

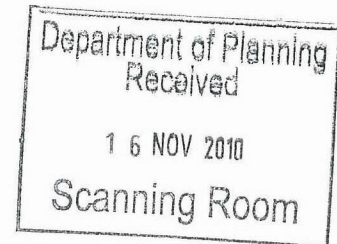
November 15, 2010

Major Projects Assessment
Department of Planning
GPO Box 39
SYDNEY NSW 2001



Attention: Diane Fajmon
Application reference number: MP 10_0111

Subject: GreenWay Submission from Bicycle NSW



Dear Diane,

Please find attached Bicycle NSW's submission to the GreenWay Environmental Assessment. We are pleased to be offering a detailed submission which we believe both supports a great deal of the plan but also highlights some critical issues with the regard to both the scope and design considerations of the project.

As a peak body that is interested in the future of improved travel alternatives for all people, we believe that with the recommended modifications and essential linkages that the GreenWay could be an iconic and invaluable asset for the people of greater Sydney for decades to come.

BNSW stands ready to assist as best we can in both providing additional input and in helping to support and communicate the benefits of a properly designed and delivered program.

Sincerely,

Omar Khalifa

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Bicycle NSW submission

to the NSW Department of Planning
on the

Application by Transport NSW for the Project

Sydney Light Rail Extension - Inner West, Dulwich Hill to
Lilyfield

(and likely “GreenWay Components”)

November 2010

Contact

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EXECUTIVE SUMMARY

BicycleNSW welcomes the inclusion of the Greenway shared path as part of the Sydney Light rail extension, Lilyfield to Dulwich Hill.

The Greenway corridor provides an excellent North-South connection that can be utilised by people walking and cycling, and to reach the light rail extension and other public transport. The Greenway also improves the connection between two of Sydney's best recreational cycling routes, the Bay Run and the Cooks River Cycleway, creating new opportunities for families and other recreational cyclists to explore more extensive areas of Sydney and its waterfronts. The east-west crossings of the corridor – by underpasses and bridges – strengthen the urban connectivity of this significant transport corridor for the Inner West region for general-purpose cycling, as distinct from recreational cycling, for people attracted to travel to the Sydney CBD and other urban centres of Burwood, Strathfield and Parramatta. The mix of land uses and the urban density will ensure that the Greenway will serve many people and give enjoyment every day. Investing in facilities for accessibility and safe cycling will give an excellent return on investment, as indicated by recent studies of the Inner Sydney Bike Plan, with benefits of reducing car use and supplying an affordable, healthy and sustainable travel alternatives.

BNSW's interest in this Project application is for the transport corridor to be used optimally, with respect to the cycling network and the integration of planning and design with the light rail extension. This means that the selection of GreenWay Components for inclusion in this Project needs to be relevant and not compromise local or regional bicycle network planning for the longer term. Members of Bicycle NSW attended some of the Community Information Sessions about the Project proposal. Bicycle NSW and its members have a long-standing engagement on the development of the GreenWay.

BNSW also supports the City of Sydney in implementing its Cycling Strategy and the Inner Sydney Bike Plan, which bears direct on network planning in this sub-region of Sydney.

This Submission responds to the exhibition of documentation support the application by Transport NSW for Project approval from the Director-General, Planning NSW. Its structure follows the form of the Environmental Assessment, in dealing with route options for the GreenWay, the alignment, the design of the shared path, and cycling access and facilities at the light rail stops. It also responds to the EA's Technical Paper on Traffic and Transport.

The Submission Conclusions detail our support for the proposed Greenway, raises concerns and presents recommendations.

Bicycle NSW is keen to support and collaborate for a successful execution and operation of the Project.

1. ABOUT BICYCLE NSW

Bicycle NSW is a member-based association with over 30,000 members and supporters.

Our association is dedicated to promoting, advocating, and supporting cycling in all its forms as an environmentally sustainable and healthy form of transport, recreation and tourism; we engage with government at all levels, business and the community. We are committed to supporting the Membership (individuals and corporates) and its 34 affiliated Bicycle User Groups (BUGS) throughout NSW.

Our Membership is made up of people of all ages, cycling abilities and cycling disposition and who ride all kinds of bicycles whether for transport utility – to get to places – or for recreation.

We maintain regular contact with our Members, Supporters and BUGs through our website (www.bicyclensw.org.au), a twice-monthly e-newsletter (to 30,000 recipients), and *PushOn* (a monthly online magazine) and *Australian Cyclist* (a bi-monthly magazine). Bicycle NSW also publishes submissions made to inquiries and consultations. We recently published our annual report for 2009-2010 which is available for download at www.bicyclensw.gov.au.

2. OUR SUBMISSION

Bicycle NSW has a long-standing involvement in the GreenWay and programs funded by the NSW Government to promote its use as part of the wider cycling network.

Relevantly to this Project application by Transport NSW, Bicycle NSW made a written submission to Transport NSW in response to the GHD Draft Report (May 2010) as a feasibility study for the extension of the Sydney Light Rail, Lilyfield to Dulwich Hill and compatibility of the proposed Green Way. Transport NSW also convened a meeting of bicycle stakeholders at which Bicycle NSW participated.

BNSW's interest in this Project application is for the transport corridor to be used optimally, with respect to the cycling network and the integration of planning and design with the light rail extension. This means that the selection of GreenWay Components for inclusion in this Project needs to be relevant and not compromise bicycle network planning for the longer term.

BNSW also supports the City of Sydney in implementing its Cycling Strategy and the Inner Sydney Bike Plan, which bears direct on network planning in this sub-region of Sydney.

This submission provides feedback on the proposed cycle facility and GreenWay to be built along the light rail line including suggestions and recommendations on future work required to integrate this new facility with existing local facilities and networks.

This Submission is structured to:

- Describe our understanding of the proposed Project , particularly the selection of "GreenWay components" as a foundation.
- Express concerns with the resulting selection of "GreenWay Components" in jeopardising bicycle design for the wider bicycle network relating to the transport corridor.
- Express our support for the proposed Project, in principle, with two major provisos that we believe, that could be accommodated within the scope of the existing Project and not delay its approval and commencement.
- Provide comment on the Environmental Assessment, and in relation to the Director-General's requirements.

We conclude our submission with the major recommendations.

3. OUR UNDERSTANDING OF THE PROJECT

The application to extend the Sydney Light Rail from Lilyfield to Dulwich Hill and the supporting documents were placed on exhibition:

- Transport NSW's application (and declaration), with its Preliminary Environmental Assessment Report (dated July 2010) and Product Definition Report (54 pp.), and associated correspondence between Transport NSW and the Director-General.
- Director-General's Requirements (2 pages).
- Environmental Assessment – comprising a Main Report, as Volume 1 (461 pp.), and Technical Papers, as Volume 2 including Traffic and Transport Impact Assessment (83 pp.).

http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=4097 [accessed 29/10/2010]

This documentation shows that approval of the Sydney Light Rail Extensions, both south for the Inner West line and north through the Sydney CBD, qualifies for assessment under Part 3A of the *Environmental Planning & Assessment Act*, as Major Projects constituting Critical Infrastructure. In other words, Projects declared by the Minister to be of State and regional environmental planning significance essential for the State for economic reasons and for social reasons and for environmental reasons (Government Gazette, No. 92, Official Notice 16 July 2010).

The Product Definition Report confirms that the 'scope of work' for the Inner West extension includes: "complementary uses of the corridor (including a pedestrian and cycle shared path and components of the GreenWay) and a delivery strategy for the extension." (p.1)

The Product Definition Report describes the Project in terms of:

- a) The scope of works to construct and the operational requirements for the Inner West Extension.
- b) "GreenWay components", described as being likely to be incorporated.

This description was confirmed orally with the Project Manager at the Community Information Session, 30 October 2010.

BNSW appreciates the NSW Government's decision to incorporate into the light rail extension Project some needed facilities in the GreenWay so as to connect with the Bay Run and ultimately the Cooks River Cycleway. These shared paths will also be accessible to more people with the extension of the light rail. With improved connections to local communities along the

GreenWay corridor, the Project has the capacity to provide improved general-purpose cycling access to the Sydney CBD and major urban centres of Strathfield and Parramatta.

The GreenWay corridor provides an excellent North-South connection that can be utilised for a variety of active travel purposes. The improved connection between two of Sydney's best recreational cycling routes (The Bay Run and the Cooks River Cycleway) creates new opportunities for families and other recreational cyclists to explore greater regions of Sydney.

This mix of uses will ensure that the GreenWay will be utilised every day of the week and provide an excellent return on investment in terms of reduced congestion, improved health and reduced environmental impacts (noise, air pollution, climate change).

Definition of the GreenWay Components

Following the receipt of submissions to the feasibility report, the Project's objectives were expanded to implement some part of the GreenWay Plan – a continuous, shared path, between Iron Cove and Cooks River, connecting to the light rail stops and local bicycle networks, and conserving urban bushland sites.

The Product Definition Report refers to "The GreenWay components that would be incorporated into the Inner West Extension Project." (p.24) It lists the commitment to the shared path including connections to existing shared/cycle paths, its location and associated infrastructure and works with the aim of ensuring accessibility and connectivity such as that the shared path would be at grade or elevated according to local topography.

The indicative diagrams give a design for the shared path that takes some account of the local topography and the crossings of major roads, the Hawthorne Canal and the rail corridor (at stops) within the limited geographical site of the Project.

It also articulates the principle of segregating the light rail alignment and the shared path for walking and cycling, illustrating the cross-section profile for the movement of these three transport modes, and their proximity and connectivity to urban bushland and neighbourhoods.

Further, the report also delineated the scope of the "GreenWay components" for incorporation into the Project by overtly excluding a new pedestrian and bicycle bridge at Cooks River, and any further upgrades of network connecting to Iron Cove and Anzac Bridge." (PDR p.25).

4. ROUTE OPTIONS FOR THE GREENWAY

Overview

The Product Definition Report (s4.5) describes the “preferred route” for the GreenWay shared path as a component of this Project, following the assessment of route options, made in *Environmental Assessment Vol 1 – Part B Concept Design and Development – Chapter 5 Design Development* at 5.2.1 (pp. 58-61).

The GreenWay shared path being proposed, concurrently with this Project, is illustrated well in EA Figures 6.3, 6.1(a)-(e).

The EA relied upon the route options identified and compared in the *GreenWay Strategic Concepts Report* (February 2010) – options described as blue, orange, red or white. The EA describes how it reached a ‘preferred option’ for the GreenWay route:

The preferred option

Following assessment of the options against the identified evaluation criteria, a preferred option or ‘best possible strategy fit’ was developed. The preferred option consisted largely of a combination of the proposed ‘blue’ and ‘orange’ options, which identified a GreenWay shared path generally within the rail corridor, away from the existing track alignment [formation] and some sections outside the rail corridor, including Cadigal Reserve, on Weston Street and [the on] the western side of Hawthorne Canal (in Richard Murden Reserve).

Following the development of the preferred option for the GreenWay shared path within the GreenWay Strategic Concepts Report, some further refinement has been made. The refined GreenWay shared path route forms part of the project and is described in detail in Section 6.3.

Overall, Bicycle NSW **strongly supports** the ‘blue’ option, as identified in the *Strategic Concepts Report*, that is, those route options within the railway corridor but not in the formation (i.e. away from the track area).

We welcome the commitment to providing grade-separated crossings at critical barriers such as Parramatta Rd (at same grade as railway over Parramatta Road, EA 5.2.2) and many other major crossings. Our preference is to gain, for the main North-South cycling route, the benefit of the more gradual gradient of the rail corridor, part of which is in a cutting for part of its length, and elevated in other sections. This is why we **recommend** crossing over Marion Street at rail-grade.

Bicycle NSW **also supports** the use of the ‘orange’ option along Weston Street (Fig 6.1 (d)), and Johnson Park (Fig 6.1 (d)) utilising existing road and path networks. At both these sites, the route for the GreenWay path is situated on the western side of the light rail alignment.

Bicycle NSW **strongly endorses** the alignment of the GreenWay from the Taverners Hill Stop to the Dulwich Grove Stop. This portion of the GreenWay removes significant barriers to cycling and provides greatly improved safety and efficiency for cyclists and pedestrians.

BNSW notes that the EA does not justify the alignment for the Greenway path on the western side of the Hawthorne Canal, through Richard Muirden Reserve (Fig 6.1 (c) and Fig 6.1 (b)) compared to an alignment on the western side of the rail alignment, north of the Marion Stop. As the EA Figures illustrate, shared paths are already located on the western side of the light rail alignment. Existing shared paths provide access to Iron Cove from Marion St, and these existing shared paths are located on either side of Hawthorne Canal. In our view, these facilities appear adequate for the mainly recreational bicycle and pedestrian traffic they cater for (and are likely to cater for in the future).

Bicycle NSW has concerns regarding the alignment Northbound from the Taverners Hill Stop towards Iron Cove. These concerns will be explored in the following sections.

CBD Connectivity and DG's Requirements

The Director General's Requirements identify land use and transport as a key issue, expressly to include: *"the integration of light rail stops and the GreenWay with surrounding land uses and transport infrastructure and networks, including urban connectivity, stop accessibility and adjoining land use access; pedestrian and cycle networks and infrastructure..."*

Bicycle NSW supports this approach to the integration of land-use and transport planning in that it would improve conditions for cycling for a range of purposes, not limited to recreational cycling. As a result, the potential to replace car trips (and car parking) by cycling would be greatly increased, particularly with strategic works and plans underway by the adjacent local Councils (particularly Leichhardt and the City of Sydney). This would contribute to a more positive environmental outcome for the Project as a whole.

The Director General's Requirements also state that the location of the Project is *"along and adjoining the Rozelle Goods Line from Lilyfield to Dulwich Hill."*

While the Sydney Light Rail Extension utilises the rail formation and grade of the Rozelle Goods Line, the proposed GreenWay articulated for the Project curtails the efficacy of plans for the GreenWay and its connectivity to local cycling networks and the vision for the regional cycling network, expressed through the implementation of the City of Sydney's Cycling Strategy and by the Inner Sydney Bike Plan.

In particular, the Northern alignment of the GreenWay has been adjusted to connect to Iron Cove rather than to follow the rail alignment and connect to the Lilyfield Stop. This connection to Iron Cove (and hence the Bay Run) has come at the expense of improved amenity and safety for cyclists travelling to/from Lilyfield (and hence the Sydney CBD).

