Mike Turtur Bikeway Overpass Project Community Reference Group Report

Purpose

- This document provides an overview of the Mike Turtur Bikeway Overpass (MTBO) project Community Reference Group (CRG) process and a summary of the insights shared by CRG members.

Background

- The CRG was formed in May 2022 to provide a forum for discussion and exchange of information about the MTBO project. The CRG was formed in response to community feedback and concerns related to the 'initial design' presented in late 2021/ early 2022.
- Twelve CRG members (see Attachment A) were selected in accordance with the Terms of Reference. The Terms of Reference is available to be viewed on the PTP Alliance website. The Terms of Reference for the CRG were based on other CRG's used on other Department for Infrastructure and Transport projects.
- The CRG meetings were facilitated by an Independent Chairperson, Mark Douglas from Ethos Consulting.
- Five CRG meetings were held between May and August 2022 (see Attachment B for a summary of the meetings). Members were also provided with the opportunity to attend a site walk with the PTP Alliance General Manager during June 2022 to understand the site constraints and project considerations.

Project objectives

- The following project objectives were communicated to members:
    - Improved connectivity for pedestrians and cyclists across the rail corridor at Goodwood Railway Station.
    - Improved access and accessibility to Goodwood Railway Station, with:
        - all paths and walkways for the project required to be Disability Discrimination Act (DDA) compliant; and
        - all ramps and platform accessways required to be compliant with Disability Standards for Accessible Public Transport (DSAPT).
- Throughout the CRG process, members were encouraged to consider other potential options to deliver these objectives.

Design guidelines review

- CRG members from Friends of Forestville Reserve Inc. presented a set of design principles at CRG meeting 1 for discussion and review by the group.

- At meeting 2 the PTP Alliance shared the Design Principles used by the project team to guide the project design, based on the requirements of the Office of Design and Architecture SA (ODASA).
- In response to member interest, feedback was sought on these principles and they were updated to reflect the group feedback and achieved broad endorsement.
- An alternative set of principles was proposed again for endorsement by some CRG members from the Friends of Forestville Reserve Inc.
- Following some refinements to align between documents, these latter principles were accepted by the PTP Alliance as having the same intent as those used by the PTP Alliance. These were considered as CRG Design Principles (refer Attachment D) for reference in the CRG scoring (red/amber/green) process that would later be carried out.

New potential option generation process

- The CRG commenced with the intent of starting with a 'blank slate' and exploring what other options could be considered to achieve the project objectives. This included exploring different underpass and overpass solutions, as well as the location of potential structures and at-grade options. This process led to a number of options being raised by CRG members for consideration. Work was undertaken by the PTP Alliance team in between meetings to create simple design imagery of the new options raised for review by the CRG.

CRG members and project staff at a CRG meeting

Designs considered

- As part of the CRG process, 13 new options were raised and investigated. Some options were requested by CRG members, and some were created by the PTP Alliance in response to CRG members' questions and concerns. It was communicated to the CRG that these options may not be able to be delivered for a range of reasons including budget, constructability, rail disruption, key stakeholder feedback or other reasons.
- Options of local upgrades were also discussed. As these did not meet all project objectives, they were not considered as part of the options scoring but the local upgrade options discussed are included in the local upgrades section of this report.

- Following a request from some CRG members, the 'initial design' concept presented to community in late 2021/ early 2022 was also presented to the CRG in meeting 3. The proposed landscaping and some artist impressions of this initial design was also shared.
- The new options shared were high-level concepts only, that had not had any form of robust budget, rail or construction assessments undertaken. At the time of these options being discussed at CRG meetings, it was unknown whether any of these new options could be delivered within the approved budget. A cost analysis was not provided due to time and cost involved to develop for 13 designs. PTP Alliance did provide indications of what designs would be unlikely to be delivered within the current budget, based on similar current interstate projects.
- Due to the high-level nature of the options discussed and number of options generated, other technical assessments and detailed design aspects were not undertaken, as part of this process. These aspects include detailed considerations of rail and construction impacts, over-shadowing impacts, a formal vegetation survey on the southern side (including identification of specific trees that would be impacted) exact lift locations and exact path widths. While there was discussion in meetings on these matters, no formal assessments have been undertaken.

Review Process

- In meetings 2, 3 and 4 members worked in small groups to do a high-level brainstorm of the benefits and limitations of the new options developed. Members were encouraged to reflect on these options not only from the point of view of their needs but also the needs of other user groups. Each "user group" then shared their feedback and reflections with the wider group.
- As a result of this brainstorm, seven new options were ruled out as they were deemed not suitable by all CRG members for either one or more of the following reasons:
    - they did not meet the project objectives;
    - there was a technical engineering reason for them being not viable;
    - there was broad consensus across the group that there was significant community impacts.
- All options that were ruled out were agreed to by all members. Options that had any level of support within the group were kept in the scoring process.
- A summary of the options considered, and which ones were ruled out by the CRG, is outlined below.
- The seven remaining options formed the 'consolidated list' of potential new options. These options are provided for reference at Attachment C.
- Members were asked to assume all options could have the same number of elevators (four), have the same width ramps and that the detailed design would look at exact location of the bridge section (over the rail) moving closer to the tram line, on the northern overpass options.

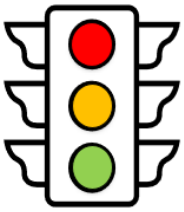
New potential option	Ruled out by CRG	Outcome determined by CRG
level crossing north of the station platforms	Yes	Due to safety concerns, amount of time the gates would be closed and State and National policy to remove level crossings

New potential option	Ruled out by CRG	Outcome determined by CRG
level crossing south of the station platforms	Yes	Due to safety concerns, amount of time gates would be closed and State and National policy to remove level crossings
upgrade of the existing underpass	Yes	Due to rail disruption, lack of DDA compliant access to the station, therefore not meeting project objectives, and cost anticipated to be the same as building a new underpass
new underpass in the existing underpass location with straight ramps	Yes	Due to impacts to the reserve, rail disruption and lack of DDA compliant access to the station, therefore not meeting project objectives
new underpass in the existing underpass location switchback ramps	Yes	Due to rail disruption, lack of DDA compliant access to the station and switchback ramps being unsuitable for cyclists, therefore not meeting project objectives
new underpass at the northern end of the station platforms	Yes	Due to lack of space on the platforms for elevators and increased detour for pedestrians and cyclists (Named 'Option 1')
new underpass just north of the Brown Hill Creek culvert with a curved ramp	No	Not preferred by CRG due to impact and severance to the reserve during and post construction and loss of green space Members expressed there was a strong interest in an underpass in the wider community, therefore this option was retained for scoring. (Named 'Option 2a')
new underpass just north of the Brown Hill Creek culvert with a straight ramp and bridge over Brown Hill Creek	No	Not preferred by CRG due to impact and severance to the reserve during and post construction. Members expressed there was a strong interest in an underpass in the wider community, therefore this option was retained for scoring. (Named 'Option 2b')
overpass on the northern side, closer to the tram with four elevators with a straight eastern ramp	No	Named 'Option 3a'
overpass on the northern side, closer to the tram with four elevators with a curved eastern ramp	No	Named 'Option 3b'
overpass on the southern side with four elevators	No	Named 'Option 4a' A detailed south side design was distributed by a member at meeting 5. The extra details provided would form part of a detailed design phase should this design move forward
cycle-only underpass with a short DDA access overpass	Yes	Named 'Option 5a'

New potential option	Ruled out by CRG	Outcome determined by CRG
cycle-only overpass on the southern side and a short DDA overpass on the northern side with four elevators	No	Named 'Option 5b'
the initial project design	No	Named 'Option 6' While this option was not preferred by the wider community it was kept in the scoring process as it was preferred by some members of CRG.

