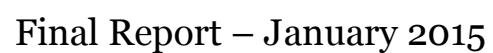


Donnybrook Station Development Concepts



Public Transport Victoria

Donnybrook Station

Development Concepts

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Date: September 2014
Reference: 4761
Status:

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1 Introduction

1.1 Purpose of this Report

The primary purpose of this document is to provide Public Transport Victoria (PTV) with a concept plan for Donnybrook Station, and the associated modal interchange facilities, to enable planning for the progressive upgrade of the facility to the status of a major metropolitan station once electrified train services have been extended beyond Craigieburn on the broad gauge network.

The outcome of the planning work is a preferred station footprint that will inform land use planning outcomes for the adjacent land, and the associated infrastructure such as road network design.

At this point in time there is a degree of uncertainty surrounding many aspects of the station facility that will not necessarily be resolved until detailed design has been undertaken. Therefore, wherever options have been considered, conservative design decisions have been adopted to ensure the land footprint is sufficiently flexible to accommodate alternative design options at the time of detailed design.

1.2 Context

Donnybrook railway station is positioned on the main north-eastern rail corridor just north of Donnybrook Road. The site is characterised by two broad gauges rail tracks, addressed by a station consisting of two side platforms, and a single standard gauge rail track without a platform, which forms part of the main Melbourne to Sydney interstate rail line.

Currently the station is serviced by V/Line train services operating between Seymour and Southern Cross stations, with express train services from Shepparton and Wodonga lines also operating through the station without stopping.

The station is serviced by 14 trains per day in each direction, of which only two could be considered as suitable for commuter services to the Melbourne CBD. Hence, the facilities at the existing station are somewhat basic reflecting the current role of the station and consist of a small car park and a minimal amount of shelter provided for passengers waiting on the platforms.

However, Donnybrook Station is placed within the North Growth Corridor of Melbourne and will, within a few short years, be engulfed by urban development. The Lockerbie Precinct Structure Plan (PSP) was approved by the Minister for Planning in June 2012 and provides for the future planning of land for residential purposes immediately adjacent to the station site. As those areas are developed, there will be an increasing demand for public transport services which will partly be fulfilled by rail, and partly by bus along Donnybrook Road.

This will trigger the need for substantial changes to the station in order for it to fulfil a far more prominent role on the metropolitan rail network. These changes include:

- Greatly improved modal interchange facilities to allow buses to efficiently access the station to facilitate quality passenger transfer to/from rail
- Provision of car parking and associated facilities for other modes such as bicycles, kiss & ride, and taxis

- Provision of improved customer service features such as shelter, toilets, ticketing facilities, passenger information displays, and disabled access
- Consideration of the interface with adjacent land uses to minimise traffic impacts, noise, light spill and other potential impacts, particularly relating to residential uses
- Pedestrian access from one side of the corridor to the other via either a footbridge or subway, noting that any above track structure will need to provide for 7.1m clearances to facilitate double stacking of containers on the standard gauge track as a minimum
- Potential future duplication of the standard gauge track
- Amplification of Donnybrook Road and grade separation of the railway crossing which will trigger the need to change the point of access to the station from Donnybrook Road

2 Opportunities and Constraints

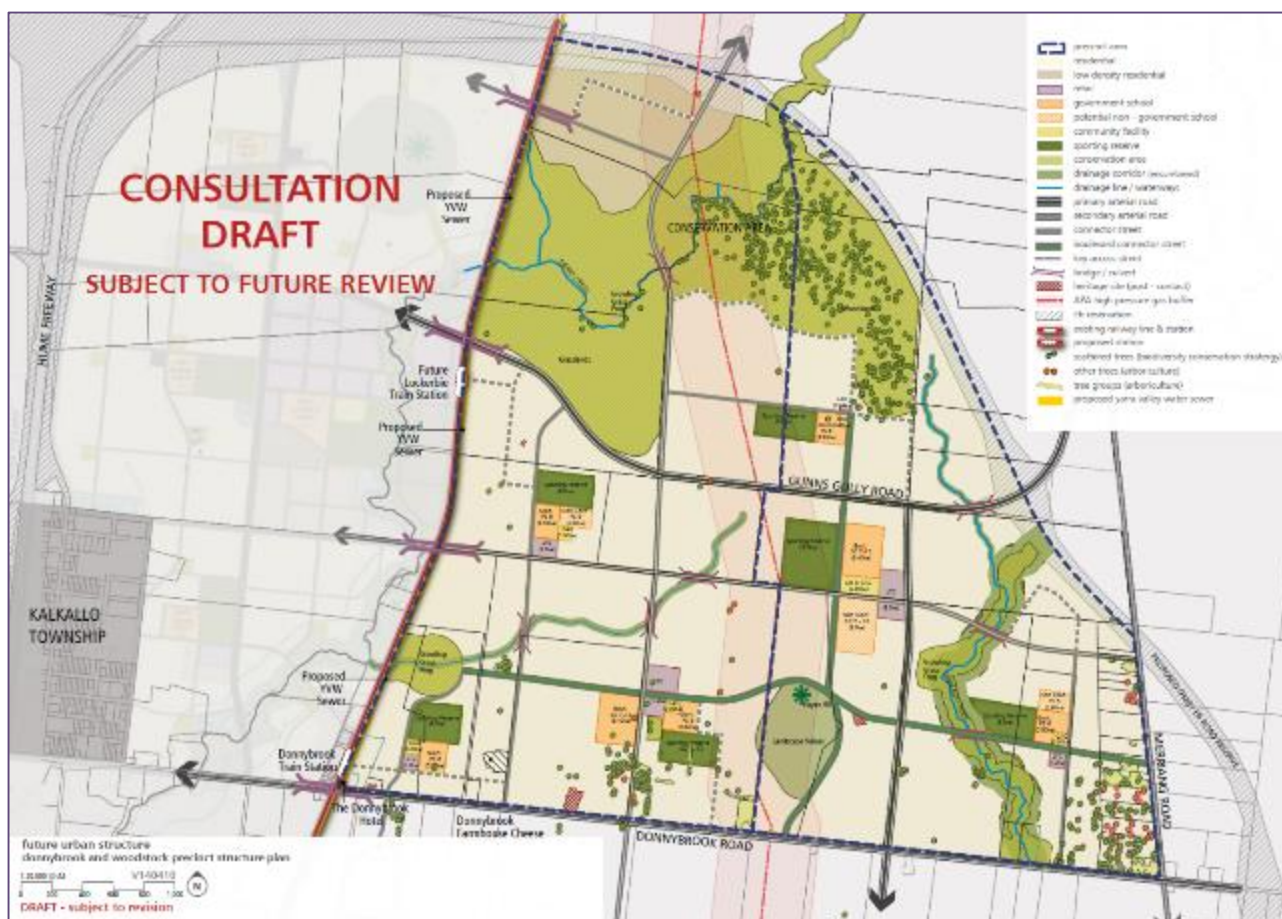
2.1 Opportunities

2.1.1 Donnybrook Precinct Structure Plan (PSP)

Donnybrook PSP is located in Donnybrook to the east of the recently approved Lockerbie PSP. The precinct is bound by the Outer Metro Ring Road (OMR)/E6 reservation to the north, the Sydney-Melbourne train line to the west, Donnybrook Road to the south, and the Woodstock PSP to the east. It is located immediately to the east of the site of the existing station and therefore will have an interface with the required footprint of the future Donnybrook metropolitan rail station and interchange.

The PSP is still under development and there is an opportunity for PTV to negotiate a favourable footprint to accommodate the future station needs and to have its design integrated into the surrounding land uses.

Figure 1: Donnybrook and Woodstock Draft PSP's (as available at the time of producing this report)



2.1.2 Lockerbie Precinct Structure Plan

The Lockerbie Precinct Structure Plan (PSP) was approved by the Minister for Planning in June 2012 through Amendments C161 to the Hume Planning Scheme, C81 to the Mitchell Planning Scheme and C161 to the Whittlesea Planning Scheme.

The PSP covers an area generally bounded by the proposed Outer Metropolitan Ring Road to the north, the Hume Freeway to the west and the east and Donnybrook Road to the south. It immediately abuts to west of the existing Donnybrook Station and will influence future development of the station site.

The PSP is a strategic plan that sets the vision for the development of the area and provides developers, investors and local communities with guidance about the future development to the area. It has been developed in consultation with affected parties including Public Transport Victoria. To some extent, given that the PSP has been approved, this could be perceived as a constraint, however there appears to be some opportunity to revisit the road layouts and land use designations in the area immediately to the west of the station.

Figure 2: Lockerbie PSP



The area immediately adjacent to the station is designated for high density residential and there is a local convenience centre indicated immediately to the north, with both these land uses providing a strong interface to the activities of the station. These areas are in turn surrounded by medium

density housing and the whole local station precinct is constrained to the west and north by the Merri Creek valley and associated biodiversity area.

Merri Creek also provides a restriction for road access with only one road connecting the station area to the wider Lockerie community to the north and, assuming the construction of the Donnybrook Road grade separation, only one road connection to Donnybrook Road to the south

2.2 Constraints

2.2.1 Donnybrook Road

A major determining feature of the site will be the design and construction of the proposed Donnybrook Road grade separation.

The proposal is to provide a new road over rail overpass, to be constructed off-line from the existing road, on the southern side of Donnybrook Road with the existing at-grade crossing being closed upon commissioning of the new structure. At the time of preparing this report the timing for construction of the overpass was uncertain, but it is generally considered to be at least 20 years into the future. The timing of the bridge construction compared to the timing for the new Donnybrook Station will determine how the station will be developed and its relationship to Donnybrook Road for access.

When Donnybrook Road rail crossing is grade separated, a road intersection is proposed at each foot of the road bridge gradient, some 550m to the west of the rail corridor boundary and 320m to the east, to serve the station and surrounding land uses, as proposed in the Draft PSP. Given that the role of these intersections includes providing access to the station for both cars and buses, and the volumes of traffic involved, a suitable signal controlled intersection will need to be provided to accommodate turning traffic.

2.2.2 Standard Gauge Rail Corridor

The main Melbourne to Sydney standard gauge rail track is located immediately to the east of the Victorian broad gauge rail tracks and the existing station platforms. Moving this track to accommodate changes to Donnybrook Station is possible, but undesirable because of the potential costs and service disruptions that would be incurred.

The corridor is managed by Australian Rail Track Corporation (ARTC) who advise that future provision will need to be made for a second track and associated maintenance access roadway. It has been assumed that the second track and road would be laid parallel to, and to the east of, the existing standard gauge track without alteration to its alignment. Station planning has taken into account the associated land requirements for this purpose.

2.2.3 Yarra Valley Water Pipeline

YVW propose the construction of a pipeline along the eastern edge of the railway boundary. The requirement is for a 20m wide reservation and for there be no significant structures placed within the designated corridor. Therefore land use will be limited but could include sealed car parks, bus interchange and other similar uses. There is also a proposed branch sewer proposed to dissect the VicTrack land on the western side of the rail corridor just to the south of the existing dam.

2.2.4 Donnybrook Springs Hotel & Donnybrook Road Grade Separation

The Donnybrook Springs Hotel lies in the path of the proposed YVW pipeline reservation. YVW has advised that they would be unlikely to propose the demolition of the hotel because the cost of purchase would likely exceed the cost of boring the pipe under it.

The hotel location also presents a constraint on the design of the station. The hotel fronts Donnybrook Road immediately adjacent to the eastern edge of the railway boundary thus restricting direct access to the station site from Donnybrook Road and creating the need to provide a secondary road link through the Donnybrook PSP area for access to the eastern side of the station site.

3 Factors Affecting the Generation of Options

3.1 Introduction

Planning the layout of the proposed Donnybrook Station is complex as a result of there being the large number of constraints applying to the site and its access. Therefore, the approach has been adopted to progressively resolves key constraints in a priority order based on the degree of influence those constraints will have on the layout of the station and its facilities. The aim of the exercise is to progressively narrow down design options to generate one or two concepts that can be taken through to more detailed treatment.

3.2 Location of the Station Platforms

3.2.1 Identified Issues

- The footprint required to be accommodate for an island style platform is 240m long and:
 - » 8m wide without provision for a foot bridge except where it joins the end of the platform
 - » 10m wide where a footbridge is to be landed onto the platform
 - » 12m wide with a station building and footbridge landing on the platform
- The footprint required for each side face platform (two are required) is 240m long and:
 - » 3.5m wide without provision for a foot bridge except where it joins the end of the platform
 - » 6.5m wide where a footbridge is to be landed onto the platform
- As previously described, it is proposed to provide a road over rail grade separation of this existing level crossing at some point in the future. The timing of abolition of the existing level crossing is critical to the design of the new station. If the crossing has been removed by the time of construction of the station then it will not necessarily present a constraint for platform placement, however if the level crossing remains then the platforms must be located clear of the crossing.
- Another constraint is the width of land available within the corridor, specifically between the rail tracks, to accommodate the required platform dimensions. Currently there is vacant space between the broad and standard gauge tracks as well as on the eastern side of the corridor.

3.2.2 Proposed Responses

Because of the relative uncertainty associated with the timing for construction of both the station and the grade separation, a conservative approach has been adopted based on the assumption that the station is constructed in advance of the grade separation being constructed. This will dismiss the option of placing the platforms underneath the grade separation in preference to keeping them to the north of the existing level crossing.

Assuming the need to provide a signal at the departure end of the up platform, this triggers a requirement for the up end of the platform(s) to be a minimum of 40m clear of the level crossing.

Figure 3 and Figure 4 show resolution of platform location for an island platform, and side platforms, respectively.

