North East Link
Cycling and Walking Infrastructure

Presentation to the IAC on NEL Environmental Effects Statement

Panel Hearing: 27 August 2019
Introduction
1. My submission to the North East Link EES relates to Bike Infrastructure, along the Eastern Freeway Corridor and the North East Link Corridor. It is anticipated that these corridors will be key Strategic Cycling Corridors following the review of the SCC Network.

The North East Link Authority is delivering worthwhile improvements, in some specific sections of the corridors, that will address ‘high stress’ / barriers to many cyclists. These include the North East Bike Corridor, Belford Rd, a direct route at Burke Rd, and underpasses at Lower Plenty Rd, and Grimshaw St. However the Reference Design retains a number of ‘high-stress’ sections; effectively the Reference Design Route is a series of disconnected sections.

Without a consistent ‘low-stress’ route (Victorian Cycling Strategy), the potential value to the community of the new bicycle infrastructure will be significantly compromised.

Accordingly my presentation focusses on improvements to bicycle infrastructure in both corridors that will deliver a consistent whole of route ‘low traffic - stress’ cycling conditions that will be attractive to the largest cohort of cyclists (the ‘interested but concerned’)

2. Victorian Cycling Strategy 2018 - 28

This new strategy is a major shift in Bike Strategies

The focus of this strategy is on:
‘increasing the number, frequency and diversity of Victorians cycling for transport by:
• investing in a safer, lower stress, better connected network, prioritising strategic cycling corridors
• making cycling a more inclusive experience’

3. People make their choice to cycle based on the highest level of traffic stress they expect to encounter. Hence in its Executive Summary the VCS states they ‘will provide a whole of route approach to reducing traffic stress’. Thus a high stress section of a route (which is otherwise low traffic stress) becomes a barrier to many cyclists.

4. Underpinning the Strategy is the recognition that people ‘can be grouped into four types according to their cycle attitudes and behaviours’ according to an American Study

   It is used to better understand people’s propensity to cycle and what can be done to encourage them.
5. The ‘interested but concerned’ group is the largest group (60% within a community)

The Victorian Cycling Strategy notes that investment in cycling infrastructure that makes cycling safer and lower stress for the interested but concerned, is worthwhile. and will have the best outcome of getting more people cycling.

6. Incorporate new cycling infrastructure in major transport projects

The Victorian Bicycle Strategy has a very clear message about the development of infrastructure:

‘The Victorian Government will continue to require high-quality cycling infrastructure as part of major transport projects. Government policy requires the needs of cyclists to be considered in the scoping stages of transport projects, including connections that cyclists may need to make outside the project area.’

(refer section 1.7 Victorian Cycling Strategy)

NELA has not, in many instances, made that consideration in their scoping of NEL.
5. The ‘interested but concerned’ group is the largest group (60% within a community)

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(refer section 1.7 Victorian Cycling Strategy)

NELA has not, in many instances, made that consideration in their scoping of NEL.
Whitehorse Cyclists is a club with around 320 members. The club runs about 20 rides a week, with rides ranging from Easy Rides (30-40km), medium and Hard Rides (around 80 to 100km).

Many of the Whitehorse Cyclists’ organised rides use the Koonung Trail, but will not cross directly at intersection because of perceived safety risks, and thus cross at the nearby Pedestrian Signals, south of Leonis Street.
Consideration of Traffic Stress at intersections and its impact on a cycling network

A typical city network of roads¹
These comprise local streets, and arterials with differing levels of stress for the cyclist

1. Maaza C Mekuria, Peter G Furth
   ‘Modeling and Evaluating Bicycle Networks Based on Traffic Stress and Origin-Destination Connectivity’
Consideration of Traffic Stress at intersections and its impact on a cycling network

Same network but showing only the ‘low traffic’ streets: It is no longer a network for most cyclists (ie the ‘interested but concerned’) - just a series of ‘disconnected islands’

Route Stress = Stress of its most stressful link

The Reference Design has these ‘gaps' in its route: they can be avoided and achieve a continuous low stress route

1. Maaza C Mekuria, Peter G Furth
   ‘Modeling and Evaluating Bicycle Networks Based on Traffic Stress and Origin-Destination Connectivity’
Consider the following figure: it shows a population catchment of 232,330 for the NEL Project (Population figures from 2016 Census)

If the bike infrastructure on the Eastern Fwy and NEL link corridors does NOT meet the needs of ‘Interested but concerned’ cyclist (ie the level of traffic stress is too high) then the effective catchment of these corridors is only around 18,500 people.

With the current Reference Design, it will only be attractive to about 12% of those who wish to cycle.

Has NELA with its Reference Design, delivered on providing continuous low - stress traffic routes in the Eastern and NEL Corridors?

