

BOYNE BURNETT INLAND

RAIL TRAIL

Project Masterplan



Boyne Burnett Inland Rail Trail - Project Masterplan

General Design Considerations

Trail Surface

The surface of a rail trail is a critical component of its success. A successful surface should exhibit the following properties:

- Be fit for purpose
- The surface needs to cater appropriately to all users. In this instance, it needs to suit walkers, cyclists and horse riders. Generally speaking, fine graded crushed stone with fines is considered to be the most appropriate surface to cater to walkers, cyclists and horse riders, without providing separate surfaces for each use type.

- Be robust
- The surface needs to be resistant to wear from use, and resistant to damage and wear from natural processes such as wind and rain.

- Be easy to maintain
- The surface should require little maintenance and should be easy and low cost to repair.

- It should complement the character of the trail
- The aesthetics of the trail surface should not be at odds with its surroundings and should enhance the user experience.

Surface Condition

The existing trail surface through each of the three sections is predominantly in good condition in terms of scour and erosion, it is generally considered to be an appropriate trail surface for all three user types. Where the trail is not fit for purpose it generally exhibits the following issues:

- Vegetation growing through the trail surface.
- Larger loose rocks and detritus on the track making it hard to walk, cycle or ride on.
- Scour or erosion where uncontrolled surface water is running over the track.
- Soil, silt or fine aggregate size forming the surface of the track resulting in it being more susceptible to particle movement, erosion or muddy and slippery conditions when wet.
- Large aggregate size or ballast still in place, making the trail hard to walk, cycle or ride on.
- No track surface present. There are a few instances where the track surface has been removed or covered over completely, or, where the trail needs to be bypassed, such as around bridge crossings.

Detailed gravel pavement design are subject to future a future detailed design exercise and it is recommended that in-situ subgrade testing be done to confirm these designs.

Where required, the track could be treated with one of the following typical treatments: -

Trail Surface Treatment Type 1

It is recommended that Treatment Type 1 be the minimum treatment level for the entire trail. It assumes the trail surface is in good condition already.

- This treatment involves:
- Mechanical removal of surface vegetation.
 - Spraying out vegetation to stop it growing back through the trail surface.
 - Grading the surface to remove large rocks and detritus.
 - Lightly rolling the surface to compact the existing gravel profile.

It is recommended that this treatment be carried out further as a maintenance process to the entire trail at required intervals. This will ensure the longevity of the trail and highlight any potential problem areas that arise.

Trail Surface Treatment Type 2

Treatment Type 2 is recommended to be used where the following issues arise:

- Very heavy vegetation on surface.
- Minor scour or erosion on the trail surface.
- Shallow, slightly oversized aggregate (~5-10mm) making up the trail surface.
- Shallow finer material making up the trail surface.
- Where there is no trail surface present but there is a robust, compact sub-grade in place.

- This treatment involves:
- Mechanical removal of surface vegetation.
 - Spraying out vegetation to stop it growing back through the trail surface.
 - Grading the surface to remove large rocks and detritus.
 - Lightly rolling the surface to compact the existing gravel profile.
 - Add 100mm depth of locally sourced, fine graded crushed stone with fines(CBR 80) to the surface, it would be ideal for the colour or type of stone to match what is existing to achieve the least impact on the visual amenity of the trail.
 - Trim, shape and compact.

Trail Surface Treatment Type 3

Treatment Type 3 is recommended to be used where the following issues arise:

- Very heavy vegetation on surface.
- Major scour or erosion on the trail surface.
- Deep, very oversized aggregate (<10mm) or ballast making up the trail surface.
- Deep, large amounts of finer material making up the trail surface or soil over surface.
- Where there is no trail surface present and the existing sub-grade is poor.

- This treatment involves:
- Mechanical removal of surface vegetation.
 - Spraying out vegetation to stop it growing back through the trail surface.
 - Grading the surface to remove large rocks and detritus, OR, grade and remove oversized aggregates or ballast off site. Lightly rolling the surface to compact the resultant gravel profile.
 - Add 200mm depth of locally sourced crushed stone to the surface, 100mm of finely graded stone with fines (CBR 80), over 100mm of coarsely graded stone (CBR 35). It would be ideal for the colour or type of stone to match what is existing to achieve the least impact on the visual amenity of the trail.
 - Trim, shape and compact.

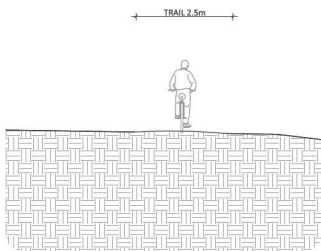
Trail Surface Treatment Type 4

It is not envisaged that this treatment is required at this stage of the project and it is felt it should be used as a last resort. This level of treatment is thought to impact on the character of being in mostly natural landscape, and, is expensive to install, maintain and repair. It is envisaged this treatment might be used in the future where particular problem areas are identified. As this treatment is not appropriate for use by horse riders, it is proposed that a 1m wide bridle trail be constructed as part of this treatment.

Treatment Type 4 is recommended to be used where the following issues arise:

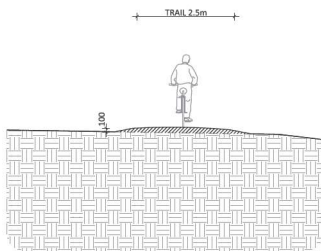
- Continuous heavy wear on surface.
- Around heavy use areas such as sidings.
- Reoccurring very heavy vegetation on surface despite removal.
- Very poor subgrade.