Individual preferences of consolidated list of potential new options

- Through the CRG process, the conversation at meetings suggested there was no clear standout preferred new solution amongst all members.
- With this in mind, to develop a more objective understanding of different individuals' perspectives and provide opportunity for confidential feedback on different design options, CRG members were asked to review the consolidated list of design options outside of the CRG meeting using a 'scorecard' format.
- Members were asked to assess their preferences for each of the remaining new options, plus to initial design, using a traffic light system:



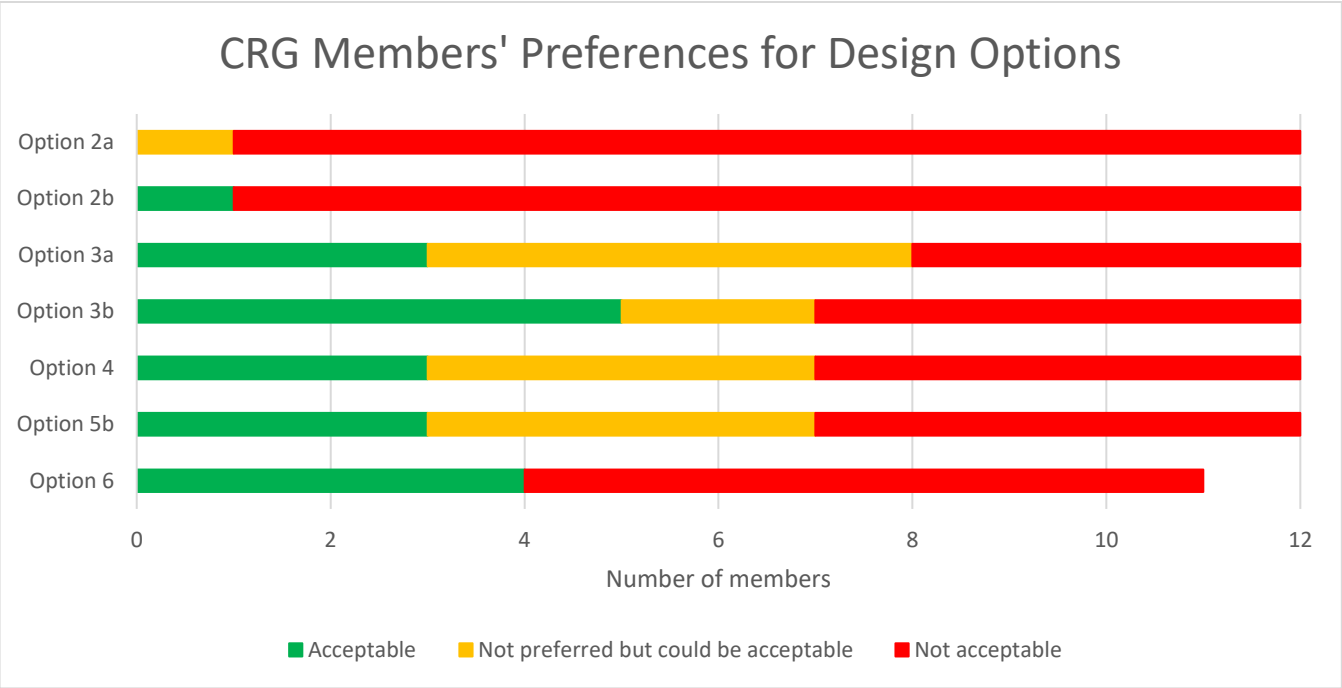
RED: Not an acceptable option in my opinion

ORANGE: Not my preferred option but could be acceptable (perhaps with certain adjustments)

GREEN: Acceptable option (*star most preferred option)

- The individual scorecards were collected in the week following CRG meeting 4 to enable a summary to be shared with members at CRG meeting 5.
- In meeting 5, the indicative vegetation impacts associated with Options 3a, 3b, 4 and 5b were shared with the CRG. As a formal vegetation survey has not been conducted on the south side, the vegetation impacts looked at the number of vegetation impacted. It did not formally consider the perceived value, size of the vegetation or regulatory status. These preliminary investigations identified that a similar number of vegetation would be lost irrespective of the design options considered by CRG. The new northern options (3a, 3b and 5b) all had similar vegetation removals required within the reserve as was identified in the initial design due to construction access and design footprint required on any northern side design. See attachment E.
- Members then had an opportunity to re-submit their scorecards following meeting 5 if they considered the information shared about vegetation impacts or other reasons based on more recent information/discussions changed their assessment.

- All 12 members provided their feedback via a scorecard submission, and those results are summarised below. Attachment F contains details of members' individual preference profiles.
- The traffic light system against each potential new option again displayed there is no single preferred option (see chart below).

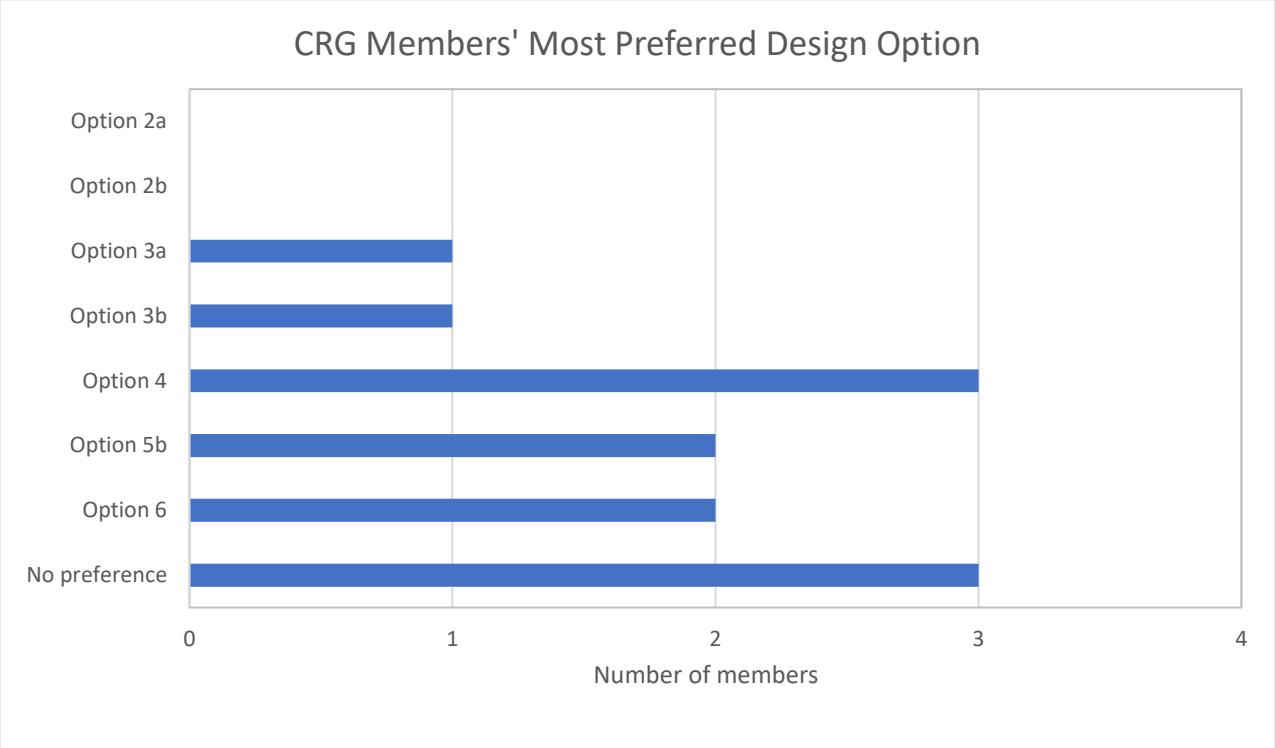


**Please note one member did not provide a score for option 6.*

Details of each option:

new underpass just north of the Brown Hill Creek culvert with a curved ramp	Option 2a
new underpass just north of the Brown Hill Creek culvert with a straight ramp and bridge over Brown Hill Creek	Option 2b
overpass on the northern side, closer to the tram with four elevators with a straight eastern ramp	Option 3a
overpass on the northern side, closer to the tram with four elevators with a curved eastern ramp	Option 3b'
overpass on the southern side with four elevators	Option 4a.
cycle-only underpass with a short DDA access overpass	Option 5a'
cycle-only overpass on the southern side and a short DDA overpass on the northern side with four elevators	Option 5b
the initial project design	Option 6

- Throughout the CRG process members expressed that there continued to be a strong interest in an underpass in the wider community.
- In addition to scoring the individual design options, members were asked to indicate their most preferred ("top") option.
- Several members did not select a most preferred option, with two of these members stating that no project design would be acceptable.



Insights received through the scorecard process

- In addition to members using the red/ amber/ green scorecard, a number of comments were also provided by members on their individual scorecards. This section summarises the feedback received through this process.