NO - But it can be done.
Upgrade Koonung Trail - sth side to improve community access to BHMAC

Grade Separate Shared Path to reduce Traffic Stress, and provide pedestrian separation

Direct route to improve community connectivity and avoid 800 metre detour for pedestrians & cyclists

Shared Path Bridge & Shared Path on WEST side of Bulleen Rd

Re-aligned Shared Path on North side of Eastern Fwy: improve grades and community connectivity

Shared Bridge for Strategic Cycling Connection between Doncaster and Box Hill MAC

Gateway to Eastern Fwy and NELA Bike Corridors

Strategic connection to Anniversary Trail

Upgrade Koonung Trail - sth side to improve community access to BHMAC
Gateway to the Eastern Freeway and North East Link Cycling Corridors

**Dumped at Merri Creek**

The North East Link Project is delivering *some* significant bicycle and pedestrian infrastructure on the Eastern and North East Link corridors, at a significant cost. However cyclists are left *stranded with no appropriate connection* at its western end to major Strategic Connection Routes into inner city suburbs and the CBD.

The Eastern Freeway Cycling Route is designated a **Strategic Cycling Corridor**. The Proposal is to construct a wide, high level bridge over the Merri Creek. The Proposal would also widen the intersecting Merri Creek Trail (SCC) adjacent to Trenerry Crescent.

This proposal would provide a quality connection to the N-S Merri Creek Trail and enable the NEBC to connect Roseneath Street (and further to Wellington Street, inner city networks and into the CBD.)

Both these approaches to the Eastern Freeway Bike corridors are **significant SCC routes**; both are *substandard*.

This Gateway Connection is consistent with key principles of the Victorian Cycling Strategy - that seek to *join up important destinations; the central city, national employment and innovation clusters, major activity centres and other destinations of metropolitan and state significance. We will priorities strategic cycling corridors for investment to deliver safer and more direct cycling into and across Melbourne and Victoria*’ (See Pg 8; See also Pg 27 regarding Government’s policy re Scoping of Bike Infrastructure including connections outside the Project area)

The Gateway Connection is an integral part of the Strategic Cycling network, the most significant one from Eastern Suburbs, and makes economic sense to complete this project.

**This project should be constructed as part of the North East Link Project.**
Gateway and its connection to CBD and national innovation and employment centres
Comment regarding Parks Victoria (Submission -774)

Parks Victoria in their submission made the following comments in regard to Yarra Bend Park:

The *intersection and termination* of the cycleway with the existing Main Yarra Trail adjacent to Roseneath Street footbridge providing access across Merri Creek is of *concern*. Parks Victoria emphasises the prime purpose of the Main Yarra Trail is to facilitate a recreational shared use trail which connects areas within the parkland network. Given the merging of high speed transport cyclists with regular park users, cyclist and park user safety at this point will be at risk. It is highlighted that this is already a very popular area for off leash dog walking, families and recreational bike riding. The addition of a new stream of commuter cyclists will contribute additional pressure. Accordingly, the design of the connection will be critical in the safe integration and management of the two paths, and *ultimately the safe use of the bridge also*. Parks Victoria considers that an integrated active transport link needs to be identified and included as part of the project to ensure safe connectivity between the cycleway and active transport routes to the west through Clifton Hill.

Park Victoria’s concern can be readily addressed by the proposed high level bridge over Merri Creek: the direct intercept of the walking trail and the Strategic Cycling Corridor is *avoided*. The route then continues west along Roseneath Street. It will enhance the strategic objective for the development of Yarra Bend Park.

The City of Yarra makes a similar request for a positive connection to inner city cycling routes.
Strategic Connection to the Anniversary Trail

The Anniversary Trail is a key Strategic Cycling Connection in Melbourne’s Strategic Cycling Network. The Anniversary Trail links the Gardiners Creek Trail in Malvern (and nearby Chadstone Shopping Centre) to Fairfield, and further north to Northland Regional Shopping Centre and Latrobe University.

It is the longest north-south off road path in the eastern suburbs and can therefore achieve a significant increase in the number of cyclists riding for transportation - provided the key discontinuity/barrier across the Eastern Freeway is upgraded to achieve a Low Traffic Stress route that will enable all types of cyclists to cross (particularly the 60% ‘interested but concerned’).
Strategic Connection to the Anniversary Trail

You’ve got to be kidding!
A likely response for many cyclists wanting to cross the Eastern Freeway. Cyclists have to use on-road bicycle lanes, or narrow footpaths, and cross high speed turning traffic onto the freeway in order to cross the Eastern Freeway. This is a high traffic stress route.

That means that only the ‘strong and the fearless’ will cross the freeway. The bulk of cyclists, the ‘interested but concerned’ are most unlikely to cross the freeway. It means the numbers of cyclists accessing the North East Bike Connection along Eastern freeway will be substantially lower.

The figures to the right represent a population catchment of 590,000 people, of which 400,000 are potential cyclists to cross the Eastern Fwy.

Only the ‘strong and the fearless’ would be prepared to ride on the Chandler Hwy across the freeway ie around 6000 people.

The Proposal is build a separate SUP bridge/underpass of the Eastern Freeway.

There would be significant upside in cycling numbers that would cross over the Eastern Freeway and use the NEBC/Eastern Freeway SCC, with this proposal.
Strategic Connection to Anniversary Trail

The Proposal: A SUP bridge/underpass to provide a ‘low stress’ crossing of the Eastern Freeway.