- This treatment involves:
- Mechanical removal of surface vegetation to 3.5m width
 - Spraying out vegetation to stop it growing back through the trail surface to 3.5m width.
 - Grading the surface to remove large rocks and detritus to 3.5m width.
 - Lightly rolling the surface to compact the existing gravel profile to 3.5m width.
 - Add 200mm depth of locally sourced crushed stone to the surface, 100mm of CBR 80 material; over 100mm of CBR 35 material (to 2.5m width).
 - Add 1m wide of 200mm depth of locally sourced crushed stone to the surface, 100mm of finely graded stone over (CBR 80), 100mm of coarsely graded stone (CBR 35) to create the bridle trail.
 - Trim, shape and compact.
 - Apply two-coat spray seal system (to 2.5m width only).



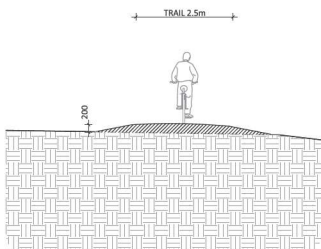
Trail Surface Treatment Type 1

- Mechanical removal of surface vegetation.
- Spraying out vegetation to stop it growing back through the trail surface.
- Grading the surface to remove large rocks and detritus.
- Lightly rolling the surface to compact the existing gravel profile.



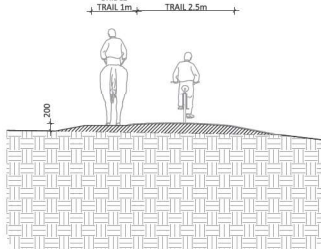
Trail Surface Treatment Type 2

- Mechanical removal of surface vegetation.
- Spraying out vegetation to stop it growing back through the trail surface.
- Grading the surface to remove large rocks and detritus.
- Lightly rolling the surface to compact the existing gravel profile.
- Add 100mm depth of locally sourced, fine graded crushed stone with fines(CBR 80) to the surface. It would be ideal for the colour or type of stone to match what is existing to achieve the least impact on the visual amenity of the trail.
- Trim, shape and compact.



Trail Surface Treatment Type 3

- Mechanical removal of surface vegetation.
- Spraying out vegetation to stop it growing back through the trail surface.
- Grading the surface to remove large rocks and detritus, OR, grade and remove oversized aggregates or ballast off site. Lightly rolling the surface to compact the resultant gravel profile.
- Add 200mm depth of locally sourced crushed stone to the surface, 100mm of finely graded stone with fines (CBR 80), over 100mm of coarsely graded stone (CBR 35). It would be ideal for the colour or type of stone to match what is existing to achieve the least impact on the visual amenity of the trail.
- Trim, shape and compact.



Trail Surface Treatment Type 4

- Mechanical removal of surface vegetation to 3.5m width
- Spraying out vegetation to stop it growing back through the trail surface to 3.5m width
- Grading the surface to remove large rocks and detritus to 3.5m width
- Lightly rolling the surface to compact the existing gravel profile to 3.5m width
- Add 200mm depth of locally sourced crushed stone to the surface, 100mm of CBR 80 material; over 100mm of CBR 35 material (to 2.5m width).
- Add 1m wide of 200mm depth of locally sourced crushed stone to the surface, 100mm of finely graded stone over (CBR 80), 100mm of coarsely graded stone (CBR 35) to create the bridle trail.
- Trim, shape and compact.
- Apply two-coat spray seal system (to 2.5m width only)



Example of small particle material over the trail surface



Example where large particle ballast is in place on trail surface



Example of vegetation encroachment into trail surface

Boyne Burnett Inland Rail Trail - Project Masterplan

General Design Considerations

Bridges

There are a large number of bridges through the trail which should be retained. Bridges are very much an attractor to these types of recreational facilities as they are iconic and encapsulate the heritage and character of rail corridors. Repairing and converting these so that trail users can ride across as many bridges as possible, further enhances the experience of the trail and will attract more users. Re-using heritage elements for purpose similar to their original intended purpose (ie. travel), enhances the heritage preservation and the user experience. Utilising the bridges will promote more frequent use of the trail, especially during periods of rain as it resolves the issue of traversing creeks and gullies when they are flowing.

Repairs and conversions to bridges to improve safety for trail users represents one of the largest single cost items associated with the rollout of the trail. With this in mind bridge repairs and conversions will need to be prioritised based on their importance and the ease and cost of repair.

As a minimum, it is proposed that all bridges be retained and undergo basic maintenance and monitoring to ensure they can be preserved, and don't pose any safety concern to trail users or others.

It is anticipated that all bridges will require some intervention, whether it is maintenance for preservation or work to convert it for trail use.

Many of the bridges have suitable alternative routes already that require little or no work to make useable. This is however a dry weather only option. Many of these bridges would be considered a low priority to repair and could be considered for repair or conversation in future, for either conservation or trail use.

Several bridges have poor or no suitable alternative routes. To attract more users, provide better continuity, and better overall trail experience, these bridges should be prioritized for conversion.