Cyclists travelling to/from the Sydney CBD would receive little benefit from the upgraded path between Marion St and Iron Cove. They would still be exposed to a number of dangerous and difficult circumstances along Lilyfield Rd in order to connect to the Anzac Bridge. These include:

- Steep inclines on Lilyfield Rd.
- Dangerous 'door-zone' bike lanes on Lilyfield Rd.
- Narrow, steep and dangerous footbridge over Victoria Rd.

These are severe obstacles to enabling more people to ride bicycles as a means of transport for urban connectivity.

Bicycle NSW considers that the requirements to provide urban connectivity and improve the cycle network would be better served by providing an improved CBD route along and adjoining the Rozelle Goods Line. In the alternative, if the GreenWay path is to be located from Marion Street west of the Canal, then BNSW **strongly recommends** that the elevation of GreenWay shared path at rail-grade from Taverners Hill be continued at rail-grade over Marion Street. This would then fulfil the immediate objectives of the proposed Project as well as achieving a far better solution for the CBD Cycling Link as part of another process (with the support of the City of Sydney).

BNSW contends that the crossing of Marion Street at rail-grade has not been assessed in relation to CBD cycling connectivity or other aspects of the plans, and commitments for the cycling network made by local Councils.

Bicycle NSW presents a number of preferred alternatives to the proposed GreenWay path North of Taverners Hill Stop, referred to by the umbrella term **CBD Cycling Link**. The **CBD Cycling Link** comprises two sections (Stage 1 and Stage 2) described in detail for each section of the light rail alignment in **Appendix 1**.

Existing plans for connecting to the GreenWay

There is evidence that many stakeholders expect that the **CBD Cycling Link** is a component of the GreenWay project. The following documents show that these stakeholders expect that the CBD Link will be delivered as part of the GreenWay project or shortly afterwards, in the words of the DG's Requirements *"to be delivered through other processes"*.

GreenWay Master Plan

Section 3.25 of the GreenWay Master Plan (Oct 2009) highlights:

The potential for an off-road grade-separated cycling priority shared pathway within the Rozelle freight corridor to link the GreenWay Trail to the Anzac Bridge Cycleway and Balmain. A route using the Lilyfield rail tunnel and passing underneath Victoria Road Bridge should be investigated as a key element of such a concept;

The support shown for a CBD link is illustrated in a network diagram – **Appendix 2** - which shows the orange route utilising the West side of the light rail corridor from Marion St to the Leichhardt North Stop and beyond using the City West Link Tunnel.

Leichhardt Council plans

The **CBD Cycling Link** provides urban connectivity through the cycle network endorsed by Leichhardt Council (part of their amended bike plan 2007). This work includes a long-term strategic vision for the Rozelle Goods Yard outlined in the *Bays Precinct Cycleway Concept Proposal* endorsed by Council on 28 April 2009 – **shown in Appendix 2** - and adopted as part of their revised 2007 Bike Plan. A further extract from *The Leichhardt Bike Map* at **Appendix 2** shows the proposed **CBD Link** in green. It can be seen that the Lilyfield Rd bicycle route (dark blue) is largely parallel to the **CBD Cycling Link**, however it provides an inferior facility in terms of gradient, safety, directness and conflicts/crossings.

The EA does not mention the fact that Leichhardt Council is about to build a bridge across Hawthorne Canal at Blackmore Park, which will provide another option for cyclists to access Darley Rd or Lilyfield Rd via Canal Road – further indicating a disappointing lack of awareness of local bicycle network provision and planning.

Strategic Concepts Report

The *Strategic Concepts Report* (dated February 2010) presented detailed route options for three scenarios as follows:

- Red - routes that are primarily within the Rozelle freight rail corridor formation (track area)
- Blue - routes within the railway corridor not in the formation (i.e. away from the track area)
- Orange - routes outside of the Rozelle freight rail corridor.

Figure 1: Strategic Options Report Map



This *Strategic Concepts Report* (p.115) provided the following analysis:

Section 1 – Lilyfield Rd to Marion St

The route options for this section have almost identical lengths and directness, effort required and climbs. A major difference is the amount of traffic having to be crossed, with RED best, BLUE next, and almost an order of magnitude better than the ORANGE and WHITE routes. The RED and BLUE options have about half as much length adjacent to open space compared to the ORANGE/WHITE routes. A major difference exists for the BLUE route compared with RED in amount of bushcare sites impacted, ten times more than the RED route, and none at all impacted for ORANGE/WHITE options. The RED option is almost entirely in the railway formation, with none for the other routes, as is the case for all of the other sections, while the RED and BLUE routes are mostly within the rail corridor, almost none for the ORANGE and none for the WHITE routes. Construction costs for the section is highest for the BLUE option (mainly due to bridge and decking costs), about \$300,000 less for the RED option, and about \$0.5M less again for the ORANGE option (due to the use of existing infrastructure).

Section Outcome: *ORANGE route appears most suitable, particularly in the short-to medium term as lower cost, upgraded rather than new facility (and thus reduced CO2 construction emissions), and reduced bushcare impacts. Not either in the rail corridor or formation frees rail formation[sic] for any future double track light rail extension and avoids approvals issues with corridor access. A new bridge crossing at Marion St (SO7) appears cost prohibitive but may be longer-term enhancement, particularly as it also provides a grade-separated link to the Allen St subway (SO8). Sub-option SO8/BLUE route from Marion St to Allen St subway could provide longer-term increase in capacity outside the formation. This could link to a “no-regrets” development of bi-directional cycle lane priority route on Darley Rd would provide additional capacity, and reduce need for additional facility in rail corridor (at least north of Allen St subway) in the longer-term. Additional minor works on existing pathways to improve links at Blackmore Oval, particularly if new bridge is constructed.*

BNSW surmises that Transport NSW, the Project applicant, opted for the Orange Route due to its lower cost in the short term – but we simply do not know because the documentation does not justify its ‘preferred option’ at this level of detail. There is no assessment of the bridge crossing at Marion Street or even consideration of the *order of magnitude* benefits to safety, efficiency and amenity that would be achieved for users of the GreenWay and the road users on Marion Street (as might have been expected in the Technical Paper on Traffic and Transport).

Consultations

During Community Information consultation Sessions, Transport NSW staff acknowledged that community concerns were a factor in the decision to use the 'orange' route rather than the 'blue' route North of Taverners Hill Stop. It should be noted that the section in question is where the GreenWay path is least likely to have an impact on privacy due to the thick line of trees along the rail corridor. Bicycle NSW notes that a significant portion of the GreenWay path uses the 'blue' option due to the superior safety, efficiency and continuity it provides. These significant benefits should not be under-valued.

On 2 July 2010, BNSW participated in a consultative meeting convened by the Transport NSW Project Manager with other non-government organisations, including the BUGs as members of the GreenWay Steering Committee, BikeSydney, EcoTransit, and consultants who prepared the feasibility study (GHD) and consultants (Aspect Studios in conjunction with Biosis) working on the design of the GreenWay and protection of bushcare sites.

No minutes of that meeting were issued, and participants were advised that, on receipt, the DG's requirements would be forwarded, and that the meeting was the first of a number of sessions. The treatments for each section of the light rail alignment and the GreenWay shared path were presented as a 'shared movement corridor' – indeed, a 'natural movement corridor' enabling access to many major activities and attractions. We were advised about the proscription of Route Options for the GreenWay in the rail formation so as to require a single-track for any distance of the corridor. Cycling advocates raised questions and made statements, including the following:

- Appreciation that an elevated cycling structure would be built and a bridge across Parramatta Road because of the assessment that the underpasses would flood.
- That the main GreenWay spine be connected to the south by a bridge across the Cooks River and to the north to the Anzac Bridge.
- That Marion Street poses a significant barrier to the use of the GreenWay for cycling, particularly for utility-cycling rather than recreation. Cycling advocates explicitly expressed a strong preference for grade-separation at Marion Street.

Cycling network improvements: Traffic & Transport Paper 6.2

Technical Paper 1 - Traffic and Transport presents a table of cycling network improvements (6.2). These items are principally maintenance issues and investigations, for which responsibility or 'stakeholder opportunity' is designated as for a council, RTA and Transport NSW. appears. The Technical Paper implies that these activities would be "delivered through other processes" although some relate directly to the safety for cyclists of the proposed GreenWay route, e.g. the on-road cycle path at Old Canterbury Road and Weston Street.

Detailed comments are attached at **Appendix 3**.

This list suggests that Transport NSW is limited to investigating bicycle parking at Stops (Hawthorne, Lewisham West, Arlington) and GreenWay facilities such as cafes and parks. But Bicycle NSW considers that a number of items for improvement, designated to other stakeholders, are so related to the GreenWay that Transport NSW would need to participate, if not co-ordinated their undertaking.

Alternative Schemes within the Project: 6.4

The EA 6.4 states that as a result of stakeholder concerns, Transport NSW is investigating alternative schemes for three of the components of the Project:

- 1) *the signalised pedestrian crossing at Marion Street*
- 2) *the Weston Street on street cycle pathway*
- 3) *the location of the Dulwich Hill Interchange Stop.*

Bicycle NSW has expressed concern about the proposed Greenway route and has made its concerns known to Transport NSW in a stakeholder consultation meeting and at a community information session. The three alternative schemes being addressed by Transport NSW (as shown above) do not address the extent of the concerns raised by Bicycle NSW regarding the absence of a CBD Cycling Link. We emphasise that Marion Street Bridge at rail-grade, on the elevated shared path, until Hawthorne Stop is an essential and minimum requirement.

BNSW also **strongly recommends** that bicycle planning, whether by Councils in co-operation with Transport NSW and the RTA, need also to consider how the GreenWay project influences the cycling route from the GreenWay to the Lilyfield Stop, and from the Lilyfield Stop to Anzac Bridge. Such bicycle planning could be integrated with the planning of the light rail extension from Circular Quay to Central and by liaison with the City of Sydney Council.

Summary & resolution of GreenWay components within the Project

BNSW asserts that the Project's process for arriving at its 'preferred option' is flawed for a number of reasons:

- In being inadequately informed about the status of bicycle network planning in the local area and sub-region – it omitted the local plans described above.
- In overlooking that the Sydney CBD as a significant attractor of bicycle trips (& latent demand) as conveyed by discussion of the merit of the including shared paths from the GreenWay Trail in the 'Do Nothing Option' the Environmental Assessment Vol 1, Part D Chapter 5.2.1.
- In the cursory consideration of cycling in the EA's Traffic and Transport Technical Report and the lack of information or analysis about the increased trends to greater cycling levels by people in the locality of the GreenWay.

- Acknowledgement of the State Plan target for cycling without an apparent appreciation of its statutory consequences for integrated planning by councils; some councils in the GreenWay corridor have committed in their strategic plans to reduce dependency on private motor vehicles for travel, with more trips being by walking and cycling.
- In omitting consideration of the City of Sydney's commitments in its Cycling Strategy, including the funding of major cycling infrastructure to achieve its stated cycling targets (double the cycling target of the State Plan).
- The *Strategic Concepts Report* was prepared prior to the NSW Government's decision to extend the light rail, and no additional bicycle network planning was undertaken to integrate with the light rail plans.

Nonetheless, Bicycle NSW suggests that funds could be found at least for the GreenWay path components to include an at-rail-grade, separated crossing at Marion Street. We note that substantial funds have been provided for 5 tunnels and 2 bridges as part of the GreenWay design within the Project; this level of funding suggests that the \$0.8M required to provide a grade-separated crossing at Marion St should not be a significant barrier.

It is vital that the design of the GreenWay path facilitates safe, direct and continuous cycling amenity. The proposed design that requires people who are cycling to descend from the elevated shared path down to the road grade to cross Marion Street would be a shortsighted solution.

5. THE GREENWAY SHARED PATH: EA Ch 6

Alignment: 6.3.2

In general, BNSW considers that the alignment or ground plan of the proposed GreenWay path offers excellent path continuity, gradients and safety. This is achieved by providing many grade-separated crossings including tunnels at Hercules St, New Canterbury Rd, Constitution Rd, Davis St and Old Canterbury Rd as well as bridges at Parramatta Rd and Hawthorne Canal.

BNSW **recommends** maintaining this good practice by also providing grade-separation for crossing Marion Street at the level of the light rail, not the road.

Therefore, even the “GreenWay components” selected for the Project should maximise connectivity into the cycling network and the wider GreenWay plan including BNSW’s **CBD Cycling Link** - as detailed in Appendix 1. Anticipating this **CBD Cycling Link** could be better supported through designs at the northern end of the light rail corridor, from Lilyfield almost to Taverners Hill (the first four sections described in the EA and the stops discussed further below).

BNSW CBD Cycling Link

BNSW does support the EA’s statement that the proposed GreenWay shared path be located on western side of LR corridor (6.3.2 p.112) for its entire length.

One of the Bicycle User Groups (BUGs) participating in the GreenWay Steering Committee stated:

The greatest impediment to cycling is not the whole route but mainly that part of the route between the current Lilyfield Station and Hawthorn Canal where the track passes via a cutting through the ridge between Leichhardt and Rozelle.

Lilyfield Stop to Leichhardt North Stop

The Bicycle NSW **CBD Cycling Link** (Appendix 1) identifies cycling route options to enable safe cycling and continuity from the Sydney CBD travelling south along the transport corridor. In contrast, the proposed Project has failed to make any provision for cycling design in this segment.

The barriers to be surmounted by good bicycle design are the City West Link, the topography and heavy traffic on Lilyfield Road, and the drop in gradient to reach down to the Rozelle goods yard.

BNSW **strongly recommends** the NSW Government to adopt a cycling alignment that enables a **CBD Link** for safe cycling.

Leichhardt North Stop to Hawthorne Stop

Bicycle NSW illustrates in its Figure below the proposed alignment for the **CBD Cycling Link** (red line) adjacent to the light rail tracks (orange line).

The Figure below shows the bicycle route at the North edge of Blackmore Park (the longest yellow line) – this is an existing shared path. And Leichhardt Council has decided, we think tendered for, a bridge to be built across the Canal, permitting a direct link from the existing shared path to the West side of the Hawthorne Canal.

BNSW Figure A: Revised Bicycle Design: section Leichhardt North to Hawthorne



Orange: the rail formation/tracks

Red: revised bicycle route, to the north of, and adjacent to, the rail

Yellow: bicycle route crossings to enable route continuity and better urban connectivity.