It will greatly improve community connectivity over the Yarra River and Eastern Freeway, which currently present as barriers to many.
It will significantly improve cycling numbers
It is consistent with government goals for cycling to connect missing links in Strategic Cycling Corridors with low traffic stress and direct routes

This is a project that deserves to be part of the North East Link Project.
It is a 'once in a lifetime opportunity for construction of this link, simply because it can be done in conjunction with other major project works on the freeway.
It is also within the Project Boundary - Surface Works.

Three disconnected routes:
- Anniversary Trail south of Eastern Freeway
- Eastern Bike Corridor
- Anniversary Trail (& Darebin Trail) north
A new Shared Path on the North side of Eastern Freeway: Reduce Stress and provide better community connectivity

The existing shared path on the southern side of the Eastern Freeway has grades in excess of 10% to the west of Bulleen Road; not only stressful, but a barrier for many cyclists and walkers.

The proposed Shared Path would be located on the north side of Eastern Freeway adjacent to the bus expressway from Burke Rd to go under the Freeway Golf Links bridge and Bulleen Road. East of Bulleen Road it would continue though to the Shared Path replacement bridge across Eastern Freeway at Estelle Street. An elevated crossing of Thompson can be achieved by the shared path ramping up to the North to East bound vehicle ramp from North East Link to the Eastern Fwy.

The SUP Proposal achieves much flatter grades; it is essentially at freeway level compared to the southern route which climbs 15m, and thus will appeal to more cyclists.

It achieves grade separation for the whole of Main Yarra Trail/Koonung Creek Trail from Collingwood to Ringwood.

It also achieves a more direct route to/from the Shared Path along Bulleen Rd; much better connectivity to playing fields, schools, to homes in Bulleen and to the Bulleen Park and Ride.

It thus needs be included as part of the North East Link Project (this Proposal falls within the Project Boundary - surface works)

Connections of path to Bulleen Rd path via widened interchange ramps - details not shown
A new Shared Path on the North side of Eastern Freeway: 
Reduce Stress and improve community connectivity

Existing Conditions looking east towards the Freeway Golf Cub Bridge over Eastern Freeway

The benched embankment provides an opportunity for the Northern Alignment Shared Path to run along in front of the piers for the Freeway Golf Cub Bridge; it DOES NOT impinge on the Bus Expressway (see next page)
A new Shared Path on the North side of Eastern Freeway: Under Freeway Golf Links Access Bridge

The Freeway Golf Links Bridge overpasses part of the Eastern Freeway interchange. Notwithstanding the constrained area, there are a range of options that can enable the Shared Path to pass under the bridge - three are shown in the diagram above. (These options are NOT considered to be the only options.)

This Proposal can be constructed within the Project Boundary - Surface Works. It will not impact further on the Freeway Golf Links.
**Existing Koonung Trail on the south side of Eastern Freeway**
Photo shows the existing Koonung Trail approaching Bulleen Road from the east.

The NEL Reference Design proposes the SUP exits the path at this point to go down the narrow laneway to Highview Road. (rear side of Bellevue Primary School)

This entrance/exit point currently has very poor sight distance.

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**Heading down a ‘Dark Alley’**

The Reference Design proposes a SUP underpass of Bulleen Road, via an indirect route under freeway ramps and under Bulleen Road.
**Heading down a ‘Dark Alley’**

The Reference Design proposes a SUP underpass of Bulleen Road, via an indirect route under freeway ramps and under Bulleen Road.

**Koonung Trail on the south side of Eastern Freeway**

Photo has been edited to show proposed 9m sound walls.

The height of the walls will significantly increase cyclist and walkers concerns about personal safety in this narrow alley.

**Note:** The sound walls are key to improving future amenity to local residents and should be implemented.
Proposed 9m high sound walls

Very poor sight lines to pedestrians and cyclists on Koonung Trail

‘The Dark Alley’: poor personal amenity behind 9m sound walls
**REFERENCE DESIGN:**
- Very limited sight distance at entrance with Koonung Trail
- ‘Dark Alley’ - poor personal amenity
- Indirect
- No direct link to NEL Shared Path along Bulleen Rd (east side)

**Conclusion:** High Stress, and little value to most cyclists

**ALTERNATE - PC DESIGN:**
- Direct route with good sight-lines
- Maintains traffic capacity
- No impact on Bellevue Primary School
- Will provide DIRECT connection to Alt - PC Bridge West side

**Conclusion:** Low Stress, will appeal to ALL cyclists/peds
Major Growth Centres ‘left hanging’ - NEL will isolate cyclists and pedestrians

A Shared Path Bridge for the Strategic Cycling Corridor:
Doncaster Hill (Shoppingtown) to Box Hill Metropolitan Activity Centre

NELA has not proposed any bike infrastructure to connect to these significant regional Centres (contrary to clear principles espoused in Victorian Cycling Strategy 2018-28.)

Shoppingtown and Box Hill MAC are linked by a proposed Strategic Cycling Corridor (that extends further south to Gardiners Creek Trail)

Both centres represent the biggest growth areas in the eastern suburbs.