Key themes

- The key themes from members' comments were:
  - **Level of impact to the reserve, trees, visual amenity, and community green recreational space** – seeking a design with a minimal (or no) impact to the reserve, close to the tram overpass, that impacts the least number of trees and amount of tree space. Seeking to maintain the character and feel of the reserve.
  - **Landscaping offset opportunities** – seeking opportunities to increase appropriate landscaping opportunities within the reserve, and creation of a "pockets park" on Devon Street.
  - **Crime Prevention Through Environmental Design (CPTED)** - seeking passive surveillance of the reserve and the structure, no dark or hidden spaces, safe ground level connections and clear line of sight for all users.
  - **Connectivity across the wider cyclist network including Marino Rocks Greenway –** seeking connectivity for cyclist to travel north to Wayville and Marino Rocks Greenways cyclists and ease of journey for Mike Turtur Bikeway users.
  - **Impacts and safety of local road network** – seeking a design that doesn't increase congestion on, narrow, or reduce safety of the local roads.
  - **Improved safety and reduced conflict points between users** – reduction/removal of conflict points between users, at ground level connections, station access points and existing conflict points (tram archways).

- **Impacts during and post construction** – seeking minimal construction time and impacts, and minimal impacts to the reserve and neighbourhood in final design.
- **Level of impact to adjacent properties** – seeking minimal/no overlooking, shadowing and change of visual outlook for adjacent properties, north and south of the tram overpass.
- **Size of structure** – seeking a visually slim lightweight design that is close/attached to the tram overpass to reduce encroachment on the reserve.

- Detailed feedback related to each design option is provided at Attachment G.

Widening of tram archways

- Throughout the CRG process members expressed the need for the archways under the tram overpass to be widened. Many members expressed that the archways need to be widened regardless of the project outcome or design selected.

Feedback on attitudes towards doing nothing or doing local upgrades rather than a full solution

- Most members expressed that some level of change to improve local access would be beneficial and that doing nothing is not a preferred option. Most members felt that providing local upgrades (widening the tram archways and street treatments) was better than doing nothing.
- Three members specifically expressed a preference in local upgrades instead of a full project solution. Local upgrades identified included Victoria Street and Leah Street level crossing upgrades to include bike lanes and a grade separation to Leader Street to address future needs from the Le Cornu development.
- There was feedback provided that the existing underpass needs to be kept open regardless of the project design and that local upgrades needed to include upgrading the ramps to the existing underpass to provide a DDA compliant crossing of the train corridor, while not addressing the project objectives the DDA access across the rail corridor was viewed as important.
- Members agreed that upgrades need to include the “goat track” on the eastern side of the train line between the tram line and Richards Terrace.
- Members expressed a preference to create additional green space, regardless of the design selected, on the eastern side of the train line (where the Department owns the property on Devon Street North). It was noted by several members that they hope the property is retained as open space for public use even if the project does not require that land. It was viewed that this space should be used as additional green space and not as an off set for tree loss in the reserve.

Detailed design considerations

- Many members expanded on their scorecard with additional imagery and commentary relating to the functional and aesthetic aspects of the completed project design. Observations reflected the design principles, such as using lightweight construction materials, location of elevators, user experience, detailed impacts of shadowing and overlooking, maximising uninterrupted green spaces in the reserve, and creating activated spaces using built structures to enhance the reserve and provide additional functionality where possible (e.g. shade, seating, play spaces) while minimising impacts to adjacent residents.
- As these are considerations within the detailed design phase, these responses will be shared with the wider project team when required to inform future design work and not detailed here.

Member feedback received on the CRG process throughout meetings

- In terms of the process itself, some members expressed a desire for a different process (such as co-design) and/or deeper design interrogation and further contemplation, including ideas for weekend workshop sessions or additional meetings. However, some members expressed fatigue in relation to the process and a preference for fewer meetings and more rapid closing out of options.
- On balance it is perceived that the full range of possible options was identified for consideration within the scope and objectives of the project and had adequate review for this stage of the high-level functional design process, balancing the group members' different perspectives.
- At the conclusion of this round of CRG meetings, members were asked to complete a survey on the process.

Attachment A: CRG membership list

The following people were selected as CRG members in accordance with the Terms of Reference (Terms of Reference are available on the PTP Alliance website).

Name	Group / area represented
Kirstin Abley	Goodwood
Don Connor	Forestville Reserve Friends Inc.
Robin Dunk	Goodwood
Ryan Finnimore	Forestville
Daniel Grilli	Unley Bicycle User Group
Peter Jensen	Forestville
Hugh McCann	Goodwood
Deb Payne	Millswood
Kirsten Potoczky	Millswood
Ash Taylor	Forestville
Liz Warrell-Davies (supported by Mike Warrell-Davies)	Forestville
Jared Wilson	City of Unley

The selected members include people with disabilities, members of Goodwood Primary School Governing Council and those with discipline expertise in environment management, disability and inclusion access and town and social planning.

Members represent local residents, reserve users, Unley Swimming Centre users, pedestrians and cyclists, and a number are also Goodwood Railway Station users. The City of Unley and Unley Bicycle User Group (UBUG) were also represented by CRG members.

While the only geographical requirement was that members lived or were part of a group within a 1 km radius of Goodwood Railway Station, representation was sought to provide a spread across the four neighbourhoods surrounding the project area (north, south, east and west).

Members' contact details were added to the PTP Alliance website and promoted through the project newsletter to encourage community members to contact their local members to share their views. CRG members also engaged with their community and networks through formal and informal channels.

Attachment B: Summary of CRG meetings

Meeting 1: Wednesday, 18 May 2022

- the focus of this meeting was to set up the group and provide members with the opportunity to raise the issues they have with the project and the initial design.

Meeting 2: Monday, 30 May 2022

- the focus of the meeting was to provide members with details of the project requirements including the project objectives and share the high-level constraints of the area; and
- members were provided the opportunity to generate their own alternative designs with a focus on underpasses.

Meeting 3: Monday, 20 June 2022

- the agenda included the presentation and feedback on the initial project design, generating ideas for an alternative overpass design and presentation of the alternative underpass designs that were discussed at meeting 2;
- members viewed the overpass and underpass designs from specific user perspectives (wheelchair users, cyclists and local residents/park users); and
- as a result of these discussions further alternative designs were discussed.

Meeting 4: Monday, 11 July 2022

- the focus of this meeting was to present the alternative overpass and underpass designs that members requested;
- members were given the opportunity to ask questions of the designs and share their views on strengths and weaknesses. An alternative design was also generated at this stage by members;
- members were then given the opportunity to provide feedback on most preferred and least preferred designs during the meeting to indicate emerging preferences: and
- members were provided with an individual scorecard to capture their preferences on the designs for submission in the week following the meeting.

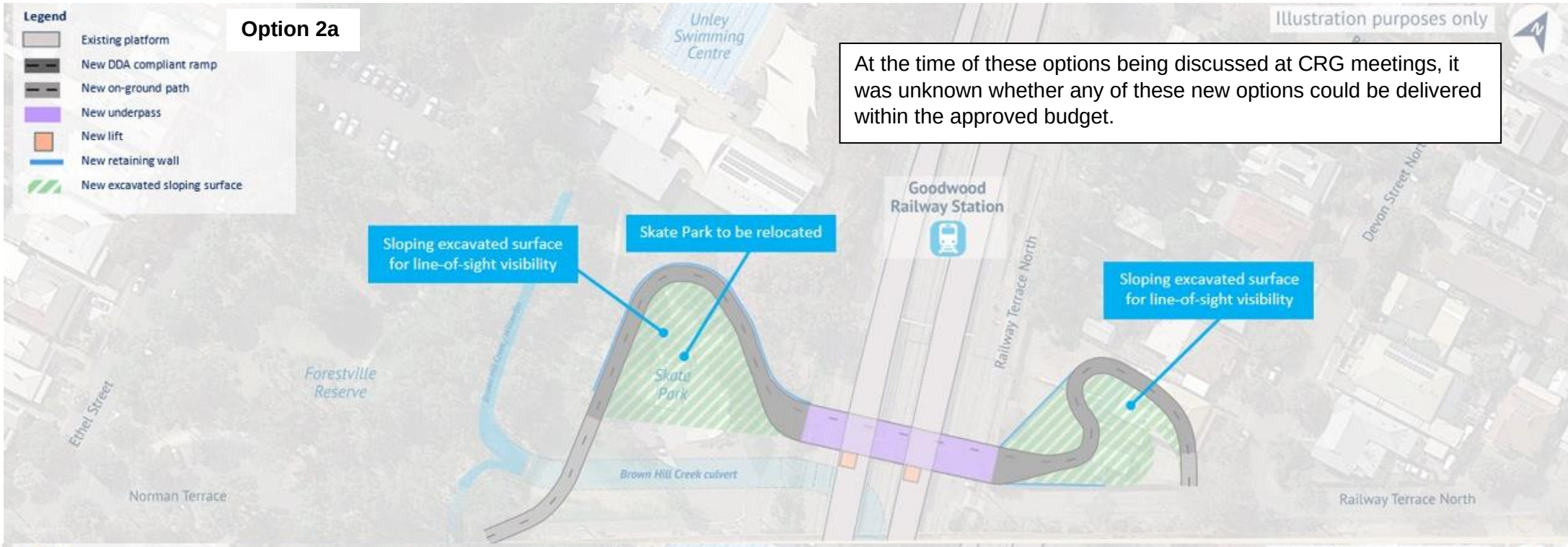
Meeting 5: Monday, 22 August 2022

- the focus of this meeting was to discuss the outcomes highlighted in this report and present the construction and vegetation impacts of some of the most preferred design options; and
- members then had an opportunity to re-submit their scorecards following meeting 5 if they considered the information shared about vegetation impacts, or other information or discussion held recently changed their assessment.

