

NORTHERN RIVERS RAIL TRAIL

CASINO TO BENTLEY SECTION MASTERPLAN

NORTHERN RIVERS RAIL TRAIL:
CASINO TO BENTLEY SECTION MASTERPLAN

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NORTHERN RIVERS RAIL TRAIL: CASINO TO BENTLEY SECTION MASTERPLAN

Prepared for Richmond Valley Council by Planit Consulting

Project No: J6805
File Location: I:\J6805 - Northern Rivers Rail Trail\2 - Project Correspondence\2.1 Incoming

Revision	Status	Date	by	Checked
A	Draft Masterplan	30/09/20	EW/MJP	MP
B	Final Draft	01/10/20	EW/MJP	MP
C	Final	03/12/20	MJP	MJP/MP

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1.0 PROJECT OVERVIEW

A 13.5km eco recreational experience through natural farming regions of the Northern Rivers of NSW.

In the current climate people are looking to how outdoor spaces really provide for our communities.

The Northern Rivers Rail Trail (NRRT) provides a vast open space to exercise, see rural areas at a slower pace and journey to new destinations with educational experiences all while taking in the beautiful fresh country air.

Studies have been completed that confirm the feasibility of the rail being used again for train was not cost effective.

Therefore the idea of converting this disused railway line into a public use space was investigated with numerous positive benefits.

Internationally there are inspirational examples of converted railway corridors for public use; the very nature of their physical arrangement lends itself to a recreational corridor for cycling, running, walking and horse riding; a connecting corridor to local towns and adding value through adjacent activities and destinations. Not to mention the inherent historic and educational opportunities.

The Baana in Helsinki and the New York High Line are significant examples however the cycling culture in Germany, Denmark and the Netherlands to name a few demonstrate strong examples of bike use for everyday transport. The NRRT will be a draw card for local and international tourism with the expectation for its use to become a significant part of local life by connecting rural towns, schools and shops to encourage a healthier lifestyle is a major benefit for the Northern Rivers Region.

The existing rail corridor will require complete resurfacing to meet safety and access requirements. A number of different surface treatments will be applied to suit the relevant locations, and their constraints.

There will also be destination and entry points along the corridor at logical locations to activate the trail and offer diverse experiences.

DISTANCE

The Casino to Bentley trail is approximately 13.5km of the full potential of the 130km NRRT. Casino is the beginning of the trail and is located at the southern end. For an average leisure ride with the family, this leg of the trail would take approximately 60 minutes depending on the pace of all family members.

The longest length between destinations (rest points with shade, seating and some with water and amenities) is from the Primex site to the 'Bat' tunnel at Naughton's Gap. This sections is approximately 7.8km.





Trail through farmland
Evocative render.
Artists impression only.

2.0 KEY GOALS AND OUTCOMES

The Northern Rivers Rail Trail offers an exciting opportunity to advance this region into the future, through the reuse and preservation of it's greatest unused resource, its former rail network
- Connecting communities and stimulating growth.



WAYFINDING

The huge expanse of this network further emphasizes the importance of wayfinding to the scheme. By establishing a coherent and holistically understood system for wayfinding through the means of signage, planting and paving solutions, visitors to the Rail Trail will be able to seamlessly navigate the site, as well as allow Casino businesses and tourist operators to capitalise on the new foot traffic being directed into the town centre.

Wayfinding will be established in collaboration with the extended NRRT schemes (in-particular Tweed Shire Council) to ensure an overall identity for the full extent of the recreational trail is adopted. A hierarchy of elements that can be site specific and connect to the overall theme will be developed.



HERITAGE/ADAPTIVE RE-USE

The site boasts a number of significant heritage structures and infrastructure. The dis-used rail-line serves as a tangible connection to the regions agricultural and industrious past and it's conservation will serve as an education tool. The NRRT will serve to protect the cultural heritage of the rail line and enable improved interpretation and understanding of its significance to future generations.

Opportunities exist for the conservation of the notable Old Casino Station building which would improve the existing interpretive elements provided by the Museum and Mini Railway. Adaptive re-use of area around the Station would enhance its potential as a central hub and principle entrance to the southern end of the NRRT and could feature an information and interpretation centre with visitor amenities and kiosk.



CONNECTIONS

CONNECTIONS TO THE LAND

A strategy will be considered to incorporate the local Galibai dialogue; how the local stories can be told and logical locations for local Aboriginal art to be integrated/displayed.

CONNECTIONS TO SITES

We are excited at the opportunity to connect with the existing Mini rail line; a potential link from Old Casino Station. The integration of both this new network into the existing shared path and cycle network within Casino will allow for the seamless direction of visitors to the trail into the heart of the town, supporting local businesses. To accommodate public use, parking and a bus pick up/drop off area will be constructed, allowing for the opportunity for larger tour groups.



ENVIRONMENT

The environmental design strategy will consider the existing local flora and fauna habitats and seek to enhance and bolster these environments. Endemic and native species will be selected for their locally identifiable character for their robust nature and their proven performance in this site specific climate.

The implementation of strategic planting will be located to help denote specific areas and provide shade amenity along sections of the Trail, as well as screen fencing, frame views, enhance aesthetics and provide spatial definition. The use of both native and endemic species will be utilised across the site, with specific planting palettes that establish character 'zones' whilst maintaining a common thread as a means of passive wayfinding. Existing vegetation will be maintained where possible and enhanced through new planting.



ESTABLISHING CHARACTER

The agricultural and light-industrial past have established a wider character for the region. By drawing on the key character and nature of the rail infrastructure combined with character cues from localised points along the trail, the proposed design would assist in consolidating the micro-regional identity at distinctive points.

These character cues can be subtle or bold and reinforced through planting, colour and material use, including reuse of salvaged railway items. This design implementation strategy can support a range of passive wayfinding as well as providing a historic layer that enriches the cultural experience of the journey.



NEW OPPORTUNITIES

The new network hopes to allow new exciting business opportunities for the region, with the potential for guided tours, heritage/educational groups and self-guided exploration.

Art and historic trail: ongoing consultation will occur with the local Aboriginal Community and Council are looking at options of how to represent the Aboriginal Community on the rail trail.

The connection of the trail into the newly established hub for the southern end of the trail at Old Casino Station will guide visitors into the towns centre, guiding them to the towns accommodation, eateries and boutique shopping.

3.0 SCOPE OF WORKS

Planit Consulting acknowledges the people of the Bundjalung Nation, as the traditional custodians of the land; Our project mission will incorporate, through collaboration with the local community, their cultural connections to the land.

The aim of this masterplanning document is to create a clear strategy for implementing detailed design and documentation. The following items have been addressed:

SURFACE FINISHES

Different surface treatments to suit the use and demand, for example the beginning of the trail from Old Casino Station will have a sealed asphalt finish to provide an easy take off and on area. Once people are clear of the hubs like the information center / kiosk at Old Casino Station and the nearby parking / drop off area at the Primex site the trail could transition into a compacted gravel surface.

Rail track-work could be incorporated into various stretches of the NRRT to reinforce the historical connection to the original rail line.

Re-use of removed sleepers and rail track-work elements could be incorporated into various landscape features of the trail, and the destination points.

CROSSINGS

Consistent treatments at crossing will be made clear to ensure safety for users, as well as informative for passers by. These are opportunities to integrate local character into the trail that is specific to the crossing; whether it be farming, creek or nearby towns.

VIEWS AND REST POINTS

The masterplan identifies a number of vantage points that will encourage people to stop, learn and enjoy the local environment through interpretive elements. These areas could integrate local artist installations with opportunities for Aboriginal and European cultural heritage overlays identifying local characteristics and stories.

Rest spots will be provided with varying amenities at logical locations and at suitable distances apart. Amenities to be provided can include shade, seating, toilets, drinking water and

bins. Further investigations will determine these locations with the following considerations: potable water supply, accessibility, maintenance and emergency access, rubbish removal, safety, proximity to external infrastructure and time / distance between rest and amenity spots.

CULTURAL HERITAGE

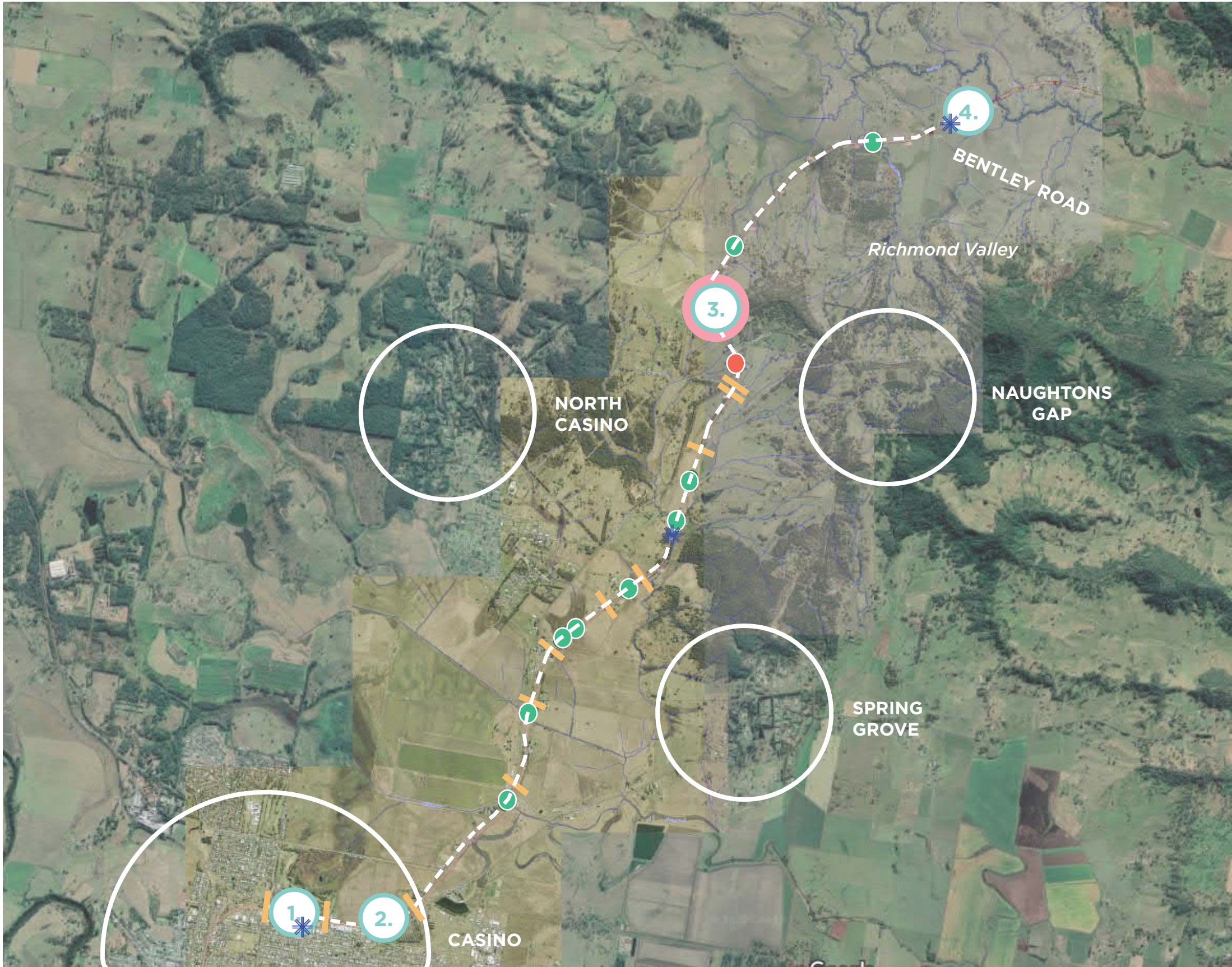
Consultation with the local Aboriginal Community will enable significant cultural input into the transition of this site. Council are looking at options of how to represent the Aboriginal Community on the rail trail. Investigation into how the local Galabal dialogue can incorporate and local stories can be told through possible wayfinding and the use of works by local Aboriginal artists.

DESTINATIONS







Four (4) key destination points are illustrated in this document.

1. The state heritage listed Old Casino Station acts as an important landmark at the starting point to this stage of the NRRT. Conservation of the building and adaptive re-use of the site is proposed, this could include an information centre, kiosk, amenities, parking and meeting areas.
2. The Primex site that provides another parking / drop off node.
3. The 'Bat' tunnel is a point of interest with many opportunities to explore; potential for tunnel access, views from on top, quiet nature sounds from below, and mini train cycle experience. Further bat studies are currently being undertaken to help inform a management plan for the tunnel.
4. Bentley Road area is an easily accessible, open rail corridor expanse with some existing service infrastructure providing opportunity for potential amenities, a camping ground, playground and bridge experience over Back Creek Bridge. This northern end of the Richmond Valley Council area terminates this stage of the NRRT and serves as the future link to the Lismore Council area of the Trail.





SITE AREA PLAN
13.4km of the Stage 2 NRRT



KEY:
Points of Interest

-  **Level Crossings**
Site Total: 13
-  **Under Bridges**
Site Total: 12
-  **Over Bridges**
Site Total: 1
-  **Tunnels**
Site Total: 1
-  **NRRT Path**
-  **Possible Amenity locations**
Old Casino Station
Powell Road (crossing)
Bentely Road / camp site

Key Sites

-  **1. Old Casino Station**
-  **2. Primex Site**
-  **3. Tunnel Site**
-  **4. Bentley Camp & Playground**

3.1 OLD CASINO STATION

The Old Casino Station precinct has been designed to direct visitors of the NRRT into the town of Casino, allowing the small businesses to reap the benefits of this development.