Doncaster Hill’s population is projected to grow 135% between 2019 & 2036, from 4,826 to 11,339 (cf to City of Manningham’s av. pop growth of 15%)

Box Hill MAC’s population is projected to grow 87% between 2019 & 2036, from 7679 to 14,379 (cf to the City of Whitehorse av. pop growth of 16%)

It is not just population that will increase; it is also employment. Both centres will also become major employment hubs. Box Hill Medical Precinct is also envisaged to become one of Melbourne’s largest medical areas.

This proposal seeks the construction of a Shared Path bridge across Eastern Freeway as part of the North East Link Project, to enable the development of a SCC.
Yet NELA’s own traffic analysis reflect the significant importance of these two areas, which show projected traffic volumes on the Eastern Freeway decreasing significantly east of Tram Road/Station Street.

Transport modelling shows significantly extra trip demand generated by the above developments and the construction of the North East Link. Traffic demand projected for Elgar Road and Station Street will be substantially constrained by limitations for further capacity improvements on these roads.

Both Elgar Road and Tram Road will also have to provide improved public transport (ie bus) capability between these two centres. It becomes imperative to ensure that Active Transport, for cycling and walking, is also provided and substantially upgraded.

The City of Whitehorse is developing proposals for the Strategic Cycling Corridor and it is understood that Manningham will also undertake more detailed investigations.

The existing footpaths on the Tram Road Bridge overpass of Eastern Freeway are substandard in width (similar to Bulleen Road overpass where this is recognised and a separate Shared Path bridge over Eastern Freeway is proposed) and, like Bulleen Road overpass, these footpaths cannot be further widened.

This proposal seeks the construction of a Shared Path Bridge across Eastern Freeway as part of the North East Link Project, to enable the development of a SCC. It is within the Project Boundary.

(Five SUP bridges across the Eastern Freeway, linking communities, are being replaced and upgraded- mainly because of widening the Eastern Freeway. None have the strategic importance of this proposal)

The NEL Project is the only realistic time that a new Shared Path Bridge can be constructed - it is a ‘once in a lifetime’ opportunity. Failure to construct this bridge, would leave a gap in the Strategic Cycling Corridor contrary to the aims of Government policy.

It is fundamental to Government’s policy for Strategic Cycling Corridors to provide a whole of route Low Traffic Stress environment that enhances greater numbers of people cycling for transport.

It is vital that the proposed Shared Path Bridge be included as part of the North East Link Project.
Upgrade the Koonung Trail on the south side of Eastern Freeway
Middleborough Rd to Park Rd

Both Box Hill MAC and Ringwood MAC will develop significantly, with increased employment. Because of the constraint in road capacity in the vicinity of these centres, cycling and public transport will take the predominant role for trips.

The proposal involves upgrading the current paths, largely unpaved, on the south side of the freeway and constructing underpasses at major arterial roads to provide a ‘Continuous Low Traffic Stress’ route, improve safety and reduce delays.

This project should thus be included as part of the North East Link Project. The Proposed Project is within the Project Boundary (except for the section east of Park Road)
Crossing Eastern Freeway at Bulleen Rd (from south to north)
Existing today - but same outcome with Reference Design SUP Bridge

Takes 4 signal phases and more than 4 minutes for pedestrians and cyclists to cross!

A ‘High Traffic Stress’ crossing of a complex intersection
Delays - risk that cyclist will not wait for traffic signals
Note: Small ‘splitter islands’ – thus insufficient storage space for waiting pedestrians and cyclists
References Design
Provides a separate Shared Path Bridge on the East side of Bulleen Rd Bridge; BUT:
- Pedestrians and cyclists will still have to cross the complex ramp intersections.
- Involves significant delays (some may disregard signals)
- Safety risk (real and perceived)

This is a ‘high stress’ location. The 60% ‘interested but concerned’ cyclist would not use this.
(My own experience and I consider myself to be in the 7% ‘enthused and confident’ group, is that I found it most daunting crossing the intersections as proposed. I decided that I would prefer to ride on the road).

What the Reference Design provides, is simply a wider footpath (3m on the new bridge, compared to a 2.3 m clear width. That does NOT reduce traffic stress! Refer to Page 5 for actual example traffic stress with Whitehorse Cyclists

Conclusion: Around a minimum $3-4 million for a bridge that does not solve a ‘high traffic stress’ problem.
It is a waste of money

Alternative - PC Design
The proposed bridge would be a shallow deck beam design, and ramps (<5%) leading back to an underpass of the exit/entry ramps.
- pedestrians and cyclists have no at-grade road crossings
- the section of the route across the Eastern Freeway is ‘Low Stress’
- the proposal would be attractive to all groups of cyclists
- more cyclists would ride (subject to the whole route being low stress)
- better connection to Bulleen Park & Ride, Sports ovals and Schools

Conclusion
A stress free proposal - big value for money
NELA Reference Design - SUP on East Side of Bulleen Rd

Golden Way Traffic Signals: significant delays to peds/bikes

Trinity sports fields; bus access students

Marcellin College 1430 students (75% buses from Heidelberg RS & local areas)

Veneto Cub (approx 900 parents and children attend soccer/week)

Carey Sports Fields students bussed

See next page regarding issues with ‘Reference Design for Shared Path’ on east side of Bulleen Road
NELA Reference Design: Shared Footpath east side of Bulleen Road

Major issues:

2. Intersection is complex, with splitter islands (the NE island is very small Refer Map Book Sheet 22) Turning lanes are free flowing. The design for widening for this intersection treatment is likely to minimise the N-S footpath widths leading to cross-walks to less than 3m for a SUP, (unless acquisition from Marcellin). This is NOT a cycle/pedestrian friendly intersection. It is ‘high stress’ and thus will be a barrier for the ‘interested but concerned cyclist’. Q. Has a functional design for intersection been done? Will the SUP width have a minimum width of 3m through the intersection?