Records of Discussion and meeting presentations for all meetings are available on the PTP Alliance website: https://ptpa.com.au/projects/mike-turtur-overpass.

Attachment C: Designs for CRG scoring

Option 2 - New underpass (a - curved or b - straight western ramp)



At the time of these options being discussed at CRG meetings, it was unknown whether any of these new options could be delivered within the approved budget.

Option 3 – New underpass (a - straight or b - curved eastern ramp)

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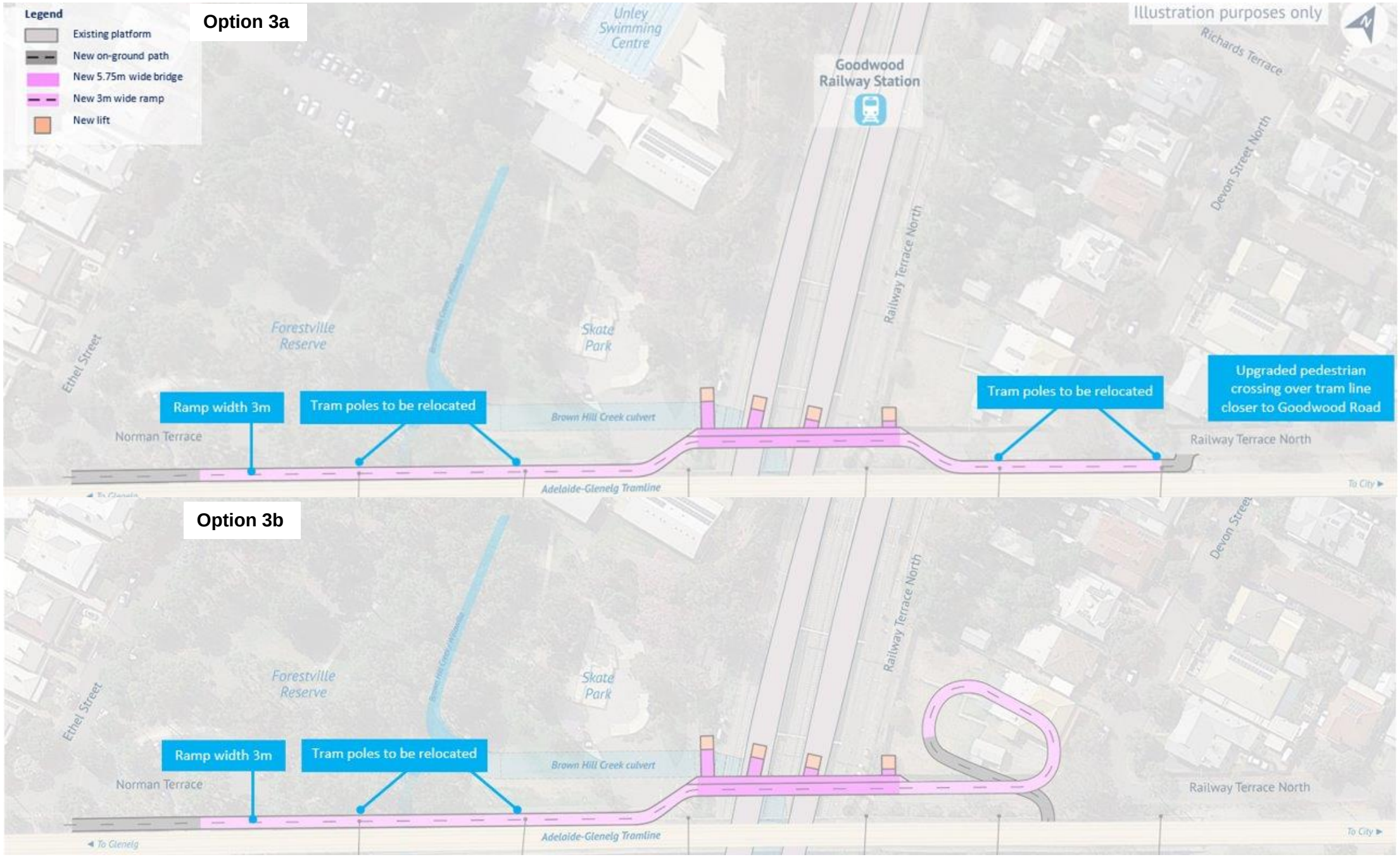
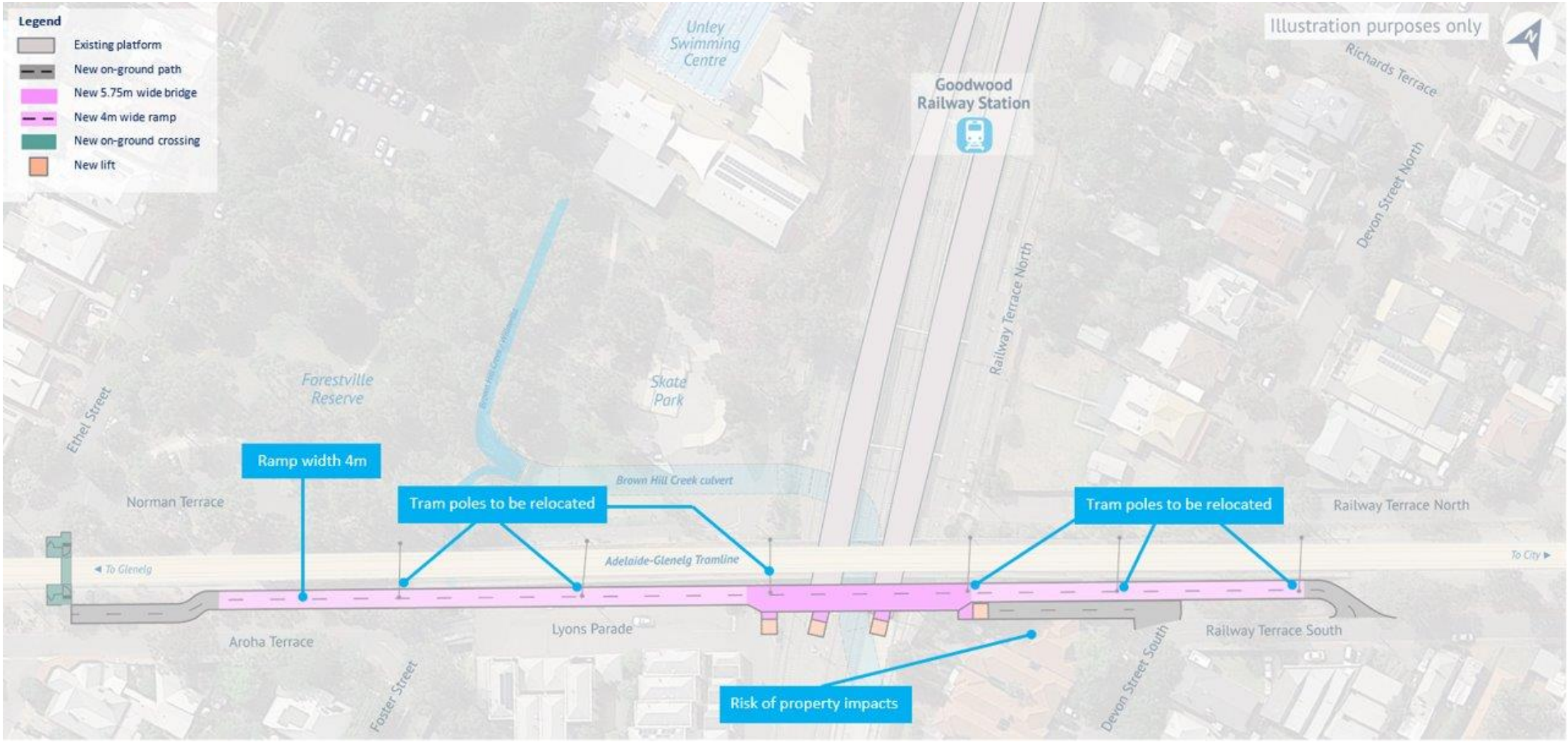
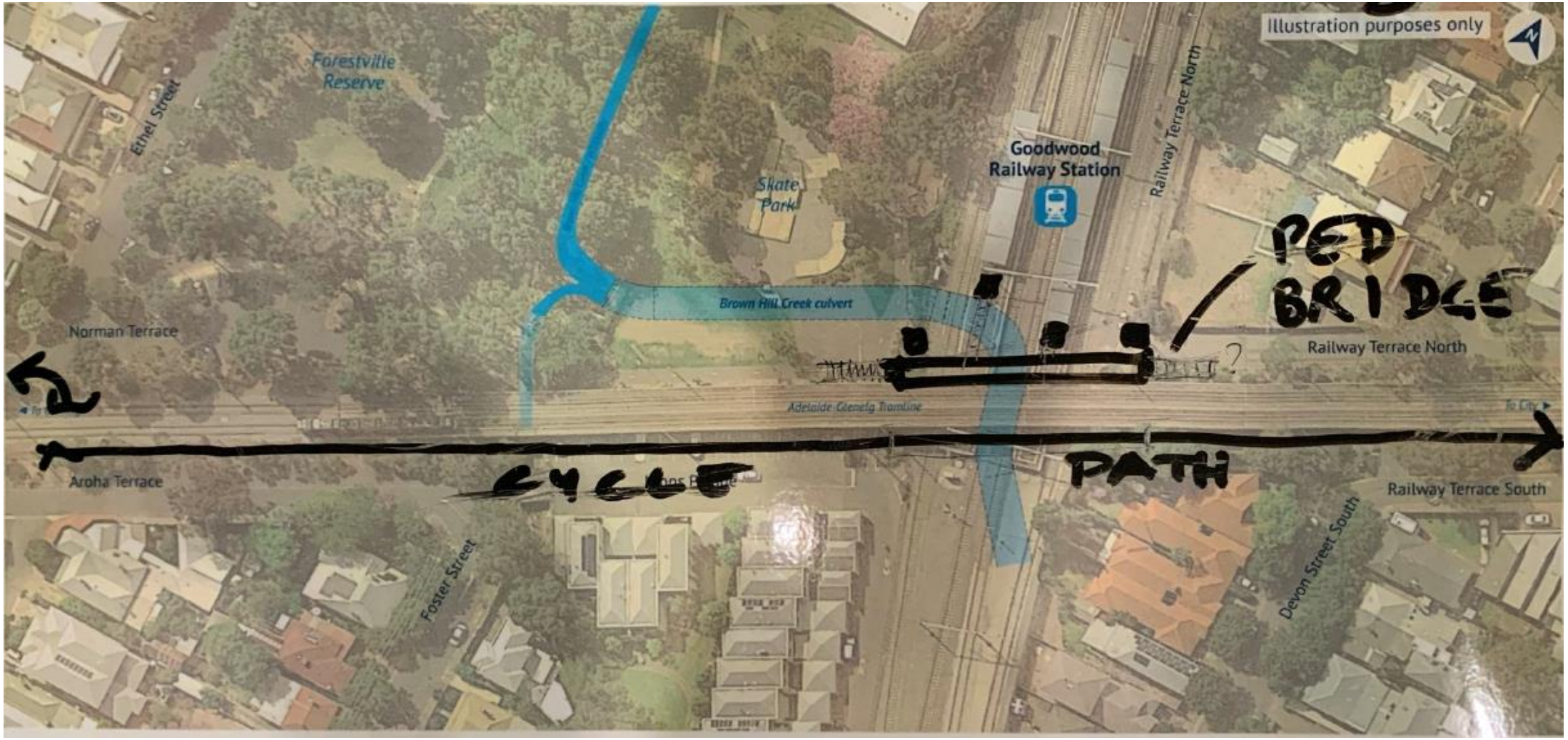