The Figure below shows a ramp that is required to be built from the eastern corner of Blackmore Park up to the Greenway path (purple line).



Orange: Rail Track

Red: GreenWay Path

Yellow: Existing Shared Path

Purple: New ramp to meet GreenWay

In contrast, for this section of the transport corridor, the “GreenWay component” is proposed as a shared path located way over to the west of the Canal connecting to the Bay Run at Iron Cove. But there is an existing shared path already; it is in reasonable condition and of sufficient capacity for the volume and type of recreational pedestrians and cyclists traffic it currently experiences (and is likely to experience). Constructing a new facility along this stretch, appears not yet called for although it could be regarded as the main route for pedestrians with cycling mostly on the other path, and cyclists can access it directly from Hawthorne Parade if there were more kerb ramps up the north end (other people would benefit too!). It would be timely to remove the one-way restriction cyclists at the north end of Hawthorne Parade.

West side of the Hawthorne Canal entrance

Regardless of the design of the Greenway path North of Taverners Hill, there is a need to improve the design of the switchback shown below (red circle). The problem of the tight turn has been raised by Bicycle NSW in Community Information Sessions. And Transport NSW staff assured us that there are plans to provide a substantial upgrade to this switchback.



The current design requires cyclists to make the 180-degree turn in only around 4m. Many cyclists will be continuing straight towards Haberfield and may be caught off-guard as another cyclist makes the sharp right-hand turn. While this switchback is difficult to negotiate for a single cyclist, it would become a serious safety risk once more cyclists begin to use the route.

Hawthorne Stop to Marion Stop

BNSW **strongly supports** the proposal to construct a bridge over the Hawthorne Canal at the Hawthorne Stop, shown in EA Fig 6.1 (b), because it would enable a direct connection for cycling between Hawthorne Pde and Darley Road.

BNSW Fig B below shows in yellow the proposed bridge at the Hawthorne Stop, and to the South (adjacent to Loftus St) an existing bridge (iron plated, heritage, in some disrepair). With these bridges and the **CBD Cycling Link** aligned adjacent to the rail tracks as recommended by BNSW, the design would achieve superior network and urban connectivity.

BNSW Fig B below shows the shared path underpass to Loftus St and the associated connections that are recommended as part of the BNSW **CBD Cycling Link**. BNSW notes the local link

afforded by the existing bridge and rail underpass from Hawthorne Parade. We also observe that the bridge is badly corroded (riveted metal plates), as illustrated in the EA Technical Paper on Heritage, although no provenance or heritage conservation status is mentioned. BNSW would like to see the existing old bridge retained and maintained for continuing use, and it appears to merit interpretation.

BNSW **strongly recommends** that the Project include a ramp from the rail-adjacent Greenway path to the Loftus St underpass to channel people (particularly on bicycles) South of the off-leash area thus reducing intimidation and conflicts with dogs. BNSW recommends that the bridge, ramp and underpass are fenced off from the off-leash area to provide maximum safety for all Greenway path users and provide a connecting shared path between Hawthorne Parade and Darley Street.

BNSW Figure B: Revised Bicycle Design: section Hawthorne Stop to Marion Stop



Orange: the rail formation/tracks

Red: revised bicycle route, to the north of, and adjacent to, the rail

Yellow: bicycle route crossings to enable route continuity and better urban connectivity.

For the Hawthorne to Marion section of the rail corridor, the Project's proposed "GreenWay components" have significant shortcomings for bicycle design and route network planning and warrant revision and funding through this Project.

Marion Stop to Taverners Hill Stop

This section is illustrated in EA Fig 6.1 (c). It shows Marion Street as the point where the proposed diversion of the GreenWay shared path from the far western side of the Canal, rejoins the light rail alignment and remains adjacent. This EA Figure also shows the proposal for the GreenWay to be elevated to the (higher) railway grade on an elevated structure, 100m north of Taverners Hill Stop (EA p.112.7).

Within this section, BNSW strongly recommends changes to the design of the shared path:

- 1) Extension of the proposed elevated shared path
- 2) Rail-grade-separated crossing of Marion Street – (not at street-level).

Request for extension of Elevated shared path

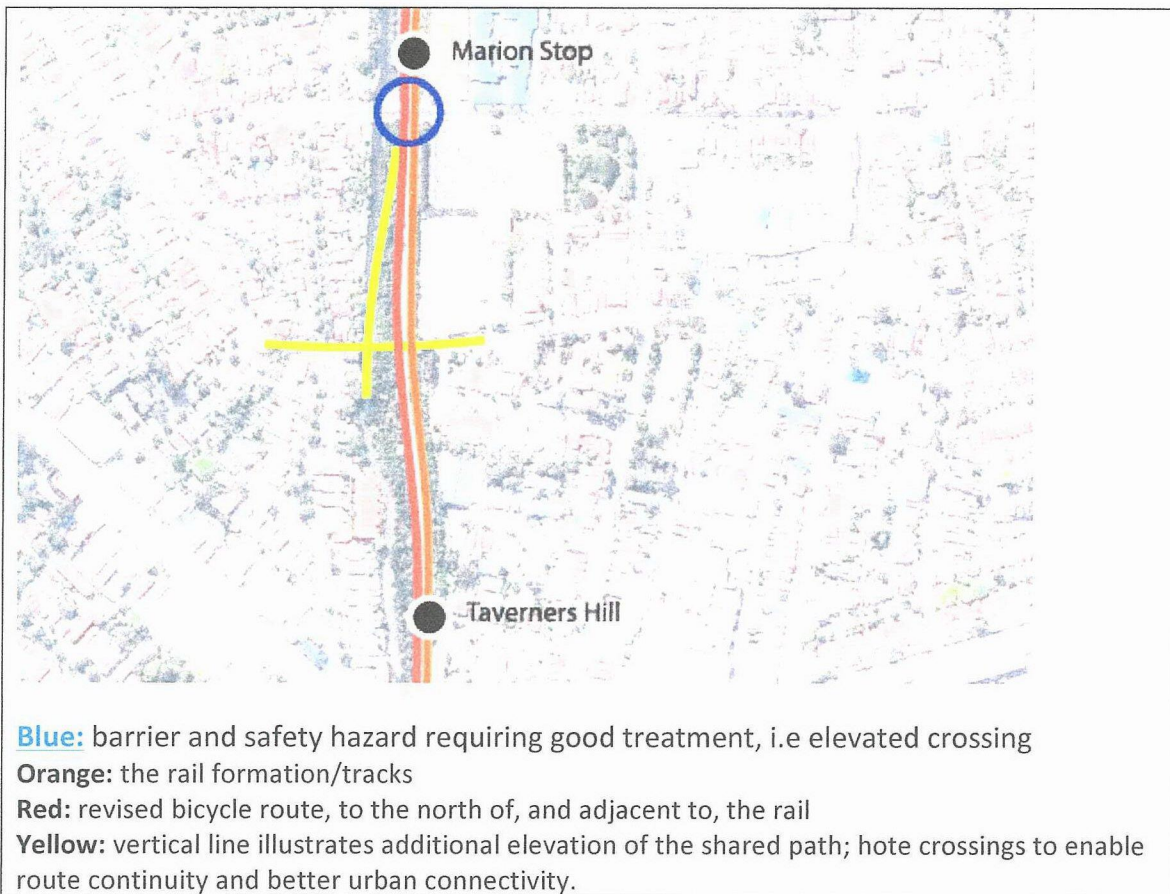
The Project proposes that 800m of the shared path be elevated, as illustrated in EA Fig 6.23.

BNSW Fig C below shows BNSW's recommended extension of the elevated shared path as the REVISED design of the GreenWay in red, from its proposed end point just 100m north of Taverners Hill Stop. This would enable people using the shared path to retain their elevation, more easily crossing over Marion Street. The vertical yellow line is the ramp.

Request for rail- grade separated crossing of Marion Street

BNSW Fig C below shows a blue circle over the intersection of the Greenway path with Marion Street. Marion Street operates as a major barrier and hazard to people.

| |
|---|
| BNSW Fig C: Marion Stop to Taverners Hill Stop |
|---|



Within the section Marion to Taverners Hill, the Project proposes a new signalised crossing on Marion Street as the “GreenWay component”, a “refinement” from the *Strategic Concepts Report*. This is a major concern to BNSW.

The signalised crossing of busy Marion Street, proposed by the Project, is not a good treatment in:

- Demanding a significant increase in physical effort by people walking and riding bicycles to change elevation (Rotherham, Parkin 2010).
- Delaying people using the shared path and deterring their use of the GreenWay.
- Reducing opportunities for transport choice.
- Detouring people away from desire lines and destinations to the East.

In comparison, an at-grade crossing would also be a better road safety treatment. People using the shared path could remain at their elevated grade rather than have to descend to the road simply to cross it.

Further, there’s a real likelihood that this cheap fix would reduce the value of the investment in the Project’s GreenWay shared paths, and later investments by local Councils through their Bike Plans, and the Inner Sydney Bike Plan.

Bicycle NSW **strongly recommends** a grade-separated crossing of Marion Street as an elevated structure – not the street-grade crossing proposed in the Project. Such an arrangement as a cross-section profile is illustrated in the EA for another location, EA Fig 6.23 near Cadigal Reserve.

A superior crossing of Marion Street (safer, greater amenity (Parkin, Rotherham 2010)) could then service, even at a later stage, the continuation of the shared path along BNSW's much-preferred alignment. This alignment would be adjacent to the light rail, on its western side providing a more direct route to Eastern destinations– described as BNSW REVISED route in the **CBD Cycling Link** Appendix 1.

From the southern side of Marion Street, BNSW supports that a shared path should run adjacent to the rail tracks, although the rationale for it to be widened and its surface upgraded is not given (EA 6.3.2 p.112.5).

Request incorporation of rail underpass (Lord St) into Project

This existing underpass beneath the rail tracks is not shown in EA Figure 6.1(c) nor mentioned in the text (p.112). This significant asset should be incorporated into the Project planning of the alignment of the shared path.

The proposed design has the whole path ramping down from Taverners Hill to the Marion St road grade as it heads North. BNSW **recommends** that the GreenWay path continue at-grade with the rail line but that an extra ramp be provided for access down to Lord Street. However, the ramp should be reversed to provide optimal access for cyclists travelling to/from the city rather than to/from Dulwich Hill.

Taverners Hill Stop to Lewisham West Stop

BNSW supports the route design in this section, shown in EA Fig 6.1 (d) in making a grade-separated crossing of Parramatta Road.

This design removes significant barriers and offers a level, continuous path to pedestrians and cyclists. It allows cyclists to continue at railway-grade beneath the Western Train Line and Longport St before reaching the Lewisham West Stop.

Lewisham West Stop to Waratah Mills Stop

BNSW supports the proposed continuation of the path along this section continues on the West side of the rail corridor (EA Fig 6.1(d), EA p.113), utilising an underpass under Old Canterbury Road (EA p.113.1). This would remove a significant barrier to cycling and provides a level, continuous path for walking and cycling on the GreenWay.

From the underpass, the proposed route would then head north away from the rail alignment via a laneway to Weston Street (EA p. 113.2).

Bicycle NSW **recommends** that the closure of the north end of Weston St be investigated. This appears necessary to protect users of the proposed on-street cycle path along Weston Street (EA Fig 6.1(d) and Fig 6.25) from motor vehicles turning from Old Canterbury Rd and to reduce conflicts between cars and cyclists who are turning right into the access lane at the north end of Weston St. If the North end of Weston St is not closed, other traffic-calming measures should be considered such as curb-extensions, speed humps, surface paint etc. Large bicycle logos (PS-2 from the RTA's *NSW Bicycle Guidelines*) should be placed in the centre of each travel lane to clearly assert the rights of cyclists to use the centre of the travel lane.

Figure 6.30 in the EA illustrates the current design of the on-road stretches such as Weston St. BNSW recommends a review of this design. Bicycle NSW members consider that on streets with a low volume of motor traffic, bicycle logos should not be placed in the door-zone of parked cars to avoid the hazards of 'doorings', collisions caused by car doors being opened in the path of oncoming cyclists – a major source of injury (for discussion of bicycle road safety see BNSW submission to the NSW Staysafe Committee's Inquiry into Vulnerable Road Users <http://www.bicyclensw.org.au/content/staysafe-inquiry-vulnerable-road-users>)

Waratah Mills Stop to Arlington Stop

BNSW **strongly supports** the proposal illustrated EA Fig 6.1(d), EA p.113.5:

- Alignment of the GreenWay adjacent to the west side of the rail lines on an existing embankment
- A grade-separated crossing of Davis Street, removing a significant barrier and offering a level, continuous path for people.
- The path to deviate from its rail-adjacent alignment to pass through Johnson Park as an appropriate use of existing land and affording some protection for existing bush-care sites.

Arlington Stop to Dulwich Grove Stop

BNSW **strongly supports** the proposal (EA Fig 6.1(d), EA p.113.6) for:

- Returning the alignment to be adjacent to, and West of, the light rail tracks.
- A grade-separated crossing of Constitution Rd and New Canterbury Rd (by underpasses) removing significant barriers and providing a level, continuous path for pedestrians and cyclists.

Dulwich Grove Stop to Dulwich Hill Stop

BNSW **strongly supports** the proposal (EA Fig 6.1(e), EA p.113.7) for:

- The construction of an underpass through the abutment of the Hercules St overbridge providing a grade-separated crossing of Hercules St that removes significant barriers and provides a level, continuous path for pedestrians and cyclists.
- Retaining the proposed alignment to be adjacent to, and West of, the light rail tracks until Jack Shanahan Park where it deviates from the light rail corridor that heads to Dulwich Hill interchange stop and to follow a disused, existing rail alignment on the West side of Jack Shanahan Park.

As the GreenWay path reaches Terrace Road, a number of options exist for connecting to the local road network and to Dulwich Hill station and proposed Interchange Stop. These are illustrated and described below.

BNSW Fig D: Options for Terrace Road to Dulwich Hill



Red dot: suggested 'shared zone' to replace roundabout and refuges

Red line: showing the on-street cycle route from the Jack Shanahan Park, under existing rail bridge at Terrace Road and then in the rail reserve instead of the proposed car park.

Purple line: local streets to be used as on-road connections to Cooks River.