3. Traffic Signals at Crema Drive. This becomes the major access to Carey Sport Fields/Veneto Club. Cyclists will experience increased safety issues & delays. Shared Path must not be less than 3m in width (including clearances to signal hardware and signs) Note Carey Submission 453 seeks ‘double right’ from north approach Q. Has a functional design for intersection been done? Will the SUP width have a minimum width of 3m through the intersection?

4. Current Trinity intersection has a footpath width less than 1 m; the minimum width must be 3m for Shared Path at the crossing

5. The intersection at Olympic Way is downstream of ‘Y’ intersection of Bulleen and NEL off ramp. Given that both these roads will have high traffic flows, any pedestrian or cycle demand at Golden Way will impede either Bulleen Rd or Ramp flow. It is effectively the controlling intersection. Pedestrians and cyclists will experience long delays.

Conclusion
The Shared Path route on the east side of Bulleen Road, is not a ‘fit for purpose’ route; it is effectively a series of disconnected sections because of ‘high stress’. It will be a barrier to many cyclists. Most probably, only the ‘strong and fearless’ (1%) and some ‘enthusied and confident’ (7%) will ride, and many of these will instead use the bike lanes along Bulleen Road.
NELA Reference Design Alternative (Bulleen Rd ‘switch’) east side

Golden Way Traffic Signals: significant delays to peds/bikes

Trinity sports fields; bus access students

Marcellin College 1250 students (buses from Heidelberg RS)

Veneto Cub (approx 900 parents and children attend soccer /week)

Carey Sports Fields students bussed

See next page regarding issues with ‘Reference Design Alternative (Bulleen Rd ‘Switch’) for Shared Path’
Reference Design Alternative (Bulleen Rd ‘switch’)

Major issues (similar to Reference Design SUP east side):

2. Marcellin College entrance (relocated northwards) Intersection is complex, with splitter islands (the NE island is very small Refer Map book Sheet 22) This treatment apparently involves acquisition from Marcellin. Turning lanes are free flowing. The design for widening for this intersection treatment is likely to minimise the N-S footpath widths leading to cross-walks to less than 3m for a SUP, Note Carey Submission 453 seeks ‘double right’ from north approach. This is NOT a cycle/pedestrian friendly intersection. It is ‘high stress’ and thus will be a barrier for the ‘interested but concerned cyclist’. Q. 1. Has a functional design for intersection been done? Will the SUP width have a minimum width of 3m through the intersection? 2. Will on road bike lanes continue up/& thru intersection?

3. Veneto/Trinity Sports Fields Entrance (Traffic Signals) Cyclists will experience increased safety issues & delays. Similar problems with splitter islands for pedestrians and cyclists. Shared Path must not be less than 3m in width (including clearances to signal hardware and signs) Note Carey Submission Q. 1. Has a functional design for intersection been done? Will the SUP width have a minimum width of 3m through the intersection? 2. Will on road bike lanes continue up/& thru intersection?

4. The intersection at Olympic Way is downstream of ‘Y’ intersection of Bulleen and NEL off ramp. Given that both these roads will have high traffic flows, any pedestrian or cycle demand at Golden Way will impede either Bulleen Rd or Ramp flow. It is effectively the controlling intersection. Pedestrians and cyclists will experience long delays.

Conclusion

Similar conclusion as per Reference Design SUP.
The SUP is not a ‘fit for purpose’ route;
it is discontinuous, it is ‘high stress’ for the 60% ‘interested but concerned’ cyclist, and they will not ride;
It will NOT increase cyclist numbers.
**Key Features**

1. SUP Bridge on West side of Bulleen Rd; Links to ramp underpasses. NO intersections to cross; it is a ‘low stress’ crossing over Eastern Freeway. See Slide 27. SUP Bridge will also connect to Park and Ride.

2. Underpass of access road into Carey Sports Complex and Veneto Club.

3. Threshold treatment across Ilma Court entrance.

4. The median of Bulleen Rd would be partly narrowed, over a distance of 600m north from Veneto Club, and the western footpath reserve increased to a width of 5 m to provide SUP. (See Page 34) There is no impact on Bolin Bolin Billabong.