Figure 3: Resolution of the Location of an Island Platform Arrangement

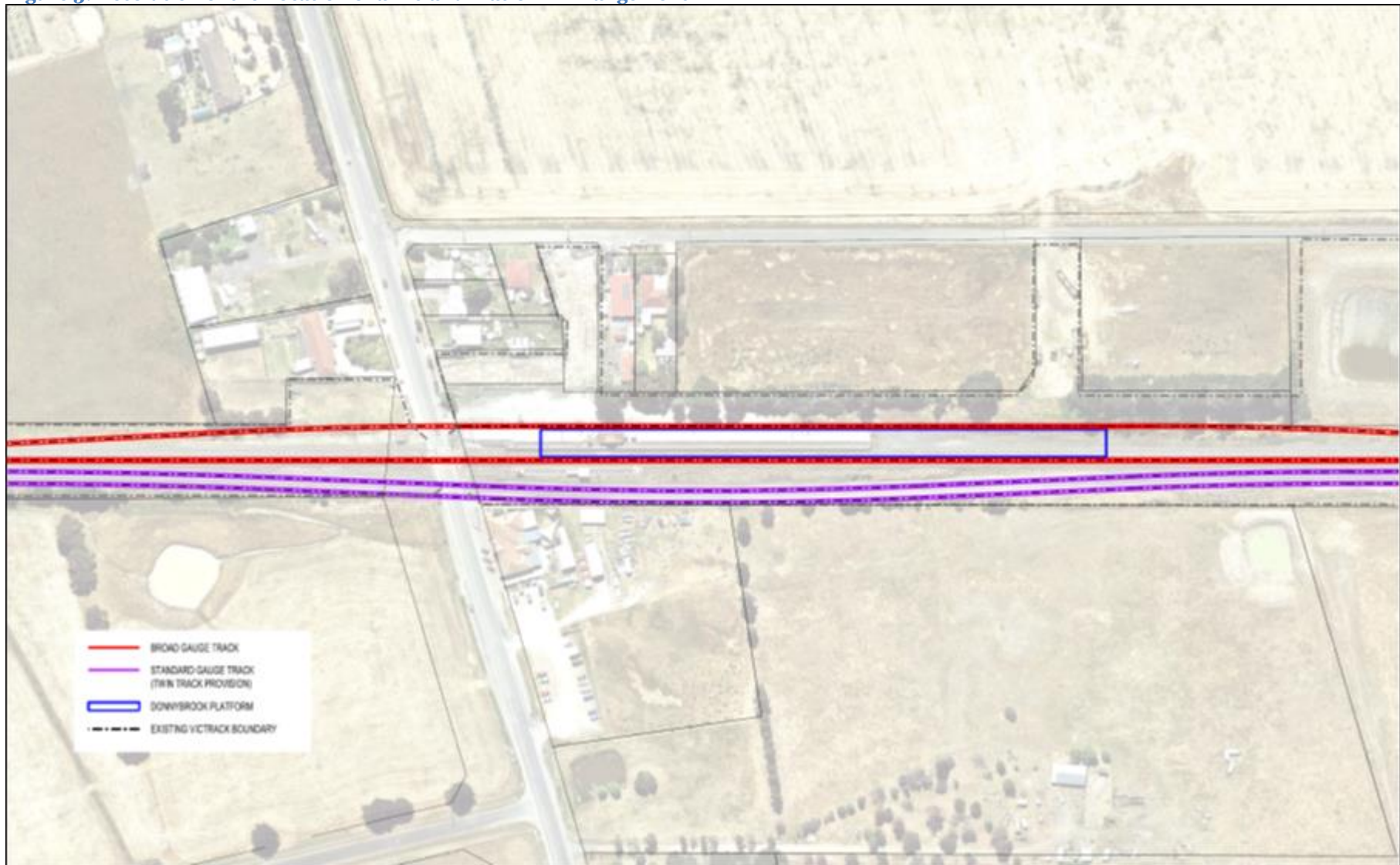
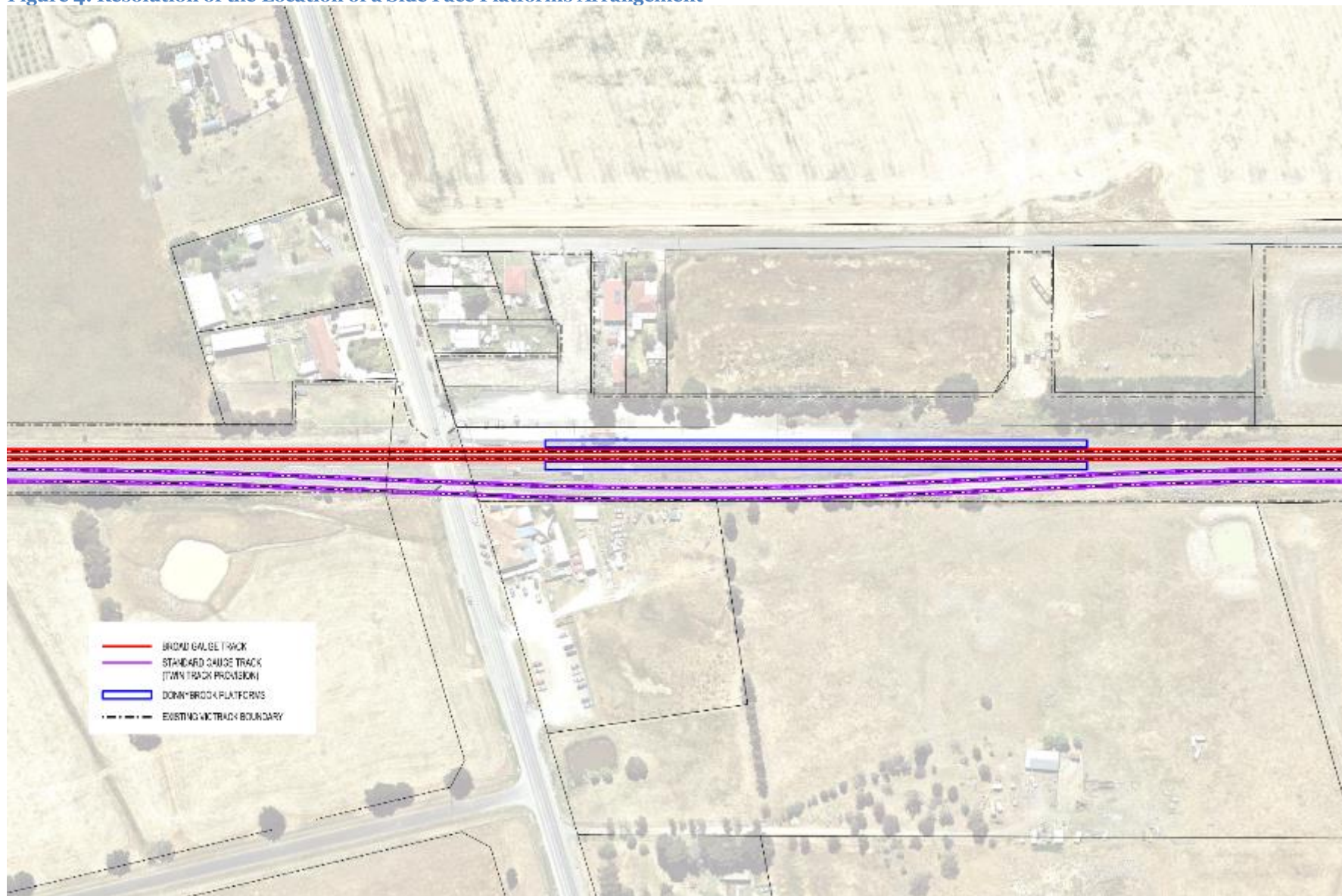


Figure 4: Resolution of the Location of a Side Face Platforms Arrangement



3.3 Location of Access across the Tracks

3.3.1 Identified Issues

- There is a preference for the provision of a footbridge for access across the tracks for the following reasons:
 - » The nature of the basalt ground conditions, along with anecdotal information regarding ground water and inundation conditions, suggests the use of a footbridge rather than a subway.
 - » Construction interfaces with the live train running lines make it more favourable to build a footbridge
 - » Footbridges are also preferred over subways because they provide a more favourable security environment
 - » It is expected that a footbridge will be more cost effective to provide
- Access to the footbridge will be provided by stairs, ramps and lifts.
- Clearance requirements over the standard gauge interstate track is 7.1m which dictates:
 - » 128.8m of ramp length to ground level
 - » 15.9m of stair length to ground level
- Clearance requirements over the broad gauge regional tracks is 5.75m which dictates:
 - » 97.2m of ramp length to ground level
 - » 13.2m of stair length to ground level
- The private land associated with the Donnybrook Springs Hotel precinct (including the land behind the hotel) is assumed to be retained in private ownership and is therefore not available to use for the footbridge (or any other rail infrastructure associated with the station).
- It is desirable that the access point to the platforms is located such that it will assist with the distribution of train loading. This is normally achieved by locating the access point within the middle third of the platform. It can also be helped by staggering access points at stations along the rail line and assumes that people tend to stay close to the point of access rather than distribute along the station. This behaviour is often reinforced by the provision of platform shelters and other facilities. A crude assessment of the status quo along the corridor is presented in the following diagram which shows a cluster of access points towards the Melbourne end of platforms, another in the middle and a few at the other end suggesting that the northern end of the platform would provide a better outcome.

Figure 5: Distribution of Platform Access Points on the Craigieburn Line



- Access to the station from Springs Road to the west of the rail corridor can only be achieved via two VicTrack owned parcels of land, one 60m and the other 260m north of Donnybrook Road. These are recognised as thoroughfares in the Lockerbie PSP.
- Access to the rail corridor from the east is constrained by the presence of the Donnybrook Springs Hotel which extends approximately 45m north of Donnybrook Road.

3.3.2 Proposed Responses

The design of the footbridge will need to respond to the proposed location and footprint of the platforms identified earlier.

The positioning of the footbridge within the corridor will primarily be informed by the length of the staircases because these are expected to serve the majority of users, delivering them to an appropriate location on each side of the corridor, and to the station platform(s). The design of ramps will be modified to suit this specification whilst delivering people to a suitable landing point. The exception to this logic would be if there is a need for pedestrians to traverse a distance greater than the total length of any required ramp in order to access destinations/facilities, then the ramps might become the controlling design feature.

The length of the ramps and stairs will be determined by the vertical clearance requirements for the bridge over the rail tracks, being different for the standard and broad gauge tracks. In order to minimise the vertical distance to be negotiated by rail patrons, the potential benefit in designing a height change in the bridge decking so that people who only need to cross the broad gauge tracks do not need to climb as high has been considered. However, this complicates the bridge design adding costs for marginal net gain (only seven additional steps). Therefore, it is assumed that the footbridge remains at 7.1m across the whole rail corridor, with ramps and stairs scaled appropriately thus representing the greatest impact on land footprint.

The diagrams on the following pages shown the furthestmost southern and northern locations available for the footbridge, with everything between these locations representing viable solutions. The ultimate location chosen for the footbridge will be influenced by station building placement, and the location chosen for other facilities such as the bus interchange.

In the case of an island platform, the southernmost solution is controlled by the private land holdings to the east of the corridor, whilst the northernmost solution is controlled by the need for the stairs to remain connected to the end of the platform.

In the case of side face platforms, the southernmost solution is controlled by the private land holdings to the east of the corridor, whilst the northernmost solution is controlled by the width of the up platform as influenced by the curvature of the adjacent standard gauge track (assuming that realignment of the broad gauge is not to be contemplated)

It should be noted that in all options the ramps, stairs and lift structures of the footbridge will be sited on the proposed Yarra Valley Water pipeline route which is planned immediately adjacent to the railway corridor. Possible solutions include:

- YVW to accept a diversion of the pipeline around the footbridge, or
- YVW to agree to the footbridge being located within the edge of their 20m corridor, perhaps as a 'relocatable' facility, or
- Extension of the footbridge across the pipe track

Figure 6: Footbridge Options for Island Platform Access

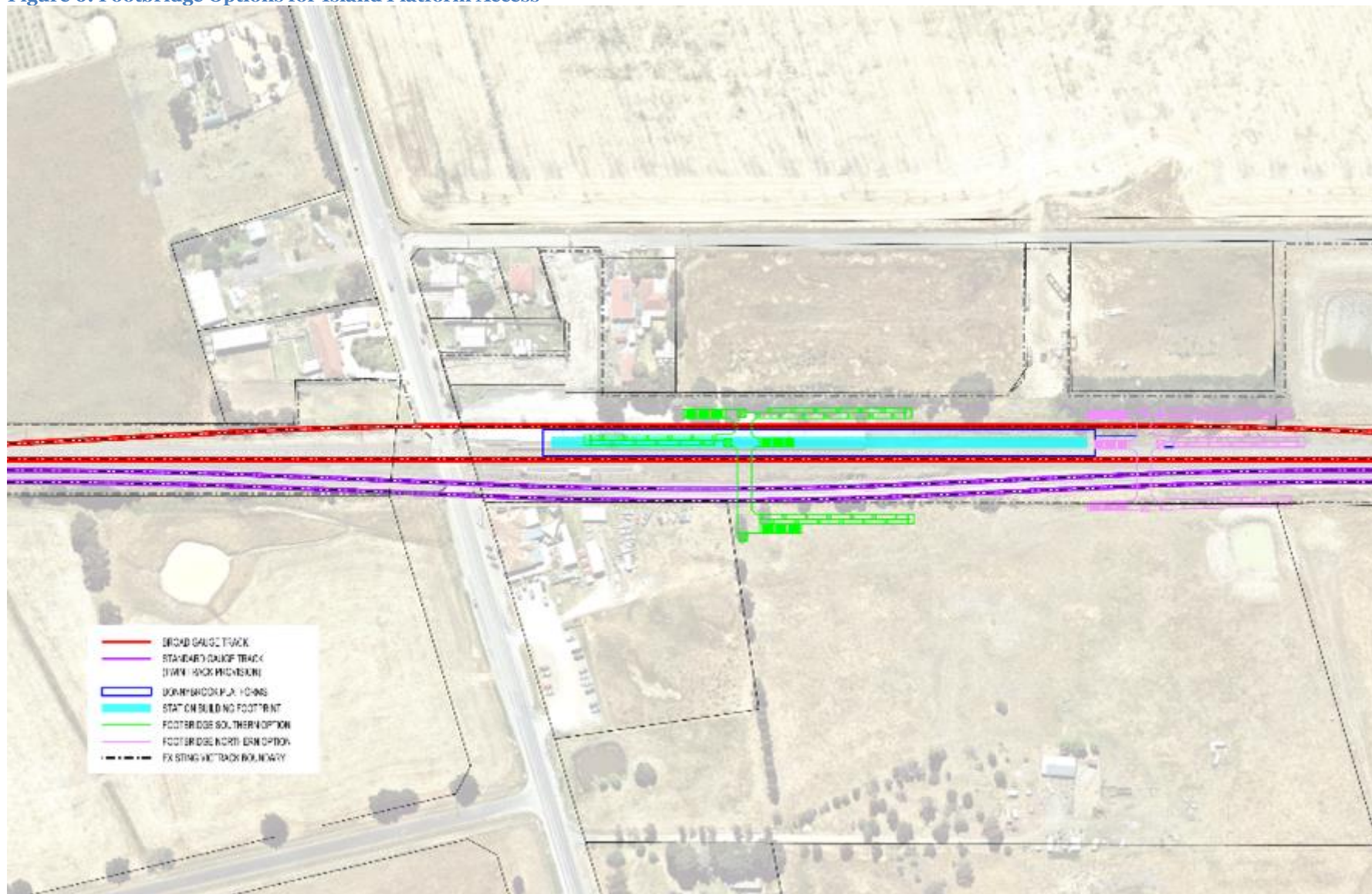
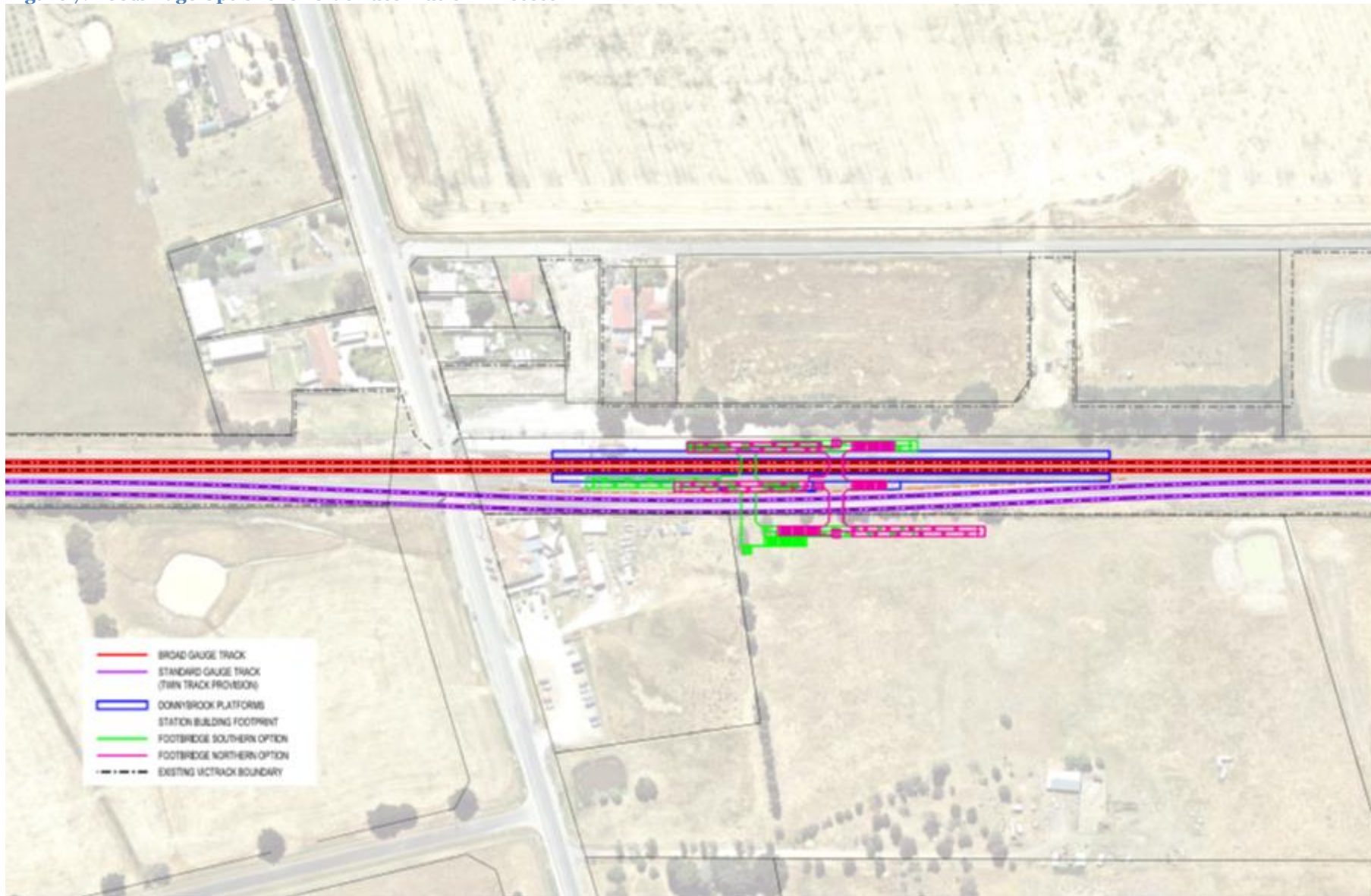