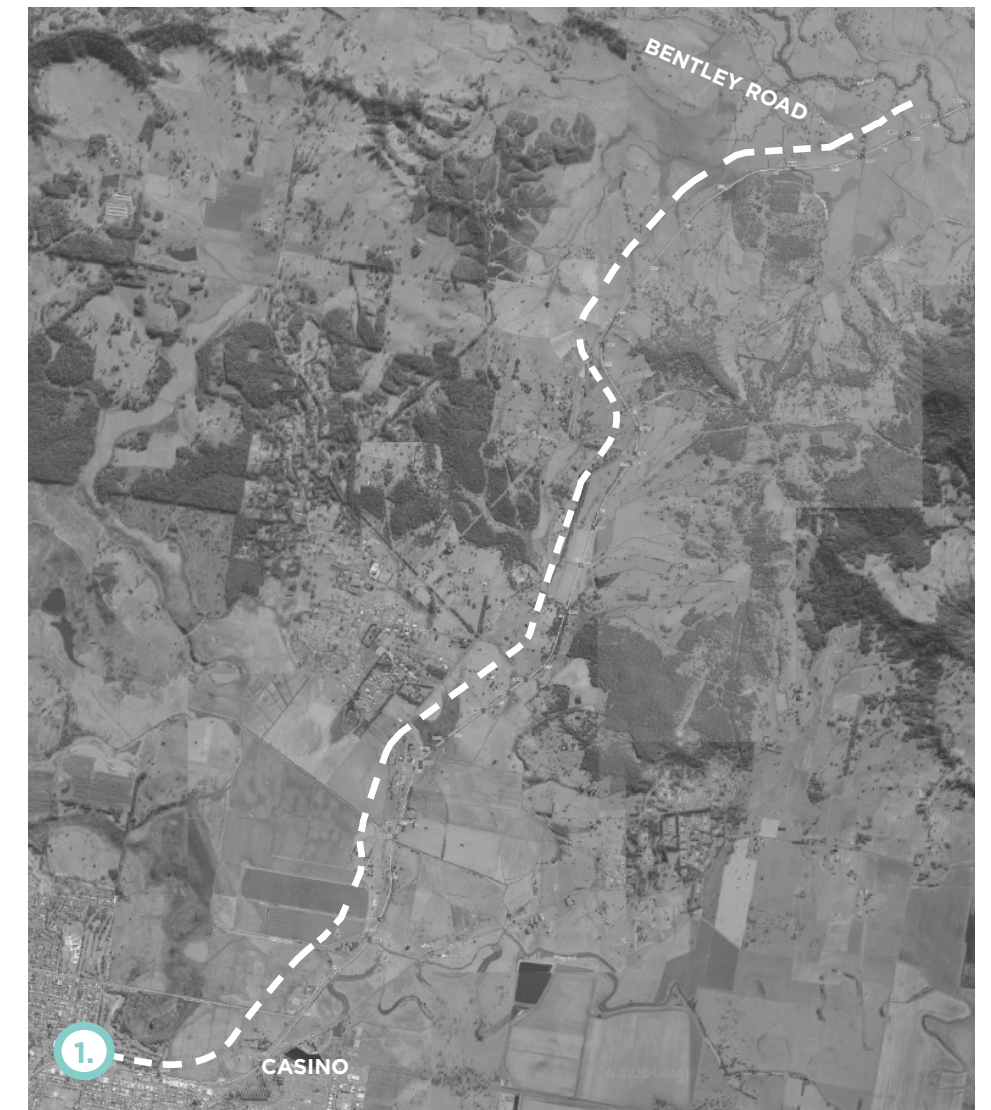
The town of Casino is set to be one of the greatest beneficiaries of the NRRT. The town acts as the 'Rail Trail Head' and marks one end of the wider rail trail network. To capitalise on the expected influx of tourists to the region following the development of the NRRT, the Old Casino Station precinct has been designed to cater to visitors needs, with amenities, storage areas, tourist bus drop-off and ample parking. Alongside this, the trail's end will direct and guide visitors to the restored Old Casino Railway Station.

Opening in 1903, the station served as the town's primary station until 1930 and remained in operation until 1974. Following several years of sitting abandoned, the stations main building was reimaged as the Old Casino Station's Museum. Entered in the New South Wales heritage register as a place of state significance in 1999, the building survives as an important Federation style weatherboard station designed following a non-standard Public Works Department floor plan.

An opportunity now awaits for the Station to once again be reimaged and restored to its former glory. The restoration of the station and proposed modern extensions may house amenities, a new eatery and a reinvigorated museum.

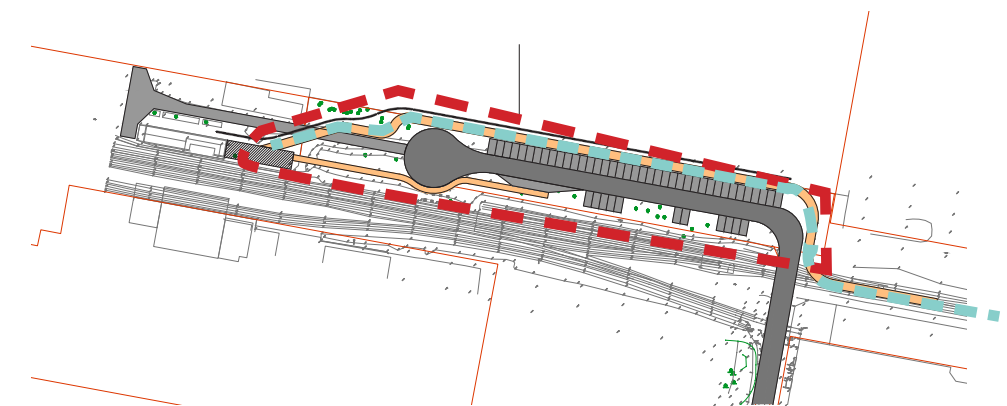
The existing Mini Rail pays homage to the rail history of the precinct. A new stop at the Old Casino Station may be arranged (relocated 'platform' to the northern side) returning it to its original function as a train terminal.

The Old Casino Station provides a landmark entrance to the Casino to Bentley Rail Trail and the opportunity for seating and shade trees and pergolas to be dotted throughout the forecourt with dense low-level planting to soften hardscape elements.

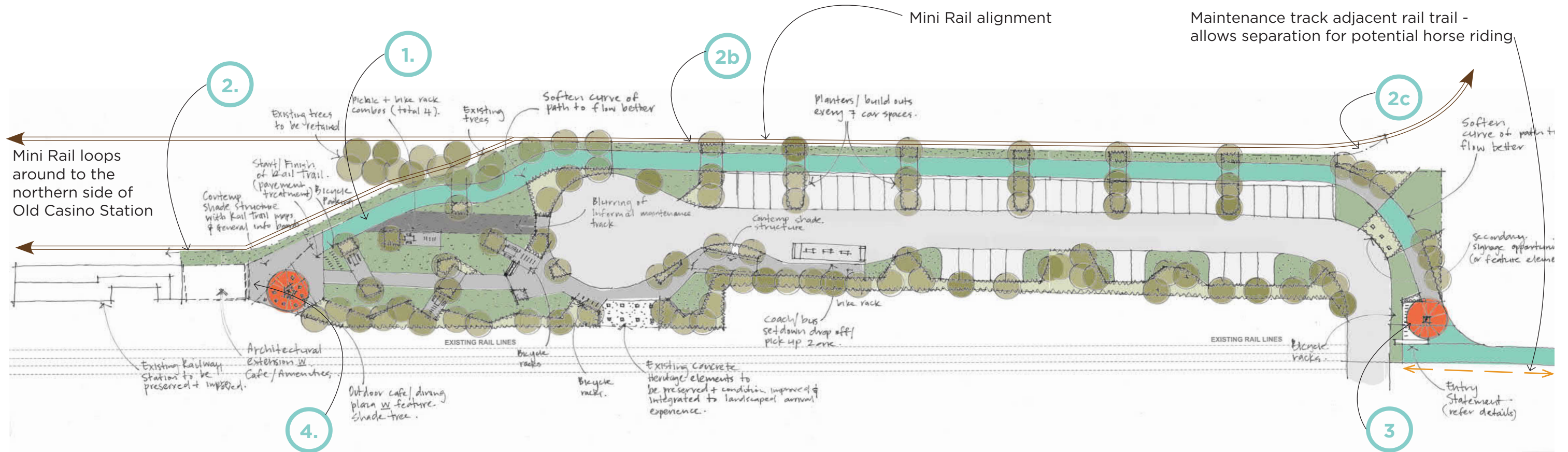


LOCALITY MAP:

0km. Beginning of trail



existing conditions - locations correspond with the Key below



KEY:

1.

RAIL TRAIL LINE

This site marks the beginning of the NRRT; the trail will commence as a formalised path that could transition into a decomposed granite track.

2.

MINI RAIL

The existing mini rail will be retained and run adjacent the new rail trail for the above shown portion. Realign existing fence and provide new aesthetically pleasing fence to safeguard against mini train movement.

3.

ENTRY STATEMENT

Entry sign with feature tree, bike racks and seating; this area also denotes the first on-line access and now termination point to the original rail alignment.

4.

OLD CASINO STATION AREA

A new structure could adjoin the existing heritage Old Casino Station to accommodate a kiosk, amenities and information regarding the rail trail. This meeting place could spill-out into an open courtyard with a feature shade tree; ample seating and bike racks.

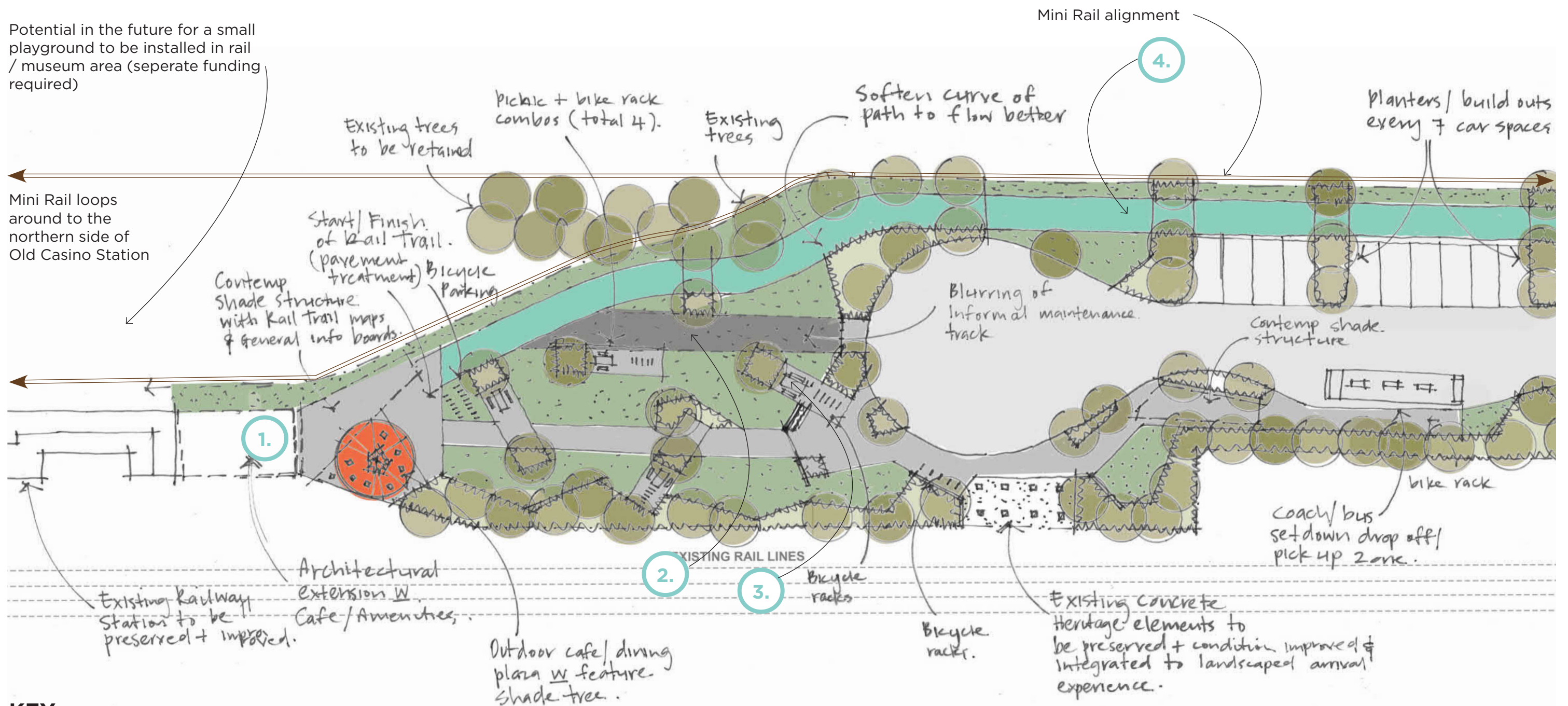
OLD CASINO STATION PRECINCT PLAN 1:500 @ A1, 1:1000 @ A3



0 5 10 15 20 25

NORTHERN RIVERS RAIL TRAIL: CASINO TO BENTLEY SECTION MASTERPLAN

Potential in the future for a small playground to be installed in rail / museum area (separate funding required)



KEY:

1.

INFORMATION CENTER

Kiosk / information center to be built independent of the Old Casino Station allowing the heritage building to be maintained/ refurbished.

2.

SERVICE ACCESS

Access for deliveries and emergency vehicles could be gravel surface to integrate within the open meeting area. Removable bollards can be installed to control access.

3.

PICNIC TABLES

Shade gardens adjoining seating and bike racks adjoin the path access to the Information center, Old Casino Station and Rail Trail start point.

4.

RAIL TRAIL

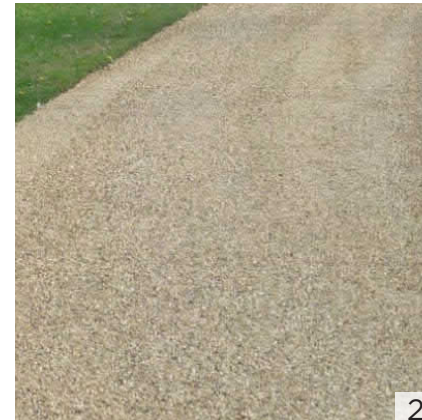
The Rail Trail will be a 3 meter wide track that for the most part overlays on the existing disused Northern Rivers Rail line. Potential for elements of the original rail line to be incorporated into the trail finishes.

STATION PRECINCT - ZOOM PLAN 1:200 @ A1, 1:400 @ A3



0 2.5 5 7.5 10

Feature Tree Species: large native trees will be significant markers throughout the NRRT project. They will act as a wayfinding specimen to alert people to the trail. Good shade trees with distinctive character will be used. Potential to be used at all entrances and key destinations to the trail.



Gravel access way may be used for deliveries and emergency vehicles. Should be flush with surrounding surface finishes to eliminate trip hazards and ensure non obstructive overall movement. Provide controlled edge to lawn. Removal bollards can be installed to control access.

Bollards: bollards may be required at certain locations to control traffic. A removable bollard can be installed to the service access to limit vehicular traffic within the pedestrian / bike zone.



Furniture: Indicative picnic table and seating. A consistent suite should be provided along the corridor. These could be used at specific locations for meeting / socialising, rest and eating. May be used at all four key destinations.

Rail trail surface: A sealed asphalt with concrete edge could be used at the start of the rail trail for a comfortable 'take-off' pathway.



Indicative drinking fountain that may be used along the corridor, could include bottle refill and dog bowl.