5. Access to Marcellin and Trinity sport fields via traffic signals.


7. NOTE: SUP underpass/overpass of Thompson Rd to avoid ‘high traffic stress’ complex traffic signal crossing to Koonung Trail (east).
Alternative Design - PC (Bulleen Rd ‘switch’) West Side

Key Features

1. SUP Bridge on West side of Bulleen Rd; Links to ramp underpasses. NO intersections to cross; it is a ‘low stress’ crossing over Eastern Freeway. See Slide 27 SUP Bridge will also connect to Park and Ride
2. Underpass of access road into Carey Sports Complex.
3. Underpass of the entrance into Veneto Club, while maintaining at-grade pedestrian access into Veneto for Pedestrians (there are different ways that this could be achieved and requires functional design)
4. Threshold treatment across Ilma Court entrance
5. The median of Bulleen Rd would be partly narrowed, over a distance of 600m north from Veneto Club, and the western footpath reserve increased to a width of 5 m to provide SUP. (See Page 34) There is no impact on Bolin Bolin Billabong.
6. NOTE: SUP underpass/overpass of Thompson Rd to avoid ‘high traffic stress’ complex traffic signal crossing to Koonung Trail (east)
Provide Shared Path on west side of Bulleen Road, by narrowing median from 5.2 m to 3.2 m (Traffic lane widths remain the same)

There is NO impact on abutting land uses

Footpath reserve widened to 5 m by narrowing central median

Bulleen Rd Alternate Design - PC: Shared Footpath West side
How a SUP can be provided

Bulleen Rd - nr Veneto Club: Modified cross-section
The Direct Path (PC) proposes a SUP underpass of Manningham Road to Banksia Park. This would give a much safer and more direct crossing for walkers and cyclists, of the various roadways, and without the delays associated with a complex traffic intersection. This would greatly enhance the number of active transport trips into Banksia Park.

Banksia Park includes the renowned Heidi Gallery, which receives around 120,000 visitors/year.
NOTE 1. A SUP bridge over the Yarra River would need to be located adjacent to Pipe Bridge, and would require removal of a number of mature gums.

NOTE 2. The SUP currently crosses the entrance roads into ‘The Greenery’, where there is a high safety risk from free-flowing left turn vehicles, and right turn vehicles from Banksia St (turning from E to N).

Neither of the two NELA options (Opt A & B) were preferred to the Direct Route (refer next slide), by CTDG members during a site visit June 2018.

Option A: SUP to cross Yarra R opposite Yarra St; Option B connects to existing path. Both involve 800m extra distance cf to Direct Path.
North East Link Corridor - Section Manningham Road to Rivergum Walk

A Direct Path through Banksia Park (Yellow route)

NELA Reference
Design
2.8 km

Alternate Route:
Direct Route
2 km

Minor Impact on trees

Significant Impact on mature trees

Underpass Manningham Rd

Approx location for Shared Path bridge (37°54.2463’S 145°4.7379’E)

Much of the Direct Route in Banksia Park would use local access roads and existing shared paths
A Direct Route: Delivering benefits to the Community: Walking

**Walking**
Approx 10,200 people live in the Viewbank area shown (2016 Census data)

Yet Banksia Park is effectively inaccessible to most of these residents, other than to drive via Banksia St and Templestowe Road.

The proposed Direct Route Bridge means:
- Walking access, within 7 minutes to 40 minutes, to Banksia Park. Banksia Park offers:
  - Heidi Gallery and Cafe
  - Walking Trails
  - Fenced Dog off-lead area
- The proposed Direct Route underpass of Manningham would greatly expand walking opportunities:
  - Bolin Bolin billabong
  - Bulleen Sports Fields
  - with further path development (along the east side of Yarra river), to Burke Road bridge (about 4.5 km from the Direct Route Bridge)
The *Victorian Cycling Strategy 2018-28* emphasises that bike routes and particularly Strategic Cycling Corridors must be direct.

The Reference Design means an extra 800 m in travel compared to the Alternative Direct Path. Thus, a bike trip from Watsonia to Manningham Road, via the Reference Design represents nearly a 25% increase in distance which is the **LIMIT** that cyclists are prepared to take (otherwise they don’t make the trip or use another mode, Likewise trips from the south in Bulleen Road (eg Marcellin College to Viewbank and further north) would consider alternative modes.

It means that NELA’s route fo the Strategic Cycling Corridor will **NOT achieve its full potential**.

The Strategy also states that the priority for investment should be on Strategic Networks. Strategic Cycling Corridors ‘are the arterials of the cycling networks which joins up important destinations: the central city, national employment and innovation clusters, major activity centres and other destinations of metropolitan or state significance.’

In the North East Link corridor, the Strategic Cycling Corridor must be one that is direct. It is the route that is the arterial route in the cycling network, and to which local cycling networks then connect **rather than the other way around**.

Both Banyule and Manningham have Bicycle Strategies for the development of their local cycling networks; each recognise the need for local networks to connect across their boundaries.

What the Reference Design is doing is provide a connection of local networks from Banyule to Manningham, It **should** be creating a Strategic Cycling Corridor following the principles of Victorian Cycling Strategy. The Strategic Cycling Corridor Route is not subservient to a local network; the SCC must have **priority in planning** to ensure a **direct route** is achieved. It is no different to the principles of planning a freeway route!
North East Link Corridor - Section Manningham Road to Rivergum Walk
A Direct Path through Banksia Park (Yellow route)

And a significant comment and recommendation from Heide (Submission 643)

The North East Link presents an unprecedented opportunity to improve access to Heide and the surrounding cultural precinct. It is critical that both Heide’s needs and those of the broader precinct are addressed appropriately. Failure to do this has the potential to leave Heide geographically isolated and difficult to access. This will have devastating implications for not only the museum’s financial sustainability but also for continued community and tourist engagement with the precinct.