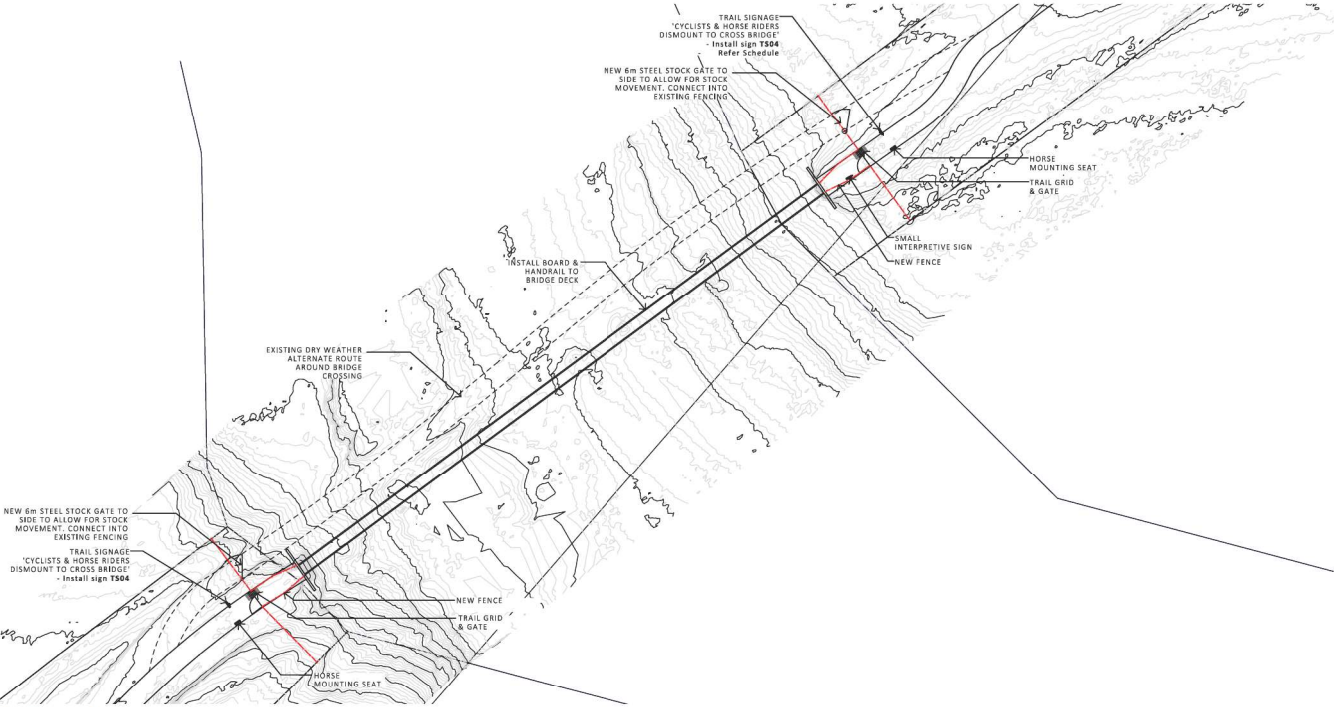
Many bridges are very damaged and will require very expensive repairs to be deemed traversable. These will need to be assessed carefully to make sure that project funds are being used as efficiently as possible.

To facilitate the conversion of bridges it is proposed to install a lightweight, modular steel and aluminium board and handrail system to allow people to safely traverse the bridges. It is recommended that cyclists and horse riders dismount when crossing the bridges. This allows the handrails of the bridges to be kept lower, keeping cost down and maintaining views from the bridge for walkers.

It is further recommended to remove all of the timber sleepers on converted bridges. These sleepers represent a very high proportion of damaged or failed elements on all bridges and the connection they have with their supporting girders also represented a consistent point of damage or failure. Replacing them would constitute a significant cost, and create an ongoing maintenance burden for the trail.

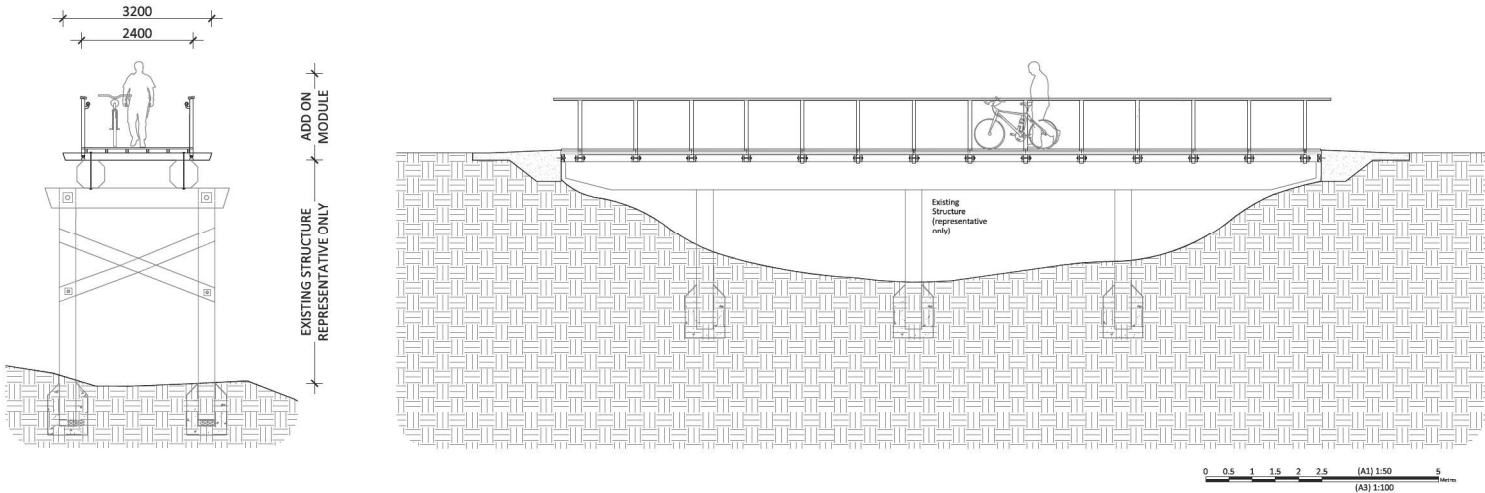
Timber sleepers in general, particularly on bridges, are an iconic part of the visual character of a rail trail. The fact there are very few sleepers remaining on the trail, makes them highly desirable to keep, but it is proposed that this desirable outcome is outweighed by the need to keep maintenance costs and labour down. It is recommended that sleepers be kept on bridges which are not considered for repairs, to keep as much of this character as possible.