Dogs on the rail trail are to be on leash.

Investigate possible locations based on potable water supply.

Numbers correspond to areas on the previous page.

OLD CASINO STATION PRECINCT: INDICATIVE IMAGES

3.1.1 WAYFINDING AND SIGNAGE

A wayfinding strategy will be included at all destinations and crossings with a consistent plant and signage palette identifiable to the NRRT.

Welcome signs will be required at major entry points along with secondary signs at crossings and safety and provision signs to name a few. Counters and distance markers may also be used.

To strengthen the long length of this trail it is important to maintain continuity through the planting and materials palette.

This will be done through a collaborative discussion with Council of the additional three areas the NRRT travels through. Possible use of hard wood timber and steel for longevity and to pay homage to the timber sleepers and steel rails of the original track. Additionally ballast rock can be reused at road crossings to frame garden bed areas.

A conceptual idea shown here is a timber post containing a steel sign to be painted at the top as a landmark consistent with the Casino patterned logo. These indicative ideas will be investigated further to form a holistic palette of materials, colours and patterns that identify the NRRT.

A consistent plant palette will be used with native and endemic species, marking the signage areas at entrances and road crossings; by using large tree it can be a visual placeholder.

Similarly accent plants could be at each crossing as a visual cue for another layer of awareness.

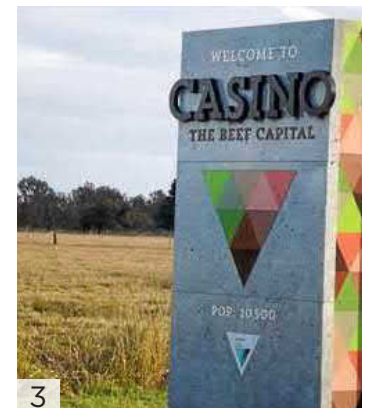
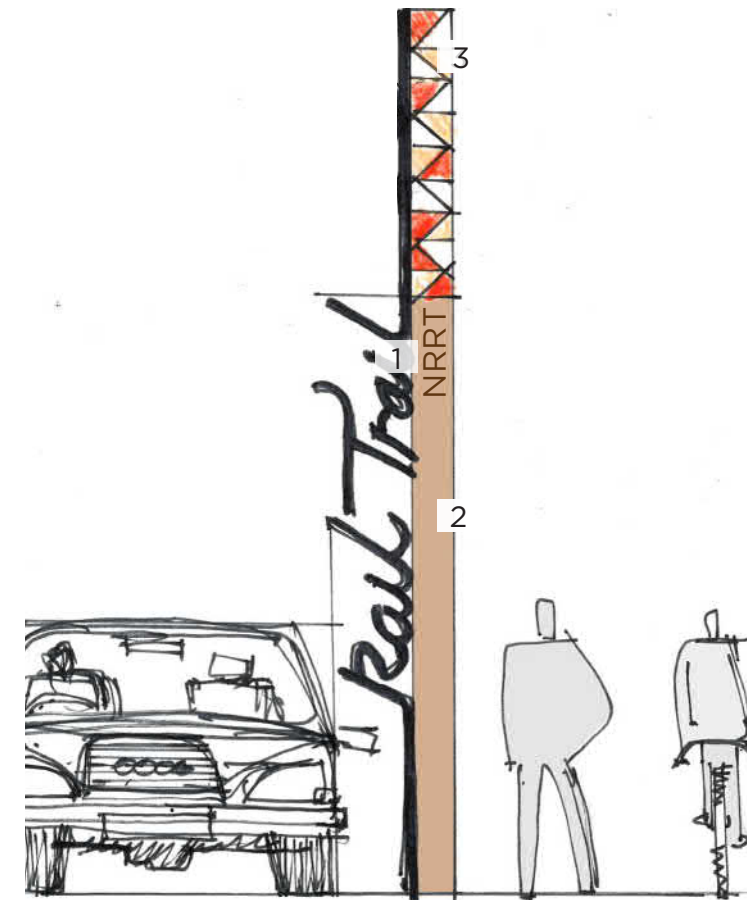
Signs could also be down at eye level warning riders to slow and stop as they approach a road crossing.



Welcome example

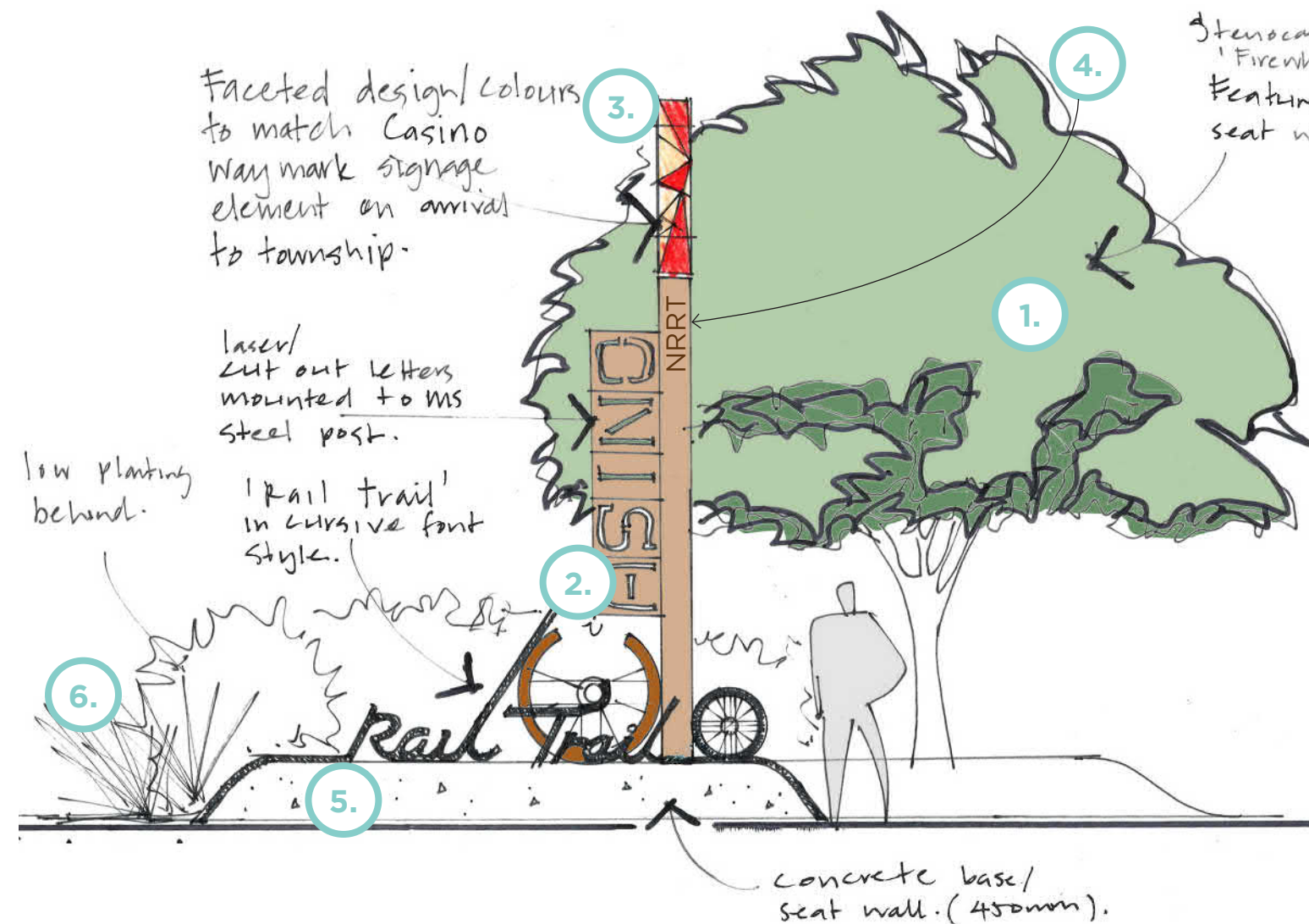


Counters / Distance markers



OLD CASINO STATION WAYFINDING - Indicative Concept Example 1:25 @ A1, 1:50 @ A3

Design to be adopted in conjunction with Councils responsible for the extended NRRT for consistency along the full extent of the Trail. Indicative concept shown below.



KEY:

- 1. FEATURE TREE**

A feature tree like the Brachychiton or the Firewheel could be used as a landmark feature shade tree for their bright colour, located at each road crossing and entry point.
- 2. CORTEN STEEL SIGN**

Could use laser cut letters in corten steel panel attached to hardwood timber posts.
- 3. DESIGN PATTERN**

Design to be adopted in conjunction with the Tweed Council for consistency along the full extent of the NRRT. The example pattern shown here would be similar to the Casino welcome logo as well as the RVC logo illustrating a connection to the area. The colours could represent the rural land; the dry grasses and the sunsets. They also tie in with the flowers on the feature tree.
- 4. NRRT SIGNAGE**

NRRT etched into the hardwood timber post with painted pattern at the top.
- 5. CONCRETE BASE**

Concrete could act as a physical barrier at road crossing and a seat at entry points. Could be formed on site and poured insitu.
- 6. FEATURE ACCENT**

Large accent species will be selected based on their robust qualities. They can be used to punctuate crossings.



OLD CASINO STATION INDICATIVE ENTRY STATEMENT - Concept Example 1:25 @ A1, 1:50 @ A3

3.2 PRIMEX PRECINCT PLAN

By utilising a key location the Primex precinct doubles its use for NRRT users and for event spill out for the Primex site.

The first stop on the Rail Trail after the Old Casino Station is proposed at the Primex site.

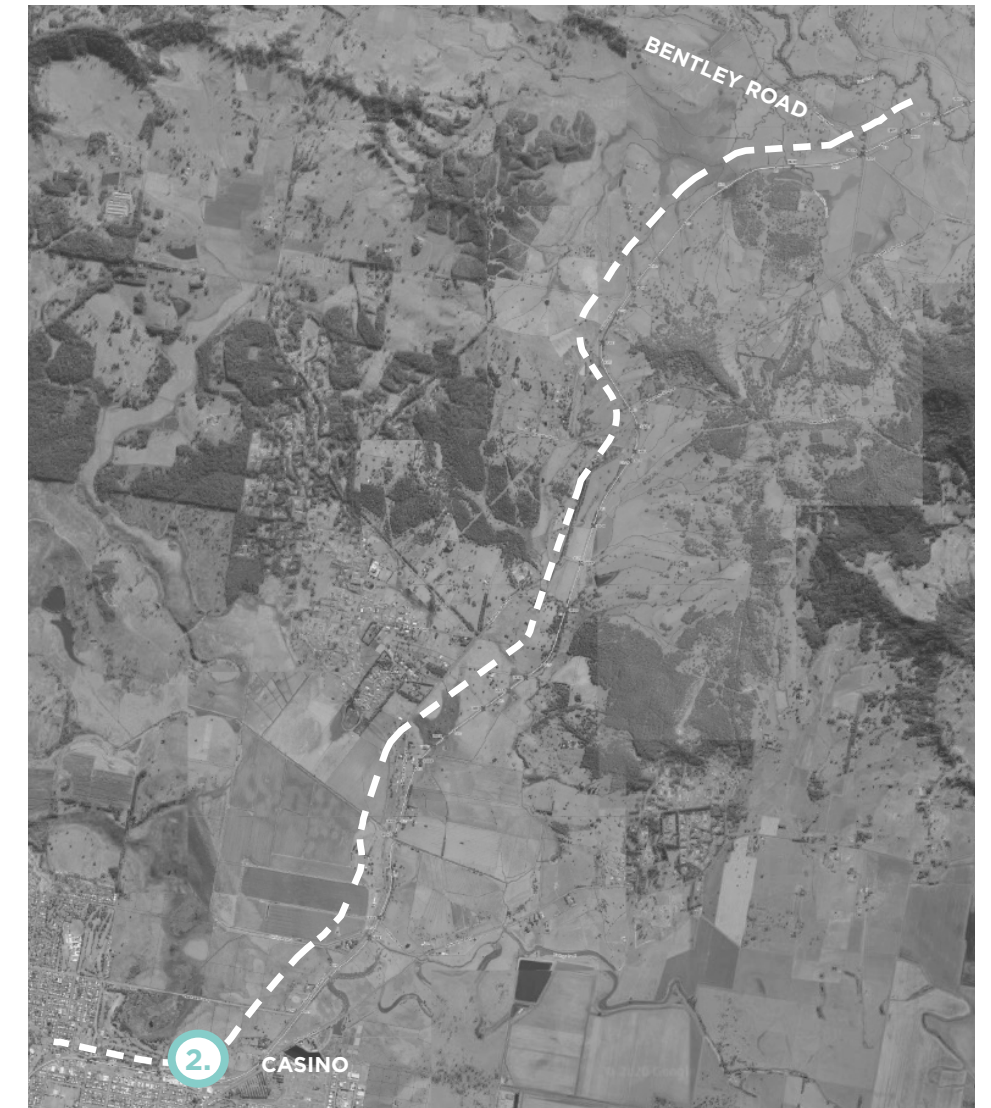
This area could feature the reuse of salvaged rail line materials at the entry drop off area for large groups and buses. Existing timber sleepers and rail tracks from the railway line will be integrated within the soft landscape, this creates a talking point especially for visitors to the Primex site.

The Rail Trail, featuring the adaptive reuse of the rail line supported by informative interpretation of the cultural heritage would serve to promote awareness and would encourage visitors to share their experience with others, attracting further visitation and promotion.

This location also provides a significant additional parking area for Primex functions.

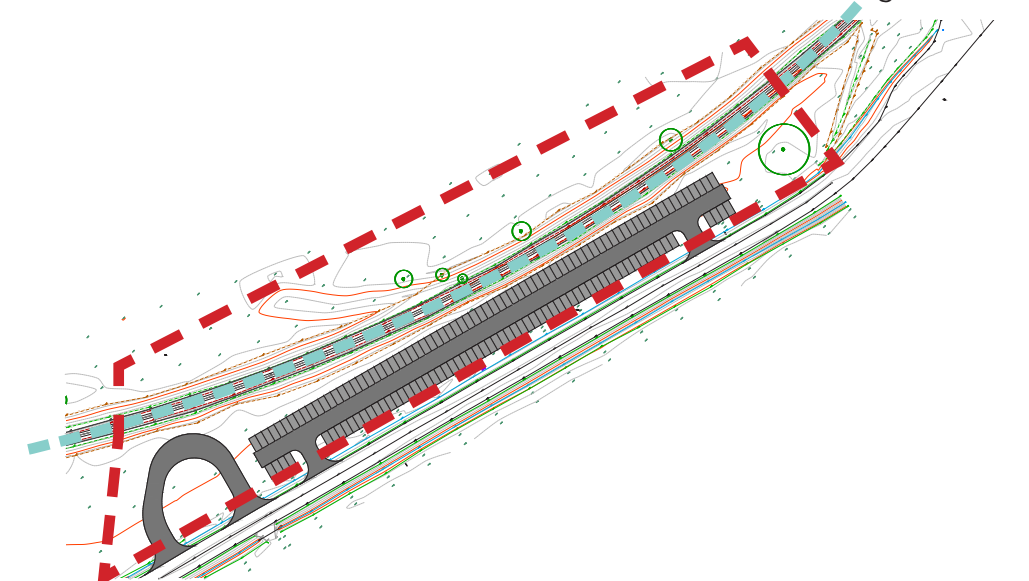
Shade trees and native low maintenance vegetation will surround picnic tables and car parking to create an enjoyable sense of space.