Parks Victoria makes a similar request for improved access (Submission 774)

The Direct Route, with its proposed bridge over the Yarra River at the northern end of Banksia Park, and the underpass of Manningham Rd (bypassing the challenging walking and cycling environment of the interchange) does achieve that objective.

Summary:
• The Alternative Direct Route eliminates an 800m detour and saves time
• It significantly improves accessibility for people living to the north of Banksia Park, to Heide Gallery and Banksia Park
• It expands and improves the walking network for local communities and visitors.
• The new shared Path Bridge across the Yarra River at the northern end of Banksia Park would have a minor impact on trees compared to the Reference Design Bridge near Yarra St, and would cost less.

Furthermore the proposed underpass of Manningham Rd addresses major concerns expressed by MCC and BBWC Experts concerning pedestrian movements around the Manningham I/C, particularly leading to the Templestowe Road SUP

This project should be implemented as part of the NEL Project. (The bridge opposite Yarra Street should be considered for funding as a Complementary Project, as it primarily seeks to link local bike networks of Banyule and Manningham.)
Key Features

1. SUP Underpass of Drysdale St (either as separate culvert or ‘shoulder trench treatment - see next page). NO intersection to cross; it is a ‘low stress’ crossing.

2. Underpass of a complex ramp intersection with splitter islands and free-flow turning traffic lanes. This is ‘high traffic stress’. The underpass treatment is a low stress alternative. It is ‘shoulder trench’ solution with a propped roadway above - see Slide 43

3. Continuous shoulder trench underpass of both Blamey Rd and Yallambie Rd intersections. It will also achieve grades for the Shared Path <5% compared to 8% at nature surface. See Slide 44

These proposals provide a low traffic stress route for the section from Lwr Plenty Road to Watsonia. They are within the Project Boundary
North East Link Corridor : Reference Design - Lwr Plenty Road to Grimshaw St
Alternative Design - PC for Drysdale St:
A Low Traffic Stress Route by providing underpass

**Drysdale Street:** There are two possible alignments for the Shared Path; two options for an underpass are shown.

*Option of Shared Path in ‘shoulder’ trench (protection fencing not shown)*

Separate footpath access to natural surface would be provided at intersections - to enable cyclists and walkers to access local streets.

These options are a Low Traffic Stress Alternative to the Reference Design. They are within the Project Boundary.
North East Link Corridor: Section Lwr Plenty Road to Grimshaw St
Alternative Design - PC at Freeway Ramp Intersection
Opposite Strathallan Road:
A Low Traffic Stress Route by providing underpasses

There are many examples in Europe where structures are designed for a ‘overhead’ load. The left photo shows a promenade/roadway in San Sebastian, Spain, whereas the right photo is of an avalanche/snow shelter in the Pyrenees.
An underpass of the Freeway ramp intersection can be constructed using similar approaches as indicated in the concept design below.
An underpass would significantly remove the level of Traffic Stress that would be experienced in the Reference Design.
Between Blamey Road and Yallambie Road, the natural surface rises steeply (6-8%) than flattens. The **Alternative Design** - **PC** underpass would grade under Blamey Rd adjacent to the depressed NEL, then ‘pop out’ to natural surface north of Yallambique Rd as the ground flattens.

A **Shared Path** underpass provides a Low Traffic Stress crossing and will reduce the grades compared to a path at Natural Surface.  
This proposal is within the Project Boundary.
Key Features

1. SUP Underpass of Drysdale St (either as separate culvert or ‘shoulder trench treatment - see page 42). NO intersection to cross; it is a ‘low stress’ crossing.

2. Continuous shoulder trench underpass of both Blamey Rd and Yallambie Rd intersections. It will also achieve grades for the Shared Path<5% compared to 8% at nature surface. See Slide 44.

These proposals provide a low traffic stress route for the section from Lwr Plenty Road to Watsonia. It is within the Project Boundary.
North East Link Corridor : Manningham Road and Bulleen Road
Delivering improvements for Buses and Cyclists

**Bicycle Lanes**: Existing ‘on road’ bike lanes in Bulleen Rd terminate (and start) south of Golden Way.

**Bus Lane**: The existing west bound Bus Lane in Manningham Rd terminate to the east of Bulleen Road. (Likewise the east bnd. lane starts east of Manningham Road.

Restrictions on bus and bike lanes occurred in the original layout because there wasn’t enough road space to share, with constraints of abutting land use.

With property acquisition for the Manningham Rd interchange, there is now more land available to widen both roads to provide for these road users, to **enhance their operation and safety**.