Option One - There are two underpasses on Terrace Rd, which will factor into the GreenWay path design. One underpass is under the Bankstown Rail Line and the other is under a railway branch for trains accessing the Rozelle Goods Line. The underpass of the Bankstown Rail Line provides an excellent, wide culvert that can be used to provide a wide (min 4m) path through to Ewart St.

The underpass of the branch line is narrow with poor sight lines and provides limited facilities for pedestrians and cyclists. Bicycle NSW **recommends** that this overpass is removed (because the rail line is being removed) so that clear and open access can be provided to Terrace Road. To achieve a gradual incline from Terrace Rd to the GreenWay path, it will also be necessary to excavate some of the rail area. This will create open access to Shanahan Park and make this park a focal point of recreation in the community.

Option Two - If it is not possible to remove the rail branch bridge over Terrace Road and provide a single access path, then two separate access paths should be provided to the GreenWay path (one on each side of the rail bridge). This will ensure that cyclists can avoid the narrow underpass along Terrace Rd and can join the road network safely. One access point will be from Hercules St where there is a proposed maintenance access point and the other will be at the entrance to Jack Shanahan Park.

When cyclists continue Southbound under the Bankstown Train Line, they arrive at the intersection of Ewart St and Terrace Rd. This roundabout requires careful treatment to accommodate the large numbers of pedestrians and cyclists who will be in conflict with motor vehicles at this point. It is expected that many cyclists will access the beginning of the GreenWay path at this point from at least 3 directions (Northbound from Ness Ave and Eastbound/Westbound from Ewart St). The convergence of bicycle traffic from several directions will increase the potential for conflict between cyclists and motor vehicles and necessitates a significant calming of traffic using the roundabout. BNSW offers to confer on the detailed design.

In order to reduce vehicle speeds and improve safety, BNSW **recommends**:

- At-grade crossings (no curbs or pram ramps) and
- Traffic calming across the whole roundabout area shown as a red circle.

For cyclists exiting the GreenWay (Southbound) at the intersection of Ewart St and Terrace Rd, three choices are apparent:

1. Turn left (Eastbound) along Ewart St (red line).
2. Proceed straight into Ness Ave (purple line).
3. Turning right (Westbound) along Ewart St (outside scope of proposed Project).

Turning left along Ewart St provides access to Dulwich Hill Station/Stop. The EA suggests that cyclists join the local road network at this point, however, this introduces two unnecessary crossings of motorised traffic on Ewart St for a mere 100m of travel. Also, Ewart Ln and the adjacent car park only allow Eastbound traffic flow and do not provide a Westbound facility for pedestrians/cyclists. The Wardell Rd rail overpass also provides very inadequate facilities for people walking or cycling (1m paths).

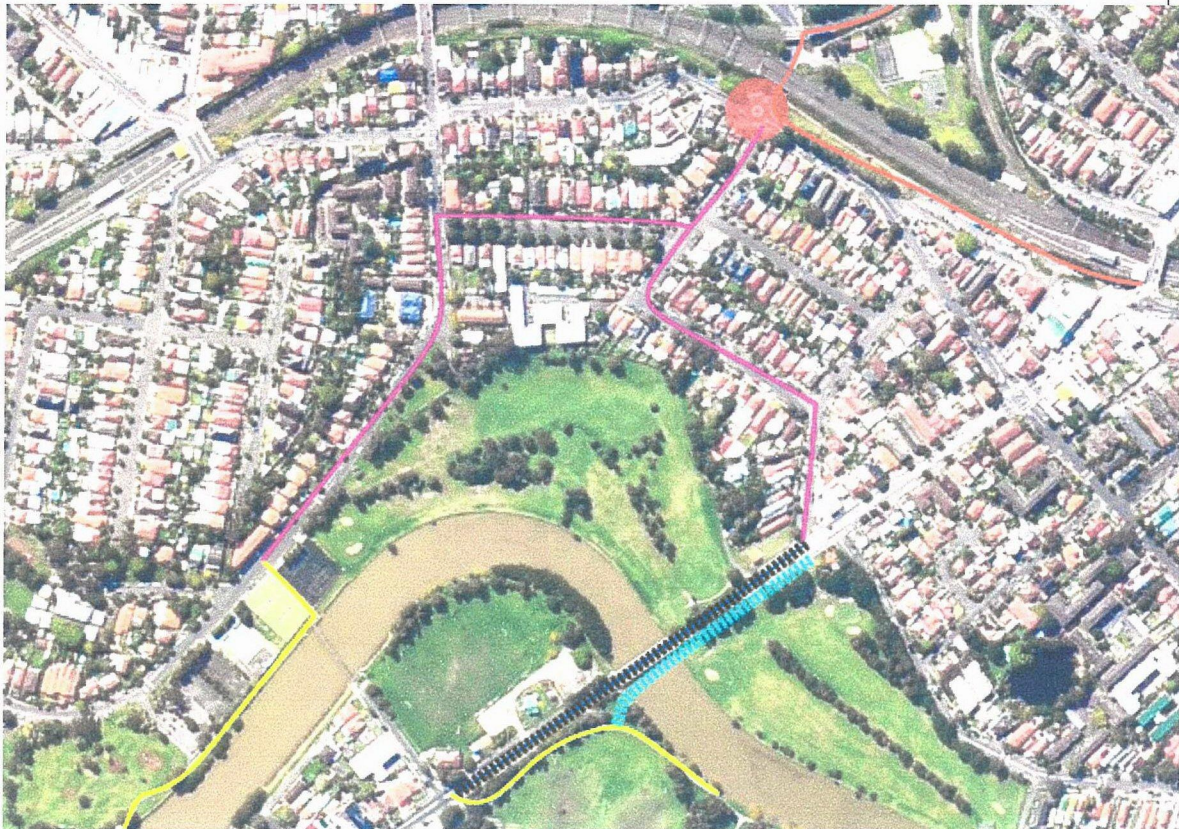
Bicycle NSW **strongly recommends** that a separated GreenWay path continues on the North side of Ewart St and along the North boundary of the car park from Terrace Rd to Dulwich Hill Station/Stop along the rail reserve.

BNSW also **recommends** additional work done to the Wardell Rd rail overpass at Dulwich Hill Station/Stop to provide additional width for people walking and cycling.

Dulwich Hill Stop (Terrace Rd) to Cooks River

The third option for cyclists approaching Ewart St Southbound from Terrace Rd is to continue straight into Ness Ave. This option provides access to the Cooks River Cycleway along a number of routes. The major Westbound and Eastbound routes are shown below (purple lines).

BNSW Fig E: Terrace Road, Dulwich Hill to Cooks River



Red dot: suggested 'shared zone' to replace roundabout and refuges

Red line: showing the on-street cycle route from the Jack Shanahan Park, under existing rail bridge at Terrace Road and then in the rail reserve instead of the proposed car park

Purple line: On-street connections to the Cooks River

Black dotted line: proposed use of existing Wardell Road bridge

Cyan dotted line: BNSW Revised design (new bridge over Cooks River).

For cyclists wishing to use the Cooks River Cycleway Westbound, they should continue straight across Ewart St using Ness Ave to access Garnet St and Tennant Pde (purple lines). There is then an access point near the tennis courts on Tennant Pde (yellow lines).

For cyclists wishing to use the Cooks River Cycleway Eastbound, they should continue straight across Ewart St using Ness Ave to access Tennyson St and Riverside Cr (purple lines). The design in the EA then requires cyclists to negotiate a very busy bridge on a narrow footpath (shown in black dots) and then to cross Wardell Rd at Lang Rd. This creates an unnecessarily long route (additional 200m) and provides an uncomfortable riding/walking environment across the bridge over Cooks River. The footpaths at this point are around 1.2 m wide which is significantly less than the minimum (pinch-point) width recommended by Bicycle NSW of 3m.

Bicycle NSW **recommends** that a refuge island be considered for the intersection of Riverside Cr and Wardell Rd to provide a safe crossing point. We observe that the road is wide enough to accommodate pedestrian refuges. To allow Eastbound cyclists to join the GreenWay path immediately South of the Cooks River, a new access point is required. BNSW revised design would avoid the requirement for cyclists to cross at Lang Rd and double-back to travel Eastbound along the Cooks River (as required by the proposed design).

Bicycle NSW **recommends** that a new pedestrian and cyclist bridge is constructed adjacent to the East side of the existing bridge over the Cooks River (dotted cyan line). This would allow cyclists to avoid the existing paths that do not meet minimum design specifications on the Wardell Rd crossing of the Cooks River. This bridge also provides the most direct link possible between the Cooks River Cycleway and the GreenWay path.

GreenWay Shared Path Design (EA 6.3 p.116)

Corner Radii and Sight Lines

The GreenWay will be used by a large number of people who will expect to travel at very different speeds, as discussed at the Stakeholder meeting with bicycle groups. People at that meeting discussed in detail path widths, appropriate corner radii and sight lines, as well as the conservation of the habitat.

Path Width

The EA states that the path width will be a minimum of 3m. Bicycle NSW **recommends** that the standard specification is 4m as has been implemented along the Gore Hill Freeway and that the 3m minimum is only considered for squeeze points where sight-lines are good.

There are a number of places where 4m may prove inadequate and some consideration should be given to providing increased width. In particular:

- Elevator/stair access points
- Rail line crossing points
- Blind Corners
- Heavily vegetated areas where poorer visibility; a build-up of debris on paths and less opportunity to avoid collisions can create safety concerns.

Signage

Way-finding signage should be provided in accordance with the *NSW Bicycle Guidelines*. This signage should integrate with local bike plans and include both distance and estimated riding (and walking) times to key destinations.

Topography, Access and Path Gradients

The gradient of the GreenWay path is generally excellent due to the nature of the original rail corridor that provided very level access to heavy freight trains. This lowers the barrier to cycling and provides ease of use for all levels of cycling. Therefore, for the Dulwich Hill to Lilyfield corridor, the design of the bicycle facilities and their connections to local networks, including the **CBD Cycling Link**, has significant potential for increasing cycling mode share.

Lighting and Security

Transport NSW also discussed these issues, including CPTED, at the Stakeholder Meeting convened. Reference should be made to those records.

Design of the Stops: EA 6.2.4

The EA Fig 6.4 shows that the light rail stops will be provided with an at-grade rail crossing point for pedestrians and cyclists in-between the two offset platforms. **BNSW supports** the location of this proposal since it allows all users to cross the rail lines in the sight of the light rail vehicles and with the knowledge that these vehicles would be stopping at each Stop.

BNSW would expect cyclists to use these rail-crossing points to connect to local communities. This applies in particular to the Hawthorne Stop, Lewisham West Stop and Waratah Mills Stop. It is important that the rail crossing points are adequately designed so that cyclists are not required to dismount to cross the rail line and for some spatial separation from pedestrians. Bicycle NSW recommends that appropriate hand-rails are provided to allow cyclists to stay mounted while waiting to cross the rail line.

Bicycle NSW restates its earlier comment (at the Transport NSW Stakeholder consultation), good sight lines and buffer zones are needed around the entrances to stops and rail crossing points because of the mix of people on foot and riding bicycles (and consequent irregular 'design envelopes') moving to and from the light rail stops and or rail crossings.

The specification for this path is documented as a *minimum clear width of 4m* (Section 6.2.4 in the EA). This is an adequate width for a typical shared-use path without conflict points, however, due to the convergence of people at these points, Bicycle NSW recommends that the width be increased to at least 6m to provide good buffer zones on each side of the path wherever feasible and without compromising the natural environment.

Access to the Stops

Access to all light rail platforms should be cycle-friendly. This is generally covered by providing disability access in the form of elevators (where required) and ramps of no more than 20:1 gradient. Additionally, the turning circle of bicycles needs to be accommodated to allow cyclists to easily navigate ramp switchbacks. Elevators should be designed to allow for a minimum of two cyclists with their bicycles.

Stop Facilities

Signage

Signage at all light rail stops should provide bicycle-specific route signage that complies with the *NSW Bicycle Guidelines* and provides way-finding both along the GreenWay corridor but also into the local cycling network.

Security and Safety

The provision of lighting, emergency telephone and CCTV cameras at light rail stops would offer excellent security and safety at the light rail stops.

Bicycle Parking

Bicycle parking facilities at each stop should include both publicly accessible racks and private, key-operated bicycle lockers. The public racks should include around 5 U-Rails per stop (to accommodate 10 bikes) for cyclists who value ease and convenience over security and protection. The private boxes should include around 5 boxes per stop for cyclists who require better security and shelter.

Particular stops may need additional facilities (even a 'bicycle hub') depending on the final design adopted. For example, Leichhardt North may attract a lot of bicycle park-and-ride users who do not want to confront the challenges of Lilyfield Rd on their bicycles!

Light Rail Stops: 6.2.5

BNSW recognises that the GreenWay is not included in the proposed design for the stops north of Marion Street. This omission may be because only the selected "GreenWay components" have been integrated into the design of the light rail extension.

Nonetheless, BNSW **recommends** that the design of the stops accommodate the GreenWay route and its relation to the cycling network, particularly for CBD Cycling links. Below we refer to some design modifications that would not restrict these future developments for good integration, beyond the life of the current Project. The affected Stops are: Lilyfield, Leichhardt North, Hawthorne, and Marion.

BNSW comments on the other Stops, to the south of the Marion Stop, relate to integration of the selected "GreenWay components" proposed as part of the Project for approval from the Director-General, Planning NSW.

Lilyfield Stop

As noted earlier, Bicycle NSW considers the preferred route for the GreenWay path as continuing adjacent to the rail line through the City West Link Tunnel between Leichhardt North and Lilyfield. This path will pass the Lilyfield Stop and continue on the North side of the City West Link while the light rail passes through a tunnel to the other side of the City West Link.

It is important that a link is provided at Catherine St for cyclists wishing to join the local cycle network. This link would consist of a ramp (possibly with a switchback) and elevator access to be shared with the light rail passengers. There is a significant drop from Catherine St to Lilyfield Station so many cyclists will choose to use the elevator to reach Catherine St.

Leichhardt North Stop

Even if there is no plan currently to continue the GreenWay path through the City West tunnel, BNSW recommends some changes to the Leichhardt North Stop, otherwise changes would become more expensive to make in the future.

BNSW suggests locating this stop further West, adjacent to Charles St, shown in the BNSW figure below. This relocation would enable people to gain easier access to the Charles St bridge. The

more open setting would give better feeling of personal security. In addition, it leaves open the potential for running the cycling route through the tunnel in the future.