Where conversion is to occur fencing and a trail grid and gate is proposed at either end. This assists to isolate livestock from wandering onto bridges and acts as a point of dismount for cyclists and horse riders. Safety signage warning users to dismount will be provided at either end. It is proposed to have interpretive signage to highlight the history and intricacies of each individual bridge.



Glassford Bridge 2 - Example

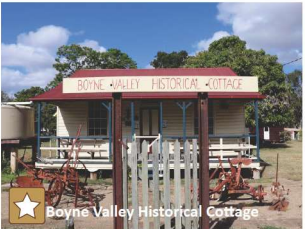
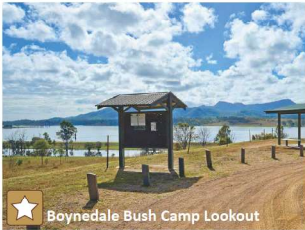
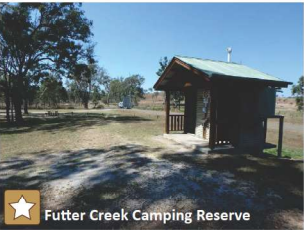
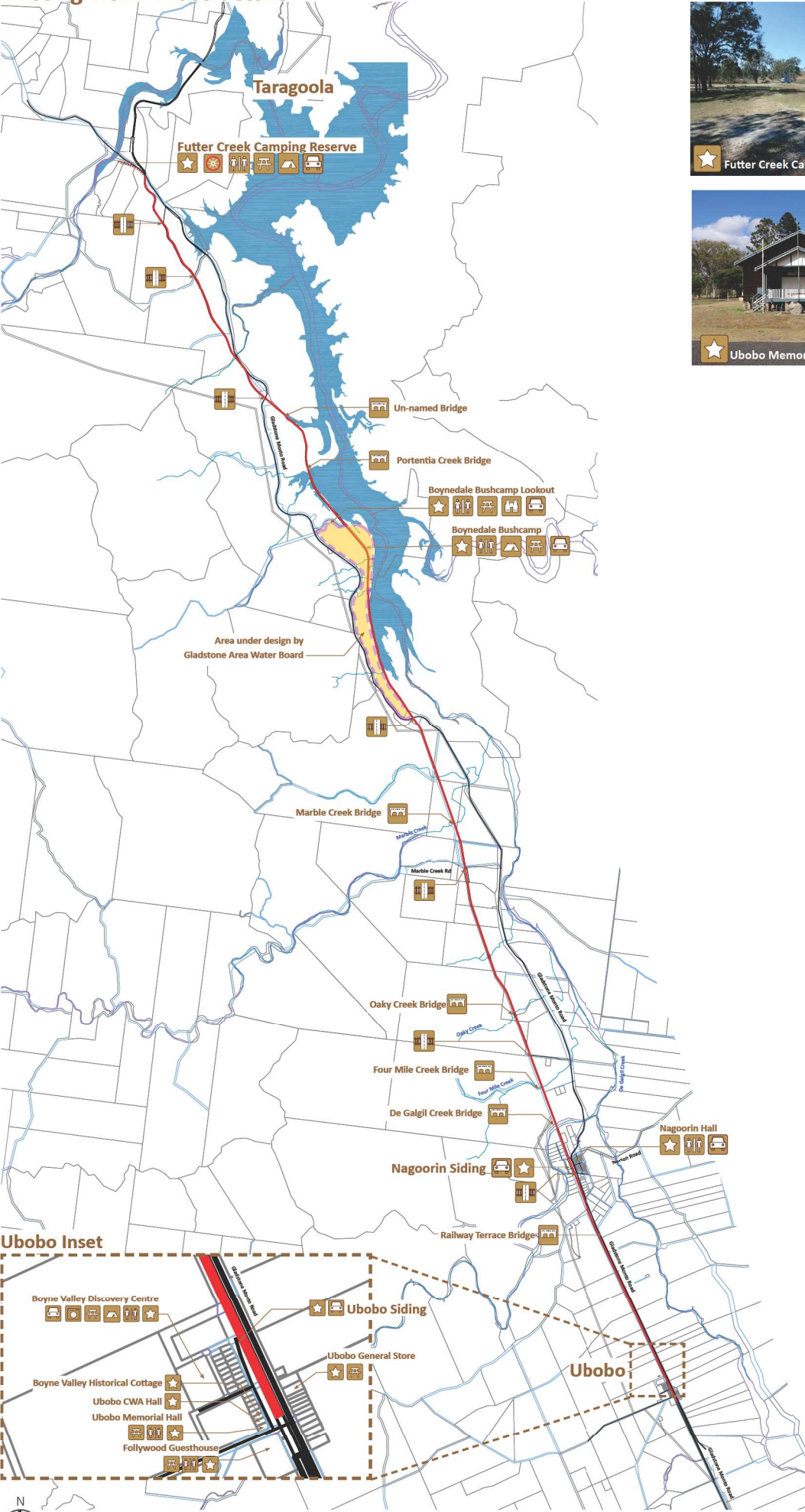
Board and Handrail bridge conversion