Different ground surface will delineate the vehicular area and the meeting / drop off space.



LOCALITY MAP:

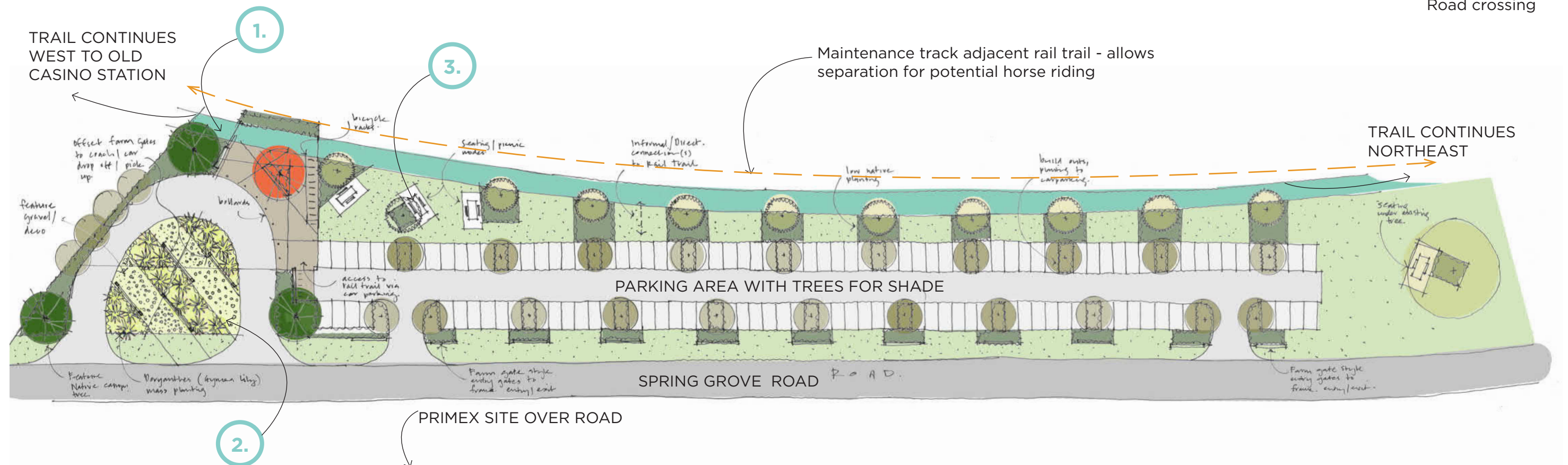
1km. north along the trail



existing conditions



Naughtons Gap Road crossing



KEY:

1.

NRRT

The rail trail track will be a formalised path through the Primex site, this may change to deco gravel northeast of this site. Feature planting can be used on approach to this site as a visual cue for users joining the path.

2.

MATERIAL REUSE

Potential to reuse some rail tracks within the landscape as a focal point as people arrive by car / bus. Promoting a heritage link to the old railway lines.

3.

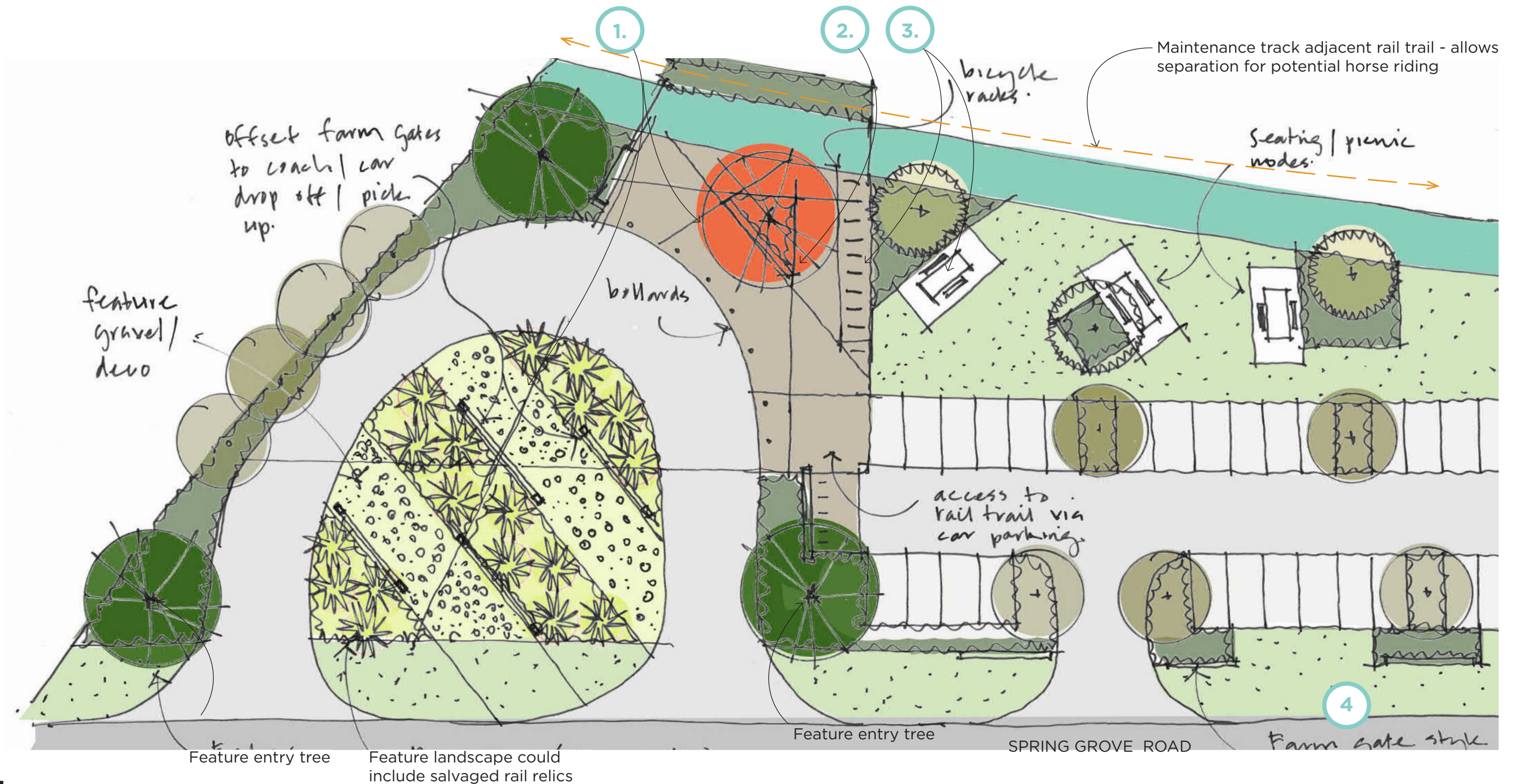
PICNIC AREA

Picnic tables under shade trees and possibly shade structures provide rest and meeting areas for the rail trail users. This area will also double as a parking and meeting place for people using the Primex site.

PRIMEX PRECINCT PLAN 1:500 @ A1, 1:1000 @ A3



0 5 10 15 20 25



KEY:

1. LANDSCAPE

The Primex site is at times highly utilised; this adjacent location will provide additional parking amenity as well as a rest spot for a picnic for cyclists and a meeting point. The native landscape surrounds could be embellished with some structure using recycled rail materials; lines of timber in ballast rocks and integrated vegetation

2. WAYFINDING

A place to take in the scenery. Potential for remnants from the railway to be integrated into the interpretive landscape design. Signage can be educational and functional rich with history and Aboriginal / artist input.

3. TABLES & BIKE RACKS

Seating and picnic areas can be provide for rest and refreshments and meeting other cyclists. Bike racks will be logically located for convenience.

4. PRIMEX LINK

Investigate potential to incorporate future informal pedestrian crossing connection to the existing Primex site. (currently not in this project scope).

PRIMEX PRECINCT ZOOM PLAN 1:200 @ A1, 1:400 @ A3



0 2.5 5 7.5 10

INDICATIVE IMAGES ONLY.

Evocative landscape that incorporates reuse of old rail tracks and sleepers with vegetation interwoven around them; reminiscent of the disused line for so many years with the new landscape representing the new use of the corridor.



Counters: could be used to understand how many people are using the trail.

Distance Markers: Could be included with the wayfinding to show distances to and from destinations and entry points to the trail.

Further potential to integrate a (solar powered) NRRT App/ map for significant destinations and events in the future.

Interweaving ground materials for visual interest and another reuse of recycled rail materials: old recycled railway timber sleepers, ballast rock; within garden areas (non access areas).



Furniture: picnic table and seating to be a consistent suite along the corridor. To be used at specific locations for meeting / socialising, rest and eating. To be used at all four key destinations.

Wayfinding, informative and heritage interpretation signage / art: Potential to incorporate storyboards designed by the local Aboriginal community that incorporates the Galib language, and local artists input. Indicative materials - signs could be made from corten steel to top old recycled railway tracks. Information regarding the Primex site and NRRT history and evolution.



Feature planting to denote NRRT destination spot. The strong structural form of the Giant Spear Lily, a large native feature plant, mimics the robust nature of a rail corridor and is low maintenance. Great as a landmarking feature, its red flower is consistent with the Brachychiton flowers.

Numbers correspond to areas on the previous page.

PRIMEX PRECINCT: INDICATIVE IMAGES - illustrating examples of materials and feature planting.

3.3 TUNNEL PRECINCT PLAN

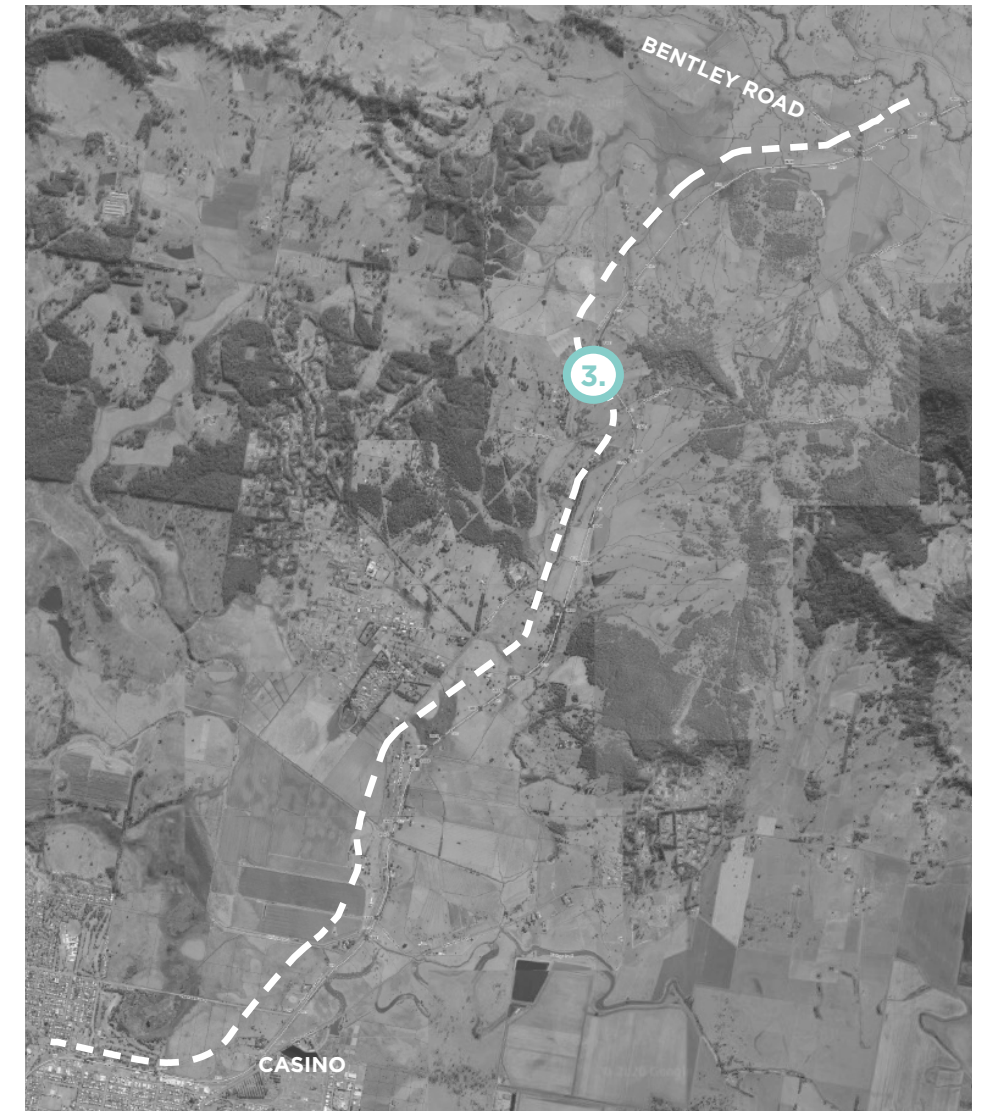
Interpretive elements will be used to educate visitors about the bat colony in the tunnel.

Recent surveys show a large colony of bats have taken up residency in the tunnel. Further studies are currently being conducted to inform the tunnel management plan for the future.

There is potential at this location on the rail trail to add a track up and over the hill. Investigations are underway for a small portion of the path to be shared-path along Stones Road on the northern side of the tunnel hill. Going over the hill could provide the opportunity to take advantage of the views, this could tie in with rest area that may provide shade and water.