BNSW FIG: LEICHHARDT NORTH STOP



Hawthorne Stop

BNSW supports the design for the Hawthorne Stop. It has no special topographical challenges or difficult roads/intersections to manage. The design is appropriately simple and provides easy access between Darley Rd and Hawthorne Pde in a way that was not possible in the past.

As described above, Bicycle NSW recommends that the GreenWay path continues adjacent to the rail line through the Hawthorne Stop (**CBD Cycling Link**) rather than run along the West side of Hawthorne Canal. Minor adjustments would need to be made to the design of the stop to allow for the GreenWay path to pass the Hawthorne Stop platforms.

Marion Stop

Bicycle NSW **recommends** that the REVISED GreenWay path, that is instead of the Project's selected "GreenWay components", continue adjacent to the rail line, at rail-grade, through the Marion Stop rather than crossing Marion Street at-grade of the roadway.

Minor adjustments would need to be made to the design of the stop to allow for the GreenWay path to pass the Marion Stop platforms. For example, the proposed lift and stairs on the West side of the rail line would need to be relocated adjacent to the rail line rather than being separated from the rail line by the platform.

Taverners Hill Stop

The Taverners Hill Stop includes two lift/stair configurations that allow users to access the stop from Parramatta Rd. There is no indication in Figure 6.11 of the EA that any additional path width or path barriers have been provided where the lift/stairs meet the GreenWay path. This omission will result in a dangerous situation for pedestrians and cyclists who will not be given adequate warning of approaching path users.

BNSW **recommends** consideration of improving safety at these points. For example, there could be a 3m-wide landing to create a buffer zone between the stairs/elevators and the GreenWay path. Alternatively, stair/elevator users may be required to walk along an adjacent path before entering the main GreenWay path. These solutions would provide GreenWay path users with enough opportunity to anticipate and avoid collisions.

Lewisham West Stop

BNSW commends the design of the Lewisham West Stop in providing level access to both sides of the platform (Hudson St to the East and Smith St to the West). The design is highly cycle-accessible and should improve the permeability of the road network for cyclists.

Bicycle NSW, however, is concerned about the location of this Stop: it is not well suited to facilitate rapid transfer of passengers to/from Lewisham Train Station. We suggest two alternative locations:

1. Place the Lewisham West Stop under the West train line and provide an elevator and walkways between Lewisham Train Station and Lewisham West Stop.
2. Place the Lewisham West Stop under the West train line and consolidate Lewisham Train Station and Lewisham West Light Rail Stop.

Option 1 would appear to be the more practical, less costly option.

Currently the environment under the West Rail Line is noisy and dark, however, with sound insulation and lighting, the Stop could provide an environment within acceptable noise standards.

Waratah Mills Stop

The Waratah Mills Stop provides level access to Davis St and Weston St.

BNSW's raises its concern about managing conflict at the intersection of Weston St and the GreenWay path. Figure 6.15 in the EA shows a large grass area near the totem that could become a default pedestrian/cycle route as it provides the shortest path around the corner.

BNSW suggests therefore design features address this likely conflict, e.g. the key is in the design: providing good sight lines and physical guides requiring cyclists to take a wide line through the corner. For example, low planter boxes provide an excellent barrier that prevents cyclists cutting corners while allowing excellent sight lines. These are far more effective at improving safety than U-Rails which are often difficult to negotiate and can cause cycling accidents.

Arlington Stop

BNSW notes that the design is difficult to assess from the preliminary sketches (Fig 6.17 and Fig. 6.18). It appears that the GreenWay path near the Arlington Stop transitions from the Constitution Rd tunnel up to the level of Johnson Park to take advantage of the existing path.

The design needs to ensure corner radii and sight lines are adequate to allow for safe cycling through the underpass tunnel, considering the speed of people riding in a southerly direction.

Dulwich Grove Stop

The Dulwich Grove Stop is positioned well below the level of New Canterbury Rd and Hercules St. Accessibility for cyclists, therefore, will largely be dependent on the elevator. For this reason, BNSW recommends that the elevator be placed within easy reach of the GreenWay path while maintaining enough of a buffer zone to ensure that people exiting the elevators have a chance to observe the GreenWay path, and any oncoming traffic, before entering the path.

BNSW also notes that the current placement of the elevator on the Eastern side and the end of the platform would require all users of the GreenWay path who also take the elevator to cross the rail lines. An alternative could be to place the elevator and stairs on the Western side near the staircases marked in Figure 6.19 thereby avoiding the need to cross the rail lines. This would benefit all path users.

Dulwich Hill Stop

BNSW supports the elevator access from a central platform to Wardell St because it provides cyclists with access to the Light Rail platform. However, the access between Dulwich Hill Stop and Dulwich Hill station is not adequate, or even safe for people riding bicycles.

For a detailed review and suggestions, see the above discussion of alignment of the GreenWay Shared Path (i.e. the selected “GreenWay components”) between Dulwich Grove and Dulwich Hill.

BNSW **recommends** that the design, outlined Fig. 6.1e of the EA, be revised to show how cyclists are expected to access from the GreenWay path to Dulwich Hill Station/Stop and vice-versa.

Bridges and Tunnels: EA 6.2.6

Bicycle NSW strongly supports the proposal for fully grade-separated crossings of Parramatta Rd and a number of other cross-streets. As noted earlier, Bicycle NSW recommends that two additional grade-separated crossings be provided for the GreenWay path: City West link Tunnel and Marion Street.

Light Rail Operations: EA 6.6.1

Rolling Stock

LRVs need to be designed to accommodate bicycle users and their bicycles.

While cyclists will primarily use the GreenWay, they may choose to undertake a portion of their journey by light rail. This may occur due to bad weather, mechanical difficulties or just to provide a rest period during a long trip.

BNSW **recommends** that LRVs provide ease of use by passengers with bicycles: on boarding, carriage, and alighting. Therefore, light rail carriages should be fitted with bike hooks to allow the carriage of at least 4 bicycles per LRV. These hooks can easily be provided in dual-purpose areas that can be utilised by standing passengers when bicycles are not present.

The provision of bicycle hooks symbolises the use of multi-modal travel and the flexibility of the LRV and acts as an advertisement for cyclists who are made aware that bicycles are welcome on-board.

6. TRAFFIC AND TRANSPORT: EA 10.2 & 10.3 and Technical Paper

Cycling Rates

There is no assessment of cycling rates in the surrounding area or along the GreenWay corridor. Gathering data on current cycling levels would create a benchmark that can be used to measure the success of the GreenWay path in attracting new cyclists. Without this data, there is no way of quantifying the return on investment provided by the GreenWay path, and in turn, future similar projects.

Cycling Amenity

This Chapter of the EA on Traffic and Transport gives no estimates of the quantified benefits that the GreenWay path will provide in terms of cycling amenity. A simple breakdown of the time for an average cyclist to perform the trip from the Cooks River to Iron Cove before and after the project would provide a useful indicator of the improved efficiency of the bicycle route.

Patronage Forecasts

Bicycle NSW is surprised and disappointed that no patronage forecasts have been carried out for the GreenWay path. The GreenWay path has the potential to provide everyday transport for many people. This needs to be acknowledged and patronage forecasted so that the traffic impacts (reducing car trips) can be quantified.

In contrast to the lack of description, estimation or analysis carried out on cycling rates and demand forecasting, Part 10 provides demand forecasting for the light rail, motor-vehicle parking and construction impacts.

Part 5.2.3 of Technical Paper 1 states:

"The sections of the GreenWay shared path that are to be constructed on-street are not expected to have an impact on parking. The GreenWay is also not expected to be a generator of vehicle trips so no impact is expected from generated traffic. Also, in these streets the additional cycle activity is unlikely to have an impact on traffic."

Bicycle NSW is surprised and disappointed that the GreenWay has only been considered in terms of *generated traffic* rather than providing an analysis of the potential for *reduced motor traffic* and reduced demand for parking. The absence of any assessment of current cycling levels and future cycling levels (through demand modelling) highlights the disturbing lack of recognition that the GreenWay path could play a key role in reducing traffic.

Figure 3.3 of Technical Paper 1 includes a map of the Leichhardt North Cycle Network as shown below. Clarification needs to be given regarding the ‘proposed on path’ route (pink) adjacent to the rail line (orange). It appears that this cycle link passes through the City West Link Tunnel. While Bicycle NSW is in strong support of this link, other sections within the EA suggest that a cycle link will not be provided adjacent to the rail line at this location.

FIGURE: LEICHHARDT NORTH CYCLE NETWORK (FIG 3.3 IN TECHNICAL PAPER 1)



Hawthorne Cycle Network

The Hawthorne map shows a 'proposed on path' route adjacent to the rail line that runs through the City West Link Tunnel, crosses the rail line at Blackmore Oval and joins Darley Rd. Other documentation in the EA suggests that this route will not be built as part of the GreenWay project. Bicycle NSW requests clarification on the plans for this 'proposed' link.

If this link is built, Bicycle NSW **strongly recommends** that the path continue adjacent to the rail line through the Hawthorne Stop, Marion Stop and over Marion St using a grade-separated crossing.

The Hawthorne map also shows a 'proposed on path' route that runs along the South edge of the City West Link from Hawthorne Canal until around Charles St where the path joins the rail-adjacent path. Again, other documentation in the EA suggests that this route will not be built as part of the GreenWay project. Bicycle NSW requests clarification on the plans for this 'proposed' link.

Bicycle NSW feels that this link is unnecessary and that the existing path along the North edge of Blackmore Oval provides an excellent route along this corridor. Leichhardt Municipal Council are planning to construct a bridge over the Hawthorne Canal that will provide easy access to the West side of the canal. The only work remaining is for a ramp to be built from the North/East corner of Blackmore Oval to join the GreenWay path (which should be running adjacent to the rail line).

FIGURE: HAWTHORNE CYCLE NETWORK (FIG 3.4 IN TECHNICAL PAPER 1)



7. CONCLUSIONS AND RECOMMENDATIONS

Bicycle NSW has reviewed the documents presented for the Environmental Assessment of the Sydney Light Rail Extension – Stage 1 – Inner West Extension, from Lilyfield to Dulwich Hill. The scope of work for this extension includes the complementary uses of the corridor including a shared path for walking and cycling and components of the GreenWay (some on-road cycling facilities and urban bushland sites).

The documentation is extensive, at over 600 pages. Nonetheless, we have found it necessary to add to the information with respect to cycling, particularly the state of bicycle infrastructure development. We contend that this information is relevant to the planning of the Project's facilities for cycling, on-going investigations, and their integration into local and regional cycling networks – a key issue in the Director-General's Requirements.

Bicycle NSW appreciates that Transport NSW is responsive to stakeholder concerns such that it is conducting investigations into significant cycling infrastructure that we have addressed in this submission. We welcome that this is work-in-progress and offer our support and collaboration.

Support

In general, Bicycle NSW is strongly supportive of the proposed Project and believes that the GreenWay path will provide a substantial improvement to cycling amenity along the Hawthorne Canal corridor and connectivity to the proposed Stops. It will also improve urban connectivity by the use of this 'natural movement corridor' and offer a safe cycling route that so many people are now hankering after.

Bicycle NSW commends Transport NSW particularly for the following design principles and elements:

- The use of the rail-adjacent reserve to provide level, uninterrupted path alignment
- The construction of grade-separated crossings (tunnels and bridges) at cross-streets
- The path alignment between Dulwich Grove Stop and Taverners Hill Stop
- The provision of bicycle parking and elevators at stops to provide accessibility for cyclists.

BNSW supports Transport NSW in:

- Investigating alternatives for three components of the GreenWay within this Project identified in the EA (6.4) 'Alternative Schemes within the Project', as discussed above in our submission, Part 4 p.18
- Providing and investigating 'cycle network improvements' identified in EA Technical Paper Traffic & Transport Table 6 as discussed above and in Appendix 3
- Giving further consideration to the timing of investments for "a new pedestrian/cycle bridge at Cooks River, and any further upgrade of the pedestrian and cycle networks connecting to Iron Cove and Anzac Bridge" (Product Definition Report section 4.5.2)

- Considering recommendations and suggestions made throughout this submission, and in the forthcoming Submissions Report.

To aid this process, a comprehensive list of items would be useful with each item be assigned a tentative designation for delivery as part of this Project or through other processes, as stipulated in the DG's Requirements.

BNSW is unclear about the management of the Project and the liaison with stakeholders, and proposals for the governance of the GreenWay on completion of the components being delivered as part of this Project. BNSW will be requesting a meeting with Transport NSW to discuss these issues.

Concerns

1. BNSW does not accept that the 'preferred route option' for the GreenWay fulfils the function of the Dulwich Hill to Lilyfield Route, Route K in the NSW Bike Plan, as the priority link in the Sydney regional bicycle network (NSW Bike Plan p.11). The spatial footprint of the southern portion (Taverners Hill to Dulwich Hill) overlaps with Route K; North of Taverners Hill, however, the **CBD Cycling Link** has been overlooked.
2. BNSW has demonstrated that the 'preferred route option' and associated GreenWay components incorporated with the proposed Project have been selected without adequate consideration of local and sub-regional bicycle planning, the status of relevant cycling network plans and cycling infrastructure works already committed and to be commenced within the life of this Project. It is critical that the components of the GreenWay do not jeopardise or diminish options in bicycle network planning. For example, a road-grade crossing of Marion Street would interfere with the continuity of the proposed CBD Cycling Link as well as reduce the safety of the GreenWay route for all users.
3. A street-level crossing of Marion Street, with a signalised crossing, has been proposed for people to cross this busy road. This crossing is a critical element of the proposed GreenWay Shared Path that would greatly affect cycling, although it has not been assessed yet. The Project proposes a new, elevated GreenWay shared path aligned with the light rail from immediately south of the heavy rail line to 200m north of Taverners Hill Stop – shown in EA Fig 6.1 (c).

In response to this concern, BNSW **strongly recommends** continuing the elevated GreenWay shared path, aligned with the light rail, so that it crosses over Marion Street and continues to the Hawthorne Stop – shown in BNSW Figure B: Revised Bicycle Design: section Hawthorne Stop to Marion Stop. People would be crossing busy Marion Street at rail-grade, safely separated from the roadway, without delay, on a continuous path without using human effort to change levels (Rotherham 2008 and Parkin 2009) and benefitting from the gentle gradient of the light rail corridor.