Boyne Burnett Inland Rail Trail - Project Masterplan

Taragoola to Ubobo 34km trail length

Existing Trail Infrastructure



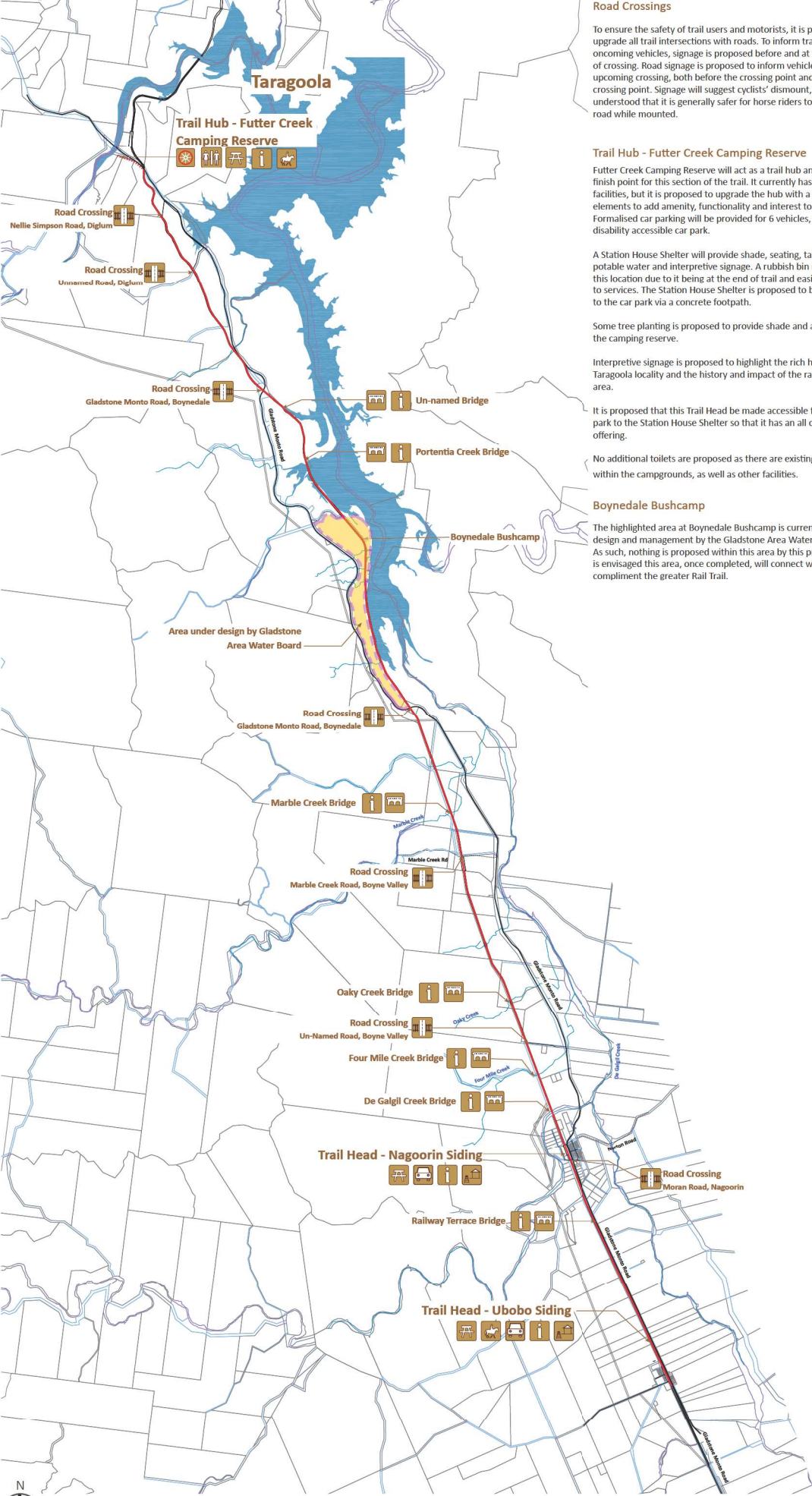
Legend - Existing Trail Features

- | | | |
|-------------------------------|-------------------|---------------|
| ★ | Place of Interest | General Store |
| Lookout | Lookout | Toilet |
| Camping | Camping | Food |
| Picnic Area | Picnic Area | Bridge |
| Horse yard | Horse yard | Laundry |
| Road Crossing | Road Crossing | Trail Hub |
| Car Parking | Car Parking | |
| Rail Trail | Roads Sealed | |
| Alternative / Temporary Trail | Roads Unsealed | |

Boyne Burnett Inland Rail Trail - Project Masterplan

Taragoola to Ubobo 34km trail length

Proposed Trail Infrastructure



Road Crossings

To ensure the safety of trail users and motorists, it is proposed to upgrade all trail intersections with roads. To inform trail users of oncoming vehicles, signage is proposed before and at the point of crossing. Road signage is proposed to inform vehicles of the upcoming crossing, both before the crossing point and at the crossing point. Signage will suggest cyclists' dismount, but it is understood that it is generally safer for horse riders to cross the road while mounted.

Trail Hub - Futter Creek Camping Reserve

Futter Creek Camping Reserve will act as a trail hub and a start or finish point for this section of the trail. It currently has camping facilities, but it is proposed to upgrade the hub with a number of elements to add amenity, functionality and interest to the trail. Formalised car parking will be provided for 6 vehicles, including one disability accessible car park.

A Station House Shelter will provide shade, seating, tables, non-potable water and interpretive signage. A rubbish bin is proposed at this location due to it being at the end of trail and easily accessible to services. The Station House Shelter is proposed to be connected to the car park via a concrete footpath.

Some tree planting is proposed to provide shade and amenity to the camping reserve.

Interpretive signage is proposed to highlight the rich heritage of the Taragoola locality and the history and impact of the rail line on the area.

It is proposed that this Trail Head be made accessible from the car park to the Station House Shelter so that it has an all of community offering.