Figure 7: Footbridge Options for Side Face Platform Access



3.4 Location of the Station Building

3.4.1 Identified Issues

- The PTV specification for a Premium Station includes provision of a 120m² station building for the purposes of customer service. This standard has been adopted for this study, but it is noted that by the time that Donnybrook becomes a premium station it is possible that the need for such a facility may have changed.
- Where an island platform is proposed the placement options for the station building are:
 - » on the island platform adjacent to the entrance point to the footbridge
 - » on the footbridge to form an elevated concourse over the platform.
 - » at ground level, preferably on the side of the corridor from which most of the passengers approach the station, and most likely the same side as any modal interchange
- Where side face platforms are proposed, there are options as to where the station building can be placed:
 - » if the building is to be situated at ground level, it is normal practice to place the station building on the 'up' side of the corridor, given that this is the focus of the morning peak demand, and adjacent to the entrance point to the footbridge.
 - » the alternative is to elevate it in conjunction with the footbridge to form an elevated concourse over the platform to serve passengers arriving at the station from both sides of the corridor.
- The station building should provide observation of the station and surrounds for security reasons. It should also be located close to any bus interchange.
- The station cannot be located within the Yarra Valley Water pipeline corridor without approval from YVW.
- Where the station is placed on a platform there will be a preference for its width to be no wider than 4m in order to minimise the width of the platform. Where the station is located off the platforms and on adjacent land, more flexible dimensions can be adopted.
- The placement of the building shall not create the need for a fully ticketed footbridge in order to ensure unimpeded access across the corridor for no rail related pedestrian traffic

3.4.2 Proposed Responses

The decision as to the provision of an elevated station building in conjunction with the proposed footbridge could be considered at the detailed design stage. There is no established station design rule to inform this decision and therefore different solutions have been employed at various new stations. Recent stations built for the Regional Rail Link Project have employed elevated stations as have some other recent stations such as Nunawading, Springvale, and Sunshine.

Some of the issues that influence the decision as to elevating the station include:

- An elevated station provides the opportunity for improved revenue protection and station security outcomes
- An elevated station is equally accessible from both sides of the track whereas in the island platform scenario some passenger will need to use the footbridge twice in order to access it (refer to Figure 12 for further explanation)

- Current design criteria means that elevated station buildings are more expensive to provide and will have higher whole of life costs. It is also more difficult to manage the construction phase where building above live running lines would be required
- The design of an elevated building may need to be tied to the construction of the footbridge whereas the provision of a ground level station is not dependent on co-ordination with other infrastructure projects and could occur at an earlier stage if required

In the case of an island platform, the platform footprint has been set out to include provision of a station building on the platform, located close to the bottom of the main points of access. It is important to note however that the provision of a 'closed' station using Myki barriers will be problematic at platform level because it is not possible to collocate the foot of the stairs, ramps and lift. It is possible to place barriers at the top, on the footbridge, but this would imply the station building should also be located on the footbridge to help provide the necessary supervision. The alternative of placing the station on the eastern side of the corridor creates a conflict with the proposed Yarra Valley Water pipeline route which is planned immediately adjacent to the railway corridor. It has been assumed that placing the station building within the edge of that corridor, perhaps as a 'relocatable' facility, would be acceptable. However this option is less desirable because passengers approaching the station from the west, and requiring access to the station building, would need to use the footbridge to cross the corridor, and then reuse the footbridge to access the platform across the standard gauge tracks.

In the case of side face platforms, there is sufficient room to place the station building on the central portion only of the up platform, due to platform width restrictions created by the curvature of the adjacent standard gauge track towards each end of the platform. Alternatively the station building could be placed on the eastern side of the corridor, but this creates a conflict with the proposed Yarra Valley Water pipeline route as discussed earlier. There is no reason to choose to place the station building on the western side of the corridor, due to the reasons previously discussed relating to access for morning peak services.

Figure 8 shows the range of locations available for the placement of the station building on the island platform and on the eastern side of the corridor, whilst Figure 9 provides the range of locations available in conjunction with side faced platforms which include on the up platform and on the eastern side of the corridor.

In the context of this report, the objective is to provide a footprint for the station that will future proof PTV requirements and as such assuming that the station building is required to be provided at ground level beside the corridor better satisfies this requirement

Figure 8: Station Location Options with an Island Platform

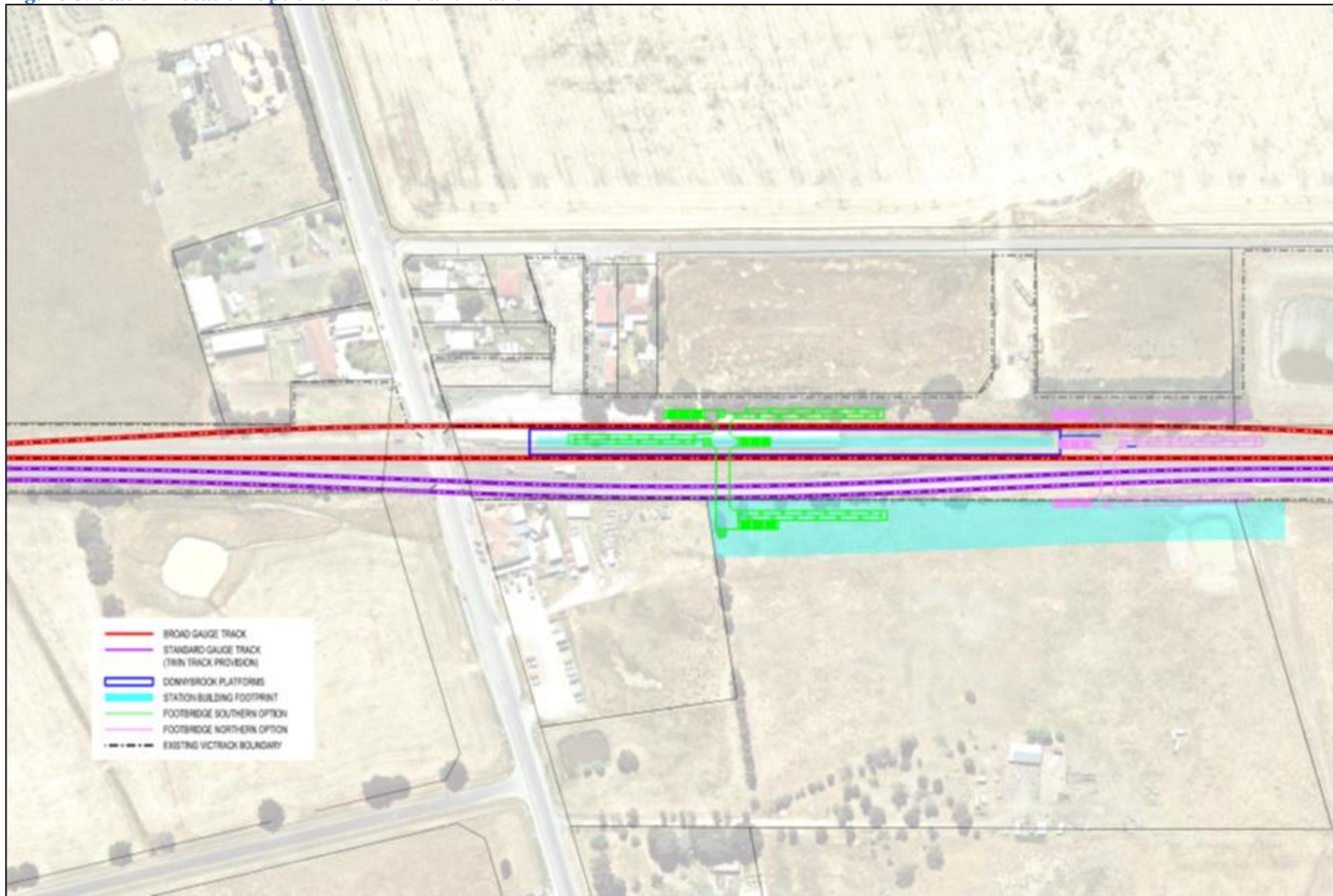
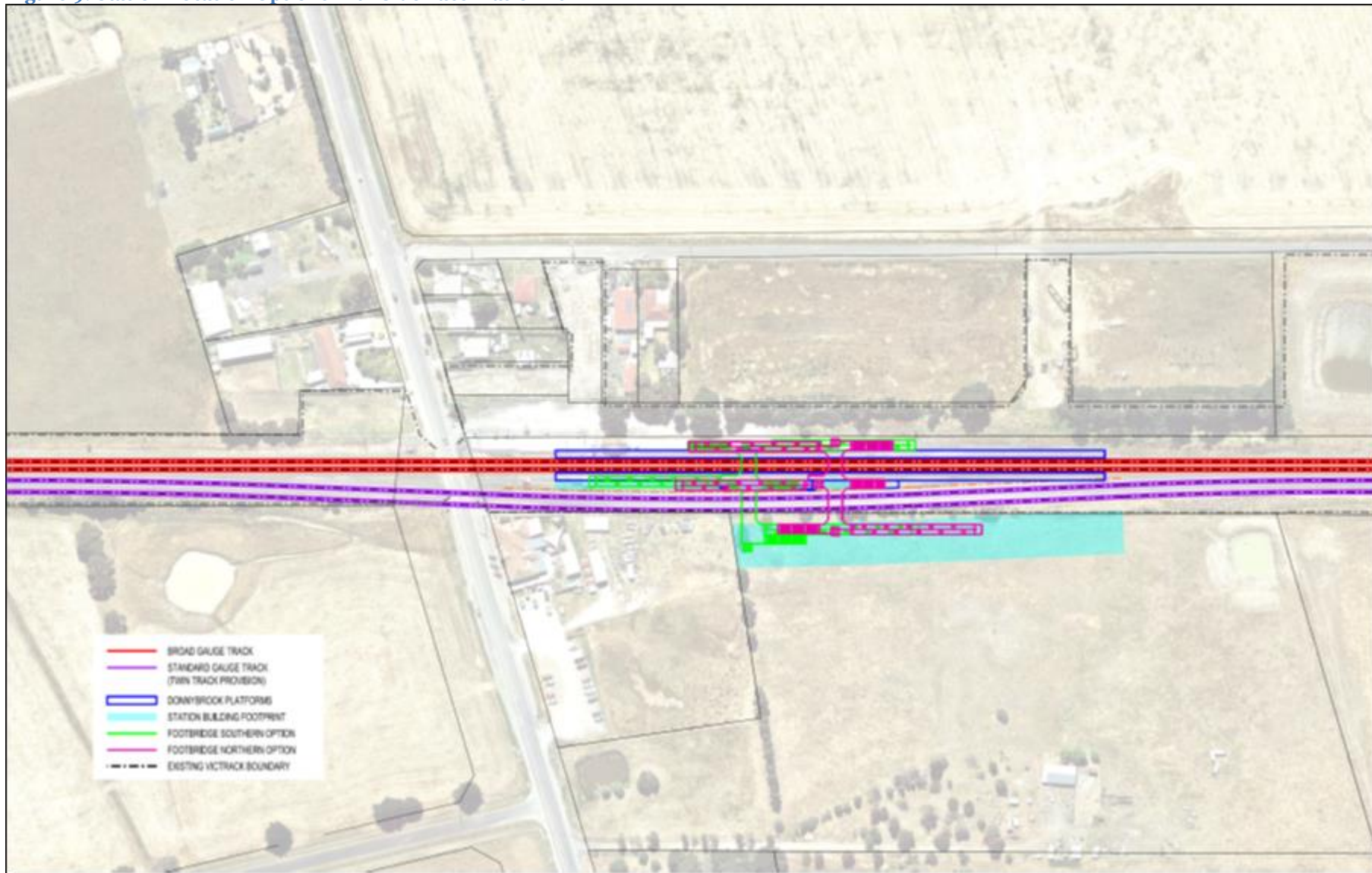


Figure 9: Station Location Options with Side Face Platforms



3.5 Location of Road Access Points

3.5.1 Identified Issues

- The location of the points of access from Donnybrook Road to the station will need to consider the proposed design for road over rail grade separation of the railway crossing. The length of the ramps will push intersection options 550 and 320m from the rail corridor.
- Proposed connector road intersection with Donnybrook Rd shown in the Lockerbie PSP is not viable due to the Donnybrook Road overpass ramp design
- Access roads on both sides of the corridor will need to be designed to accommodate two way bus operations to ensure future proofing of the station options and development staging
- Access roads should be as direct as possible to minimise the time it takes a bus to return to Donnybrook Road in order to continue its journey

3.5.2 Proposed Responses

The Lockerbie PSP provides for a road intersection at the western end of the bridge ramp. Access to the station is via either of two local roads which intersect with these roads. The northernmost of these roads also provides a link towards the north and provides access for communities to the north. This road arrangement is adequate for providing access to the station, provided that these roads are designed with a cross section consistent with the two way operation of buses. However it is considered that the route from Donnybrook Road to the station is not direct enough prompting the development of some alternative options as presented in Section 4.4.1.5 later in this report

The Draft Donnybrook PSP currently provides for a road intersection at the eastern end of the bridge ramp. This road intersects a road corridor designated as a 'key access route' which runs west towards the station. This road arrangement is adequate for providing access to the station, provided that these roads are designed with a cross section consistent with the two way operation of buses.



3.6 Location of the Bicycle Facilities

3.6.1 Identified Issues

- Two 'Parkiteer' style facilities are to be provided, one on each side of the corridor. A dimension of 7m x 5m has been used as a footprint.
- The storage facility should be connected to external bike pathways, and preferably a portion of the Principle Bicycle Network

3.6.2 Proposed Responses

The facility will be placed in an area where users are not tempted to access it through the modal interchange facility and where it is possible to access it from a shared or dedicated pathway.

3.7 Location of Bus Modal Interchange

3.7.1 Identified Issues

- The facility should be located as close as possible to Donnybrook Road such that the access route is as direct as possible in order to minimise bus travel times, particularly for through bus routes that will need to divert off Donnybrook Road in order to access the station.
- The modal interchange should be consolidated on one side of the rail corridor (rather than split) in order to aid wayfinding for users.
- The interchange should be located in close proximity to the access point to the footbridge given that this will represent the shortest route to the platforms. Preferably, this route would also be in close proximity to the station building.
- Location of the interchange on the western side of the corridor when side platforms are used has the advantage of reducing the need to use the footbridge (passengers arriving off 'down' train services would not need to use the footbridge). If it is located to the east, then all access will require elevation over the standard gauge track(s). The choice of an island platform would also require all access to be via the footbridge.
- A total of 8 bus stands are to be accommodated to service the following uses:
 - » 6 for three through routes requiring a separate stand for each direction of operation
 - » 1 for one terminating route
 - » 1 for rail replacement bus use
- Shelter is to be provided for each bus stand with capacity to accommodate 12 people in each
- Pedestrian movement (ie those not accessing buses) through the interchange area causing interaction with bus movements is to be discouraged by the design, and the location of the facility in relation to walking desire lines

3.7.2 Proposed Responses

The bus interchange design will reflect the need to provide an effective and efficient connection between modes, preferably without exposure to rain or sun, and with selective use of wind breaks within waiting areas.