4. The treatment of a Marion Street crossing is pivotal to connectivity with local and regional cycleway and to the level of cycling use (an objective of the NSW Government, and the councils of Leichhardt, Marrickville and the City of Sydney). On the face of the documentation, we concluded that the Project has not been adequately informed of the extent of investment in cycling facilities and objectives to achieve growth in cycling (as the mode share) relevant to this transport corridor. As a result, the EA does not grasp the pivotal role of this crossing in the local and sub-regional cycling networks. We are inspired to work for the longer-term efficacy of the GreenWay and do not want this compromised by a shortsighted decision at this pivotal point. The continuation of the elevated path and the rail-grade crossing of Marion Street would benefit the proposed upgrade of the existing western route as well as the eastern route essential for connectivity to Leichhardt, Lilyfield and beyond to the Sydney CBD.
5. The CBD Cycling link would benefit directly from the recommended treatment for crossing Marion Street: on an elevated shared path, at rail-grade to the Hawthorne Stop.
6. The southern end of the proposed GreenWay where the cycling route goes onto the local street network needs considerable attention for safety and amenity. This submission discusses these issues and identifies some possible solutions for investigation and delivery.

Recommendations

Primary recommendation: elevated, rail-grade crossing over Marion Street

Given the above (support, concerns and detailed submission), at this time, Bicycle NSW's major recommendation is that:

the GreenWay shared path cross over Marion Street so that the shared path is at rail-grade, and elevated over the street; this overpass is achievable by extending the elevated shared path, as proposed from south of Taverners Hill Stop until the Hawthorne Stop; and that this facility be part of the GreenWay components within the Project's commitments and delivery.

Bicycle NSW regards this as an essential, realistic variation to the proposal. It would be a minimum requirement for good bicycle planning. The Marion Street crossing is the only remaining barrier to this natural movement corridor offering a safe, continuous path of travel.

In our view, only by incorporating this feature, could the GreenWay components be said to meet the expectations for integration, set out in the Director-General's Requirements. These encompass urban connectivity, pedestrian and cycle networks and infrastructure and a continuous path of travel to interchange with City Rail services on the southern end.

Further Recommendation A: Alignment

Bicycle NSW has expressed concern about the proposed GreenWay route and has made its concerns known to Transport NSW in a stakeholder consultation meeting and at a community information session. Here is a very brief summary:

- Provide for CBD cycling connectivity from the Marion Stop, or at least accommodate future connectivity and do not jeopardise planned bicycle routes.

CBD Cycling connectivity would be optimised by the path remaining rail-adjacent to gain the benefit of the gradient, directness and connectivity. For this purpose, on a south-north direction, the path be made rail-adjacent between

- The Taverners Hill Stop and the Marion Stop, requiring the elevated crossing over Marion Street – hence our primary recommendation above
- The Hawthorne Stop and the Marion Stop.

The location of the Leichhardt North Stop be relocated slightly to the West towards Charles Street. The path be then made rail-adjacent between the Hawthorne Stop and the Leichhardt North Stop with a grade-separated crossing to be built over Charles Street.

The barrier created by the City West and the NSW Government's current opposition to using the City West Link Tunnel for a cycling route, requires careful investigation for the CBD Cycling Link. While the CBD Cycling Link sits outside the proposed Project, it needs to be factored into the final decisions on the alignment and of course, crossing over Marion Street. It is salient that cycling connections to the Sydney CBD were omitted from 'cycling network improvements' presented in the Technical Paper on Traffic and Transport supporting the Application to the Director-General.

- At the southern end of the proposed GreenWay alignment,
 - Review the on-road cycle route for safety and directness. Our submission suggests that the route from Terrace Road to Dulwich Hill Station and Dulwich Hill Stop along Ewart Street needs a fully separated path to be built on the Northern side of Ewart St using part of the rail reserve (not the formation)
 - Expedite the timing of investment in a pedestrian and cycling bridge to ford the Cooks River and join into the Cooks River Cycleway, as identified in the Product Definition Report, s4.5.2, and thus a route right through to Iron Cove and the Bay Run (and CBD cycling connections) presenting a major recreational facility for local and visiting tourists from interstate and overseas

Further Recommendation B: Further investigations

- Encourage NSW Transport to undertake the suggested investigation:
 - alternatives for three components of the GreenWay within this Project as identified in the EA (6.4) 'Alternative Schemes within the Project', as discussed above in our submission, Part 4 p.18
 - 'cycle network improvements' identified in EA Technical Paper Traffic & Transport Table 6 as discussed above and in Appendix 3
- Initiate dialogue on the CBD Cycling Link in its relationship to the GreenWay, including with City of Sydney and Bicycle NSW
- Closer attention to on-road cycling safety, e.g. from Dulwich Grove to Dulwich Hill station, and the use of design to manage potential conflicts between all GreenWay users and adjacent lands, including dogs!

Further Recommendation C: Governance

Identify appropriate governance arrangements for GreenWay shared path and its development. Reviewing the EA's Cycling Network Improvements illustrates the existing need for coordination and communications for stakeholders and users. We would in particular encourage liaison with local councils (four directly affected plus CoS) the RTA and BNSW on further developments.

Further Recommendation D: pick up Bicycle NSW's recommendations and suggestions within the text of the submission

BNSW would be pleased to confer and discuss possible arrangements

APPENDIX 1 – THE CBD CYCLING LINK

Here we present our first and second choice a CBD Cycling Link for the GreenWay.

This tunnel is only wide enough to accommodate the two light rail tracks. The provision of a continuous Greenway through the City West Link Tunnel would require either: significant excavation to widen the tunnel (prohibitively expensive) or a reduction in the light rail facilities to a single-track line for a short section.

The first choice for Bicycle NSW strongly favours of providing a short section of single-track light rail that leaves room for a continuous Greenway from the Lilyfield Stop to the Leichhardt North Stop. This is common practice around the world and would result in very little impact to the level of service provided by the light rail.

Given the current view of Transport NSW, that single-track running for the light is unacceptable, the second choice for Bicycle NSW for implementation of a Greenway path that does not use the City West Link tunnel.

CBD Link – Stage 1 (Lilyfield to Leichhardt North) – 1st Choice Option

The *CBD Link – Stage 1* runs Westbound from the Lilyfield Stop to the Leichhardt North Stop. The 1st choice option uses the ‘red’ corridor (on the rail line) for the majority of the time. The ‘red’ option requires that one of the rail lines is replaced with the Greenway path through the City West Link Tunnel. This results in a reduction of the rail facility along this short stretch and requires single-track operation.

Bicycle NSW recognises that Transport NSW is reluctant to use the City West Link Tunnel for the Greenway for the following reasons:

- Reduction in safety and level of service of light rail.
- Safety concerns for Greenway path users.

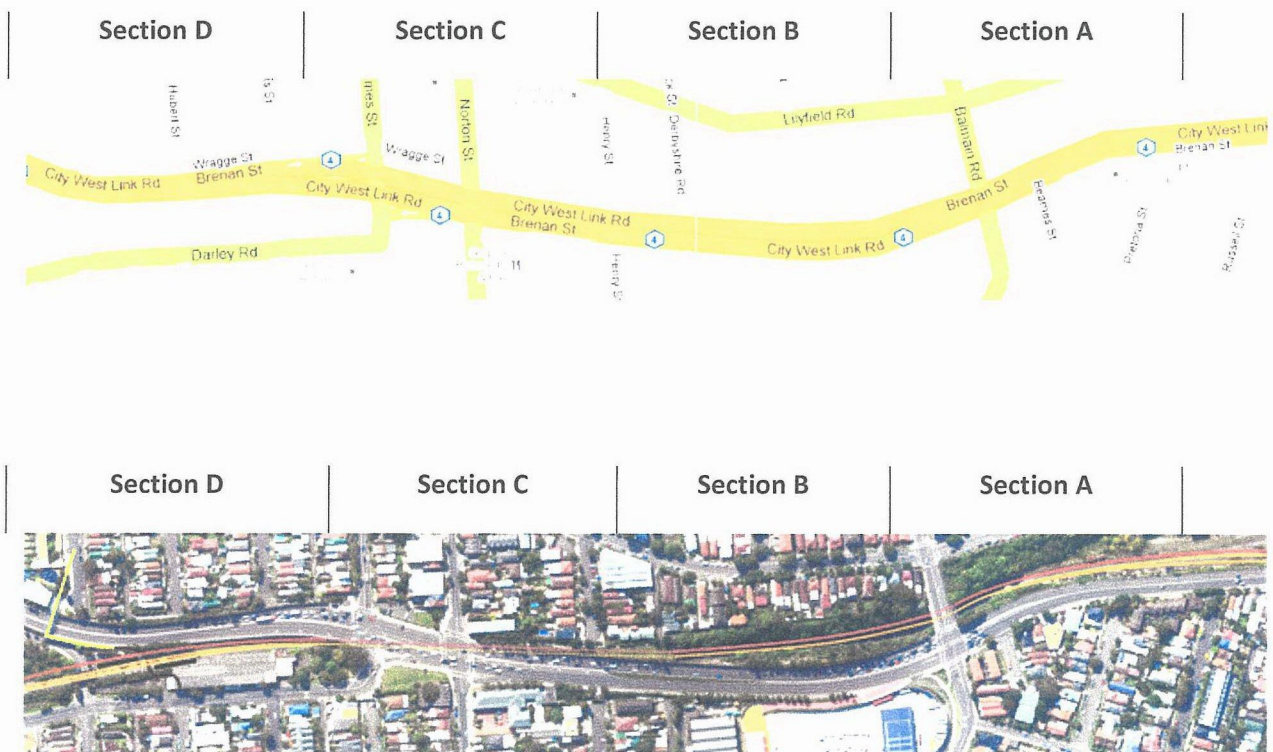
In general, Bicycle NSW supports dual track operation of the light rail for the majority of the corridor. There is no doubt that a single-track solution along the entire corridor (or most of it) would result in reduced level of service and reliability. However, no evidence has been provided by Transport NSW to support the assertion that a short section of single-track would result in any meaningful decrease in safety, reliability or level of service.

Single-track operation is common around the world and is necessary in this case due to the high cost of alternatives. Providing an additional tunnel for the Greenway would impose a significant financial cost. Failing to provide a level alignment for the Greenway path would impose a

significant useability cost. The hostile road environment and steep gradients in the area are a crippling impediment to general-purpose cycling.

Bicycle NSW does not believe that the safety concerns expressed by Transport NSW are justified. With appropriate lighting and security cameras, the safety of the tunnel section will be greater than for many sections of secluded and poorly-lit cycle path already in the Sydney bicycle network. Bicycle NSW also notes that the tunnel is straight and provides full visibility from one end to the other.

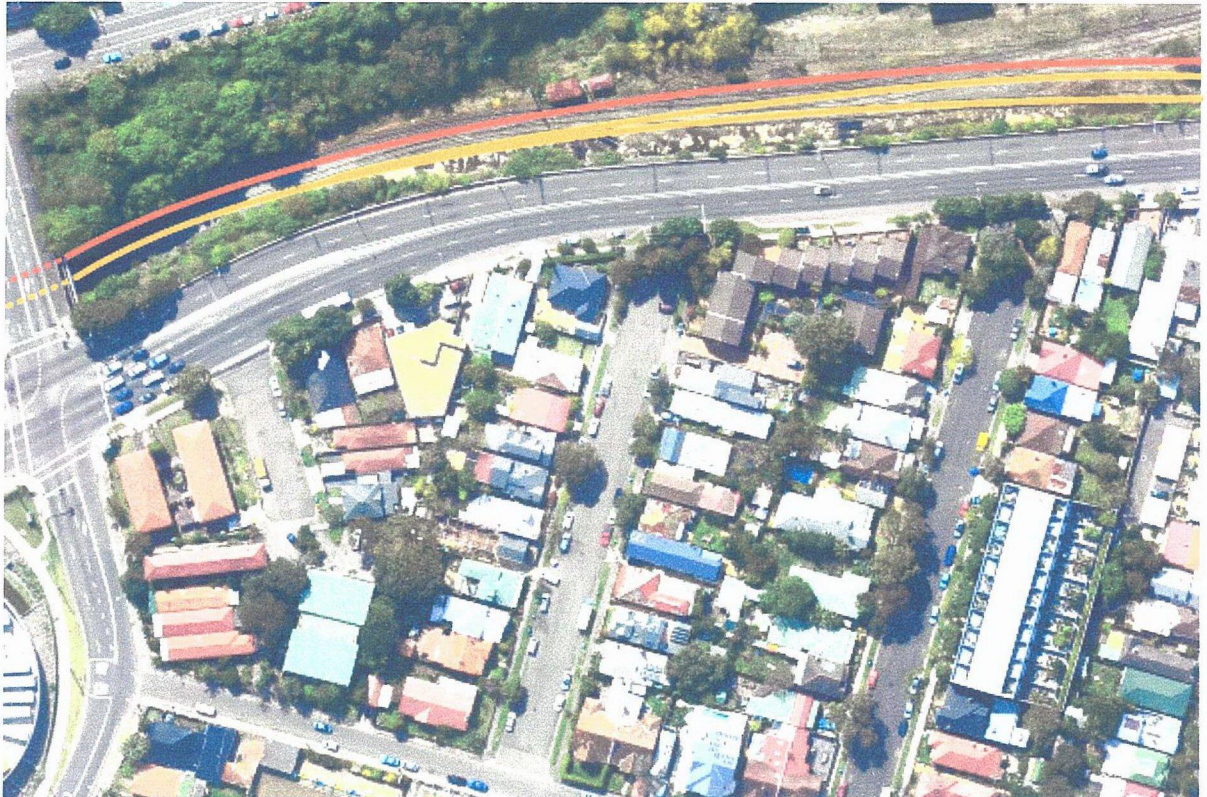
The *CBD Link - Stage 1* can be broken into the following sections for analysis of options. The continuation of the link further East will require further analysis in light of future plans for the Rozelle Goods Yard.



Stage 1 – 1st Choice Option - Section A

The following diagram shows the double rail tracks (orange) merging into a single rail track (orange) as they enter the narrow cutting at the West end of the Rozelle Goods Yard. This leaves room for the Greenway path (red) to enter the cutting adjacent to the rail line and pass beneath Balmain Rd (dotted lines on the left).