No additional toilets are proposed as there are existing toilets within the campgrounds, as well as other facilities.

Boynedale Bushcamp

The highlighted area at Boynedale Bushcamp is currently under design and management by the Gladstone Area Water Board. As such, nothing is proposed within this area by this project. It is envisaged this area, once completed, will connect with and compliment the greater Rail Trail.

Trail Head - Nagoorin Siding

Nagoorin Siding will act as a trail head and start, intermediate or finish point for this section of trail. It is proposed to upgrade the siding with a number of elements to add amenity, functionality and interest to the trail. Formalised car parking will be provided for 6 vehicles, including one disability accessible car park.

A Station House Shelter will provide shade, seating, tables, non-potable water and interpretive signage. A rubbish bin is proposed at this location due to it being at the end of trail and easily accessible to services. The Station House Shelter is proposed to be connected to the car park via a concrete footpath.

New tree planting is proposed to provide shade and amenity to the Siding.

Interpretive signage is proposed to highlight at the rich heritage of the Nagoorin township and the history and impact of the rail line on the area.

It is proposed that this Trail Head be made accessible from the car park to the Station House Shelter so that it has an all of community offering.

No toilets are proposed as there are existing toilets in Nagoorin Hall, across the road from the Siding.

Trail Head - Ubobo Siding

Ubobo Siding will act as a trail head and start or finish point for this section of trail. It is proposed to upgrade the siding with a number of elements to add amenity, functionality and interest to the trail. Formalised car parking will be provided for 6 vehicles, including one disability accessible car park.

A Station House Shelter will provide shade, seating, tables, non-potable water and interpretive signage. It is proposed to provide a rubbish bin at this location due as it is an end of trail location and will be easy to service. The Station House Shelter is proposed to be connected to the car park via a concrete footpath.

Some tree planting is proposed to provide shade and amenity to the Siding.

Interpretive signage is proposed to highlight at the rich heritage of the Bullyan township and the history and impact of the rail line on the area.

A 3 stall horse yard is proposed.

As camping and other accommodation options are already available in Ubobo, no additional camping is proposed.

It is proposed that this Trail Head be made accessible from the car park to the Station House Shelter so that it has an all of community offering.

No toilets are proposed as there are existing public toilets in the Ubobo Memorial Hall.

Boyne Burnett Inland Rail Trail - Project Masterplan

Taragoola to Ubobo 34km trail length

Bridges

Un-named Bridge

This is a short timber bridge that passes approximately 5m high above a gully. It is currently unpassable and in a state of disrepair. There is significant scour around some of the bridge piers and the southern bridge abutment needs repair.

There is currently, an alternative dry weather route through the invert of the creek the bridge crosses. It needs minor earthworks to make the batters safe to approach if this route is to be used long term.

Effort of repair and conversion: Medium
Priority to repair and convert: Low

Portentia Creek Bridge

Portentia Creek Bridge is a relatively modern concrete and steel bridge. It can currently be safely traversed and is preserved in its current state, and needs only minor maintenance and monitoring for it to be used long term. It is proposed to install a new safety handrail, interpretive signage at the bridge's northern end, to highlight its history. The ballast will also be covered and infilled with a fine roadbase to make a smooth and trafficable surface.

Effort of repair and conversion: Low
Priority to repair and convert: High

Marble Creek Bridge

Marble Creek Bridge is a longer timber bridge that spans Marble Creek approximately 3m above the invert. It is currently unpassable and in need of extensive repair works. It has minor erosion and scour around the bridge piers that is recommended to be repaired.

There is currently an alternative dry weather route through the invert of the creek the bridge crosses. It needs minor earthworks to make the batters safe to approach if this route is to be used longer term. It is proposed to install interpretive signage at the northern end to highlight their history.

Effort of repair and conversion: High
Priority to repair and convert: Low

Oaky Creek Bridge

Oaky Creek Bridge is a short timber bridge that spans Oaky Creek approximately 5m above the invert. It is currently unpassable and in need of repair works. It has minor erosion and scour around the bridge piers that is recommended to be repaired.

There is currently an alternative dry weather route through the invert of the creek the bridge crosses. It needs minor earthworks to make the batters safe to approach if this route is to be used longer term. It is proposed to install interpretive signage at the northern end to highlight their history.

Effort of repair and conversion: High
Priority to repair and convert: Medium

Four Mile Creek Bridge

Four Mile Creek Bridge is a short timber bridge that spans Four Mile Creek approximately 3m above the invert. It is currently unpassable and in need of repair works. It has minor erosion and scour around the bridge piers that is recommended to be repaired.

There is currently an alternative dry weather route through the invert of the creek the bridge crosses. It needs minor earthworks to make the batters safe to approach if this route is to be used long term.

Effort of repair and conversion: Medium
Priority to repair and convert: Low

De Galgil Creek Bridge

De Galgil Creek Bridge is a longer timber bridge that spans De Galgil Creek approximately 7m above the creek line. It is currently unpassable and in need of extensive repair works. There is some scouring and erosion around the bridge's piers, which need further investigation and repair to be considered safe.

There is currently an alternative dry weather route through the invert of the creek the bridge crosses. It needs minor earthworks to make the batters safe to approach if to be used long term.