Given the number of bays to be provided it is proposed to use a continuous roof structure rather than a series of discrete modular shelters (eg Adshel style).

Bus access should be set out so that the headboards can be seen in the direction of pedestrian approach from the station, but where this is not possible then it will be preferable to install an integrated information system at the point of entry to the interchange. There is a requirement for 8 stands and assuming a 18m long bay (worst case to accommodate an articulated bus), then if the buses – assuming the longest 'bendy buses', wavy kerb lines, stops are placed in one continuous line, then the interchange would need to be 160m long. This length could be halved if two lanes of stands were provided, one for eastbound routes and one for westbound routes, providing a better outcome. This would mean that nominally the interchange would have dimensions of roughly 80m x 25m and could be better accommodated in close proximity to the footbridge where it needs to compete for space with a range of other uses.

3.8 Location of Taxi and Kiss and Ride Facilities

3.8.1 Identified Issues

- Four taxi stands are to be provided adjacent to the bus modal interchange in order to improve way finding for passengers looking for connecting transport options
- Taxi stands are to be extended to consider rear loading/unloading of wheel chairs
- Six kiss and ride bays are to be provided on each side of the corridor as close as possible to access to the footbridge and in a location that does not interfere with bus movements

3.8.2 Proposed Responses

The necessary bays will be provided adjacent to a kerb and footpath that will take people directly to the footbridge and station building. The bays will be located closer to the station than the car park, and be easy for vehicles to use to avoid the temptation to drop passengers at other more attractive locations.

3.9 Location of the Car Park

3.9.1 Identified Issues

- Car parking to be provided to accommodate 2,000 vehicles, with the number of spaces increased progressively as demand increases
- Car parking should preferably be within 400m of the station platform access point, although there are examples at other locations where this distance is exceeded
- There should be the opportunity for passive observation of the car park to reduce the risks of crime
- It is desirable to split the number of spaces between each side of the corridor. However there are space constraints on the western side of the corridor should construction be limited to VicTrack owned land.
- DDA compliant spaces are to be provided in a ratio 1:50. These spaces are to be located as close as possible to the footbridge ramp or lift access point(s).
- Multi-story car parking solutions are not considered due to cost.

3.9.2 Proposed Responses

Once the functionality issues have been resolved in relation to the design of the platforms, footbridge, station building and interchange, then the dimension of a car park capable of accommodating 2,000 cars dwarfs the land impacts from those other pieces of infrastructure.

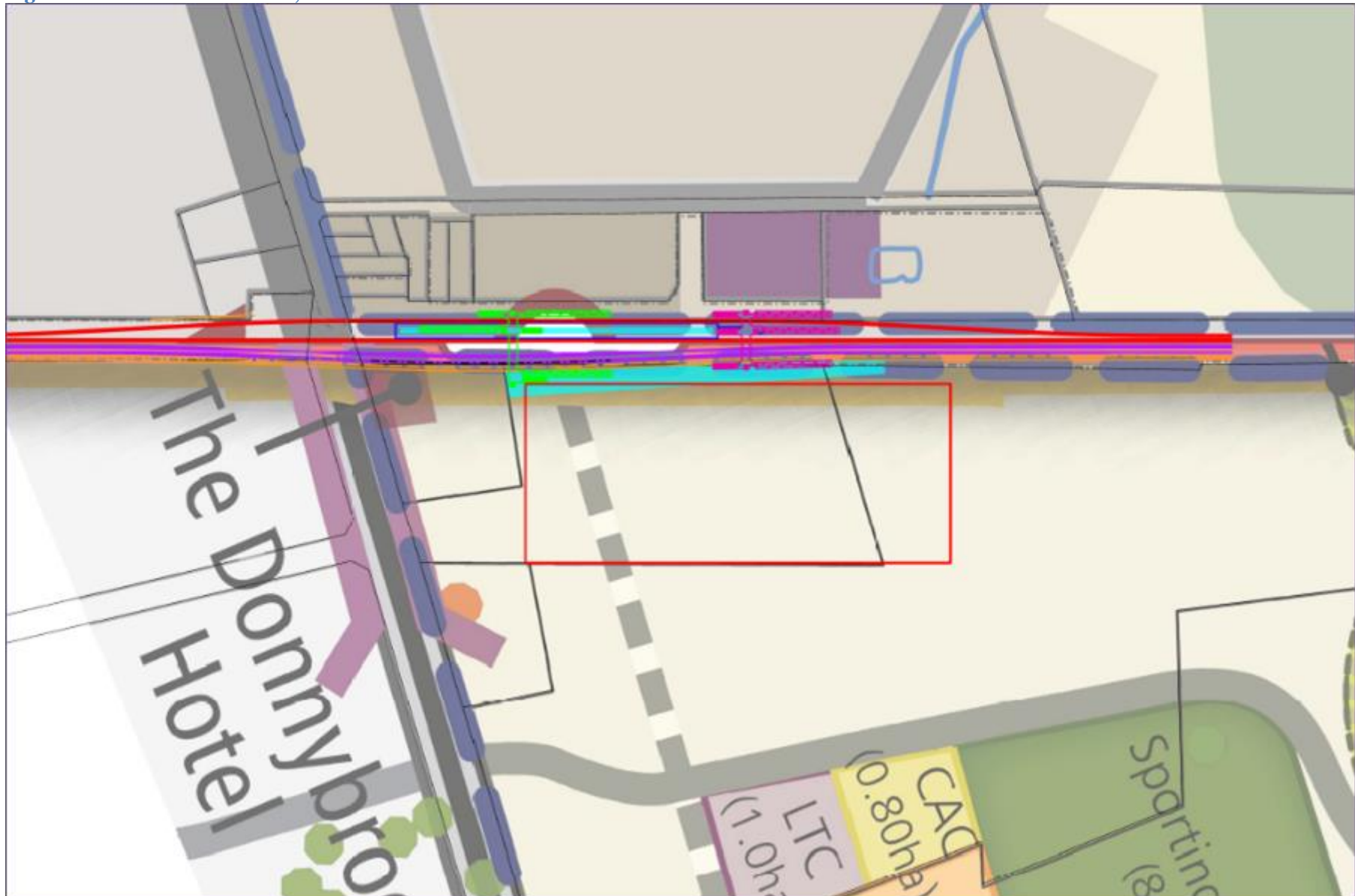
To place this into context, Figure 10 shows an indicative representation of the area required for car parking. Clearly, if the car park is applied at this location it will produce some very undesirable land uses outcomes in the sense there would be no activation of the space around the station (leading to the potential for crime and anti-social behaviour), but also there will be a significant diminishment of the walk-in catchment for the station.

In order to mitigate these concerns, it is proposed to consider redistribution of the parking spaces to multiple sites around the station and to allow room for the introduction of higher density housing closer to the eastern side of the station. This would then provide some continuity with the land uses proposed in the Lockerbie PSP to the west of the station.

Options to be considered include:

- Maximising the use of VicTrack land on the western side of the corridor, noting that the assumption is that the Lockerbie PSP cannot be altered to create more car parking space, but may accommodate the potential for land swapping
- Provide parking on the eastern side of the corridor further to the north thus allowing residential and other land uses to flow into the station area
- Exploring the possibility of placing car parking on either/both sides of the corridor to the south of the proposed Donnybrook Road grade separation.

Figure 10: Indicative Size of a 2,000 Vehicle Car Park



4 Option Development

4.1 Introduction

This section of the report focuses on reducing the infrastructure permutations in order to deliver a number of holistic options for the site layout. The focus is to now consider the relationship between the various infrastructure components in order to deliver a functional whole of station solution that will meet the needs and expectations of future users.

4.2 Resolution of Platform and Associated Access Preferences

The two platform concepts (island platform arrangement and side face platforms arrangement) have been developed in this report up to this point. To allow a focus on the interfaces between the railway infrastructure, the supporting access infrastructure, and the surrounding land uses, these options have been assessed to decide a preference. The on the following page provides a qualitative comparison of the options and indicates that the choice of side face platforms would be the preferred solution for this location.

Figure 11: Comparison of Island and Side Face Platforms Options

Platform Option	Advantages	Disadvantages
Island Platform	Facilities: Allows the option of placing the station building on the platform or footbridge so that it is accessible easily for all travellers (Medium Issue) Operation: Provides better security with all activity in a single station zone (Minor Issue)	Design: Requires the realignment of the down rail track in order to provide sufficient space to insert the island platform (Major Issue) Constructability: Significant service disruption during construction and closure of the station for travel (Major Issue) Cost: Higher cost option (Major Issue)
Side Face Platforms	Design: No requirement to alter the existing track alignments (Major Issue) Constructability: Easier to construct under live operating conditions through platform extensions (Major Issue) Cost: Lower cost option (Major Issue) Facilities: Allows the option of placing the station building on the platform or footbridge so that it is accessible easily for all travellers (Medium Issue) Operation: Enables at-grade access to the down platform to/from the west (Medium Issue)	Design: Narrower range of location options for the location of the footbridge (Minor Issue) Operation: Reduced supervision of the platform areas (Minor Issue)

4.3 Resolution of Station Building Placement

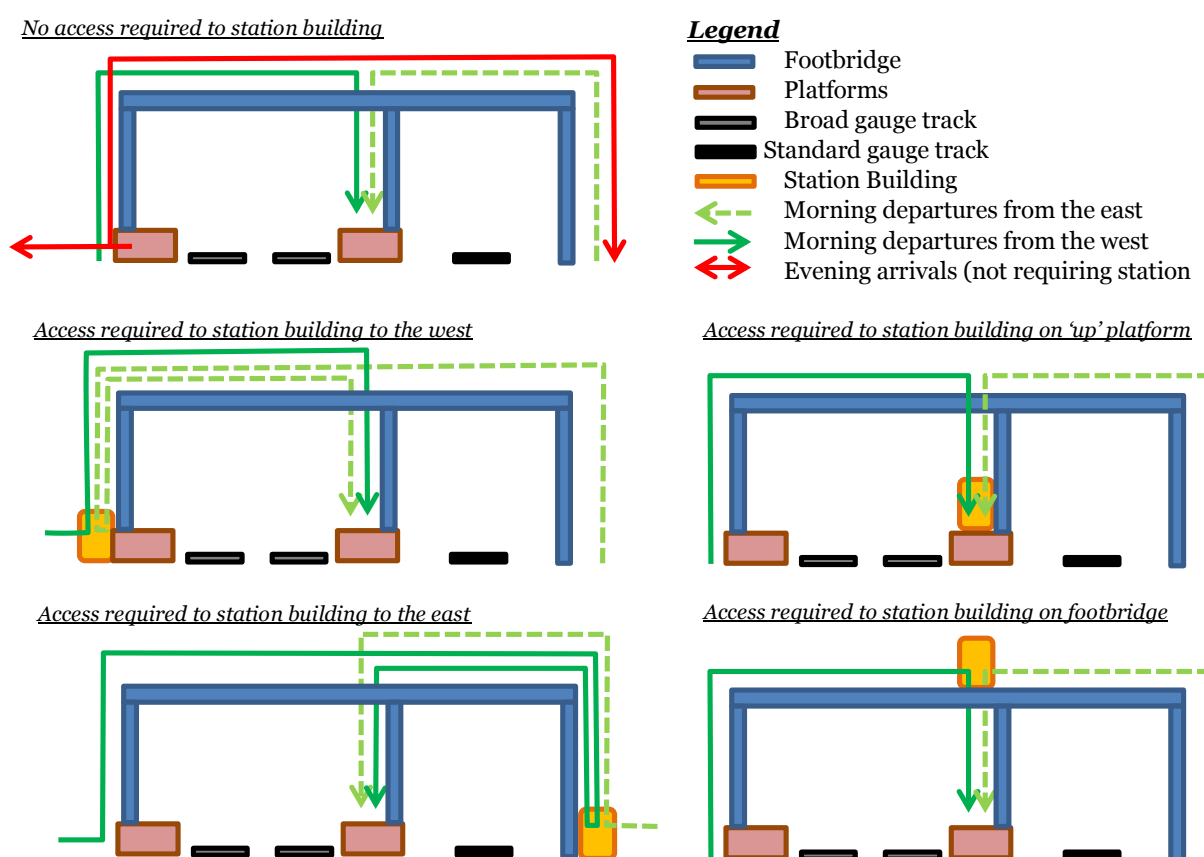
Placement of the station building has potential impacts on how people may use the station in the future. Figure 12 provides a graphical representation of how pedestrian flows may change as a result of different station building placement options and the findings are summarised below:

- Assuming that in the future increasing automation of ticketing will result in people rarely, if at all, need to visit the station building before travel then all departing passengers (towards Melbourne, which is expected to be the dominant station use) will simply use the footbridge to access the 'up' platform.
- Placing the station building either on the 'up' platform, or on the footbridge, does not change the way in which people use the footbridge irrespective as to whether they need to access the station building before joining a train towards Melbourne.

- If the station building is placed to the west of the corridor, passengers accessing the station from the east will have need to use the footbridge twice before joining a train towards Melbourne.
- If the station building is placed to the east of the corridor, passengers accessing the station from the west will have need to use the footbridge twice before joining a train towards Melbourne.

This suggests that the best solution involves designing for the building to be on the footbridge, with the option of placing it on the 'up' platform being a close second choice due to the minimal number of north bound trips likely to be made from the station and the inability to provide revenue protection.

Figure 12: Access interaction between station building placement and use of the footbridge



4.4 Station Layout Themes

There are a multitude of options available for the layout of the station features and how these interact with surrounding land uses.

After considering the issues, it has been decided that there are three key themes that will deliver differing outcomes and thereby allow most station facility layout permutations to be identified and assessed in a structured manner. These themes are:

1. **Minimal impact on surrounding land ownership:** This theme would be achieved by focussing on what could be achieved within the existing VicTrack land ownership boundaries and in effect represents the 'Base Case'. By implication this will see the focus of early station development on the western side of the corridor.

2. **Consolidation of station facilities to the east:** This theme seeks to consolidate the key railway features (bus interchange, park and ride, taxis, and additional parking) on land to the east of the corridor, using the VicTrack land to the western side only for car parking and kiss and ride. This will result in the maximum footprint impact on the Donnybrook PSP area.
3. **Dispersed car parking:** This theme seeks to retain the key station facilities close to the platforms but distribute car parking more widely, including using land to the south of Donnybrook Road. This will reduce the footprint required in the Donnybrook PSP area

4.4.1 Theme 1 – Minimal Impact on Surrounding Land Ownership

The intent of this Theme is to fully utilise existing VicTrack owned land in the first instant as a means of minimising acquisition of land in private ownership, and to minimise the impact on endorsed and draft PSP's that surround the station site.

The following sections examine the key design inter-relationships and Figure 13 and Figure 14 show a general arrangement of how the components may fit together.

4.4.1.1 VicTrack Land

The majority of VicTrack land that could potentially be available for the station facilities is on the western side of the rail corridor. The opportunity exists to use:

- An elongated parcel of land approximately 21m wide running the full length of the proposed platforms with frontage to Donnybrook Road. This will be required in order to provide access to the proposed footbridge. It also provides the opportunity as circulation space for traffic, and the potential for use for intermodal transfers because of its proximity to the proposed footbridge.
- Two parcels that run perpendicular to the rail corridor with frontage to Springs Road. These parcels provide potential for alternative points for traffic access depending on the impacts from the proposed Donnybrook Road grade separation.
- A large parcel of land to the northern end of the precinct that currently accommodates a water reservoir. Assuming that this water body no longer provides a meaningful function, and that the watercourse that feeds it can be piped, then this areas would provide the opportunity for a substantial amount of car parking.