FIGURE 2: SECTION A: ROZELLE GOODS YARD TO BALMAIN RD



Stage 1 – 1st Choice Option - Section B

The following diagram shows the single rail track (orange) running adjacent to the Greenway path (red) beneath Balmain Rd (on the right), through the cutting and into the City West Link Tunnel (dotted lines on the left).

FIGURE 3: SECTION B: BALMAIN RD TO DERBYSHIRE RD



Stage 1 – 1st Choice Option - Section C

The following diagram shows the single rail track (orange) running adjacent to the Greenway path (red) through the City West Link Tunnel.

FIGURE 4: SECTION C: DERBYSHIRE RD TO JAMES ST



Stage 1 – 1st Choice Option - Section D

The following diagram shows the Greenway path (red) running adjacent to the single rail track as they exit the City West Link Tunnel. The single rail track splits into double rail tracks before reaching the Leichhardt North Stop. The existing Charles St SUP overpass (yellow) provides a good connection to the Greenway path for local residents. The stop platforms (black with white outline) and crossing ramps (black) provide excellent access to the local road network at Darley Rd.

To allow the tracks to split before they reach the stop, it is important that the Leichhardt North Stop is moved West from the currently proposed position. The current design of the Leichhardt North Stop (Figure 6.5 of the EA) provides no space between the stop and the City West Link retaining wall. This space must be provided to allow the Greenway path to travel past the Stop, however, this is only possible if the Leichhardt Stop is located adjacent to Charles St.

FIGURE 5: SECTION A: CHARLES ST TO JAMES ST



CBD Link – Stage 1 (Lilyfield to Leichhardt North) – 2nd Choice Option

The 2nd choice option for the *CBD Link – Stage 1* runs Westbound adjacent to the rail line from Lilyfield towards Leichhardt North. This option uses an ‘orange’ corridor option (outside the rail corridor) to provide an alternative route to using the City West Link Tunnel.

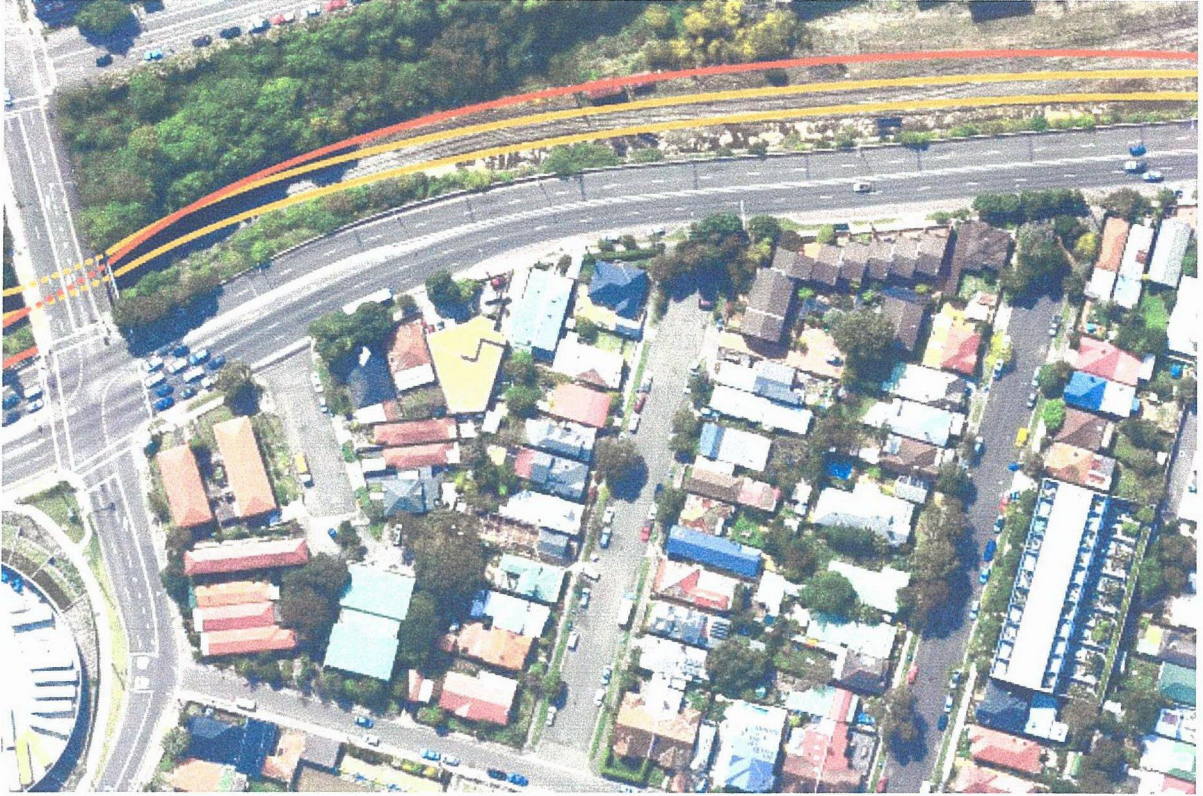
The following sections of the document illustrate the best option available for the implementation of a Greenway path that does not use the City West Link tunnel.



Stage 1 – 2nd Choice Option - Section A

The following diagram shows the Westbound double rail tracks (orange) heading towards the narrow cutting at the West end of the Rozelle Goods Yard as the Greenway path (red) begins to rise above the railway grade. At Balmain Rd (on the left), the Greenway path will have reached a sufficient elevation to cross above the rail tracks but still pass under Balmain Rd.

FIGURE 6: SECTION A: ROZELLE GOODS YARD TO BALMAIN RD



Stage 1 – 2nd Choice Option - Section B

The following diagram shows the double rail tracks (orange) continuing Westward towards the City West Link Tunnel. The Greenway path (red) crosses the tracks and begins to join the South embankment of the cutting as it rises up towards the elevation of the City West Link. A branch point should be provided to access Balmain Rd where there is already an excellent, wide footpath suitable for bicycle traffic.

The Greenway path continues to rise as it approaches the entrance to the City West Link Tunnel. It should be possible to design the ramp to have a gradient of around 5% to comply with disability requirements and to provide a low-stress climb for cyclists.

FIGURE 7: SECTION B: BALMAIN RD TO DERBYSHIRE RD



Stage 1 – 2nd Choice Option - Section C

The following diagram shows the Greenway path (red) continuing Westward adjacent to the City West Link. The path would run through an existing park behind the City West Link sound barriers, thus providing a pleasant, quiet, green environment for cycling.

The path would pass through the hole in the sound barrier and run adjacent to City West Link until Norton St. Cyclists would cross City West Link at the signalised crossing which may take some time due to the high priority given to the City West Link. Cyclists would then cross Norton St and James St which should be quick and easy if the light sequences are set to allow pedestrian/cycle movement when the side streets have a red light (a logical and simple requirement to fulfil).

Some improvements will be need to be made to the footpath areas, refuge areas and the gap in the sound wall to provide safe and easy access for cyclists.

FIGURE 8: SECTION C: DERBYSHIRE RD TO JAMES ST



Stage 1 – 2nd Choice Option - Section D

The following diagram shows the Greenway path (red) continuing Westbound from James St (on the right). The path would descend to the level of the Leichhardt North Stop and provide access to the Charles St bridge (yellow) and to Darley Rd via the crossing point (black).

In order to ensure safety for all path users, some thought needs to be given to managing the speed of cyclists as they approach the Leichhardt North Stop. Of course, placing speed-limiting devices such as chicanes and bollards can sometimes create additional hazards for cyclists, so it is preferable to seek a design of the paths that will reduce the conflicts without increasing the number of hazards to be negotiated. One such option is for the Greenway to pass over the top of the Leichhardt North Stop and only reach the rail grade at a point further West of Charles St.

FIGURE 9: SECTION D: JAMES ST TO CHARLES ST



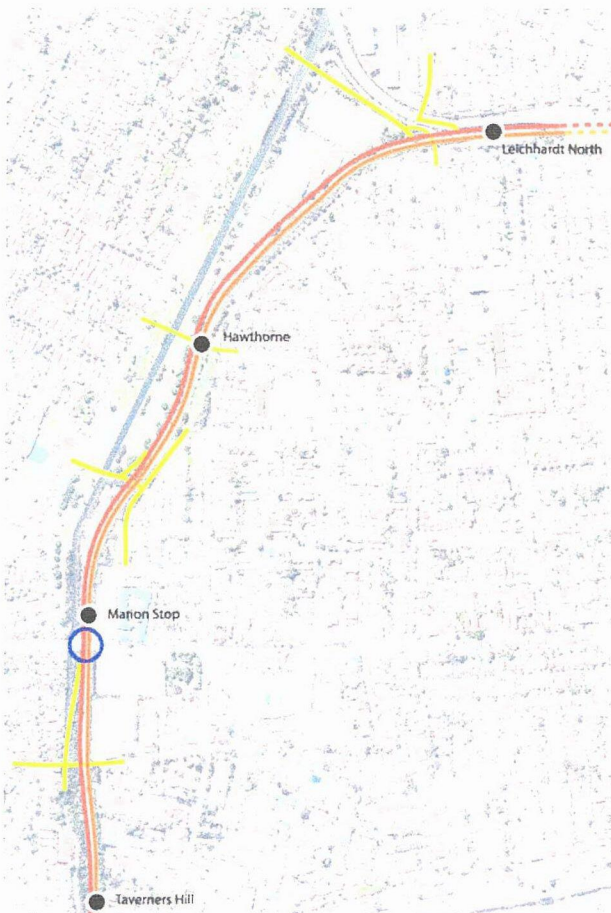
CBD Link – Stage 2 (Leichhardt North to Taverners Hill)

The *CBD Link - Stage 2* continues Westbound from the Leichhardt North Stop to the Taverners Hill Stop using the 'blue' corridor option (rail-adjacent). The 'blue' corridor option has been identified as the most suitable approach for the majority of the corridor for a number of very good reasons. It provides:

- Excellent gradient.
- Excellent grade separation for road crossings.
- Reduced conflict with non-users of the Greenway path (of particular importance near the off-leash dog area near Bones Café).

Unfortunately, the EA proposes to use an 'orange' corridor option along the Hawthorne Canal which provides far poorer access to the Sydney CBD. Even if it is not possible for the Greenway path to use the City West Link Tunnel, the *CBD Link – Stage 2* is vital for cyclists wishing to use the Greenway path to access the Sydney CBD.

Figure 10: CBD Link – Stage 2



This tunnel is only wide enough to accommodate the two light rail tracks. The provision of a continuous Greenway through the City West Link Tunnel would require either: significant excavation to widen the tunnel (prohibitively expensive) or a reduction in the light rail facilities to a single-track line for a short section.

Bicycle NSW is strongly in favour of providing a short section of single-track light rail that leaves room for a continuous Greenway from the Lilyfield Stop to the Leichhardt North Stop. This is common practice around the world and would result in very little impact to the level of service provided by the light rail.

APPENDIX 2 - NETWORK DIAGRAMS FROM EXISTING PLANS

FIGURE: GREENWAY MASTER PLAN NETWORK MAP, FIGURE 2.

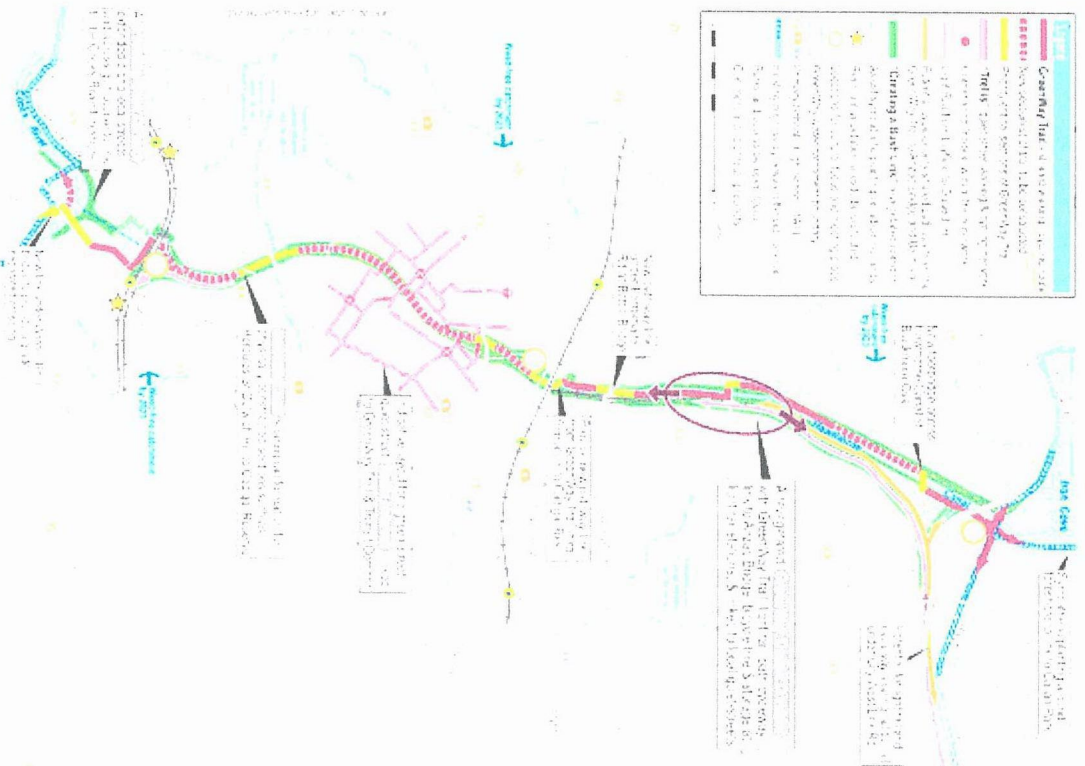
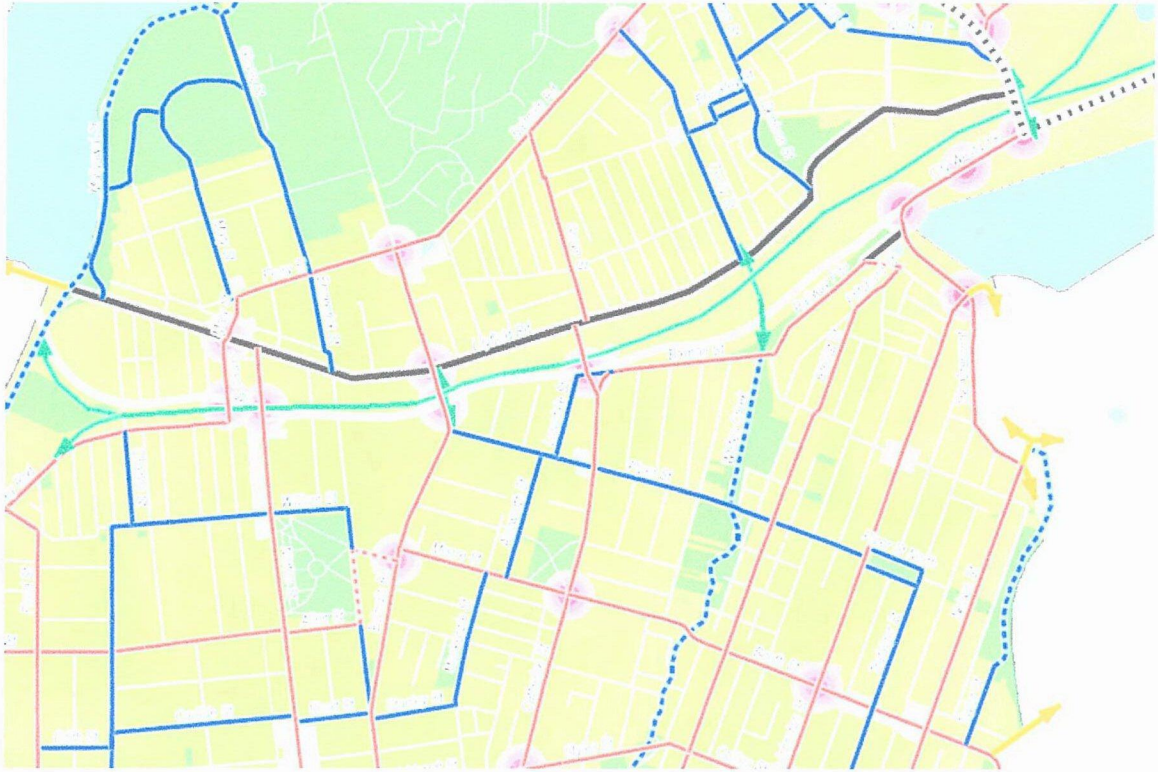