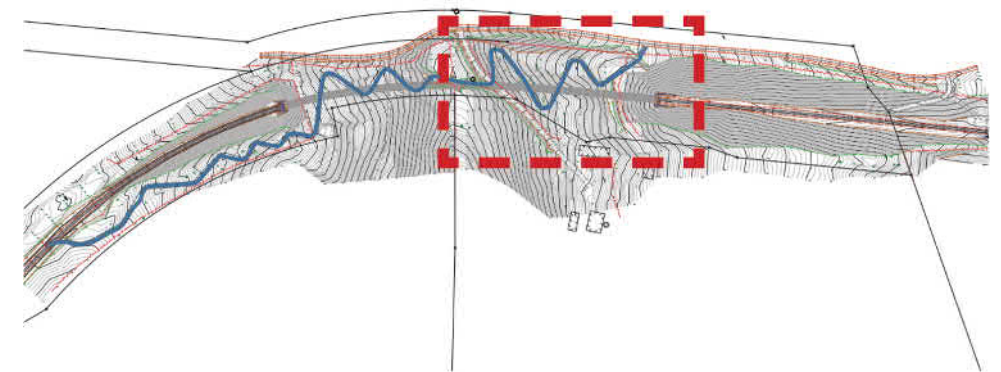
Further path design options will consider the grading, potential wash-off in heavy rain events and associated surface finishes and safety measures.

On the northern side of the tunnel there is a sheltered nook on the track just outside the playful echoes in the tunnel; this site provides an opportunity to stop and take in the country atmosphere; a listening and spotting location of fauna and flora. Can incorporate education about the nature surrounds and sightings - birds, bats, kangaroos, koalas and the like.



LOCALITY MAP:

8.8km. north along the trail



KEY:

1.

VIEWING REST AREA

Possible stone wall to create a level raised viewing area; This is on the tunnel hill open and exposed therefore shade structures and (tank) water will be provided. This remote water supply also adds another educational layer about the rural lifestyle.
2.

TUNNEL ALIGNMENT

Large Eucalyptus trees (Koala favourites) could denote the tunnel alignment below. Paving threshold treatments and salvaged railway materials could also be used to denote the location of the tunnel alignment. Potential for rest area with bike racks overlooking farmland to enjoy the views, spot wildlife, catch your breath and wait for the slow coaches.
3.

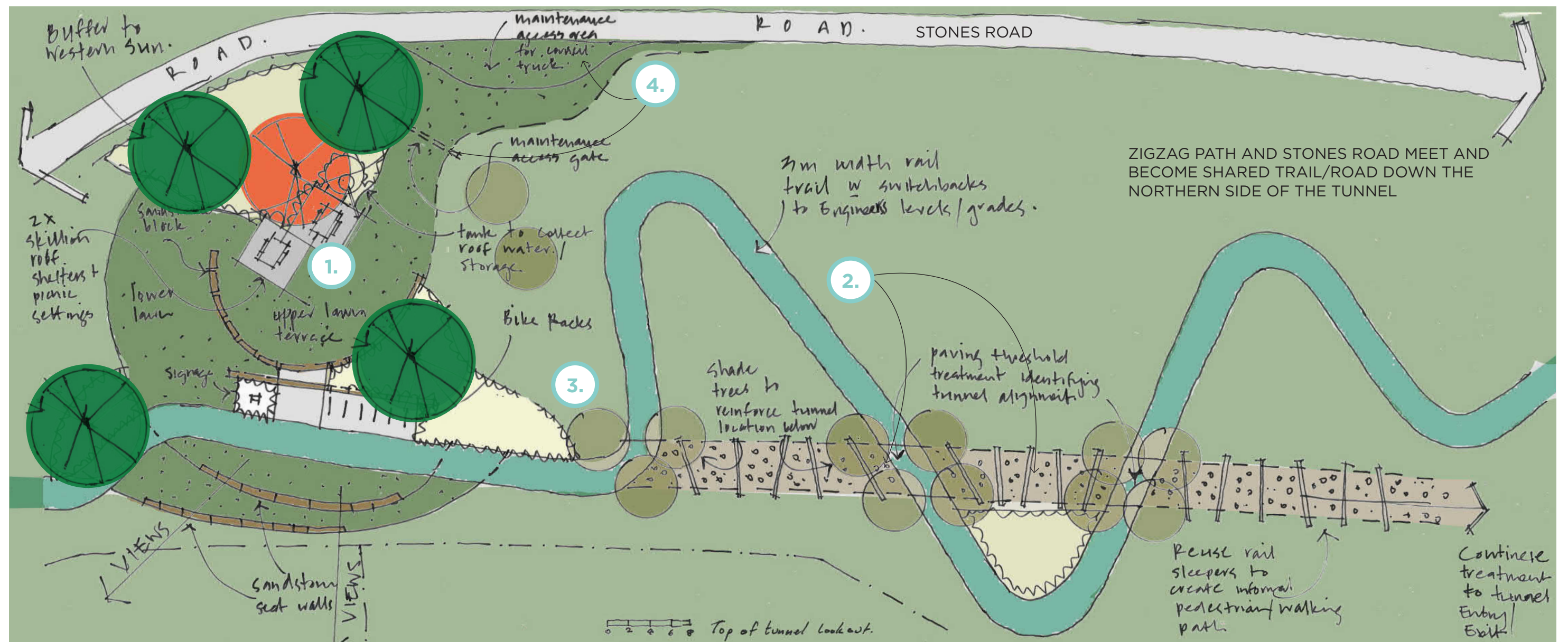
FLORA & FAUNA HABITATS

Further research into flora and fauna habitat corridors and the potential to enhance links to them will be completed through the concept design phase.

Additionally, an option of a Bush Tucker trail/walk in this area will be investigated further. This could create opportunities for educational environmental walking tours based around habitats and bush tucker.
4.

MAINTENANCE ACCESS

Stones Road adjoins the potential rest spot on to of the hill allowing a logical maintenance access point (existing access). A fence and gate can be installed to control access.



TUNNEL PRECINCT PLAN EXAMPLE - HILL TOP 1:200 @ A1, 1:400 @ A3



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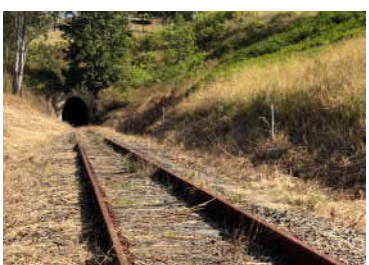
existing conditions



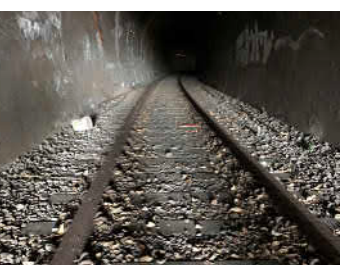
Local farm



Stones Road share access



Northern tunnel access



Tunnel



Southern tunnel approach



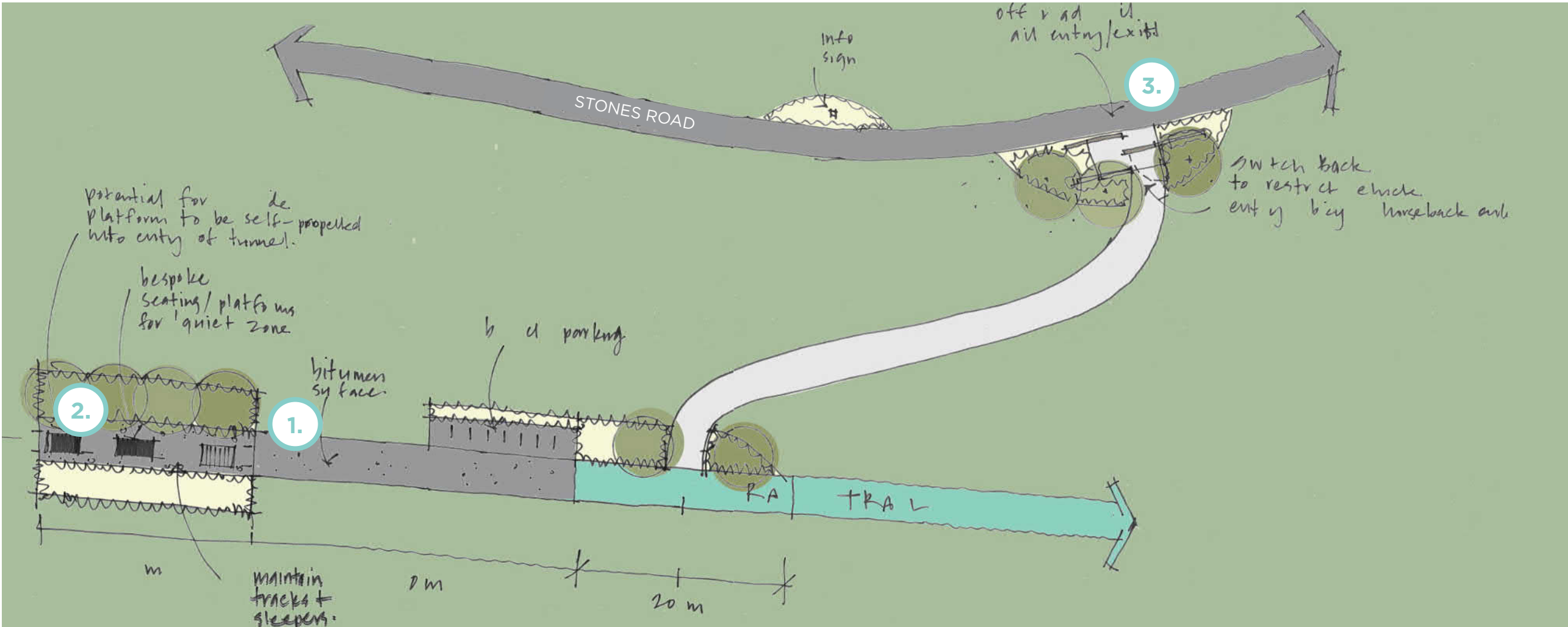
Local farm



Southern hill access



Northern view



KEY:

1.

RAIL REUSE

A fun rail reuse is being investigated for pedaling back to the tunnel entry. This goes from the northern access point where the trail rejoins the track corridor.

2.

NATURE REST SPOT

A peaceful location to take a break listen and look for nature and learn about the surrounding land; the habitats, the species and the land uses. Reuse of rail materials could make seats in an informal gathering space.

3.

ACCESS FROM STONES RD

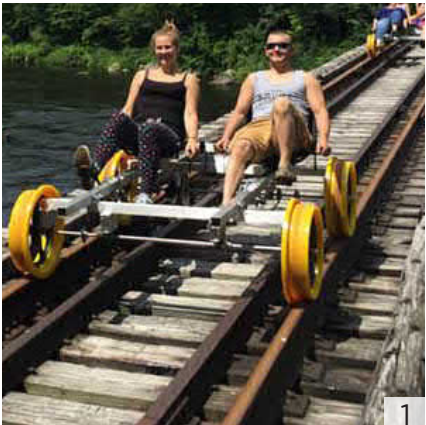
The shared Stones Road and trail joins the existing maintenance access route back on to the rail corridor. Fencing with gates can be installed to control access for emergency and maintenance access.

TUNNEL PRECINCT SKETCH IDEAS 1:200 @ A1, 1:400 @ A3



0 2.5 5 7.5 10

The NRRT will feature significant tree plantings as a markers at key locations, this could include on the hilltop to create a picturesque landmark from afar. Additionally a mix of Eucalyptus trees can be used as vertical markers of the tunnel alignment below. These also increase wildlife habitat.



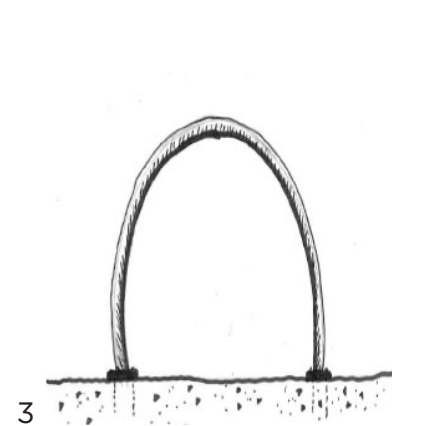
Indicative image only. Share peddle train to access into the tunnel, peddle access could be via the northern end.

Further investigations are being conducted to determine the tunnel access. This has been critical due to the bat colony that reside in the tunnel. Educational and interpretive signage about the bat colony can be incorporated into the design. Provision for lighting in tunnel will also be considered.



Possible low stone walling to provide informal seating for rest and retain a level viewing area. Indicative image shows sandstone blocks. Open lawn terraces would take full advantage of the 360 degree viewing from this location.

Proposed bike racks for the NRRT; design could be based on the tunnel's curved cathedral shape. Material: Powder coated steel: colour to match wayfinding treatments.



Furniture: picnic table and seating to be a consistent suite along the corridor. Shelters may be used at the tunnel hill for amenity on the open exposed hill top. Style example could be skillion roof with hardwood timber structure and colorbond Surfmist roof. Gutters and downpipes could be connected to stormwater tanks to provide drinking water.

Numbers correspond to areas on the previous 2 sketch pages.

TUNNEL PRECINCT: INDICATIVE IMAGES

3.4 BENTLEY SECTION PRECINCT PLAN

After a long ride a relaxing camping ground adjacent to farmlands, where cattle may come to meet you, may include amenities, playground and amazing bridge views. This is a destination not to miss.

Bentley Road provides vehicular access to camp ground sites for a van or sites for your tent or tee pee to sleep under the great open sky and enjoy some star gazing.