4.4.1.2 Station Approach

It is possible to use the existing VicTrack land to gain access to the station from two points off Springs Road. The separation of these access points provides the potential to flow buses past the front door of the station and back out onto the public road network. Whilst this provides an effective solution for traffic management, it will mean that once the high density residential is built between the station and Springs Road, then the station will be somewhat hidden from view.

Therefore, an option has been developed that proposes a land swap such that the northern most of the VicTrack connections to Springs Road is placed directly opposite the station, to create a pedestrian corridor and sight line to the station, and its original alignment is transferred to high density residential. This then provides the opportunity to develop a small retail corridor in front of the station which may also accommodate short term parking for the station and the shops. This alignment does not work well for motor vehicle access to the station or its car parks because of the narrow strip of available land parallel to the rail corridor which is best used for one way traffic flow

whilst this new access corridor intersects that corridor in the middle of it. Therefore it is proposed to push the vehicle access point further to the north onto the VicTrack land currently containing the reservoir.

4.4.1.3 Buses Routing and Interchange

It is proposed that the modal interchange will be placed adjacent to the down platform, at the base of the proposed footbridge. This means that all bus access will be focussed to the western side of the rail corridor and will require a local road access that facilitates a minimum time penalty for access from Donnybrook Road (see Section 4.4.1.5 below for further discussion)

4.4.1.4 Motor Vehicles

Kiss and ride and taxis could be accommodated in a similar area to the buses provided that there is suitable segregation of the traffic flows.

It is proposed that commuter car parking will be located on the large parcel of VicTrack land to the north, currently used for the reservoir. The extent of this land just fits within the desirable less than 400m walking distance from the platform access point.

However, this area will not be large enough to accommodate the required 2,000 cars, so at some point, as travel demand grows, additional car parking space will be required, most likely to the east of the rail corridor.

4.4.1.5 Road Access

Effective road access to the station from the west will be critical to the success of this Theme. The general area is subject to the Lockerbie PSP which has already be endorsed by MPA, therefore changes to the road network and land use allocations may be difficult to negotiate. Nonetheless, it has been identified that changes to the road network are necessary to accommodate efficient station access. Options considered include:

Option	Network Changes and Comment	Concept Drawing
1	Extend the new road off Springs Road to meet the proposed north/south arterial road linking towards Lockerbie Town Centre The proximity of the new intersection is close to Donnybrook Road and would therefore require the use of co-ordinated traffic signals operating in conjunction with the Donnybrook Road intersection and possibly the application of turn restrictions. An alternative solution may involve pushing the intersection towards the north to avoid interaction with the Donnybrook Road intersection but this would place it within the Merri Creek reserve and will most likely be on structure to mitigate flood issues.	
2	Deviate the arterial road to remain on the eastern side of the Merri Creek This provides the opportunity to shift a proposed intersection, between the arterial road and the station access road, a suitable distance away from the Donnybrook Road intersection. It also reduces road construction costs and enhance environmental outcomes by eliminating one bridge crossing of the Merri Creek.	
3	Slip ramp on northern side of the new Donnybrook Road overpass with a new access road to the south This solution has little or no impact on the Lockerbie PSP because the slip road to the north would be on the old Donnybrook Road alignment, and the proposed roads to the south are in an area a draft PSP only has been developed. One disadvantage of this option is that the wayfinding for people approaching the station from the east will not be particularly intuitive and involve a longer journey, which is also relevant to bus operations.	

After examining these options and considering their interface with the PSP, station functionality and vehicle access, it would appear that Option 1 would be the easiest to implement by resolving the close proximity of the proposed intersection to Donnybrook Road through the use of integrated traffic signals. This option provides the most direct route to the station, and also provides for a single access point for all traffic. There could be some merit associated with Option 2 given that it reduces the impact on the Merri Creek and removes the need for a substantial bridge. The choice of Option 3 will be driven by the timing associated with the Donnybrook Road grade separation and will not provide an interim solution.

A further matter for consideration is the potential to amend the PSP to better align the proposed public road design to better align it with the proposed entrance points to the station.

Figure 13: Theme 1 – Using VicTrack Land only

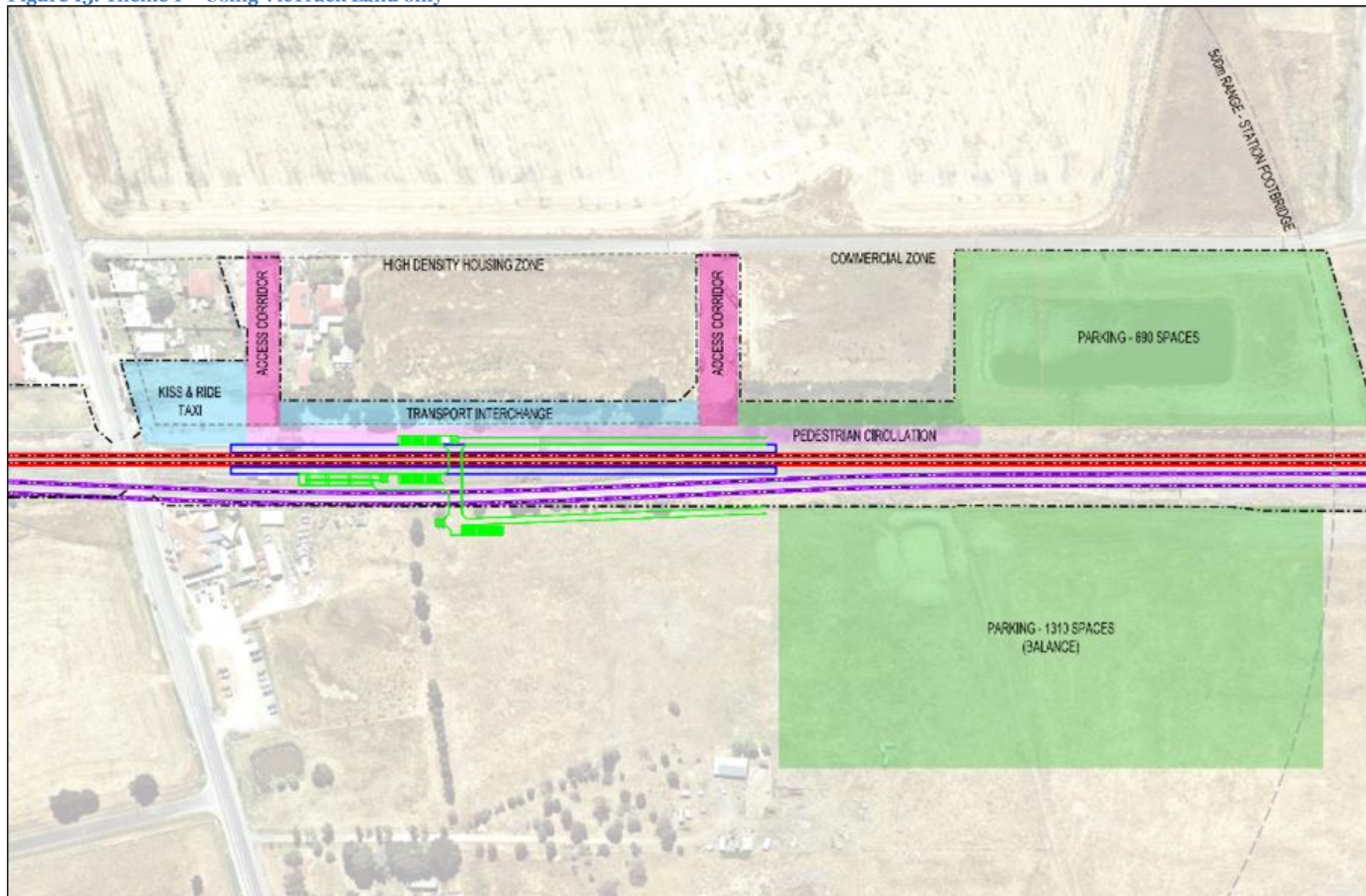
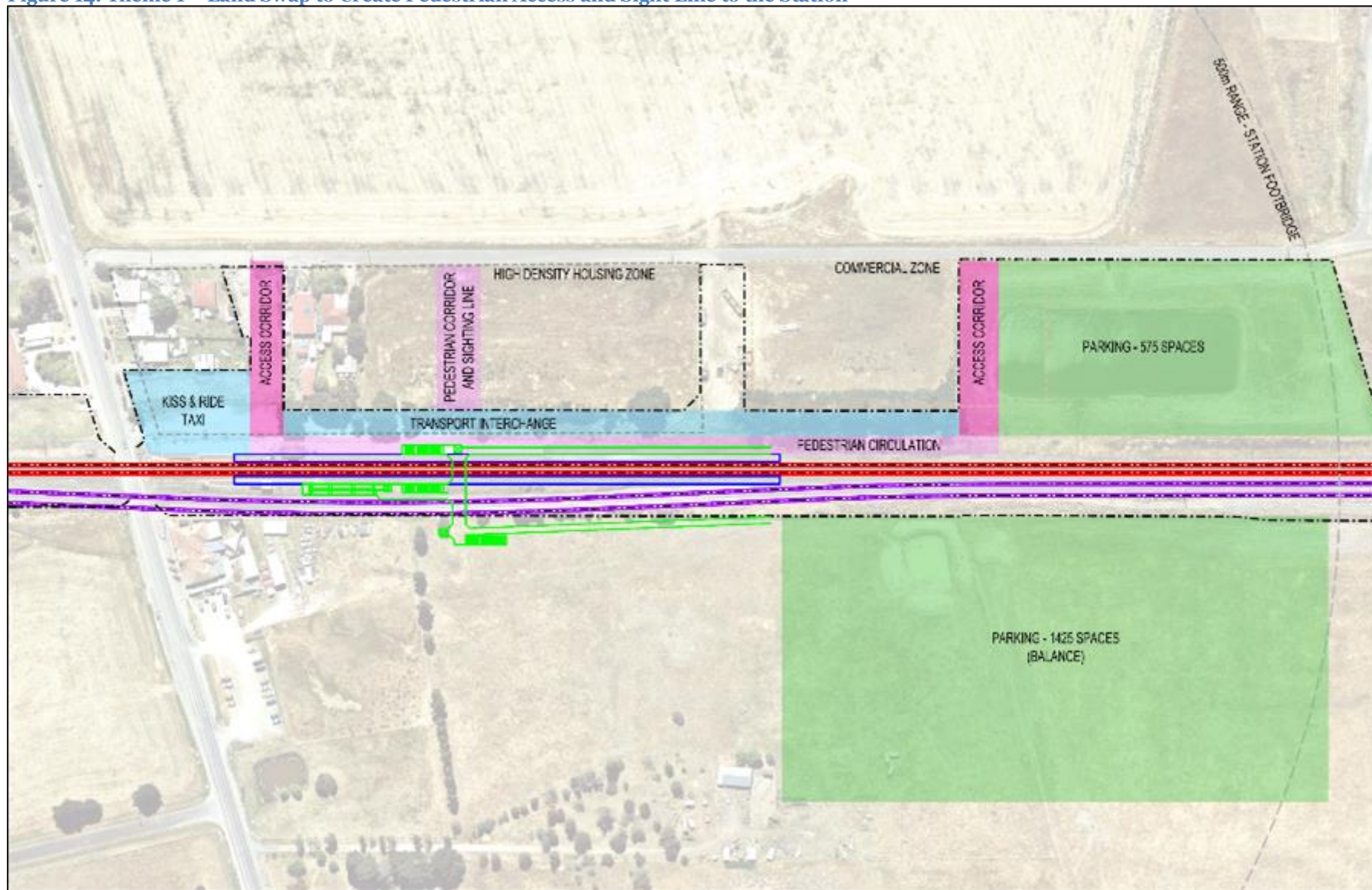


Figure 14: Theme 1 – Land Swap to Create Pedestrian Access and Sight Line to the Station



4.4.2 Theme 2 – Consolidation of Station Facilities to the East

This option assumes that the station facilities would be focussed to the east of the rail corridor as a means of identifying the maximum potential impact on land use in the Draft Donnybrook PSP should this option be adopted. The objective for the design has been to ensure that the station is not surrounded by a 'sea of car parks' disconnecting it from its potential for local trip capture. This has been achieved by introducing the opportunity to locate residential and employment land uses in close proximity to the station entrances by giving it placement priority over car parking areas.

The following sections examine the key design inter-relationships and Figure 15 to Figure 17 show a general arrangement of how the components may fit together. In some options, not all car parking capacity can be accommodated in the area designated to the north east, meaning that additional sites (eg to the west of the rail corridor or south of Donnybrook Road) would need to be identified to complement those designs

4.4.2.1 Buses Routing and Interchange

The objective has been to place the bus interchange area as close as possible to the station entrance to facilitate good public transport use in preference to people driving to the station. In all cases, access to the interchange sites will be from Donnybrook Road via a north/south road to be constructed as part of the land development and provided for within the proposed PSP.

Three different options have been explored for the placement of the interchange facility as follows:

- West facing interchange along the southern boundary of the site (against the boundary of Donnybrook Springs Hotel site) combined with kiss and ride and taxi facilities as shown in Figure 15. The access road would be shared by all vehicles but segregation in the design would ensure that the bus interchange area would be exclusively accessed by buses
- West facing interchange along the southern boundary of the site (against the boundary of Donnybrook Springs Hotel site) but with kiss and ride and taxi facilities located in a separate area as shown in Figure 16. Buses would access the interchange via a dedicated roadway with the kiss and ride and taxis gaining access via a road that also serves the car park.
- South facing interchange parallel to the rail corridor with segregated kiss and ride and taxi facilities along the southern boundary as shown in Figure 17. Bus access would share the road servicing the car park and exit sharing the road used by the park and ride and taxis, but buses will have exclusive entrance to the interchange.

4.4.2.2 Motor Vehicles

In all options, the car parking has been pushed as far north as possible with consideration to the need to keep it within 400m of the station. The foot bridge ramp has been straightened and aligned towards the car park to ensure that patrons only have to walk the minimum distance.

4.4.2.3 Transport and Land Use Integration

By placing the modal interchange in locations around the perimeter of the site and pushing the car parking towards the north, an area of land has been quarantined for allocation to other land uses. It is envisioned that this would become an activated area consisting of higher density residential and commercial uses, and given its close proximity to the station, provide a walk-up catchment with a higher degree of sustainability as compared to the other transport functions surrounding the station.