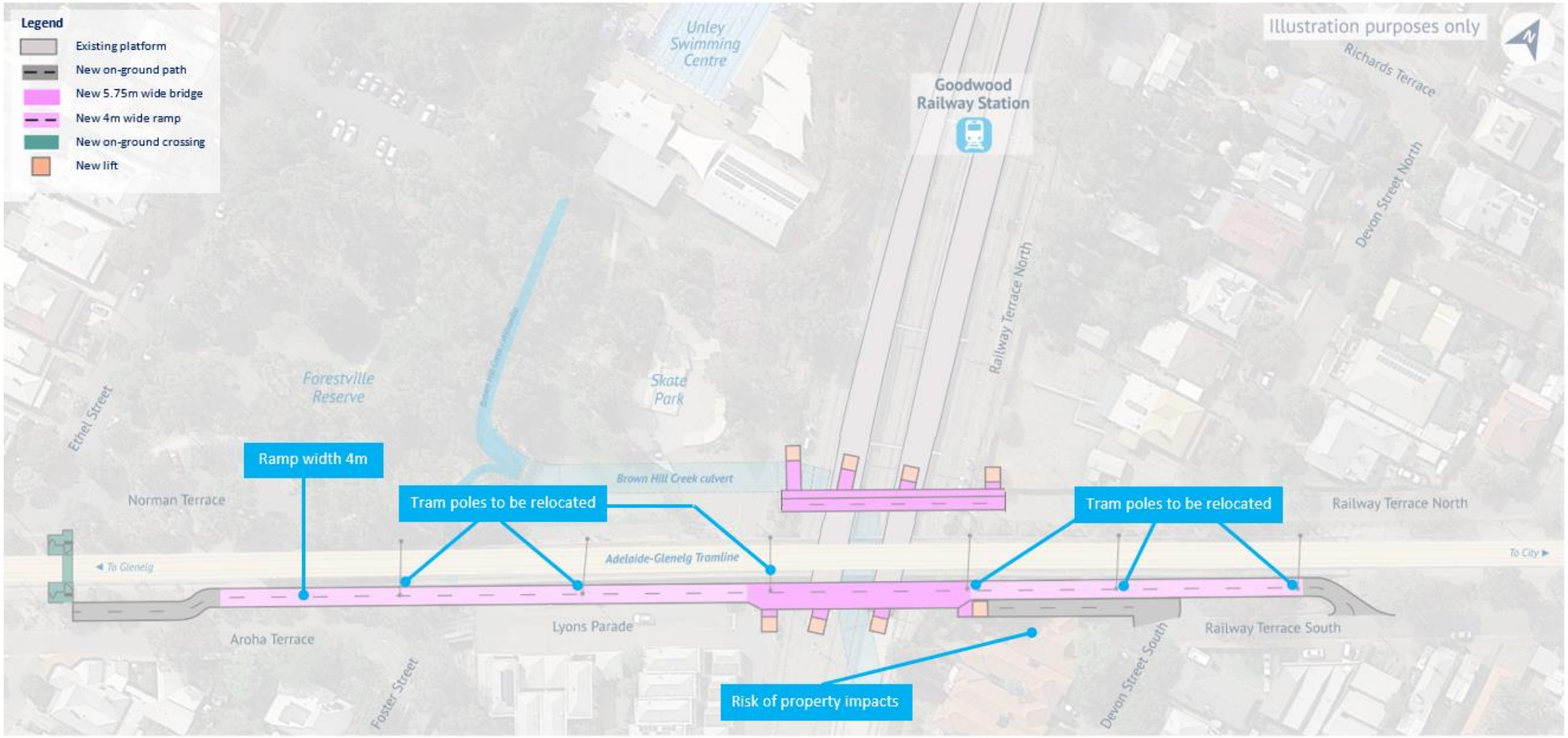
Option 4 – Southern Overpass



Option 5b – Cycle only overpass on southern side, DDA access short overpass on northern side (added at CRG meeting 4, CRG scoring was carried out on the hand drawn version. See next page for designed version



Option 5b – Designed version for information to replicate hand drawn version used in scoring



Option 6 – Initial Design

Attachment D: CRG design principles

Project Context – developed by Friends of Forestville Reserve Inc.