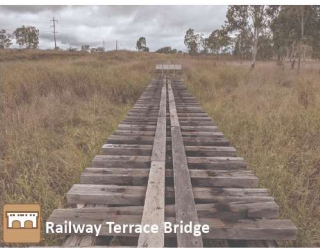
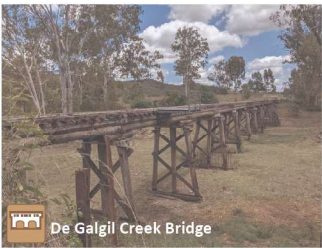
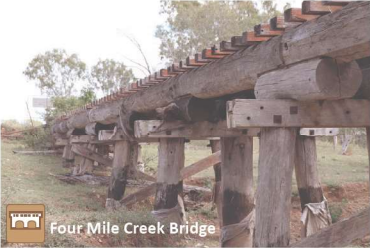
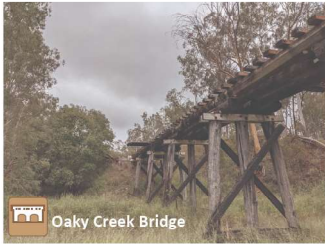
Effort of repair and conversion: High
Priority to repair and convert: Low

Railway Terrace Bridge

Railway Terrace Bridge is a short timber bridge that crosses a small gully approximately 3m above the invert. It is currently unpassable and in need of repair works. It has minor erosion and scour around the bridge piers that is recommended to be repaired.

There is currently an alternative dry weather route through the invert of the creek the bridge crosses. It needs minor earthworks to make the batters safe to approach if to be used long term. Due to this being the only safe pedestrian link between Ubobo and Nagoorin, it is recommended the repair of this bridge be a priority.

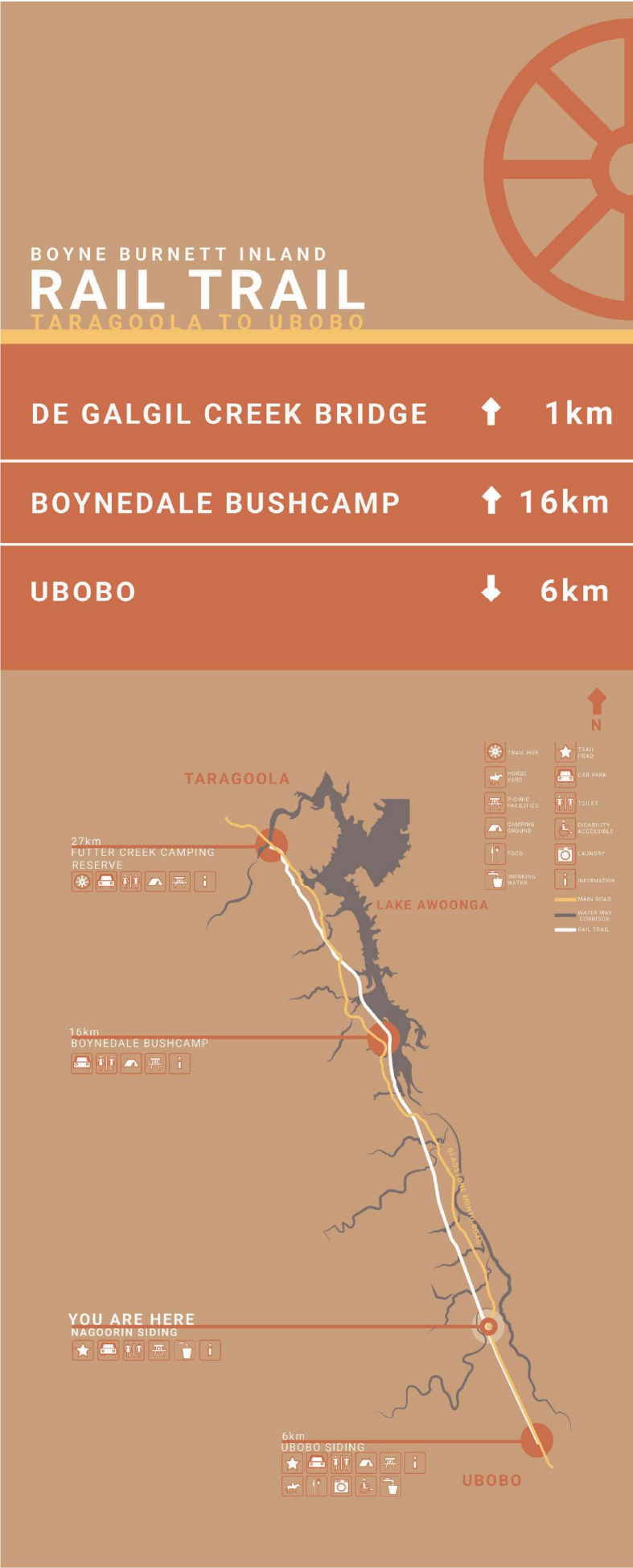
Effort of repair and conversion: Medium
Priority to repair and convert: High