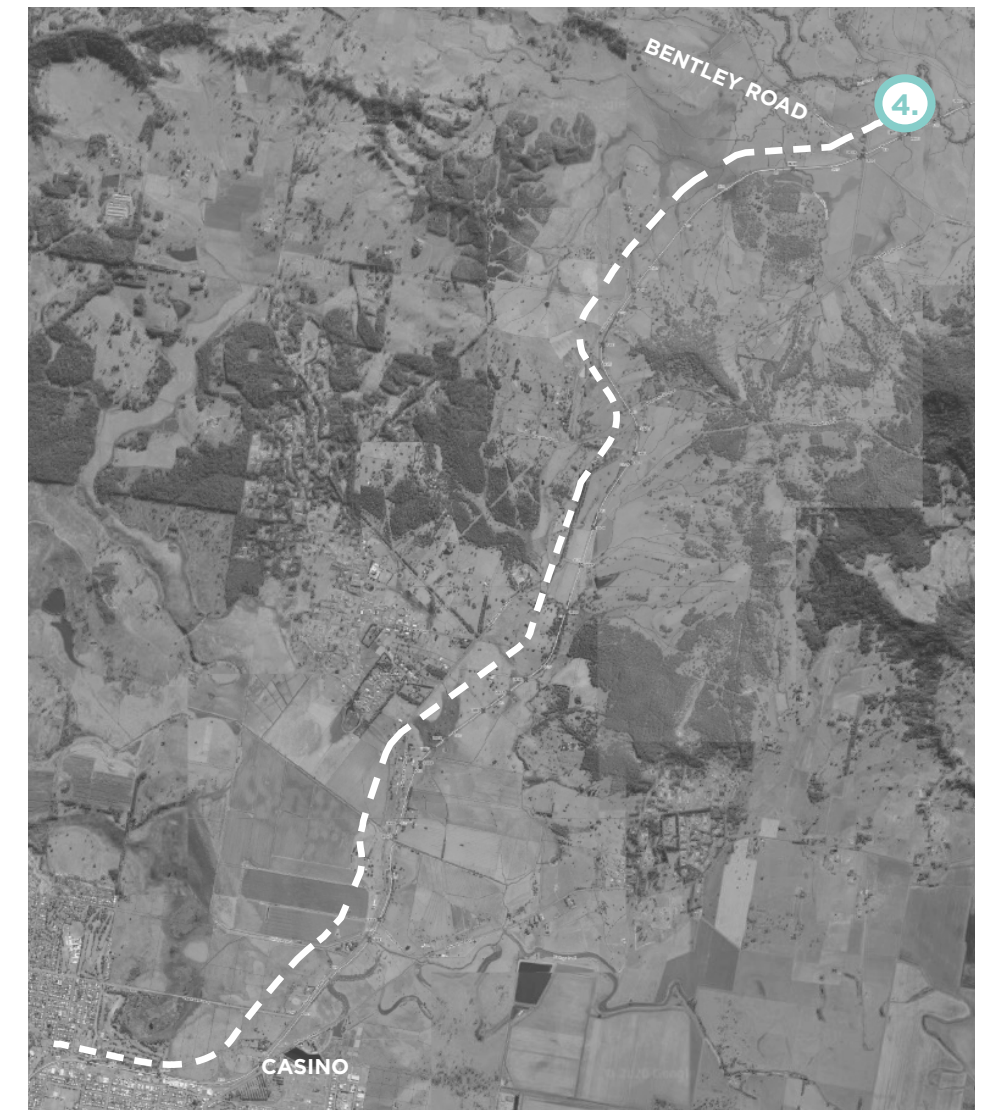
An amenities building with toilets, showers and fresh (tank) water allow for longer stays. This is located near the old Bentley Station platform; heritage interpretation will be incorporated into this area for interest.

It is recommended that a study be done on the feasibility of the existing Bentley Road 100km/hr zone being reduced to 80km/hr for safety and easier access to the proposed car parking and drop off area.

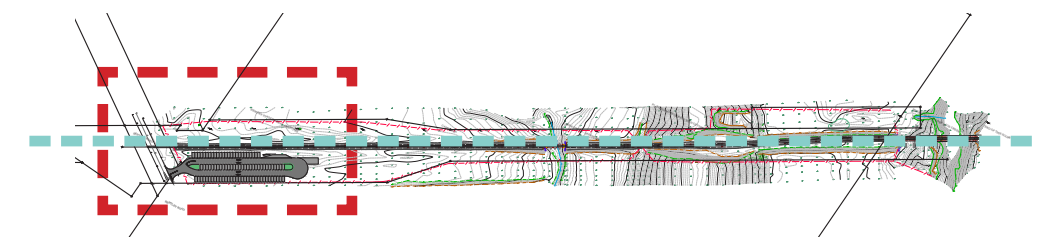
There are 77 proposed car spaces with trees in garden beds to break up the hardscape and reduce the heat island effect. The configuration may vary to accommodate caravan parking in the following design phase.

Vehicular camp sites can be denoted with recycled rail materials such as timber sleepers and rails for seating and site number signage.

Tent camping is to the northwestern side of the trail, on the same side as the possible amenities building. Potential to power the camp site.

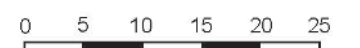


LOCALITY MAP:





EXAMPLE OF POTENTIAL BENTLEY ROAD CAMPING GROUND PLAN 1:500 @ A1, 1:1000 @ A3



3.5 NATURE PLAY AREA

While adults relax at the camping grounds the kids can explore the playground 200m up the track.

The playground is proposed to be integrated with the existing rail corridor cutting, spanning approximately 22m across the cutting and up to 4m high at the top of the cutting. On top of the cutting hill two barn character structures could provide access to the rope climb. With views over the farmland and to the rolling hills beyond this exciting playground can cater for children of all ages.

An existing stock crossing could be moved southwest 15-20m (this could be rebuilt with the rail trail works); If it is relocated within the informal play space of the grass mounds it may an exciting opportunity to create an interpretive crossing with timber (similar to the original/ existing crossing), plus interpretive steel inserts of animal foot prints. Educational signage located along the trail could doubles as a precaution for trail users to give way to cattle crossing.

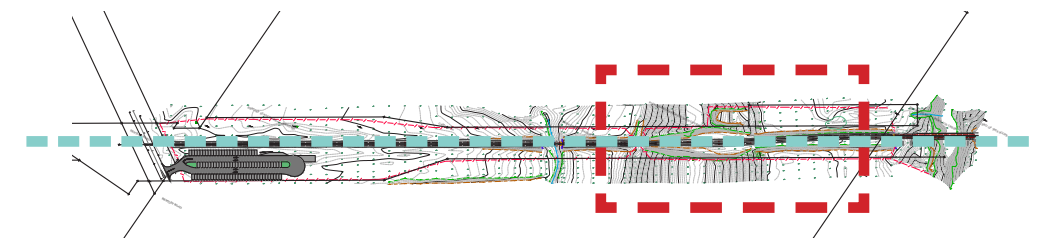
Large shade trees could make this space a usable area in the summer months, while low planting will enhance the space and maintain visual amenity.

The design items proposed will be subject to budget constraint. Items may be minimised or substituted to meet costing requirements.



LOCALITY MAP:

13.5km. north along the trail





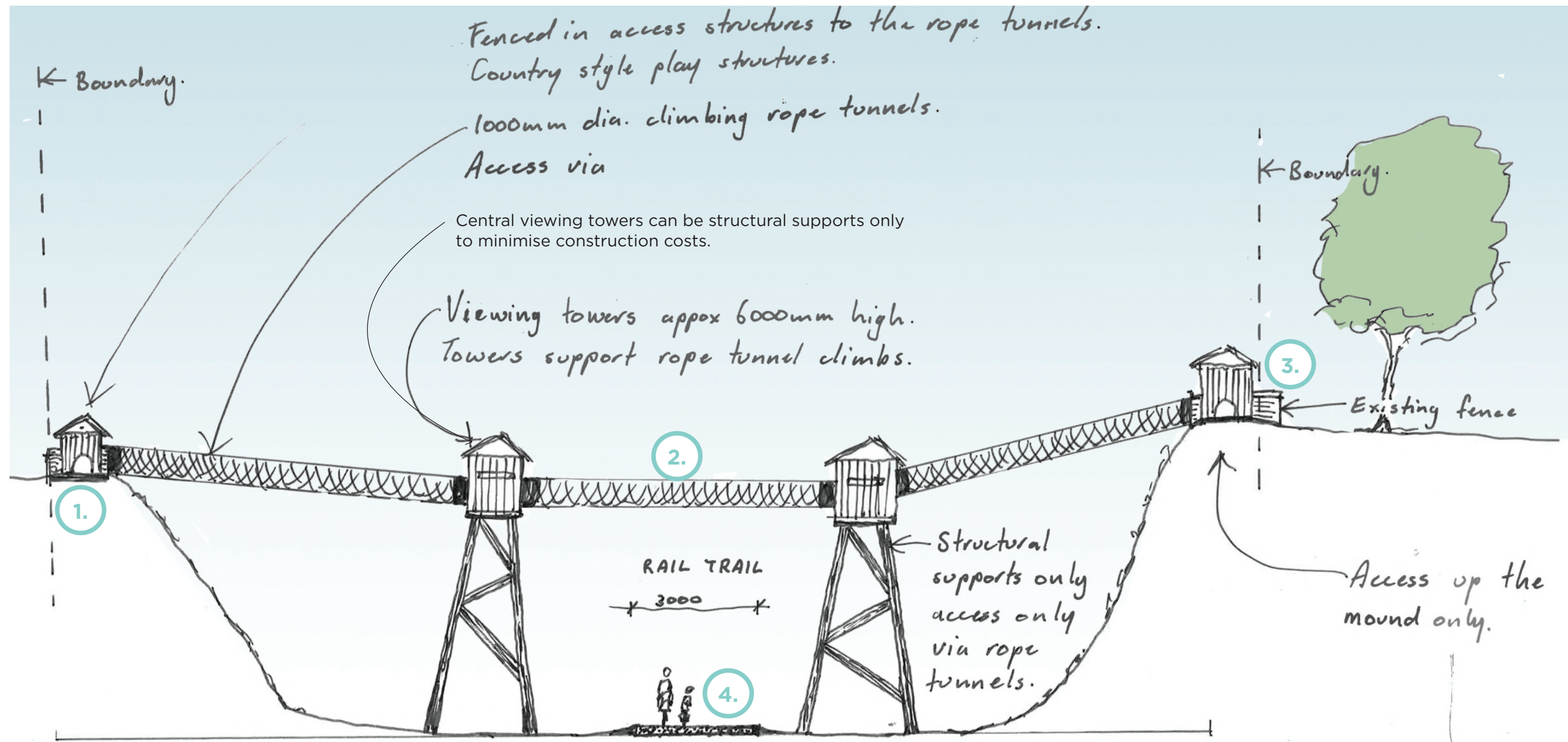
Gentle grass mounds for informal play - riding and rolling around. Large trees suitable for playgrounds for shade amenity. Could include some feature Morton Bay figs.

Adventurous rope tunnel across the rail cutting; vantage points on each side. The two middle towers are likely to just be structural support. Existing fencing could be replaced with safety compliant fencing. Access may be limited for safety.

A terraced landscape with sandstone blocks that double as seating (could match the top of the tunnel hill) on the northern side of the cutting. Play items could be located on the terraced areas; These could be based on farm characters with natural tones on artificial turf softfall to marry in with the grass surrounds.

Potential to build a 10-15m slide into the existing grade. Can use shade sail over the landing pad within softfall takura mulch. Investigation into possible flying-fox nestled among shade trees with takura mulch softfall.

0 2.5 5 7.5 10
SCALE - 1:200 @ A1, 1:400 @ A3



KEY:

1. FARM BARN

Rope access through play structure; this structure could be designed after a barn to evoke the local character.

2. ROPE CLIMB

Adventure climb across the rail trail over existing cutting. The rope can be 1m diameter and fully enclosed for the full extent of the cutting. Further investigations into the safety maintenance requirements recommended.

3. FENCING

Existing safety and boundary fence could be rebuilt for safe access into the ropes and playground / Australian Standards compliance. No access would be permitted past the barn structures for safety.

4. RAIL TRAIL

3m wide rail trail to go under the rope tunnel along the existing rail corridor alignment.

INDICATIVE ROPE TOWER SECTION 1:100 @ A3

0 1 2 3
SCALE - 1:50 @ A1, 1:100 @ A3

Significant tree plantings. The fig tree is an important part of the Australia landscape vernacular, particularly in open hot areas in the middle of summer. This tree can provide a beautiful form that is fantastic for deep cool shade and fun for kids to climb, making it a great specimen for the playground area.



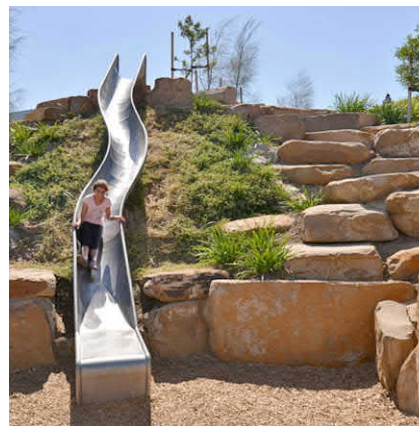
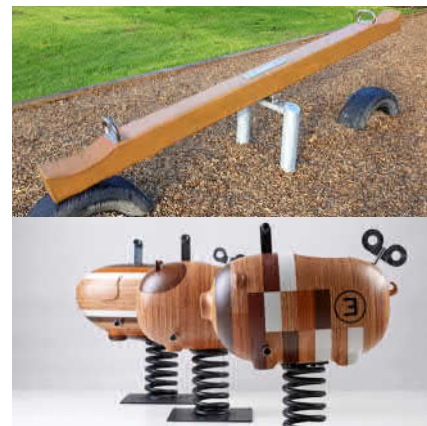
Fun large share swing can be located on an artificial lawn terraces. All playground areas will have softfall zones in compliance with AS.

Further investigations will be undertaken into a possible elevated adventure tunnel that could be constructed across the rail cutting. This would provide exciting views as kids watch people ride under them and they spot the camp ground, bridges and farm animals from up high in the sky. This can be fully enclosed omitting any softfall requirements.



Low stone walling can provide informal seating and retain level play spaces. Indicative image: sandstone blocks. Artificial lawn terraces with adjoining garden beds with fig trees; a playful climbing tree with beautiful shade. Terraces can be located to provide views back towards the camp ground and over the adjoining farmland.

Country style seesaws and animal characters for playground rockers can be installed on the terraces. All playground areas would be design to current safety guidelines and standards such as AS4685.



There is a great opportunity to taking advantage of the grade by adding a long playful slide that can grade with the slope. Indicative image only: the slide could be a plastic tube to reduce heat impacts, plus shade structure can be installed over the open landing area. Landing pad and softfall requirements would be compliant and suitable for this environment.

BENTLEY PLAYGROUND PRECINCT: INDICATIVE IMAGES

4.0 INDICATIVE CROSSINGS

Crossings provide a point of interest and require specific treatments for safety, wayfinding and education.

There are a number of different crossing treatments throughout the trail. A consistent design will be implemented to suit each type. The types of crossings include.

Creek bridge crossings: can be a modular design that is installed over existing bridge structures that have been deemed structurally sound. Where possible a consistent approach will be undertaken for all bridges along the trail. This requires further coordination with Councils throughout the extent of the NRRT. There will be some exceptions to this bridge style for example, Back Creek bridge, a significant visual structure that has been declared safe to retain; there is an opportunity to transform the existing bridge to accommodate recreational traffic use. Further investigation are required into the feasibility of installing glass panels intermittently within the floor structure of the bridge to allow visual connection through the bridge to the creek below.

