including whether the shared zone/ space concept extends south of Reid Street. The design does not appear to incorporate a large protuberance that currently exists at Reid Street. Nor is detail given on the threshold treatment to highlight or demarcate the shared zone/space, which should be an important

element in these concepts. It appears that Stirling Street might be one-way in this section, with a northbound arrow shown on the plan view. This impression may be erroneous if access to the University car park, etc, is required from Stirling Street.

The parallel parking is shown with very sharp indentation and no protection of trees. Protuberances at the ends of parallel parking would normally have a 45° angle to allow vehicles to access spaces, with end spaces shorter than mid-block spaces. We suggest parking design requires additional detailing.

We would also prefer any upstand kerb to be chamfered at the roadside edge so that a cyclist who falls against this is less likely to be injured. (Actually, we query why this is required at all.)

We would also like to see bicycle parking provided in front of the Faulding Building, suitable for visitors (and assuming that off-street bike parking is provided for staff and students).

4) The 'Meeting Place' at Holland Street

As currently designed, the Meeting Place is well aligned with Holland Street.

It would therefore be natural for cyclists who do not wish to use the shared path to travel straight through this to access the roadway in a south-bound direction.

This would be even more the case in the north-bound direction as cyclists on the western side of Holland Street would face a partial right-turn to access the shared path. This is not an intuitive movement to other road users compared to travelling straight through at Winwood Street.

Given that the Meeting Place provides direct access to the Sir William Goodman Bridge and River Torrens Linear Path, the 2.5m shared use path provided on the western side is even less appropriate in this location than its continuation further south along Holland Street.

We note that the seating shown in Holland Street does not appear to have arm rests. This is not compatible with designing for an ageing population and people with disabilities.

5) Phillips Street intersection (?)

The concept proposal does not include any indication of how cyclists using the Holland Street bikeway connect to the existing bicycle lanes on Phillips Street, or from Holland Street south of Phillips Street.

This is a critical design point as the shared path is provided only on the eastern side of Holland Street. For north-bound cyclists, use of the shared use path represents a change from cycling on the left side of the carriageway to cycling on the right in a manoeuvre that would be unexpected by many (or most) other road users, including pedestrians, and would also involve crossing over the path of cyclists who elect not to use the shared path.

6) Winwood Street shared zone link

We are broadly supportive of the use of the shared street philosophy but feel that this could be improved in the design for Winwood Street.

While kerbless design is a feature of the northern side of the street, the rest of the street design is a traditional roadway with separated footpaths. This could not be expected to lead to diminished vehicular priority over other modes on the carriageway. Obviously, this area is subject to heavy vehicle traffic and whether sharing of the carriageway is appropriate is difficult to judge in the absence of any vehicle volumes in the Concept Design Report – though all heavy vehicles using Winwood Street presumably access this via the Stirling Street shared zone, since Winwood Street is one-way.

Since the footpaths appear adequate, and in the absence of anticipated pedestrian numbers, Winwood Street may function perfectly well as a normal street. However, the lack of any threshold treatment at the Holland Street intersection is a pity as the pedestrian desire lines

to/from the Meeting Place could be expected to encourage pedestrian flow-through into this intersection, and even more the case for on-street cyclists in Holland Street.

In particular, although the western footpath of Holland Street is shown in the access and movement diagram as providing pedestrian access to the University Gym (movement 4), no footpath is provided across the protuberance in Winwood Street. This should be provided, with a kerb ramp on the southern side and tactile ground surface indicators on the northern side. The kerb ramp shown for east-west access across Holland Street at this intersection should be aligned with the footpath/ property line in Winwood Street.

The parallel parking is shown with very sharp indentation to protuberances. Protuberances at the ends of parallel parking would normally have a 45° angle to allow vehicles to access spaces, with end spaces shorter than mid-block spaces. We suggest parking design requires additional detailing. The landscaping on the northern side has a similarly abrupt eastern end. This could instead follow the turning radius for a vehicle turning right into Holland Street. This is similarly the case for the protuberance opposite the warehouse access.

The carriageway width on the approach to Holland Street seems excessive. The protuberance on the south side could probably be better designed around the vehicular turning path.

We would like to see cyclist exemption from the one-way prohibition, which can easily and safely be achieved by erecting "bicycles excepted" signage. We would also like to see bicycle parking provided for visitors to the gym.

Again, we would prefer the upstand kerb to be chamfered at the roadside edge so that a cyclist who falls against this is less likely to be injured – and query why such kerbing is necessary at all.

We note that the brick 'gate posts' that currently exist at Winwood Street/ Holland Street are not indicated in any plan. We wonder whether these could be retained and redeployed as sympathetic to the local sense of place. (For example, these could be located either side of an installation of bike rails, to protect these against vehicles and possibly support a weather-proof roof.)