The Forestville Reserve is a multi-functional and environmentally significant local Reserve serving both local and district users. It lies adjacent to Goodwood Railway Station and includes the Unley Swimming Pool and associated carparks, a skate park and basketball ring, a children's playground and other active and passive recreational areas which generate additional use, day and night.

The Reserve also incorporates significant natural features including the natural creek corridor and many large and significant trees, as well as natural landscaped and grassed areas. These features provide a wonderful habitat and refuge for a wide range of flora and fauna and help create a natural oasis within the urban environment.

It is much loved and heavily used for its size, and its qualities need to be valued and protected during, and after, any construction of new infrastructure.

Importantly, it is heavily used by pedestrians (of all ages and level of physical abilities, families with children including prams, school children accessing Goodwood Primary School, etc).

It is also used by recreational and commuter cyclists, and people using skateboards, electric scooters, etc. With so many people using the Reserve in different ways, the safety and amenity of all user groups needs to be paramount. Any path for commuter cyclists crossing the rail line, or passing through the Reserve, needs to be carefully considered to ensure that the mixing of cyclists with this diverse mix of pedestrians does not result in unsafe conditions or situations where pedestrians feel unsafe.

The construction period for new infrastructure to improve the Station and connections for cyclists needs to be as short as possible, given the importance of the Reserve to so many people, while the design of new facilities needs to be based on minimal construction impacts on the Reserve and on the adjacent residents.

Design Principles

1. **Safety and amenity** - reduce conflict between user groups and create a pleasant and safe experience; and ensure the design meets Crime Prevention through Environmental Design (CPTED) principles, providing safe use and line of sight on and around any structures

2. **Maintenance of Reserve area** – minimal loss of the existing Forestville Reserve land area west of the rail line (any gain in open space to east of rail line not to be used as compensation)

3. **Sustainability** – minimal loss of trees / vegetated areas / open space/ recreation facilities and minimal or no impact on the naturalised creek area; environmentally responsible design, increasing green space and biodiversity, and consideration of use/reuse of existing infrastructure

4. **Performance and value** – creates a desirable, functional and intuitive link across the rail corridor for pedestrians, people using mobility aids, Mike Turtur Bikeway (and other) users and provides safe and convenient DDA access to the Goodwood Station platforms and for crossing the rail lines, in a form that the surrounding community supports and values

5. **Contextual** - responds to the surrounding Reserve environment, using natural materials (where possible) that are lightweight, attractive and visually unobtrusive

6. **Visual amenity** - minimal impact on the natural visual amenity of the Reserve; a design that blends with the natural environment

7. **Vibrant and inclusive** - an integrated, inclusive and vibrant design solution that incorporates all cycle / shared paths (not just the Mike Turtur Bikeway), the Goodwood Station upgrade, pedestrian paths and connections, carparks and recreation facilities and areas within the Reserve – a design solution that adds interest and invites the community to utilise and enjoy the Reserve

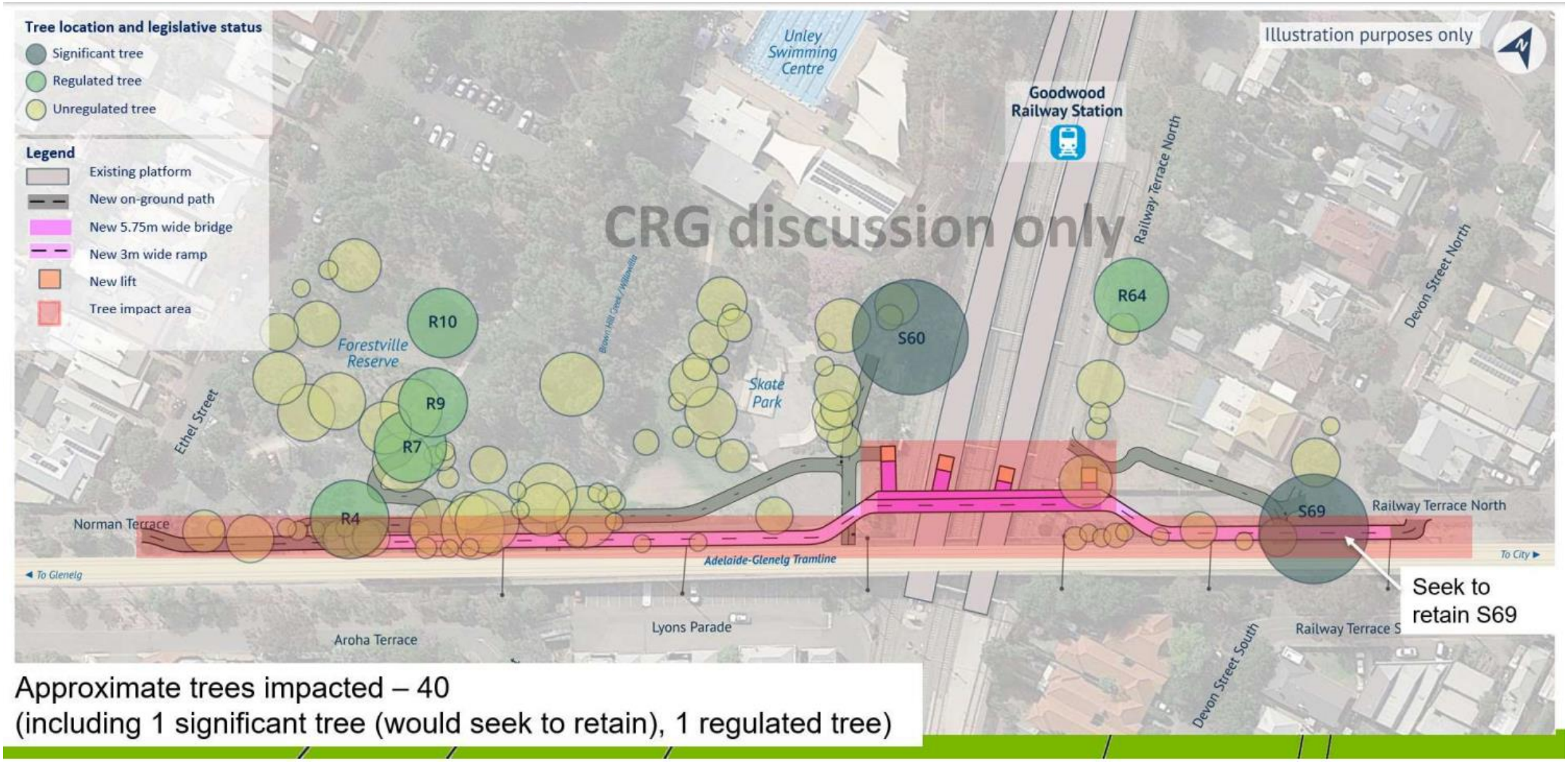
8. **Constructability** - considers the construction approach as part of the identification of a preferred design, in order to minimise construction impacts to Reserve users, fauna and flora and to surrounding residents, and to minimise the construction timeframe

9. **Connectivity** - improves connectivity between Goodwood Railway Station and existing cyclist and pedestrian routes