Figure 15: West facing modal interchange with collocated kiss and ride and taxis

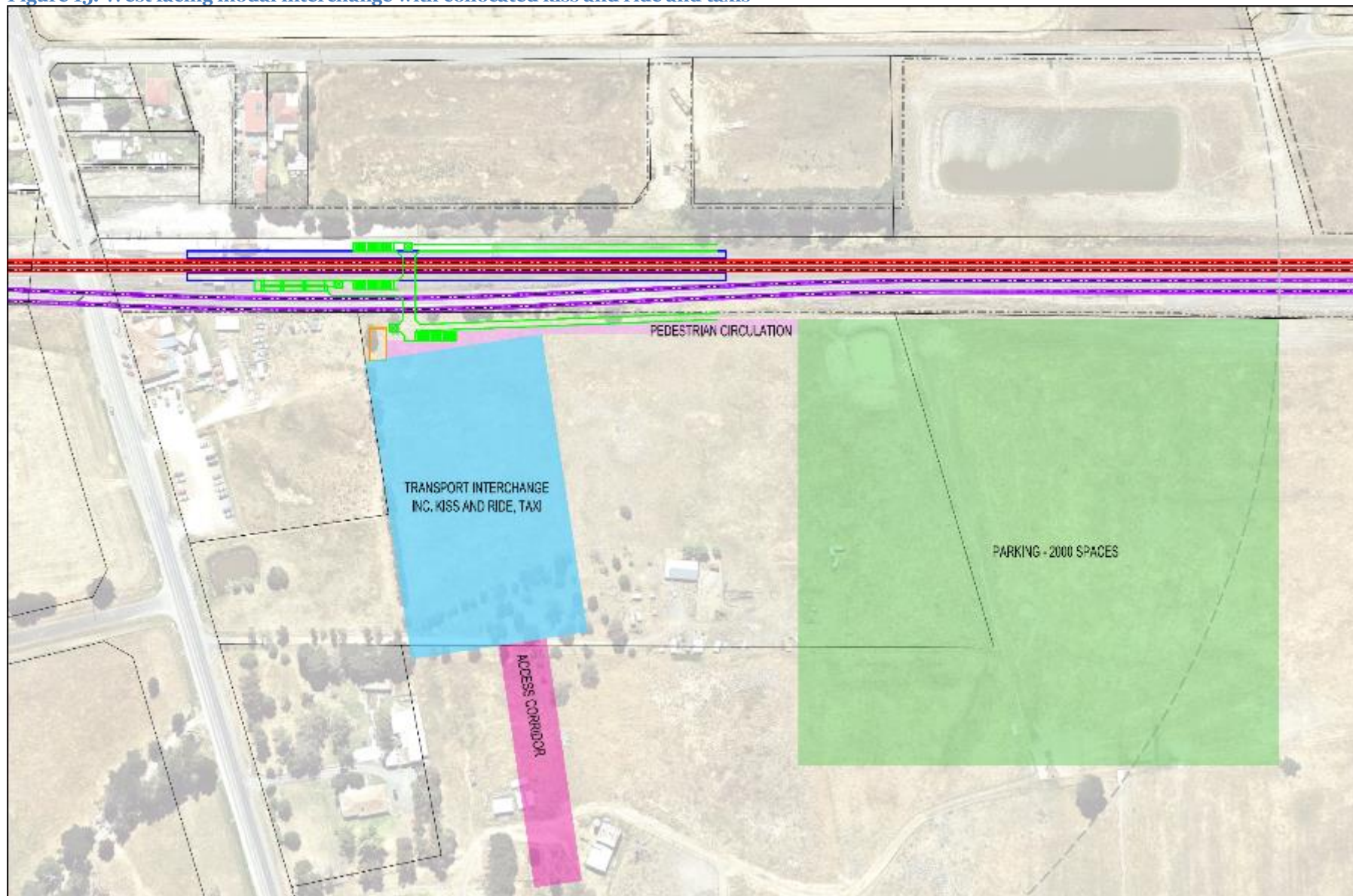


Figure 16: West facing modal interchange with segregated kiss and ride and taxis

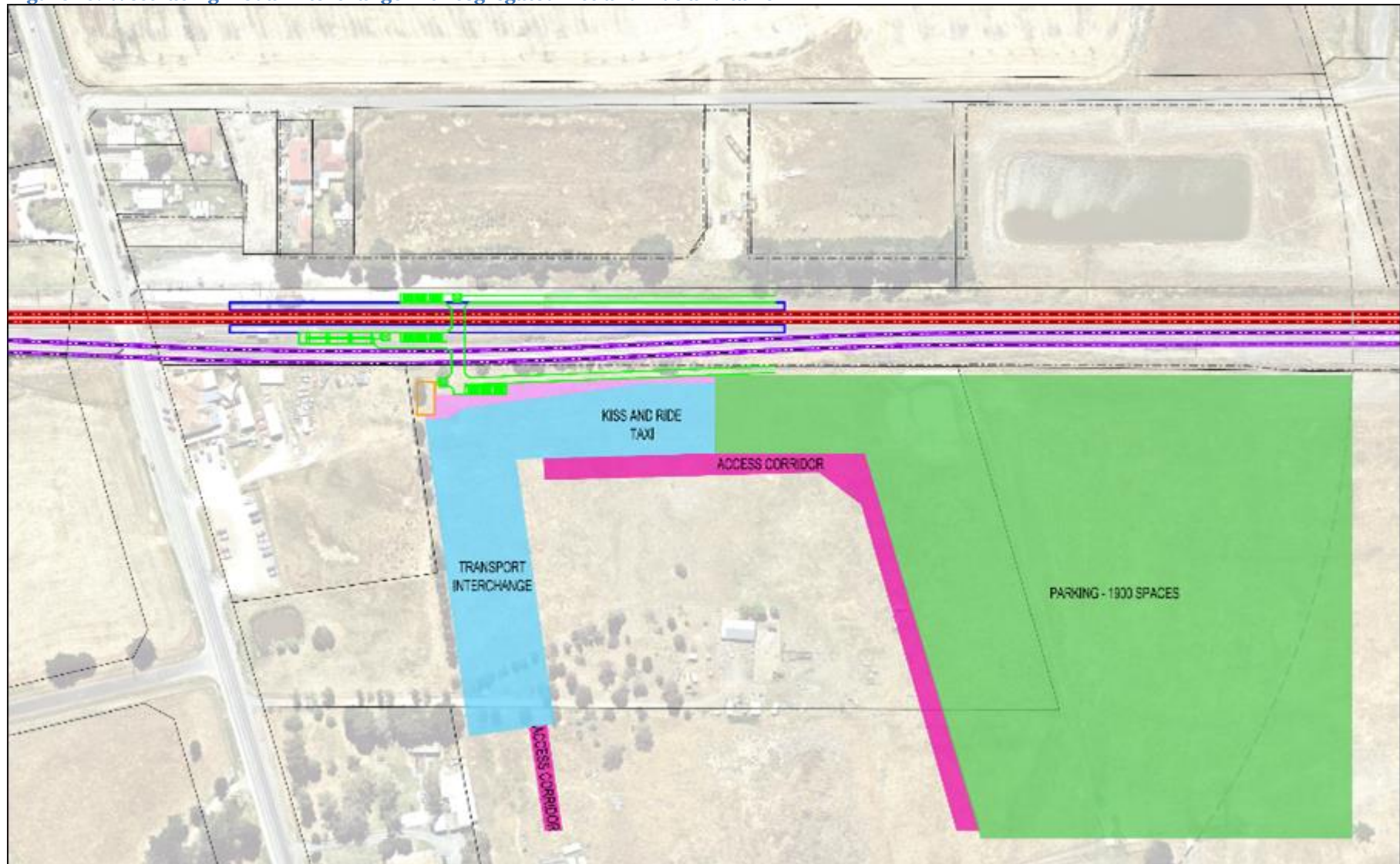


Figure 17: South facing modal interchange with segregated kiss and ride and taxis

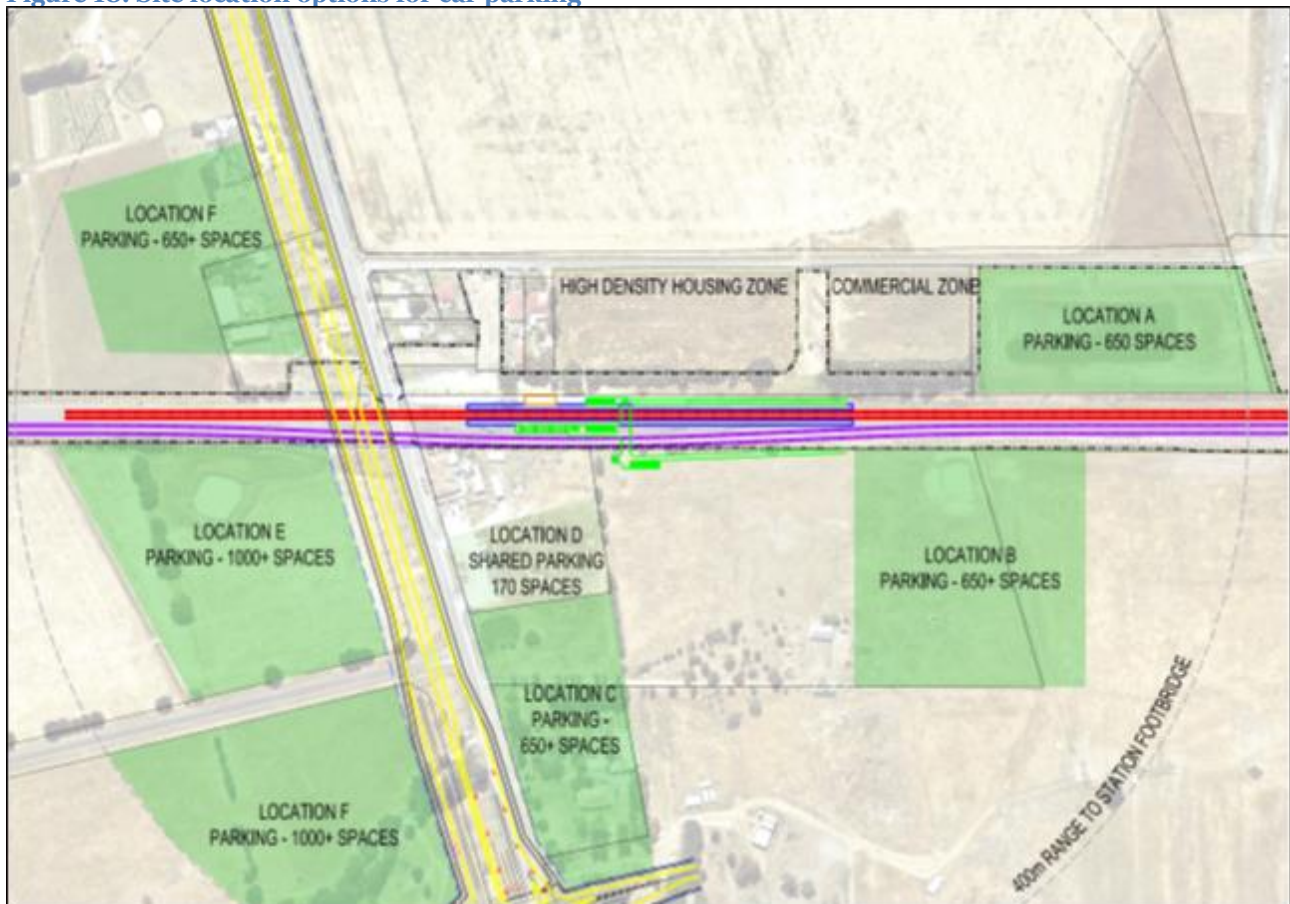


4.4.3 Theme 3 – Dispersed Car Parking

In the preceding Themes, the concept has been to consolidate the station facilities to either the west or east of the rail corridor. In this theme, options are explored to scatter the facilities over a wider area to break up the mass of land required for the station facilities. Priority has been retained for the bus interchange, kiss and ride and taxi facilities to be located immediately adjacent to the footbridge and station entrance, on either side of the rail corridor.

Car parking is the biggest single land use associated with the station and it has a great deal of flexibility as to where it can be placed. Figure 18 shows location options and it also dimensions the number of parking spaces that could be typically achieved. The practicalities of each location are discussed below, and an assumption is made that any private land ownership issues could be resolved.

Figure 18: Site location options for car parking



- **Location A:** This site has previously been examined in this document in relation to focussing the station facilities to the west of the rail corridor. Whilst there is further private land to the north of the site into which the car park could potentially be extended, the distance to the railway station would extend beyond the desirable 400m limit. Therefore this site realistically will be constrained to about 650 parking spaces. It should be noted that the use of this location is conditional on the ability to fill in an existing dam, pipe a water course and facilitate the proposed Yarra Valley Water easement.
- **Location B:** The availability of land for car parking in this general area is only constrained by the 400m radius from the station and the availability of land. The site is on private land which

would need to be acquired. The reason for the shape and location of the facility is to maximise segregation of the rail corridor from adjacent development, most likely to be residential.

- **Location C:** This option uses private land with frontage to the existing Donnybrook Road to the south which would be an advantage in the short term but once the grade separation is built alternative access would be required from the northern side
- **Location D:** This is an extension of Location C and assumes a degree of shared use with the Donnybrook Hotel. Given the intended shared use, there would need to be a co-operative approach with the land owner to make it happen.
- **Location E:** This location will ultimately be separated from the station by the proposed Donnybrook Road grade separation. Access to the station footbridge could be provided under the road bridge but there is little opportunity for a pathway to the west of the Hotel, especially once provision of the additional standard gauge rail track is considered. There would be little opportunity for observation of the car park given its remoteness and therefore it presents a security concern. The number of parking bays is constrained only by the 400m walking distance to the station. The site requires the acquisition of private land and the removal of a dam.
- **Location F:** This faces similar remoteness issues as Location E. However, pedestrian access to the station is easier to provide by making provision for a pathway under the grade separation (a roadway is being considered in conjunction with the draft PSP for the land) and then via VicTrack land to the footbridge. The number of parking bays is constrained only by the 400m walking distance to the station. The site requires the acquisition of private land.

The preference will always be to place the car parking facilities as close as possible to the point of access to the station for the purpose of security from passive surveillance from the station, in this case near the base of the footbridge ramps and stairs once these are built. To this extent, land to the west of the station represents the prime location. The land to the north east would be the second preference and then land on the southern side of Donnybrook Road would be of a lesser priority.

5 Development of the Recommended Station Layout

5.1 Introduction

There are many differing issues that inform the final station layout, some of which present trade-offs between the functionality of the station facilities, land use and practicalities of staged development (including funding).

In an attempt to minimise the number of issues remaining unresolved so that a concept layout for the station to be finalised within the scope of this report, Public Transport Victoria has undertaken a consultative process with relevant parties. A summary of the issues raised is provided below:

MPA

- A preference not to significantly modify the Lockerbie PSP, although some land swapping could be considered to afford better access to the western side of the station.
- Changes to the Draft Donnybrook PSP are acceptable provided that they are consistent with the general land use strategy
- Growth Area Infrastructure Contributions (GAIC) are likely to flow in amounts of about \$3m and therefore the development of the station should be planned in appropriately scaled stages
- The ability to reserve and acquire land to the east at the present time is problematic due to the ownership overlay and an absence of interest of the owners to develop those lands
- Use of the existing Donnybrook Hotel land is not an option at the present time, although there is some acknowledgement that future site development may change this situation.

ARTC

- Provision needs to be made duplication of the standard gauge track on the eastern side of the rail corridor

VicRoads

- Intersections along Donnybrook Road to be clear of the proposed grade separation ramps and consistent with the draft design of the grade separation
- Construction of the grade separation is likely to be over 20 years away.
- Minimum of 100m spacing of intersections on roads connecting into Donnybrook Road

Yarra Valley Water

- Any deviation of the pipeline is expensive.
- Station facilities such as paved areas for cars and buses are reasonably compatible with the pipeline, the use of the corridor for a station building is less so.

City of Whittlesea

- Supports upgrading of the station with a bus interchange, substantial parking provision and integration with adjoining land uses.
- Seeks to have highly legible pedestrian and cycling routes to the station and to have a street oriented towards the station to make it visible from a distance.

5.2 Resolution of Layout Preferences

5.2.1 Station Platforms, Passenger Access and Station Building

- Side face platforms addressing the up and down broad gauge tracks only, and ultimately extended to 220m in length, have been chosen in preference to an island platform in order to avoid the need to realign the broad gauge tracks to accommodate the platform between them, and avoid the need for passengers arriving from the Melbourne direction and accessing the west side of the corridor having to use the footbridge.
- A footbridge that spans the entire rail corridor, including provision for an additional standard gauge track on the eastern side
- As discussed in Section 4.3, the preference is for the station building to be on the footbridge or the 'up' platform.