FIGURE: LEICHHARDT MUNICIPAL COUNCIL BIKE MAP



The above figure shows that the Lilyfield Rd bicycle route (dark blue) is largely parallel to the *CBD Link*, however it provides an inferior facility in terms of gradient, safety, directness and conflicts/crossings.

FIGURE: BAYS PRECINCT CYCLEWAY CONCEPT PROPOSAL MAP

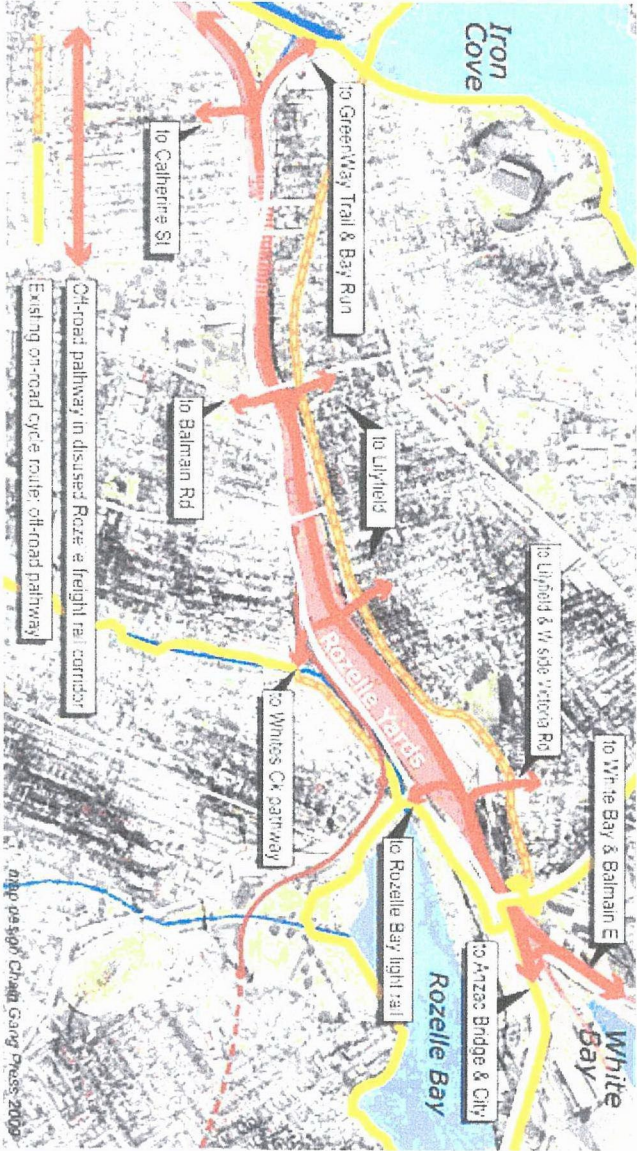
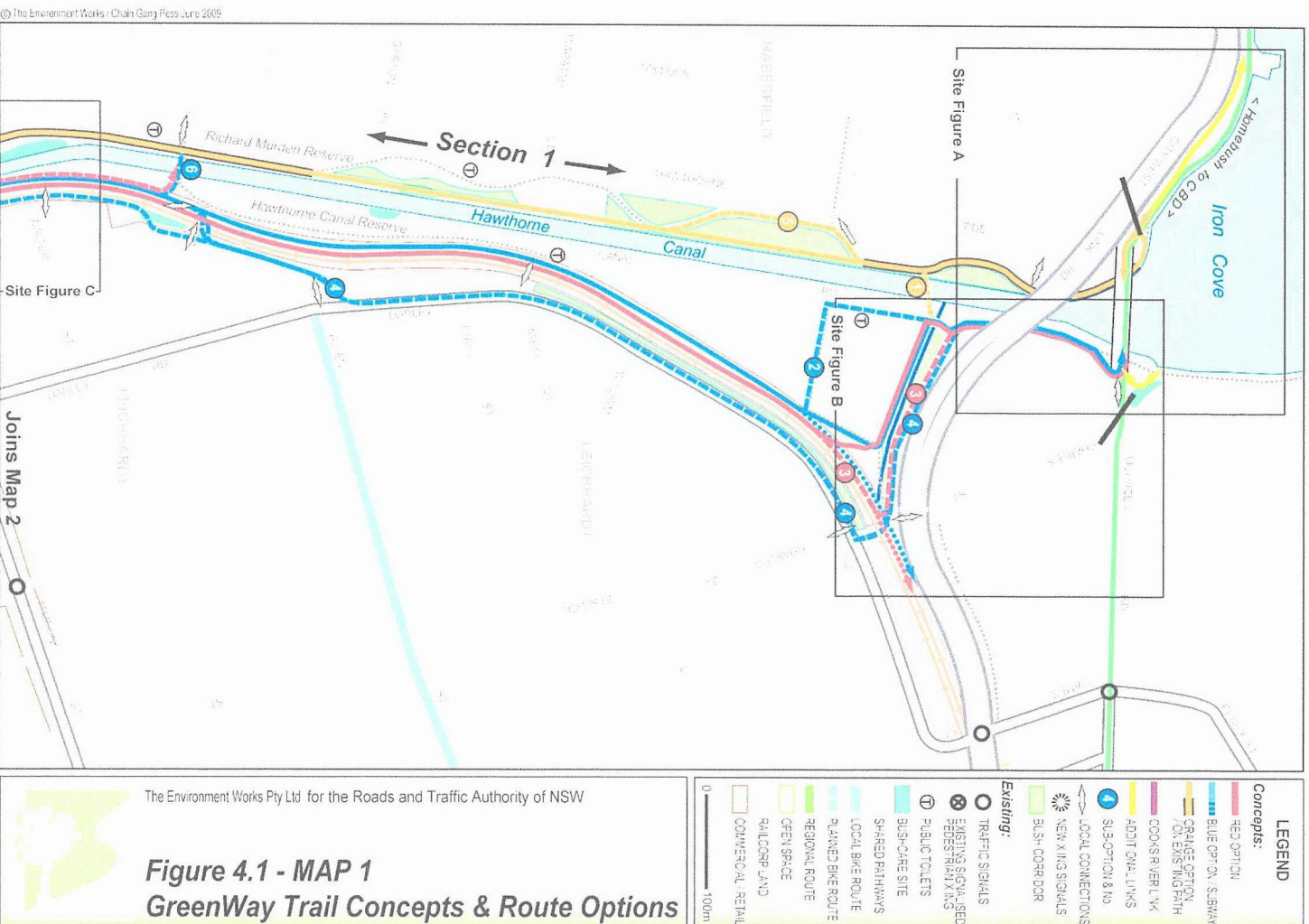


FIGURE: STRATEGIC CONCEPTS REPORT MAP 1 (Fig 4.1)



APPENDIX 3 – Comments on ‘Cycle network improvements’

The EA *Technical Paper 1 - Traffic and Transport* presents Table 6.2 ‘cycle network improvements’

Leichhardt North Stop

*investigate a cycle lane or cycle reserve on Darley Road at City West Link intersection

Stakeholder opportunity: Leichhardt Council, RTA

Comment: Not sure what is being proposed here, query a limited cycle lane just on the corner. Bicycle advocates have previously requested a cycle lane or path on both sides of Darley Rd from the City West Link to Allen St. The footpath up from the Leichhardt North Stop is unpaved at present, and we understand a commitment has been made to repave it, so there is may be a good opportunity for regrading to smooth out the really steep section just before the City West Link. The alternative for eastbound cyclists might be to cross over at the proposed refuge crossing at Francis St and use a widened shared path up to Marion St. The gradient is a little easier on that side.

Hawthorne Stop

* provide a safe, secure and weather protected cycle parking at stops and facility near the GreenWay such as cafés and park facilities

Stakeholder opportunity: Leichhardt Council and Transport NSW, Ashfield Council

Comment: Appears good. Hawthorne Stop may be suited to a bigger bike parking station than anticipated, functioning as a bicycle park and ride facility. Plans would need to leave room for later expansion.

Marion Stop

*vegetation pruning on cycle path south of Marion Street in order to convert the footpath into a shared path

* investigate the width of footpath on Marion Street between the entrances of the cycle way

Stakeholder opportunity: Leichhardt Council and Ashfield Council

Comment: Bicycle advocates have commented that this stretch of path would need more than "pruning" to fix extensive damage to the pavement caused by the many fig trees, more likely a requirement to rebuild the path.

On the Marion Street footpath, BNSW members have observed that the footpath on the north side of Marion St over the Canal is not very wide, possibly being less than 3 m. The footpath on the south side is much wider.

Taverners Hill Stop

- * trim overgrown vegetation along existing cycle path

Stakeholder opportunity: Leichhardt Council

Comment: tree roots as well.

Lewisham West Stop

- * investigate the need for a safe, secure and weather protected cycle parking facility to service the light rail stop and train station, possibly within the new development

Stakeholder opportunity: Marrickville Council and developer and Transport NSW

Comment: similar to Hawthorne Stop above; potential to attract some bicycle park and light rail riders.

Waratah Mills Stop

- * investigate intersection treatment for on-road cycle path at Old Canterbury Road and Weston Street
- * provide a high quality road surface to clearly demarcate on-road cycle path

Stakeholder opportunity: Marrickville Council

Comment: BNSW members observe that cyclists turning right, where Weston St turns right to get back onto the Greenway, would have to watch out for traffic turning off Old Canterbury Rd into Weston St. It will be a bit difficult to provide something both safe and convenient. From looking on Google Maps for a view from a car turning into Weston St. Cyclists would be turning across the car into the smaller street that runs to the left, leaving cyclists quite exposed and quite possibly relying on an unsafe route.

Arlington Stop

- * investigate the need for a safe, secure and weather protected cycle parking facility to service the light rail stop and park facilities
- * investigate possible connections to existing cycle network at Hercules Street

Stakeholder opportunity: Marrickville Council and Transport NSW

Comment: BNSW members suggest that Hercules/Beach/Constitution Rd/Denison Rd route could serve as a local bicycle route and one that needs improving. The Bicycle NSW submission considers the possible connections in discussion of the alignment and the stops.

Dulwich Hill Stop

- * investigate road safety and measures to reduce vehicle speeds at the Ewart Street/Terrace Road roundabout
- * resurface Ewart Lane to reduce tripping and cycling hazards

Comment: BNSW members have observed motor vehicles “flying through that roundabout on Ewart St, so they should do whatever they can to slow them down.”

BNSW members have also commented:

“It would make crossing to Ness Av safer, and they could then include the existing Ness Av/Garnet/Tennent St route in their project as a route to Cooks River, for cyclists heading west up Cooks River.”

“We don’t know why a cycle route down to Wardell Rd is being proposed when nothing is said about Wardell Rd Bridge. The Lang Rd footbridge across Cooks River is also showing its age.”

The Bicycle NSW submission considers the possible connections in discussion of the alignment and the stops.

ACKNOWLEDGEMENTS

Bicycle NSW thanks the many individuals and BUGs who have contributed to this submission, by riding along the corridor and making observations, commenting on sections of the EA extensive documentation, and their long-standing engagement with the many consultative processes entailed in bicycle planning by Councils, the RTA, Transport NSW, and Planning NSW.

We also thank the Project Manager, Trevor Newman and staff for conducting Community Information Sessions at the weekend, and the former Project Manager for conducting the Stakeholder Meeting with consultants.

This submission was largely prepared by Tony Arnold and Chloe Mason with considerable assistance from many members of BNSW.

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BNSW submission to the NSW Staysafe Committee's Inquiry into Vulnerable Road Users <http://www.bicyclensw.org.au/content/staysafe-inquiry-vulnerable-road-users>

Subject: Application reference number: MP 10_0111

Date: Monday, 15 November 2010 5:25 PM

From: Omar Khalifa <fforward@optusnet.com.au>

To: Omar Khalifa <omark@bicyclensw.org.au>

Feedback on the Environmental Assessment Inner West Light Rail Extension

Bicycle NSW appreciates the opportunity for giving feedback to this Project.

Please find attached our submission.

To assist our members and supporters, we shall publish this submission on our website.

If you would like further information on any aspect, please contact us.

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