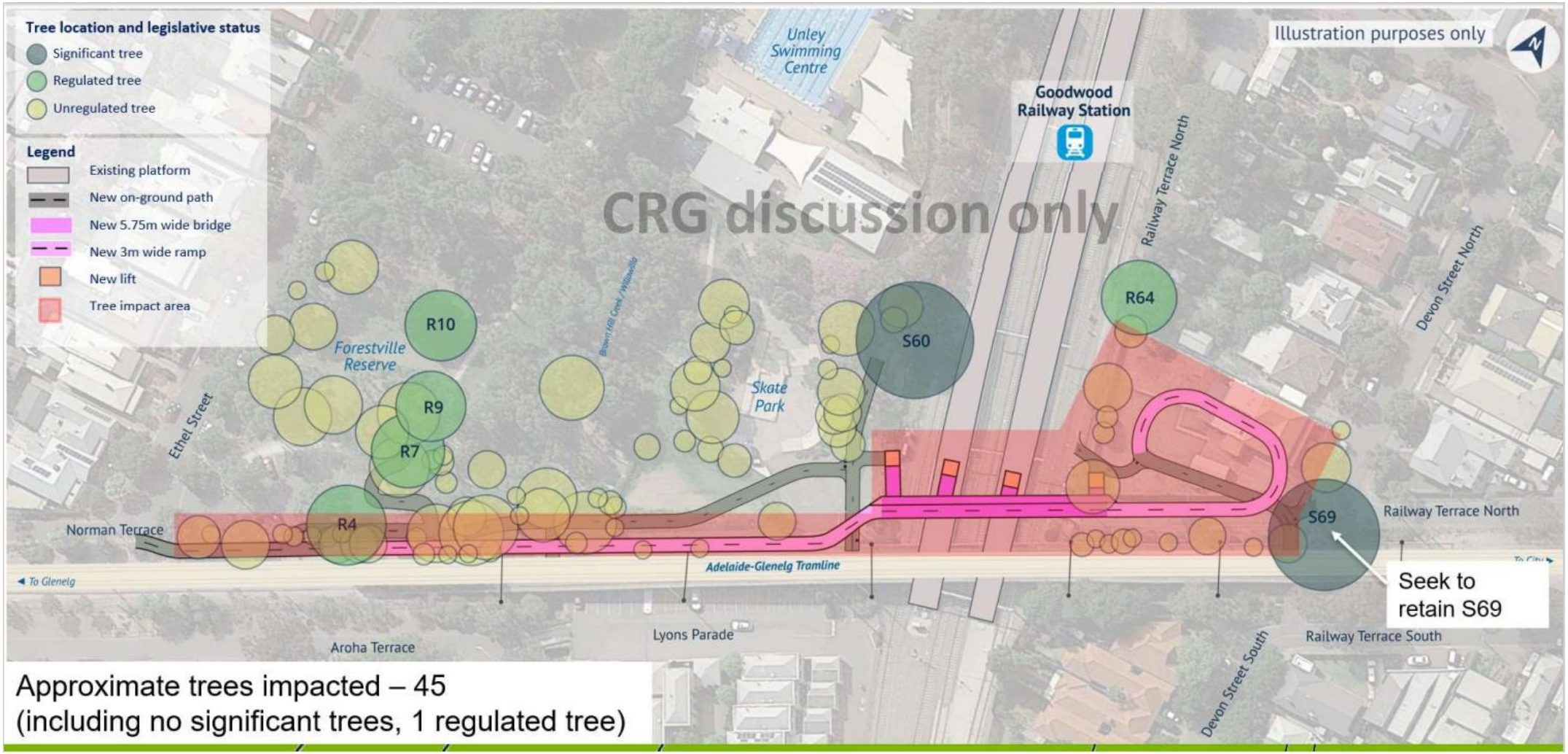
10. **Durable and future proofed** – fit for purpose now and in the future, adaptable, long lasting and maintainable

Attachment E: Vegetation Impact maps as shared with CRG

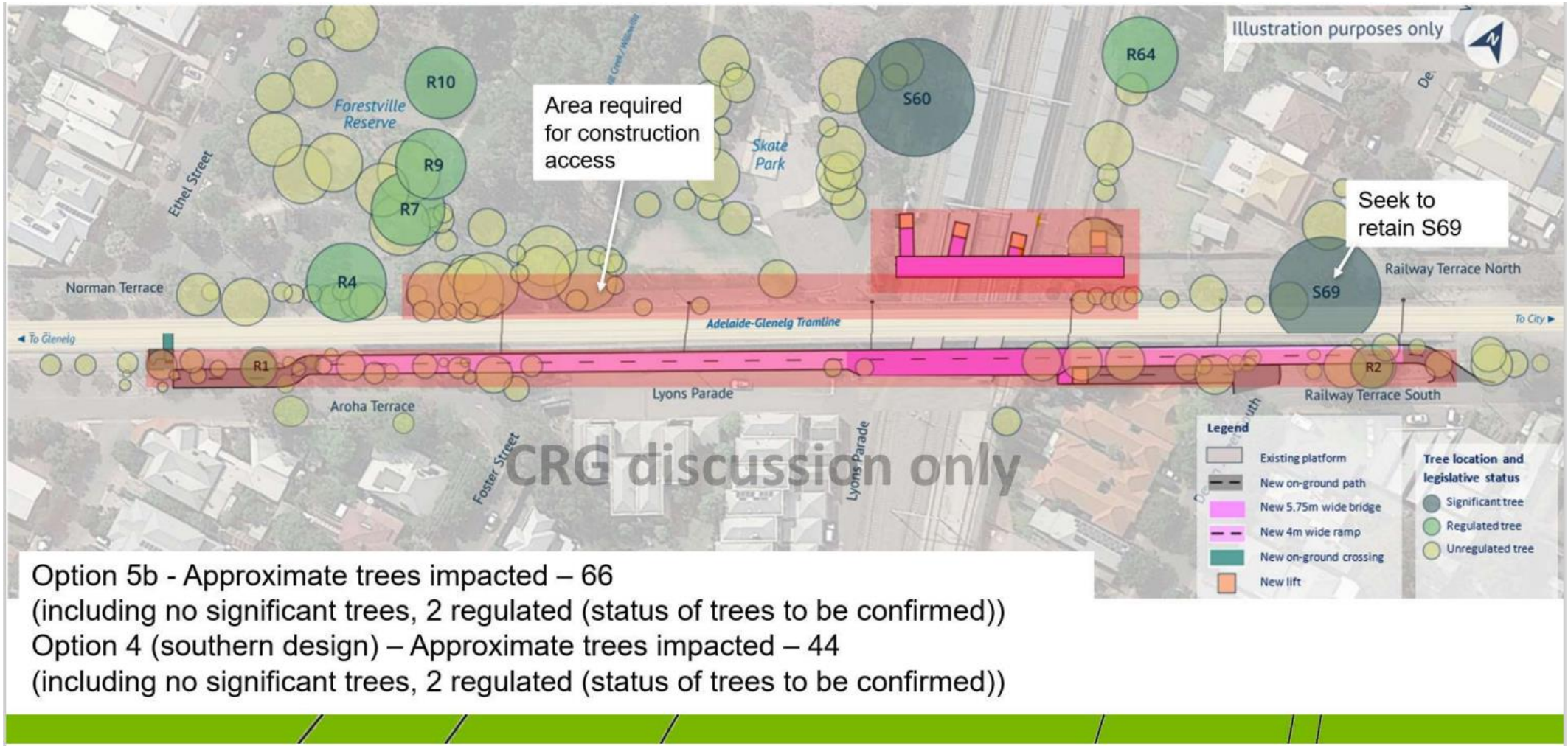
Northern design straight ramp (Option 3a)



Northern design curved ramp (Option 3b)



South and north design (Option 5b)



Attachment F: Individual Scorecard detail

	Designs	Member 1	Member 2	Member 3	Member 4	Member 5	Member 6	Member 7	Member 8	Member 9	Member 10	Member 11	Member 12
Option 2a	New underpass - curved ramp	Orange	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
Option 2b	New underpass – straight ramp	Green	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
Option 3a	Northern overpass - straight ramp	Green	Green	Green*	Orange	Orange	Orange	Orange	Orange	Red	Red	Red	Red
Option 3b	Northern overpass - curved ramp	Red	Green	Green	Green*	Orange	Orange	Green	Green	Red	Red	Red	Red
Option 4	Southern overpass	Green	Orange	Orange	Red	Green	Orange*	Red	Red	Green *	Orange*	Red	Red
Option 5b	Cycle overpass southern side, DDA overpass northern side	Green *	Orange	Orange	Orange	Green*	Orange	Red	Red	Green	Red	Red	Red
Option 6	Initial design	Red	Green	Not provided	Green	Red	Red	Green *	Green*	Red	Red	Red	Red

*Indicates most preferred option, where nominated.