7) Anderson Street

We have little comment to make, except that:

- The carriageway seems excessively wide. With no dimensions available, we are not sure whether it is intended that the southern kerb be shifted, to take advantage of what appears to be the removal of parking. Assuming the kerb is to be shifted it appears that this is solely to provide space for landscaping. The existing narrow footpath remains narrow. We query whether this is a good result for pedestrians, noting that the northern footpath is also not particularly generous. If the kerb is to be moved, then we suggest it be moved further to provide a more generous footpath. In the alternative scenario that it is not being moved, then we suggest that the ageing jacarandas be replaced with new plantings located in new protuberances (or directly into what is now the parking space), to provide an improved footpath on the southern side.
- It appears that at the Holland Street intersection, existing kerb ramps are retained. While these appear relatively modern, they do not meet current design practice. Specifically, they are not aligned with the property line (the 'tide line') and hence do not create a continuous accessible path of travel (CAPT) for people with disabilities. Instead, the intrusion of the kerb ramps into the footpath verge creates a squeeze point for pedestrians. This also appears to be the case for a mid-block kerb ramp in the northern footpath. We suggest that these would be better located in protuberances.
- It appears that the western-most car park might be located too close to the Stirling Street intersection to comply with the Australian Road Rules, in which case it should be removed.

- No detail is shown of the Anderson Street/ Stirling Street intersection. It is therefore difficult to comment on this, except to note the poor pedestrian conditions that currently exist and query whether there is opportunity to improve these.

In summary, while the Bicycle Institute applauds the intent of the Thebarton precinct concept designs, design detail is lacking that would enable this intent to be realised. We cannot see that the designs will create a "kerb-less shared use space- pedestrian priority" for Stirling Street as suggested in the Concept Design report. The Bicycle Institute is concerned about negative impacts on cyclists that are likely, particularly in Holland Street.

We therefore suggest the following.

1) Fully implement a shared street design in Stirling Street and Winwood Street

Shared street design has been used extensively in Europe and assists in reprioritizing pedestrians and cyclists within a functional street space. It has considerable potential for the Thebarton precinct, given that the streets in this precinct have no network role for through traffic and that there is limited ability to provide pedestrians with respectful access using existing footpaths.

We would like to see the shared street philosophy explicitly embraced for Winwood Street and the Meeting Place, and extended across the Holland Street/ Winwood Street junction in its entirety, in order to better cater for pedestrian and cyclist movement to/ from The Meeting Place.

The Holland Street/ Winwood Street junction is of particular concern as this presents as a T-junction to vehicles but is functionally a 4-way intersection for pedestrians and cyclists. Under a shared street philosophy, a circular form of paving – which could be imprinted into the pavement, to reduce costs – would suggest a flush roundabout, assisting with reassigning priority without requiring an actual roundabout design, and allowing heavy vehicles to overrun the centre.

The paving treatment should be continuous into the Meeting Place to emphasise the cyclist continuity to motorists. Currently, a flush/ spoon drain is proposed for entry from Holland Street/ Winwood Street to the Meeting Place. This implicitly acknowledges that cyclists will not be constrained to the shared path. As such, the ongoing connection to Sir William Goodman Bridge is a narrow pedestrian path and establishes likely conflict. We suggest a change to access through the Meeting Place, with the shared use path alignment forming a bypass when required.

Considering the current inadequacies in the nominal shared street design:

- Pavement detailing should not seek to separate the footpath, parking and carriageway. For a space to be used in a shared way, it must intuitively appear to be shared – or, conversely, hazy about separation. The materials shown for the footpath and parking should also extend into the carriageway. Pavement detailing could include some banding etc., to demarcate car parking spaces, but should discourage vehicles from expecting pedestrians to yield in the trafficable space. (On p.16, example 03 New Road, Brighton, is a better template than 04 Bowden Development, Adelaide. New Road can be viewed via Google maps at https://goo.gl/maps/1iUKr, showing the very subtle difference in paving between the carriageway and footpath, and no difference between the carriageway and parking. Regulatory signage is provided at street ends.)
- Similarly, breaking up the rhythm of the roadway with an irregular shape or grouping of landscaping – e.g. at Stirling Street/ Winwood Street, or on larger protuberances, or in planters – can help to undermine a reading of the 'zones' normally assigned to footpath vs landscaping vs carriageway by kerb lines, while still providing guidance. (This is evident in New Road through the location of seating and lamp posts, and bins and bike parking at the northern end.) For example, the importance of shade and WSUD, perhaps the tree pits could have a more organic shape, flowing into the carriageway.

- Threshold design is critical for indicating changed traffic conditions. The most important threshold locations are intersections and need careful attention.
- While flush pavements are a hallmark of shared street design, we understand that this may have implications on drainage in some locations. We would suggest that there may be opportunities to use sections of spoon drains or (less desirably) rollover kerb to 'soften' spaces and edges, and landscaping (including in planters) to provide the impression of more intimate spaces defined by something other than kerbs.
- Having said that, a protected space (outside the vehicular path) should be provided adjacent to the building line for the use of people with disabilities.

2) Consider a bicycle boulevard in Holland Street

A shared street treatment of Holland Street is also desirable, but could be expensive due to changes in paving and impacts on drainage. As an alternative, a bicycle boulevard is suggested.

A bicycle boulevard would include designation of cycle access on the carriageway in the form of sharrows. In this treatment, the shared use path should be changed to a footpath, which cyclists can use in preference to the carriageway if they wish.

Low vehicle speeds would be encouraged by alternately providing parking on the eastern and western sides to create a non-linear path of travel, similarly to the Winwood Street design proposal.

In summary, the Bicycle Institute recognizes and commends the desire of the City of West Torrens to deliver a better result for its residents and visitors.

We believe that this location could become one of the special places of Adelaide if a more thorough application of the modern principles of urban design and particularly shared places were adopted.

The Bicycle Institute would be happy to discuss design issues further with you. I may be contacted on 0402 965 929.

Yours sincerely,

Dr Ian Radbone
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