5.2.2 Bus Interchange, Kiss & Ride, and Taxi Facilities

- There is already a proposal to create kerbside bus stops on Donnybrook Road as an interim measure.
- In the short to medium term, there is an opportunity to establish an interchange facility on VicTrack land to the west of the station, should there be a need to relocate this facility away from Donnybrook Road or to supplement on-street stops.
- Ultimately the bus interchange needs to be placed in a location that is large enough to accommodate the required number of bays and one that provides easy access from Donnybrook Road to minimise journey times. The eastern side of the railway corridor should best satisfy these needs in the long run because it requires less bus diversion from Donnybrook Rd and there is more design flexibility because the PSP for that area has not as yet been adopted. However, the west has the benefit of more buses from that side of the corridor (4 routes compared to 3 to the east) and less need for passengers to use footbridge (ie all passengers need to traverse the standard gauge track if the interchange is to the east whilst arriving down passengers will have direct access to an interchange to the west). Therefore, west side has a role to play in the short to medium term but once the space requirements exceed the land available to the west then the facility will need to be migrated to the east.
- In the interim, there may be a period (before the Donnybrook grade separation is built) where the bus facilities may be required on both sides of the rail corridor as a means of avoiding congestion associated with the level crossing.
- The bus interchange needs to be located as close as possible to the footbridge access to the platforms, with buses preferably facing towards the direction of approach for passengers.
- The kiss and ride and taxi areas need to also be located as close as possible to the footbridge access to the platforms, and will therefore compete for space and position with the bus interchange. The taxi facilities should be located adjacent to the bus interchange to assist way finding for arriving passengers, however kiss and ride could be retained on both sides of the corridor.

- Both the bus interchange and kiss and ride/taxi areas will need to be resolved in light of the proposed Yarra Valley Water pipeline to be provided parallel to the eastern edge of the rail corridor
- It is considered that the bus interchange is better to be provided parallel and adjacent to the rail corridor, whilst the taxi and Kiss and ride facility would be best positioned adjacent to the boundary of the Donnybrook Hotel land as proposed previously in Figure 17. This will allow the interchange to act as buffer between nearby land uses and the railway corridor activity, and avoids the alternative of placing it adjacent to the Hotel property creating a largely vacant area of land that would isolating the Hotel from the community. The placement of the taxi rank adjacent to the hotel could also allow some synergies with the hotel requirements.

5.2.3 Car Parking

- There is already a proposal to develop the car parking area to the west of the station and adjacent to Donnybrook Road.
- Given land ownership issues, the immediate opportunity is to continue to develop available VicTrack land to the west of the corridor for car parking purposes.
- There is insufficient VicTrack Land available to accommodate the required 2,000 parking spaces and there is a need to compliment this with a further 1,400 spaces elsewhere.
- There will be a growing need to place car parking on the eastern side of the corridor as the Donnybrook and Woodstock PSP areas develop. The location of the car parking should not create a 'sea' of car parks surrounding the station, but rather the option to push the facility towards the north has been accepted. This results in the opportunity to co-locate higher density residential and land uses in close proximity to the station thus reinforcing a link between land use and public transport use, while the car park provides a buffer between the rail corridor and residential properties.
- The opportunity exists to use lands south of Donnybrook Road for temporary parking areas. However, once the footbridge is constructed and the existing station access off Donnybrook Road is closed, then this option becomes less attractive. Other issues to consider in terms of the longevity of these options include safety issues for people crossing Donnybrook Road as this road becomes busier, and the isolation of the sites once the grade separation is constructed and they no longer have the same degree of passive surveillance to protect against theft and anti-social behaviours.

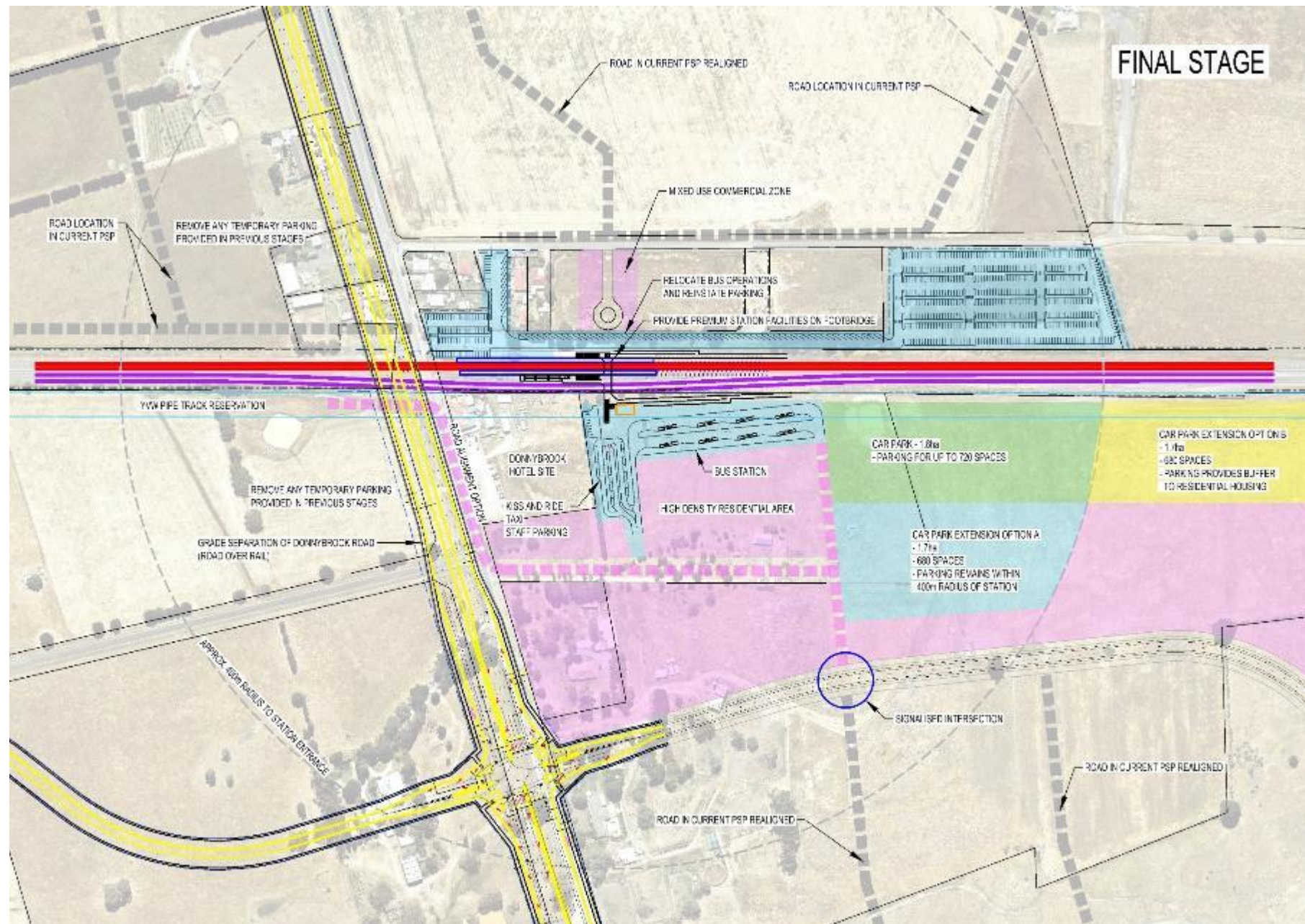
5.3 The Preferred Station Master Plan

Taking into account each of the constraints applying to the site, its interfaces with surrounding land uses, and the needs of future rail customers, the layout presented in Figure 19 represents the most informed solution that can be generated for the station facility to meet long term requirements.

Whilst this solution considers the needs of all stakeholders, and there will inevitably be a range of issues to be resolved as more detailed planning progresses, the solution primarily represents the Public Transport Victoria preferred outcome for the Donnybrook Railway Station of the future.

The following chapter considers how this Master Plan may be delivered in stages in response to rail service upgrades, land use uptake, and land availability

Figure 19: Preferred Donnybrook Station Master Plan



6 Possible Staging of Station Development

The staged development of the Donnybrook Station will be determined by three primary factors:

- **Growth in demand:** The demand for the station is currently driven only by the local semi-rural communities, however as the PSP's are delivered the surrounding area will develop and adopt land use outcomes consistent with a suburban style area. Development has already commenced at Merrifield to the west and this is likely to generate some of the earliest growth in demand for rail services. It is understood that development of the eastern side of the rail corridor (ie Donnybrook and Woodstock PSP's) could proceed faster than the western side of the line (ie Lockerbie PSP)
- **Rail service level enhancements:** The PTV "Network Development Plan – Metropolitan Rail" forecasts a gradual increase in the supply of rail capacity. Commencing with the existing rail motor style services with only 3 trains during the morning peak, the frequency and size of trains will be increased in line with the PTV Network Development Plan until the maximum practical level of services is provided using V/Line style regional train operations. At this point there will be a shift to electrification of the rail lines and the introduction of electrified trains triggering the need for further station upgrade works.
- **Availability of land:** VicTrack land will be available in the first instance to provide for the initial growth. MPA consider that lands south of Donnybrook Road will be easier to acquire than lands to the east of the rail corridor in the vicinity of the station, however there is a cost associated with the temporary development of car parking facilities to the south rather than moving directly to the east. There is the potential that the timely delivery of modal interchange facilities and car parking to the east of the corridor could constrain demand for a period and therefore focus should be placed on finding a way to make lands to the east available in time to meet the demand.

When considering the staging plan for Donnybrook Station it is important to note that the assumption has been made that the capacity of the train services will control the staging of development. This has been used as the controlling issue because it is assumed that the railway will respond to demand by creating capacity, with the ability of the railway to provide capacity being limited by capital funding for the enabling works (train purchases, electrification, upstream network capacity). It has therefore been assumed that it is unlikely that train service capacity would be delivered in advance of the demand due to these funding considerations.

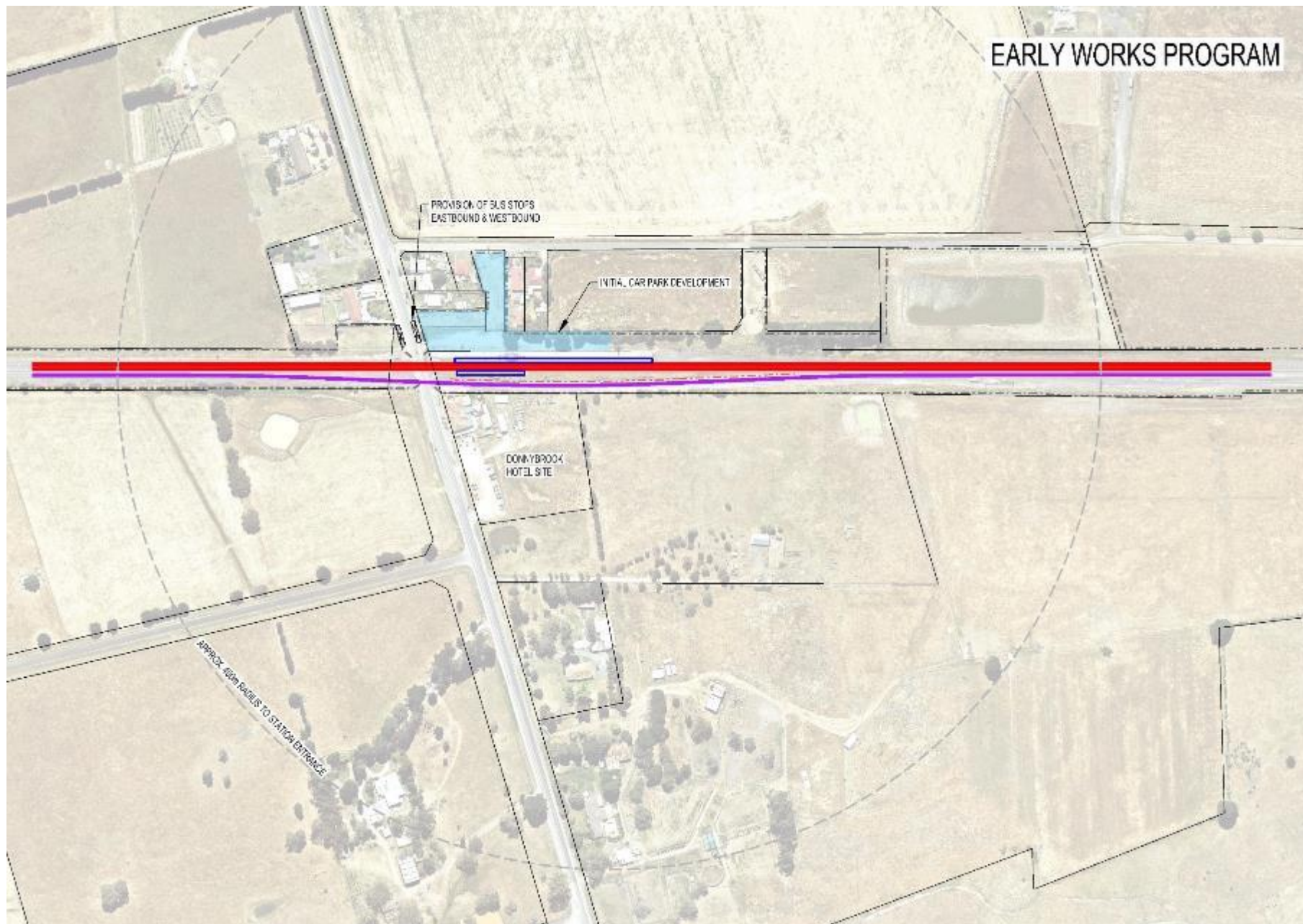
The table on the following page provides a generic staging program, but this will ultimately be informed by the actual chain of events.