Attachment G: Themes from comments from CRG members

Option 2a - New underpass - curved ramp

Strengths	Weaknesses
Provides a good cyclist connection between Mike Turtur Bikeway and Marino Rocks Greenway	Impact of the western ramp through the reserve is too destructive and will dislocate the area, cutting it in two, creating a large trench and relocating skate park
No overhead structure in reserve	Loss of trees and community green space in reserve
May be perceived as less arduous gradient for pedestrians to use by descending first	Significant disruption to reserve both during and post construction
Reduced visual impact to reserve	CPTED issues with long underpass, perceived risks to personal safety, decreasing passive surveillance opportunities for all users
	May create uncontrolled interactions between park and bikeway users on the ramp (balls and children in reserve)
	Extends the journey for cyclists and pedestrians with curved ramp
	Speed of cyclist descending into underpass
	Surrounding local road network too narrow to cater for additional cyclists
	Loss of “pocket pack” on eastern side due to ramp slopes due to line of sight
	No line of sight to other side of underpass
	Long ramps not appealing to DDA or pram users
	Conflict point at tram archway

Option 2b - New underpass – straight ramp

Strengths	Weaknesses
Provides a good cyclist connection between Mike Turtur Bikeway and Marino Rocks Greenway	Impact of the western ramp through the reserve is too destructive and will dislocate the area, cutting it in two, creating a large trench and relocating skate park
No overhead structure in reserve	Loss of trees and community green space in reserve
May be perceived as less arduous gradient for pedestrians to use by descending first	Significant disruption to reserve both during and post construction
Reduced visual impact to reserve	CPTED issues with long underpass, perceived risks to personal safety, decreasing passive surveillance opportunities for all users
	May create uncontrolled interactions between park and bikeway users on the ramp (balls and children in reserve)
	Extends the journey for cyclists and pedestrians

	Speed of cyclist descending into underpass
	Surrounding local road network too narrow to cater for additional cyclists
	Loss of “pocket pack” on eastern side due to ramp slopes for line of sight
	No line of sight to other side of underpass
	Long ramps not appealing to DDA or pram users
	Conflict point at tram archway
	Impact on Brownhill Creek

Option 3a - Northern overpass - straight ramp

Strengths	Weaknesses
Reduced impact to reserve given it abuts the tram line (post construction)	Construction impacts in reserve and residents
Option for cyclists to use Railway Terrace North or South and therefore may reduce archway use	Tree impacts, including impact on significant tree on Devon Street North with straight ramp
Reduced visual impact on neighbouring property with straight ramp (further away from homes)	Less likely to be used by Marino Rocks Greenway cyclists with straight ramp as connectivity between routes is compromised
Straight route for Mike Turtur Bikeway users and potential to ease cross-overs between Marino Rocks Greenways commuters and Mike Turtur Bikeway users (on western side)	Surrounding local road network too narrow to cater for additional cyclists and already existing car, pedestrian and cycle interface risks
Improved sightlines and flow with straight ramp	Length of walkway to elevators (due to culvert location) and visual impact of elevator shafts
Four elevators all on the same side removes the conflict on the bridge, separates users and provides good DDA access	Bridge separated from tram overpass (due to culvert) has negative visual impact and creates a ‘dog leg’ in the path
Opportunity to increase vegetation and create eastern “pocket park” on Devon Street North, with clear open sight lines into park	Dark area created under bridge as no light can come in from the south, CPTED concerns, and no trees can be planted under ramps
Good line of sight for all users	Potential dangers at exits from descending cyclists travelling at high speeds
Perceived lower construction impacts	Impacts to tram services during construction and pole relocation
Option to relocate ball court to under the overpass	Requires new automated crossing towards Goodwood Road which will create noise for residents and increased wait times for cyclists
Most of the trees proposed to be removed are between 7-10 years old and will readily grow back	Elevators may be undesirable to use
	Overlooking and light spill into nearby residential properties
	Visually intrusive large structure in reserve

Option 3b - Northern overpass - curved ramp

Strengths	Weaknesses
Reduced impact to reserve given it abuts the tram line (post construction)	Construction impacts in reserve and residents
Good connection for Marino Rocks Greenways cyclists	Length of walkway to elevators (due to culvert location) and visual impact of elevator shafts
Good line of sight for all users	Tree impacts in reserve
Direct access to Railway Terrace South	Bridge separated from tram overpass (due to culvert) has negative visual impact and creates a 'dog leg' in the path
"Pocket park" inside of curved ramp, can offset tree loss and provide open area	Surrounding local road network too narrow to cater for additional cyclists
No impact to significant tree on Devon Steet North	Visual impacts of large concrete structure and elevator shafts in reserve and at the end of Devon Street North
Four elevators all on the same side removes the conflict on the bridge, separates users and provides good DDA access	Dark area created under bridge as no light can come in from the south, CPTED concerns, and no trees can be planted under ramps
Option to have a reverse curve ramp on eastern side for improved visual amenity and access	Overlooking and light spill for neighbouring property
Option to relocate ball court to under the overpass	Curved ramp perceived as less safe than straight; perceived to be less visually appealing
Most of the trees proposed to be removed are between 7-10 years old and will readily grow back	Impacts to tram services during construction and pole relocation
	Possible impact to significant tree on Devon Street North during construction
	Conflict point at tram archway

Option 4 - Southern overpass

Strengths	Weaknesses
No impact to reserve during or post construction	Dark area created under bridge and shadowing increased into adjacent homes
Impacted trees are outside of the reserve area	Overlooking and visual impacts for a number of neighbouring properties
Reduces the conflict through the eastern tram archway	Impacts to tram services during construction and pole relocation
Good line of sight and flow with straight ramps	Mike Turtur Bikeway cyclists need to cross tram line via activated crossing, increased wait times
Four elevators all on the same side removes the conflict on the bridge, separates users and provides good DDA access	Addition of activated crossing over tram line at Norman Terrace and Ethel Street which is already a dangerous corner
Opportunity to increase vegetation in eastern "pocket park" on Devon Street North	Possible loss of eastern side "pocket park" (at Devon Street North) if not used for project
Potential to avoid narrow Norman Terrace and use wider Aroha Terrace	Poor connection for Marino Rocks Greenways cyclists

Strengths	Weaknesses
Provides straight link for Mike Turtur Bikeway users with straight line of sight	Elevators away from reserve and existing underpass, reduced passive surveillance for all users
Only minimal car park loss	Surrounding local road network too narrow to cater for additional cyclists with level crossing at Ethel Street. Railway Terrace South already very busy
	Cyclist removed from reserve, less passive surveillance and activity in reserve
	Car park loss on Aroha Terrace and Lyons Parade
	Impacts to residents during construction

Option 5b - Cycle only overpass on southern side, DDA access short overpass on northern side:

Strengths	Weaknesses
Reduced impact in reserve post construction	Overlooking and visual impacts for a number of neighbouring properties
Reduced conflict between cyclists and station access and provides good DDA station access	Increased cost, highly unlikely to be delivered within budget
Good line of sight with straight ramps for cyclists	Can't control cycle only, needs to be designed as Shared Use Path
Elevators located within the reserve area for increased passive surveillance	Dark area created under bridge and shadowing increased into adjacent homes
Impacted trees outside of the reserve area	Impact to both north and south side during and post construction
Reduced conflict through the eastern tram archway	Impacts to tram services during construction and pole relocation
Opportunity to increase vegetation in eastern "pocket park" on Devon Street North	Poor connection for Marino Rocks Greenways cyclists
Provides straight link for Mike Turtur Bikeway users with straight line of sight	Mike Turtur Bikeway cyclists need to cross tram line via activated crossing, increased wait times
Potential for cyclists to avoid narrow Norman Terrace and use wider Aroha Terrace	Addition of activated crossing over tram line at Norman Terrace and Ethel Street which is already a dangerous corner
Only minimal car park loss	Surrounding local road network too narrow to cater for additional cyclists with level crossing at Ethel Street. Railway Terrace South already very busy
	Possible loss of eastern side "pocket park" (at Devon Street North) if not used for project
	Cyclist removed from reserve, less passive surveillance and activity in the reserve
	Car park loss on Aroha Terrace and Lyons Parade
	Impacts to residents during construction
	Tree removals on north and south side
	Tree removals required in reserve for construction access (similar number to 3a)
	Length of walkway to elevators (due to culvert location) and visual impact of elevator shafts

*It is noted by PTP Alliance that this design will impose significant cost pressures to the current budget and is highly unlikely to be delivered within the current budget.

Option 6 – Initial design

Strengths	Weaknesses
Can be delivered within budget	Previous community feedback/lack of community acceptance
Reduced construction time	Overlooking on eastern side
Good connection for Marino Rocks Greenways cyclists	Tree impacts
Gap between structure allow for light and vegetation	Disruptive to reserve during and post construction
Good line of sight	Structure further into the reserve
Vegetation loss can be offset in “pocket park”	Visual impacts to reserve
Minimal/no impact on tram during construction	Loss of car parks
Provides a more open and airy design	Without additional elevators ramps are unappealing for DDA access
Direct cycling connection without need for tram crossing	Visually dominant due to separation from existing tram overpass
Moderate impact on park while keeping people travelling through the reserve	Construction materials not in keeping with parkland setting
Temporary construction access forms where ramps will be built	Some ground level paths and stairways in the reserve poorly located
Possibility to include four elevators	Cyclist speeds on long ramps
	Would not use the overpass as a wheelchair user