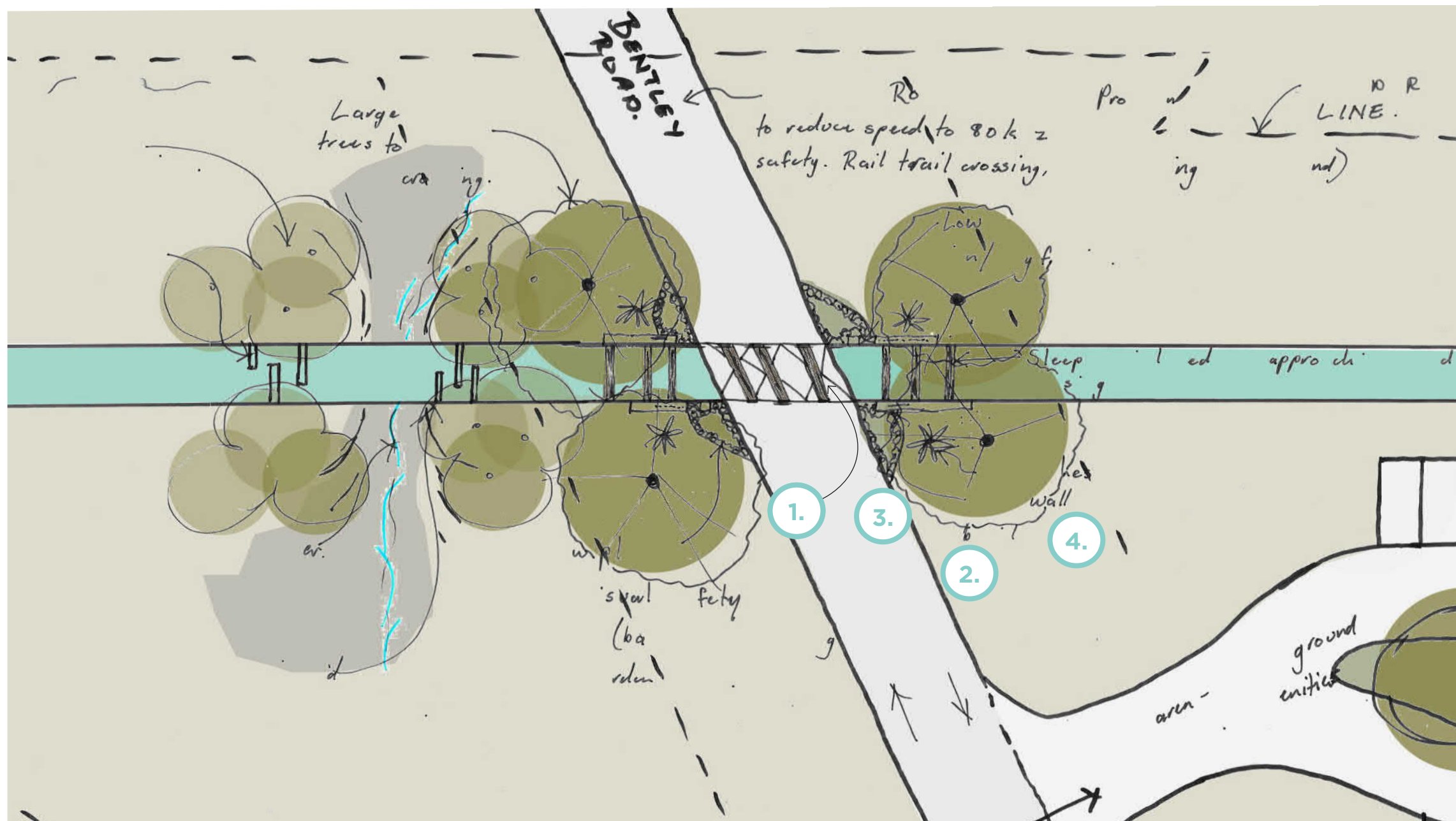
Road crossings: a stencil design could be overlaid onto roadways for safety. A visual connection to the NRRT graphic may be used however, there is an opportunity to integrate Aboriginal art/interpretation of the land, and/or the rail corridor history. A consistent identity and story can be used all NRRT crossing roads; further coordination will be sort with Councils. Local artists installations may also be considered for this application.

Farm crossings: cattle and machinery crossings will provide safe and interesting crossings. A number of design ideas are currently being investigated for cattle crossing points. Potential to provide a gate block-off scenario may be feasible for particular locations; an example of this is shown from the Tumbarumba to Rosewood Rail Trail. Investigations will also be made into various culvert style stock crossings.



Example of gates (for cattle) that block the rail trail when opened (at Tumbarumba to Rosewood Rail Trail)





KEY:

1. CROSSING TREATMENTS

Potential to install a stencil (interpretive cultural/history opportunity) over the roads at Trail crossing points. This can add a physical and visual passive awareness, that can slow both vehicular traffic and recreational users, creating a safer environment.

2. FEATURE TREE

A large feature tree can be used as a signifying landmark on both sides of the road at all trail / road crossings; they can be offset to not obstruct views in compliance with Australian safety standards.

3. ACCENT PLANTS

Accent plants for example a Giant Spear Lilly could provide landmarks for trail users, they can be used as additional visual cues for the approach to crossings.

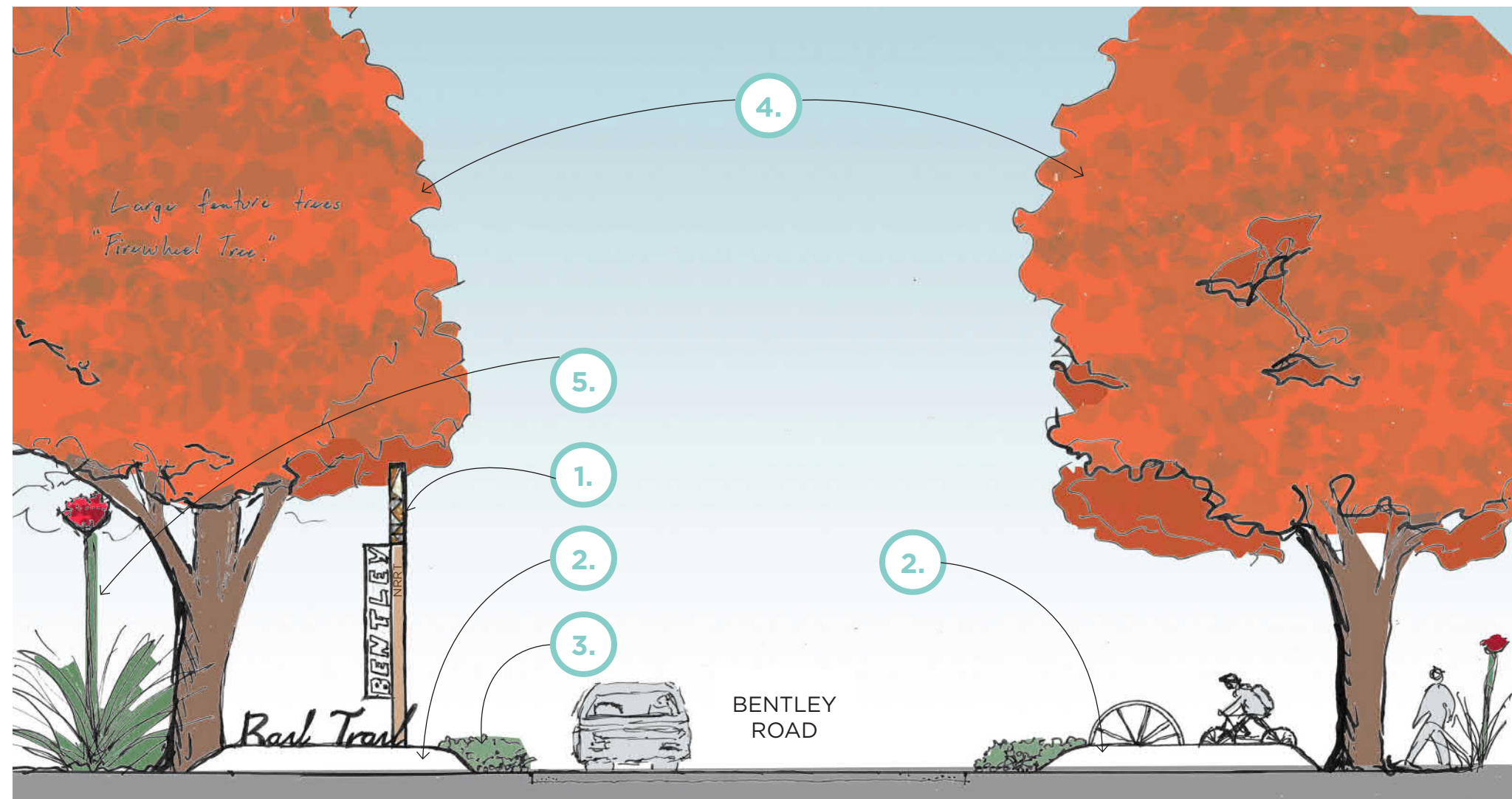
4. SAFETY

All crossing works will be developed to the relevant guidelines such as RMS to ensure traffic calming, signage and sight-lines are in compliance. Additional design overlays can add character as well as awareness to the crossing areas as noted under crossing treatments.

INDICATIVE ROAD CROSSING BENTLEY ROAD EXAMPLE 1:200 @ A1, 1:400 @ A3



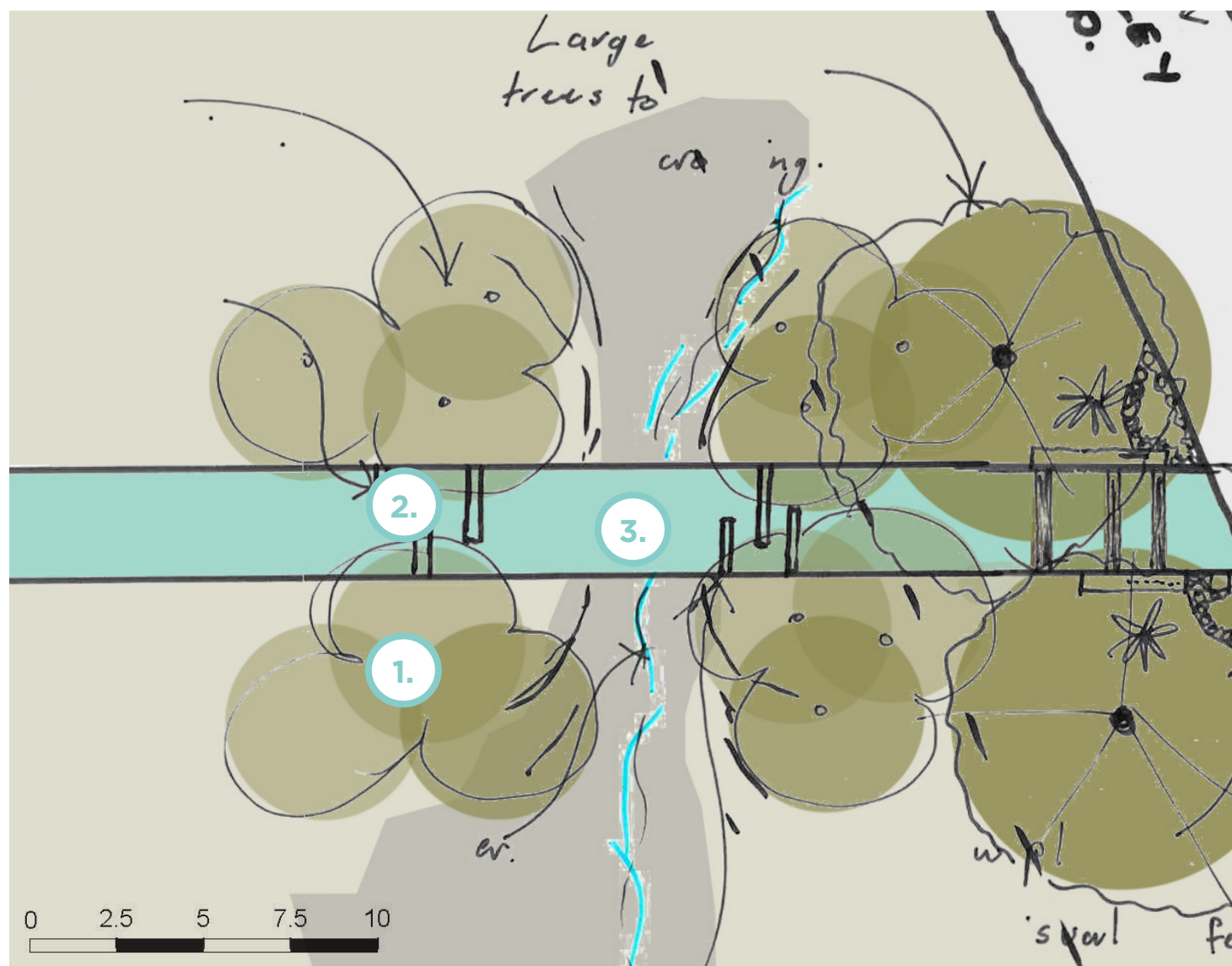
0 2.5 5 7.5 10



KEY:

- 1. NRRT SIGNAGE**
 Signage materials to be further investigated in collaboration with other Councils to develop a holistic design approach for the entire NRRT length. Appropriate naming for each area for example, the Bentley Road precinct could have Bentley in corten steel; hardwood timber post with NRRT etched into the post and a painted pattern at the top.
- 2. LOW FEATURE WALL**
 Example section shows Rail Trail text made from steel, fixed to low concrete wall; abstract steel bike wheel fixed to top of wall.
- 3. PLANTING**
 To ensure compliant sight-lines for safety low planting can be used around the low wall with ballast rock surrounding the planting.
- 4. FEATURE TREE**
 Feature NRRT tree could be a large native shade tree that denotes the sense of place and each crossing and entry to the trail. It would have the relevant setback from the roads for visual safety.
- 5. ACCENT PLANTING**
 A large robust plant can be used as a visual cue for rail trail users on approach to all roads, bridge and farm crossings.

EXAMPLE - TYPICAL ROAD CROSSING 1:25 @ A1, 1:50 @ A3



KEY:

1. SIGNIFICANT TREES

Melaleuca quinquenervia are native and a visual icon in the Northern Rivers area. They are significant around creek areas and could be used to denote creek crossings on both sides of the trail to frame creek alignments.

2. SURFACE TREATMENT

Approaching creeks and bridges the surface finish could have a rhythm of timber sleepers inlaid. A change in surface can calm (slow) trail riders for safety and to encourage them to visually appreciate the changing surrounding landscape.

EXAMPLE - TYPICAL CREEK CROSSING SKETCH

protective
fencing

protective
fencing

surface change
to slow and slow/
warn trail users

opportunities
for wayfinding
and education;
how far to the
next amenities;
how many
cattle in the
region; local
tourism places
and the like.