**PROPOSAL**

**Bicycle Lanes**: Extend ‘on road’ bike lanes in Bulleen Rd to Templestowe Road (as shown green)

**Bus Lane**: Extend bus lane along Manningham Road both sides (as shown brown) from Bulleen Rd to Lwr Heidelberg Road

**Justification and Benefits**

Bicycle Lanes Both Bulleen Road and Manningham Road form part of the Principal Bicycle Network. In a ‘green field’ site, bike lanes would have been continued thru the intersection. The NEL project has created that green field. Bike lanes will increase safety for bike users in travelling through the intersection. Vehicle users benefit from having defined vehicle paths (cars or bikes) clearly identified. Safer routes will encourage more riding.

Bus Lanes: Manningham Rd is the route for one of PTV’s highest patronised service; the ‘903’ bus. Bus lanes will enhance services by maintaining scheduled times. If the bus lane cannot be provided then an on-road bike lane can be implemented.

Bikes can safely share bus lanes which will improve safety for them and thus encourage further cycling.

NB Both Bulleen Rd and Manningham Rd serve completely different trips than the NEL Strategic Cycling Corridor bike route.
Comment on NELA’s Expert Witness Assessment of Active Transport Projects

Mr John Kiriakidis has been engaged by North East Link Authority as an expert witness and has prepared a report ‘Traffic and Transport Review’ of submissions in respect to Traffic and Transport documents in the EES.

As part of that review Mr Kiriakidis has advised that he has commented on Active Transport submissions.

Any casual reading of the Victorian Cycling Strategy would readily identify that its key focus is:

- cycling infrastructure needs to contribute to a safer, lower stress network and better connected network.
- that routes need to be continuous low stress; a route is only as good as the highest stress element within it
- people can be grouped into four types according to their cycling attitudes and behaviours; the largest group is the ‘interested but concerned’ (60% of people)
- that the priority for investment is on Strategic Cycling Corridors

Importantly what the Strategy recognises is that gaps in the network (SCC or others) **can actually be ‘high stress’ sections** that exclude significant number of cyclists. It is NOT just physical gaps in a route.

However the above key principles of the Victorian Cycling Strategy have NOT been embraced as part of the evaluation and assessment review of proposals by Mr Kiriakidis.

The key determination principle, used by Mr Kiriakidis, of assessing the various proposals submitted is whether ‘the proposed project or amendment addresses a gap in the SCC’ (Page 178), and generally if that proposal is within the project boundary. Fundamentally, it does not evaluate the Reference Design treatments and alternative proposals in **terms of stress** that the cyclist is likely to experience.

Critically the Victorian Cycling Strategy states: **Government policy requires the needs of cyclists to be considered early in the scoping stages of transport projects, including connections cyclists may need to make outside the project area.** (Refer Section 1.7, Page 26)

**I consider that the analysis and evaluation of Active Transport Proposals presented in the ‘Traffic and Transport Review’ is significantly flawed, it is inconsistent, and contrary to Government Policy; and the results should not be used as basis for the IAC considerations.**
Conclusion:

This presentation to the EES Panel is about developing and delivering high quality Bicycle Infrastructure as part of the North East Link Project, a benchmark for future bicycle infrastructure. It focuses on the core elements of the bicycle networks, the Strategic Cycling Corridors, which, in this Project, are the Eastern Freeway Corridor and the North East Link Corridor.

High quality is not about an aim of spending a certain amount of money; its about achieving outcomes. And that outcome is to get a lot more people cycling.

The Victorian Cycling Strategy 2018 recognises that there are four types of cyclists and that the biggest group in a community is the ‘interested but concerned’ cyclists. This group constitutes 60% of the community. Importantly the Strategy recognises that ‘people make their choice to cycle based on the higher level of traffic stress they expect to encounter on route. If a section of a route is high-stress then many people(particularly interested but concerned people) will decide not to cycle’.

The various proposed projects embrace fundamental objectives of the Victorian Cycling Strategy:
- to provide a continuous Low Traffic Stress route along Eastern Freeway and North East Link corridors
- to provide Low Traffic Stress inter -connections of adjacent Strategic Cycling Corridors to the NEL Strategic Corridors

The Reference Design, particularly in the North EastLink Corridor, does not provide continuous Low Stress Routes. While it includes underpasses at Lwr. Plenty Rd and Grimshaw Street, it adds a number of additional traffic signals which are complex and a barrier to many. Because of this, it represents only a modest improvement to the existing route.

The focus on implementing Low Traffic Stress routes is imperative: Low Traffic Stress routes attract the largest cohort of potential cyclists (60%) the ‘interested but concerned’ This report identifies that without having continuous Low Stress Routes, the catchment of potential cyclists for the NEL projects, maybe less than 20,000 cyclists, or 12% of potential cyclists.

Implementing Low Traffic Stress routes proposed in this report increases the potential catchment to 160,000 cyclists.

Implementing the proposed will involve some additional cost, but for that additional amount, the outcome is huge in terms of getting more people cycling. (Many of the proposals are alternatives to the Reference Design and would be of a similar cost)

It is recommended that all the listed projects of this report are included as part of the North East Link Project

Peter Carter B.Eng (Civil)
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Member of Boroondara Bicycle User Group (BBUG)
Member of Whitehorse Active Transport Action Group (WATAG)