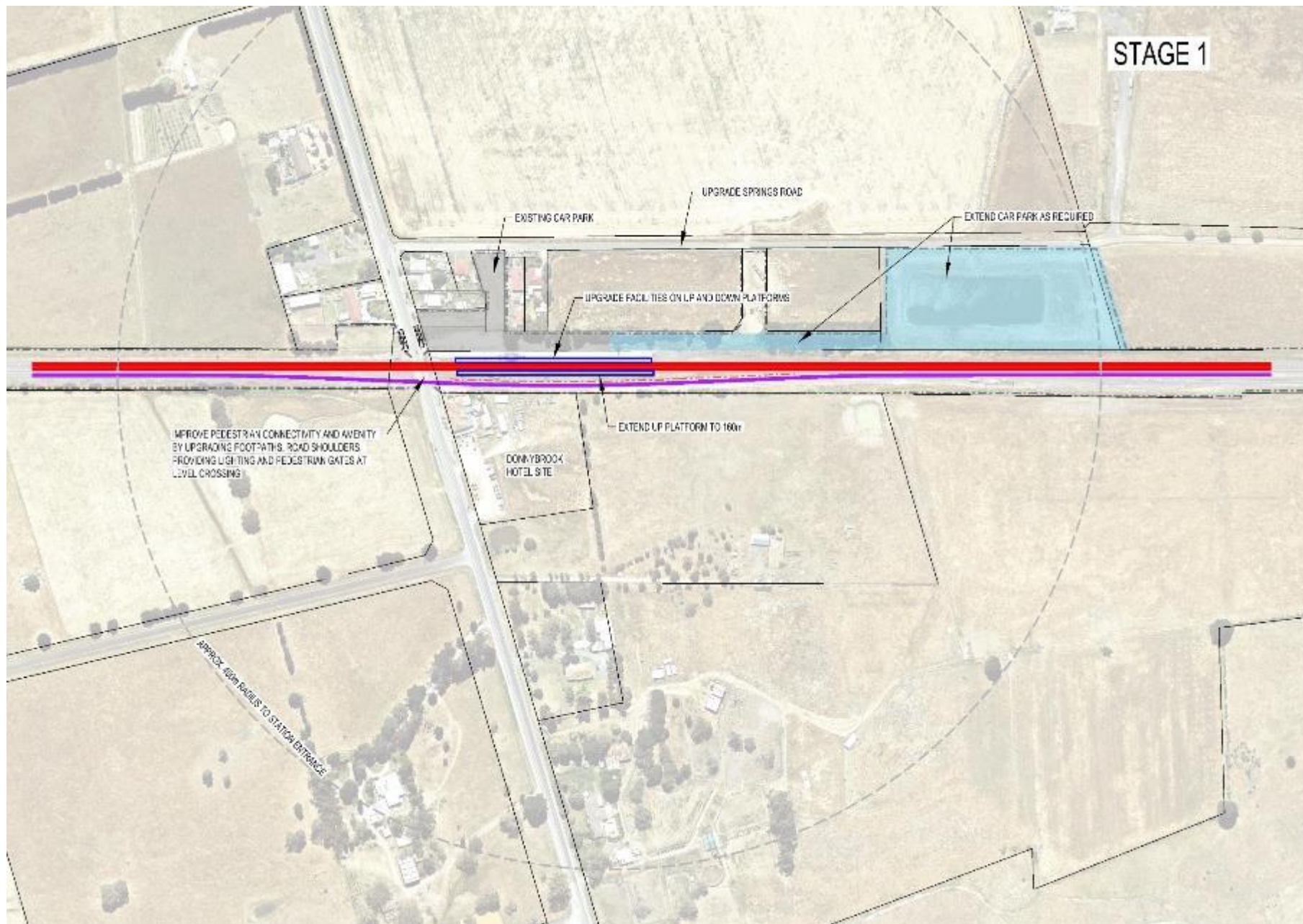
Table 1: Potential Staging Sequence

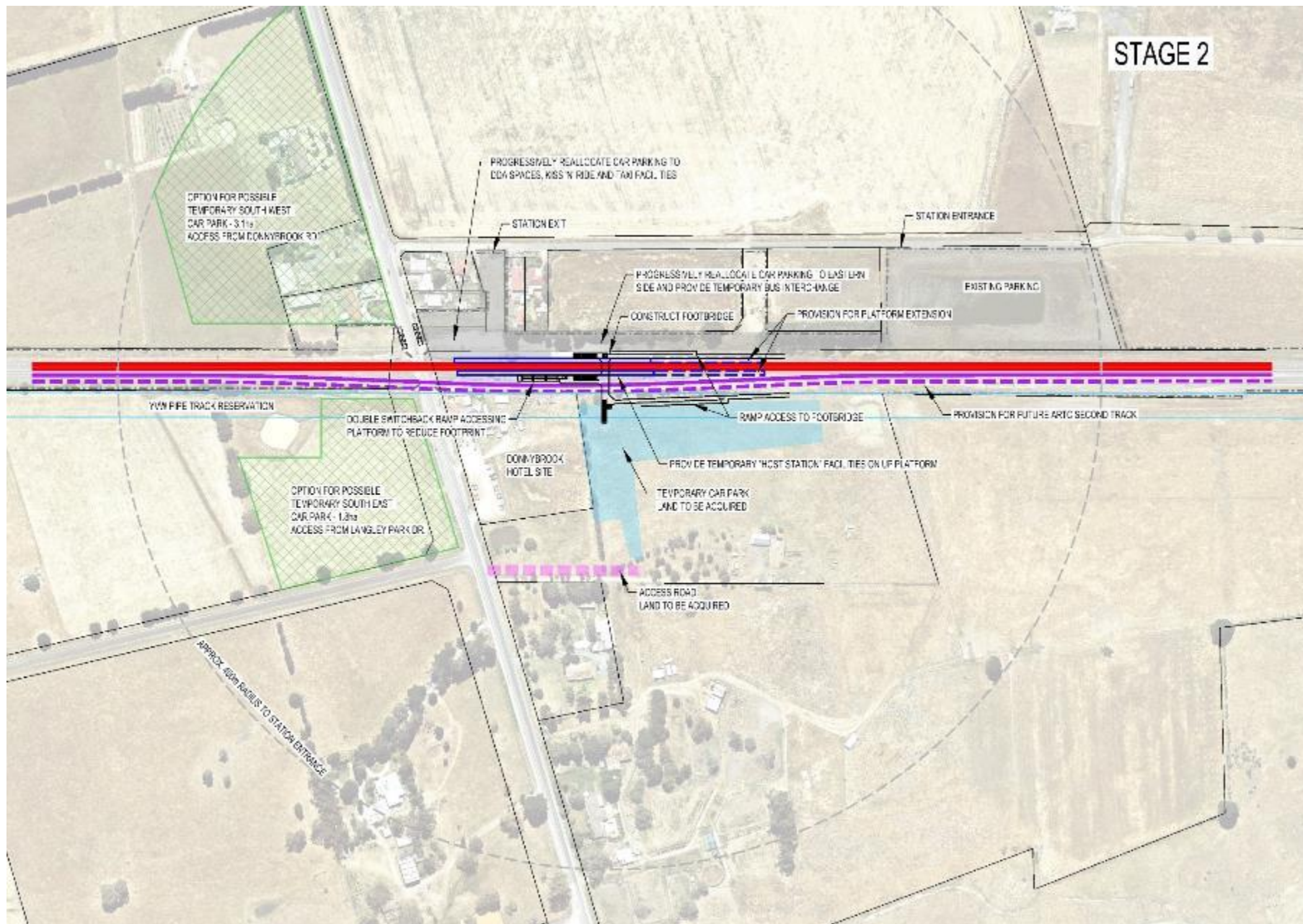
Staging	Trigger Point	Action	Detail
Early Works	Approved Upgrade to support existing rail operations	Upgrade existing facilities to improve capacity and amenity.	- Redesign and seal of the existing car park area and create a new access from Springs Road - Bus stops provided on Donnybrook Road.
Stage 1	Increased train frequency but retain existing regional style rail operations	Extend car parking to cater for increased demand. Provide for a temporary bus interchange	- Open up a second car access from Springs Road to provide access to an extended car parking area on the VicTrack reservoir land to progressively provide up to 650 spaces - Providing one way traffic flow along the western side of the rail corridor to accommodate a temporary bus interchange (when required) and up to 100 car park spaces. This could occur before taking the step to reclaim the reservoir. - Review station facilities and platform amenity
Stage 2	Increased train size but retain existing regional style rail operations	- Extend Up platform. - Construct the footbridge. - Extend car parking to the east of the rail corridor	- The up platform extension is required to support the longer trains (the down side platform has already been extended) - As demand requires, construct the footbridge and establish additional temporary parking to the east of the corridor in the area earmarked for the future bus interchange and kiss and ride facilities - Construction of these items could be deferred by the provision of temporary car parking on parcels of land to the south of Donnybrook road could be activated to provide temporary parking.
Stage 3	Further increases in patronage	- Acquire land to east of the corridor and extend the car park - Provide new station building	- Establish a sightline corridor to the station from Springs Road - Provide a new station building either on the footbridge or on 'up' platform or to the east of the rail corridor

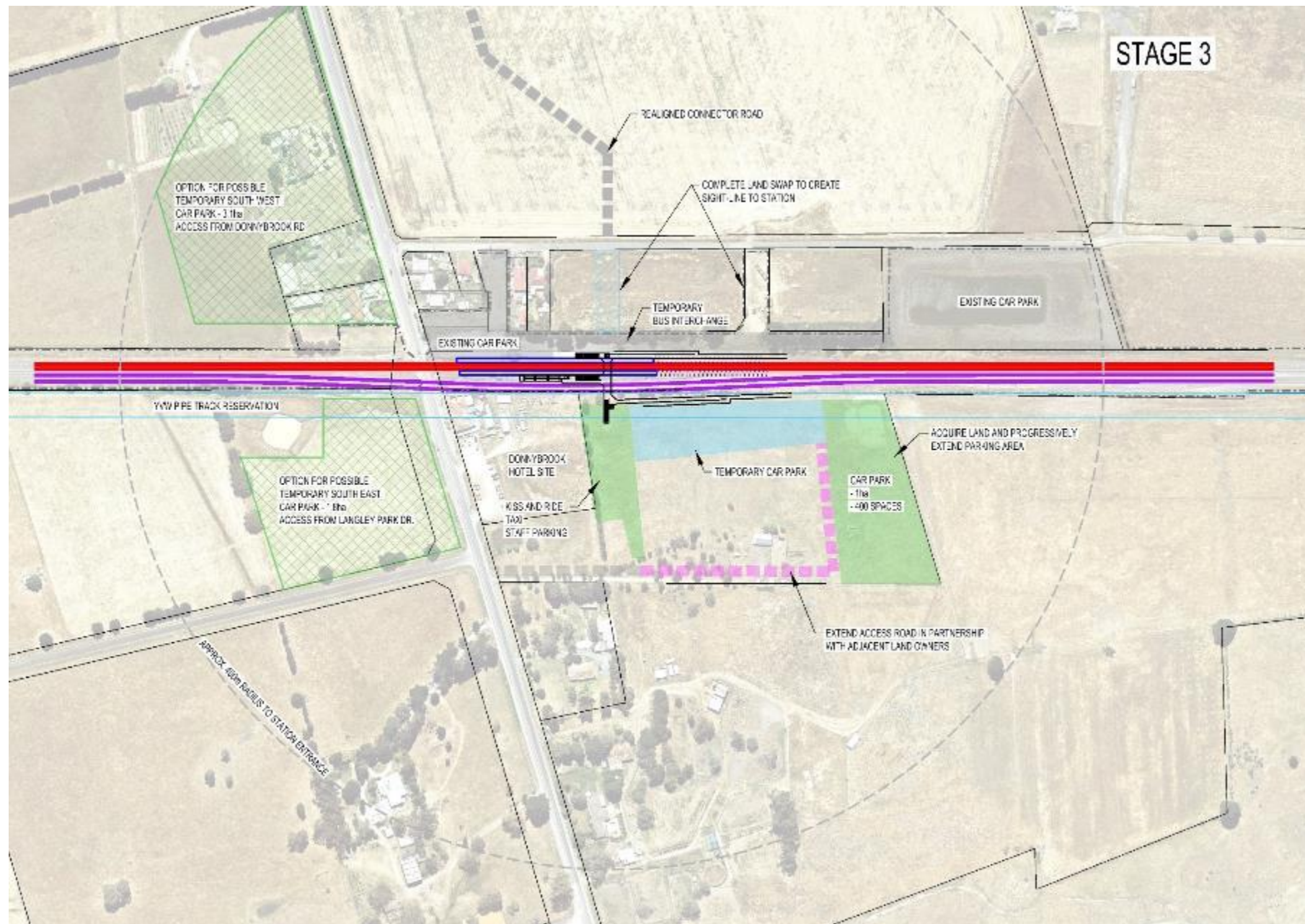
Staging	Trigger Point	Action	Detail
Stage 4 Final	Further increases in patronage from the east and/or electrification providing for suburban style operations	• Provide modal interchange, kiss and ride, taxi bays, the eastern side of the rail corridor. • Staged construction of eastern car park.	• Construct a new roadway off Donnybrook Road, including a traffic signal controlled intersection, to provide access to the modal interchange, park and ride facilities and car parking on the eastern side of the station from Donnybrook Road. • As patronage growth continues, the eastern car park (at the north end of the station site) can be extended in stages to best suit growing demand. • As patronage growth continues, the eastern car park (at the north end of the station site) can be constructed in stages to best suit growing demand. • Removal of any temporary car parking to the south of Donnybrook Road ready for the grade separation to be constructed

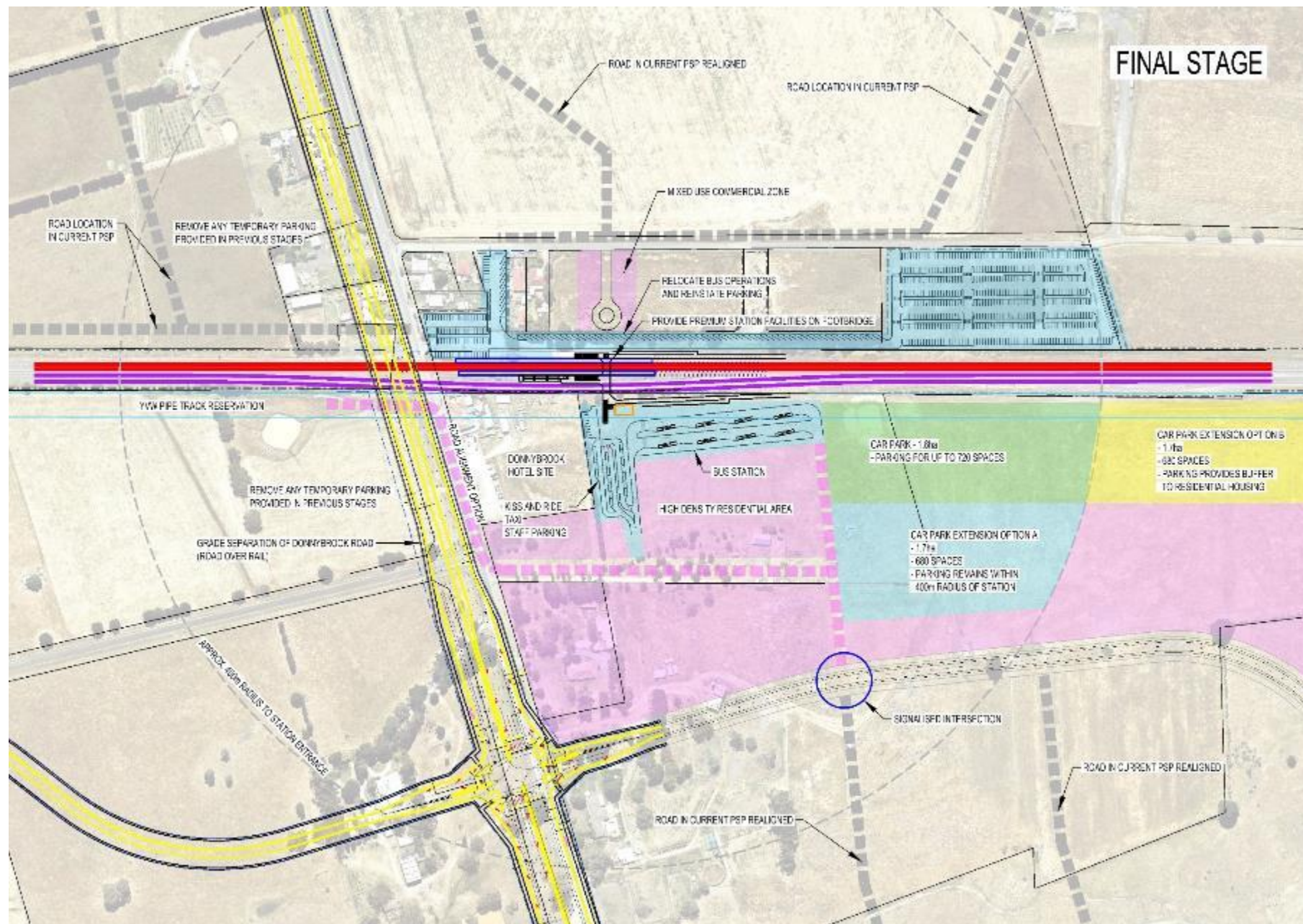
The diagrams on the following pages provide an additional explanation of the proposed staging of development.











7 Enabling Actions Required

The following issues are the key considerations requiring resolution in order to secure the future development of the station and to finalise its design concept:

- Resolve the local road network to the west of the station to ensure that it connects to Donnybrook Rd, better aligns with the proposed sightline corridor and the car park entrances. This will require negotiation with the land owner and possible modification to the Lockerbie PSP.
- Ensure that the Donnybrook PSP provides for the road alignments needed to access the station and land for the bus interchange and eastern car park. The creation of defined crossroad intersections will avoid staggered intersections and maintain desirable spacing between intersections.
- Negotiate the timing of provision of the road network to the east of the rail corridor as the catalyst for commencement of providing station facilities on that side of the corridor.
- Confirm use of the Yarra Valley Water pipe track for the footbridge landing to the east of the rail corridor, and bus interchange and car park.
- Acquire the necessary land footprint to the east of the rail corridor.
- Package progressive upgrade works to be compatible with the timing and magnitude of GAIC funding and consistent with the staging concepts presented in Section 6.
- Resolve with ARTC the alignment of the proposed second standard gauge rail line and any impacts this may have on station design and/or the Donnybrook Hotel.
- Confirm the feasibility of filling in the dam in order to release the site for car parking purposes.
- Identify the timing of bus service upgrades to determine if there will be a need for an interim interchange to be provided to the west of the rail corridor



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