Potential for reuse of rail materials for interest and connection to the history of the site. For example, steel inlays to inform cattle cross here.



3. BRIDGES

Further investigation are underway into a modular engineered bridge that can be a standard installation, with some exceptions for example, Back Creek bridge; its character can be retained and refurbished to take advantage of the views, height and scale. There is an opportunity to install some transparent floor panels for an amazing height experience.

4. FARM CROSSING

A number of adjoining farms require access for crossing cattle and machinery; these could incorporate signage and interpretive elements through interesting ground treatments. Fence and gate types will also be further investigated for adjoining properties as well as culvert stock crossings. Example of gates (for cattle) that block the rail trail when opened (at Tumbarumba to Rosewood Rail Trail).

5.0 INDICATIVE MATERIALS

Corten steel evokes a heritage connection to the old railway tracks with its rust finish that is robust, durable and long lasting. This material could be used within signage elements along the corridor.



Hardwood timber also reflects the timber sleepers of the railway. Where possible the reuse of the timber sleepers and railway tracks can be used from the Northern Rivers Railway line.



Softfall materials in compliance with AS: Takura mulch is a natural look softfall option for the slide landing area and the flying fox zone.

Artificial lawn terraces could be used in the playground, fallzone padding can be installed under the turf to AS. This allows a visually aesthetic surface with low maintenance.

Furniture: Indicative picnic table and seating. A consistent suite should be provided along the corridor. These could be used at specific locations for meeting / socialising, rest and eating. May be used at all four key destinations.



Low stone walling can provide informal seating and retain level play spaces. Indicative image: sandstone blocks.

Terraces can be located to provide views back towards the camp ground and over the adjoining farmland.

Indicative drinking fountain that may be used along the corridor, could include bottle refill and dog bowl.



Dogs on the rail trail are to be on leash.

Investigate possible locations based on potable water supply.



Furniture to be a consistent suite along the corridor. Shelters could be used at the tunnel hill for amenity on the open exposed hill top. Style example shown is a skillion roof with hardwood timber structure and colorbond Surfmist roof. Gutters and downpipes could be connected to stormwater tanks to provide drinking water.

A robust low maintenance selection criteria has been set for the NRRT materials. The final materials palette will be selected in coordination with other Councils to ensure a level of consistency along the full extent of the trail.

GROUND TREATMENTS EXAMPLES



Bitumen Seal | Formalised finish could be utilised in high traffic areas and in some key precinct areas. For example, the Old Casino Station precinct and up to the Primex area. Bitumen can also be utilised to mitigate any erosion issues that may arise with other ground treatments.



Stabilized Decomposed Granite | Locally sourced deco could make up the vast majority of the trails ground treatment. A stabilized finish has been used successful for recreational trails including for wheelchair accessibility. Further investigations into the surface finish will be done with consideration to pram, bike training wheels and wheelchair accessibility.

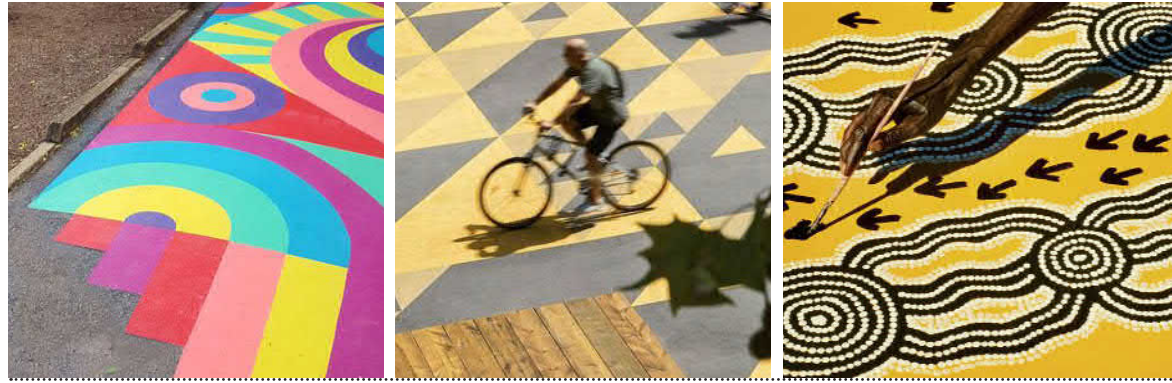


Maintenance Track/Trail - the maintenance track can be grass access allowing for both maintenance and emergency access, as well as potential horse riding. This track would be located along side the rail trail where space and topography permits.

There could be a number of entry points from the nearest road to assist in easy access to the rail trail.

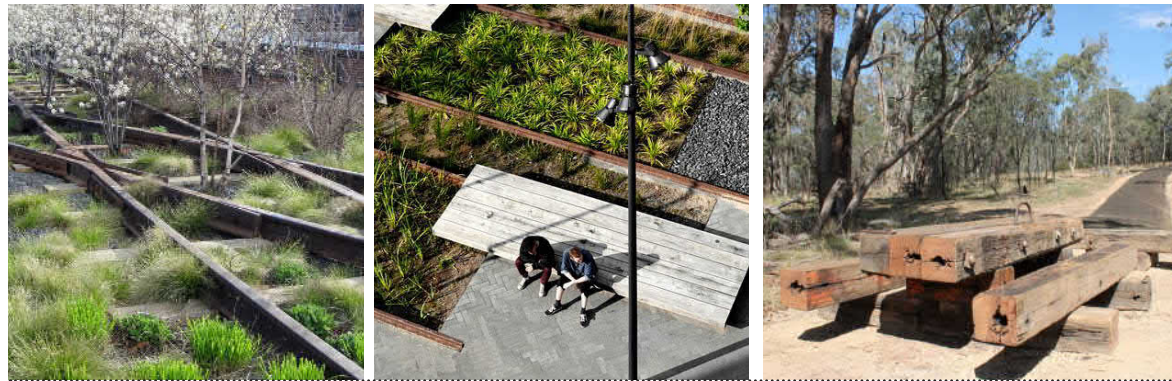
DESIGN SOLUTIONS

Key areas of interest can be selected for special treatments to be applied to. These include some cost effective solutions, adaptive reuse of existing remnant rail infrastructure and use of bespoke feature paving.



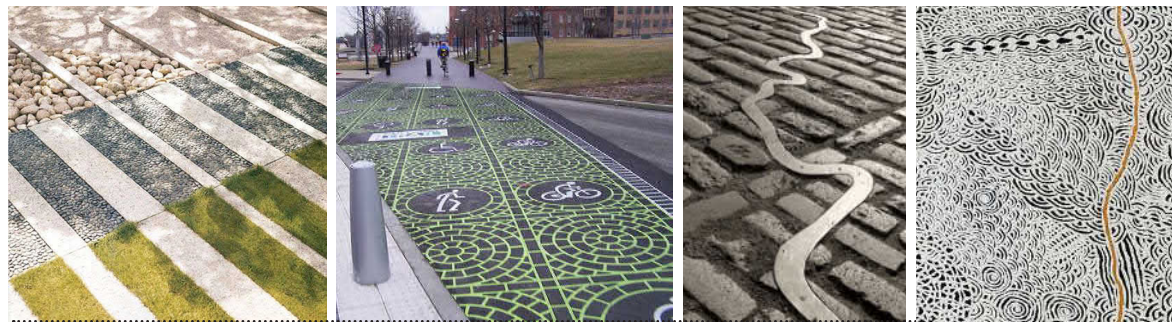
GROUNDSCAPE MURALS

Simple stencils can be applied to bitumen surfaces for interest and to enhance awareness and increase safety around road crossings. These could aid in wayfinding, define crossings, meeting points or areas of interest. This provides pops of colour and are potentially an exciting opportunity for a local artist to showcase their work on a large scale.



ADAPTIVE REUSE OF EXISTING RAIL INFRASTRUCTURE

Utilising remnant infrastructure provides a tangible connection to the areas heritage. Salvaged rail line elements could be incorporated into new spaces of planting, paving or seating in key areas. Examples pictured here are the high-line in New York, a former tram depot in Madrid and the Tumbarumba to Rosewood trail, NSW where the integration of rail elements enrich the sites character and in turn the users experience.



FEATURE GROUND TREATMENTS

More bespoke treatments could be utilised in high traffic precinct areas. These could include the use of natural materials such as riverbed stones and timber or more modern hardscape solutions such as bricks and permeable paving.



FENCING

Certain locations along the corridor will require fencing for user safety to prevent fall, and to adjoining farmland to prevent cattle and the like clashing with recreational users. Wildlife friendly fencing may be considered to allow maximum fauna movement.

Further investigations will be undertaken to inform the fencing strategy for adjoining properties. Fencing types may vary to suit the individual requirements (and concerns) of adjoining properties.

6.0 INDICATIVE PLANTING PALETTE

The following planting palettes serve as an indicative guide of the species to be selected for the southern 13.5km extent of the NRRT. The species selected are native or endemic to the Northern Rivers area and have been confirmed on the Northern Rivers inventory from Bionet Atlas to confirm their character and performance in the area.

Further development of species and character ‘zones’ within precincts will be developed during detail design. The species selected will be subject to

further scrutiny in relations to the micro-climate of the specific planting locations. For example, if they are to be located near watercourses, sheltered or exposed positions; and their preferred soil types, fertile, moist soils, drainage requirements, there tolerance to extended dry periods, frost and wind exposure.

An example of the selection criteria for detailed design is the *Eucalyptus bancroftii* that has been selected because it is endemic to the Northern

Rivers region, its gnarly character makes it suitable for out edges of design areas that extend native habitat; it is a primary food tree for Koalas and is suitable for coastal, sandy, infertile gently sloping lowland sites with poor drainage, tolerates extended dry periods, frost and wind tolerant, and is suitable for annual rainfall 900-1600mm.



The species mix has been selected for their a visual connection to the land. The planting will provide diverse colour, texture and form along with enhancing the local flora and fauna habitats. Vegetation will be used to provide shade, screening, visual cues and instill an identifiable character linked to the Northern Rivers country side for a site specific experience along this area of the NRRT.

TREES



Eucalyptus microcorys
tallowwood



Eucalyptus moluccana
Grey Box



Eucalyptus robusta
Swamp Mahogany



Eucalyptus bancroftii
Orange Gum



Eucalyptus tereticornis
Forest Red Gum



Eucalyptus signata
Scribbly Gum

TREES



Brachychiton acerifolius
Illawara Flame Tree



Callistemon salignus
White Bottlebrush



Ficus obliqua
Small-leaved Fig



Ficus rubiginosa
Port Jackson Fig



Cupaniopsis anacardioides
Tuckeroo



Syzygium hodgkinsoniae
Red Lilly Pilly



Hymenosporum flavum
Native Frangipani



Angophora robur
Sandstone rough-barked apple



Melaleuca quinquenervia
Paperbark



Elaeocarpus eumundi
Eumundii Ash



Hibiscus tiliaceus 'Rubra'
Bronze Cotton Wood



Livistona australis
Cabbage Tree Palm



Lophostemon confertus
Brush Box



Pittosporum undulatum
Sweet Pittosporum



Stenocarpus sinuatus
Firewheel Tree

The shrubs palette serves as an indicative guide of the species to be selected for use of screening and infill planting. Where adjoining properties or fence lines require screening for privacy, visual aesthetics and to prohibit access near fence lines, dense pockets of shrubs and trees can be used to minimise opportunistic antisocial behaviour. Shrubs may also be used to create understory planting to enhance habitat and delineate public access movements.

SHRUBS



Acacia courtii
Wattle



Austromyrtus dulcis
Midgen berry



Banksia spinulosa
Hairpin Banksia



Melaleuca thymifolia
Thyme Honey-myrtle



Westringia glabra
Violet westringia



Hibiscus heterophyllus
Native Rosella



Grevillea rhizomatosa
Gibraltar Grevillea



Banksia aemula
Wallum Banksia



Persoonia stradbokensis

The following feature and groundcover palette serves as an indicative guide of the species to be selected for general arrangements / reducing heat island effect (due to additional hardscape) / weed suppression / erosion control and visual aesthetics and cues; for instance, consistent use at crossings and key destinations.

FEATURES



Crinum pedunculatum
Swamp Lilly



Doryanthes palmeri
Giant Spear Lily



Xanthorrhoea johnsonii
Johnson's Grass Tree



Banksia oblongifolia
Fern leaved Banksia

GROUND COVERS



Carpobrotus glaucescens
Pig Face



Hibbertia scandens
Climbing Guinea Flower



Hibbertia marginata
Bordered Guinea Flower



Dianella caerulea
Blue Flax Lily



Lomandra glauca
Pale Mat Rush



Lomandra hystrix
Creek Mat Rush



Grevillea juniperina
Grevillea

The Bush Tucker palette serves as an indicative guide of the species to be selected for use on an edible trail; A bush tucker area can provide additional visitor interest for trail users including walking tours.

Aboriginal stories could enrich to the ‘Bush Tucker’ journey; Investigate the integration of Aboriginal story boards through this area.

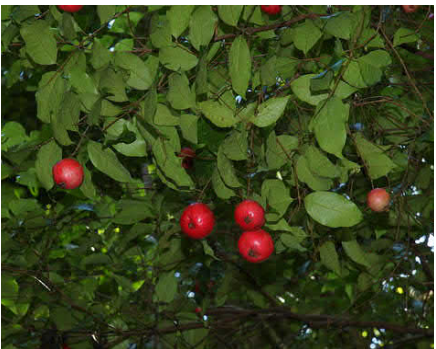
BUSH TUCKER



Macadamia tetraphylla
Rough Shelled Bush Nut



Acmena ingens
Lilly Pilly - Red Apple



Syzygium hodgkinsoniae
Red Lilly Pilly



Drymophila moorei
Orange Berry



Backhousia Myrtifolia
Grey Myrtle



Davidsonia jerseyana
Davidson's Plum



Syzygium australe
Brush Cherry



Syzygium moorei
Durobby, Lilly Pilly Coolamon



Planchonella australis
Black Apple



Citrus australasica
Finger Lime



Syzygium luehmannii
Small leaved Lilly Pilly



Podocarpus elatus
Plum Pine



Eupomatia laurina
Bolwarra



Elaeocarpus grandis
Blue Quandong



Diploglottis australis
Native Tamarind

FURTHER INVESTIGATIONS OF ALL PLANTING PALETTES WILL BE COMPLETED DURING DETAIL DESIGN AND DOCUMENTATION PHASES.



Richmond
Valley
Council



CONSULTING