Boyne Burnett Inland Rail Trail - Project Masterplan

Taragoola to Uboobo 34km trail length

Proposed Trail Wayfinding

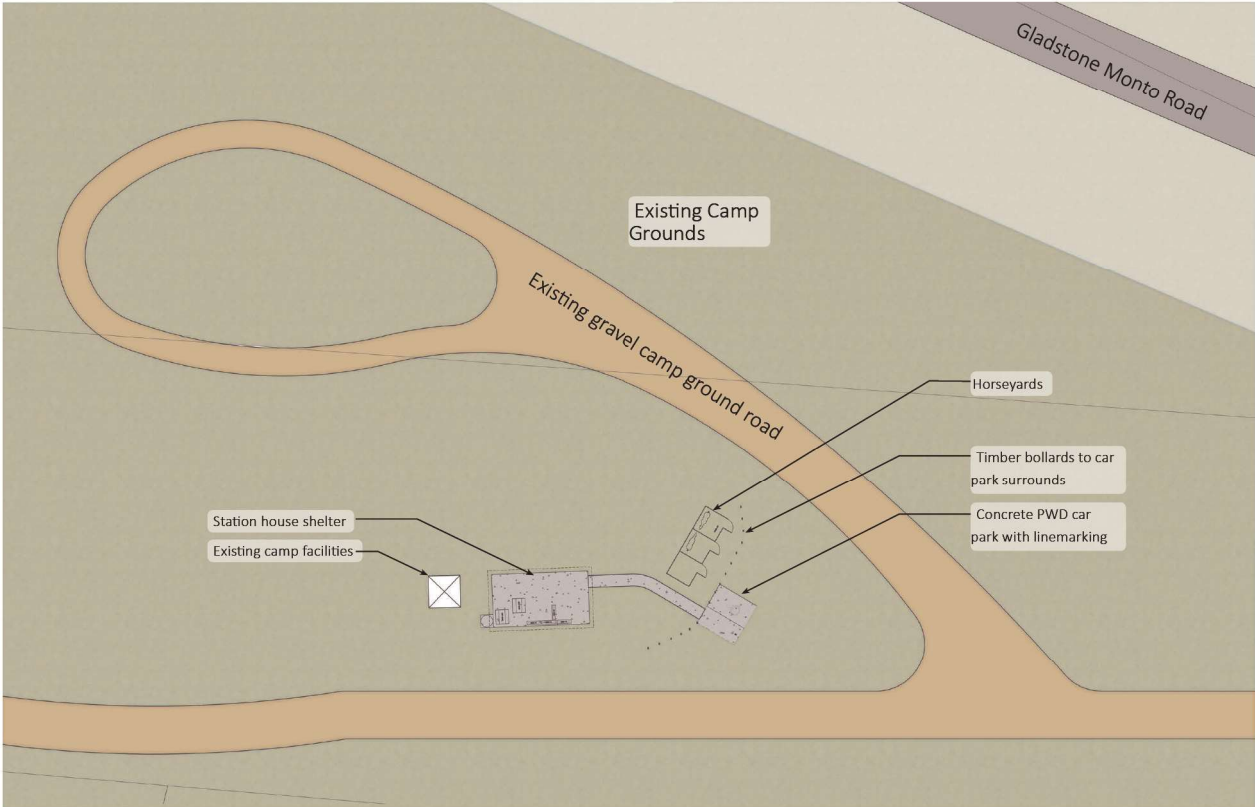


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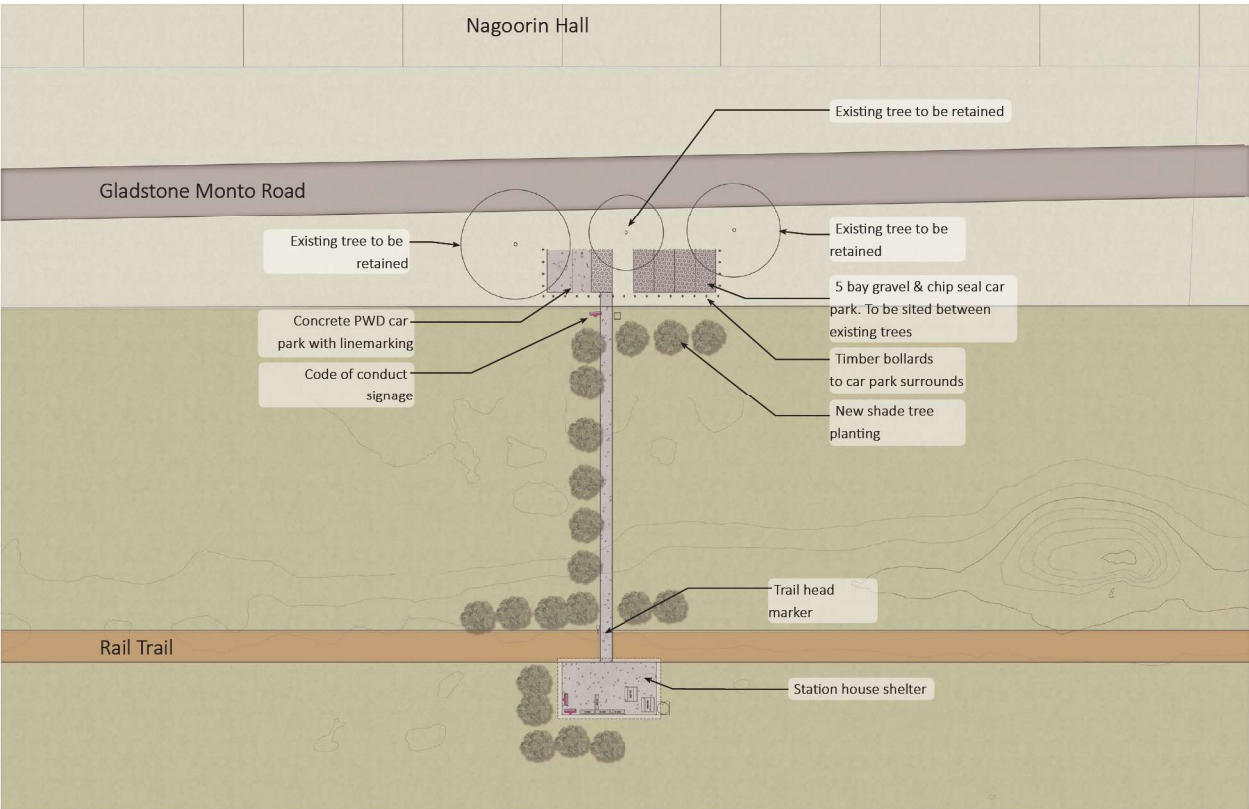
Taragoola to Ubobo 34km trail length

Trail Heads

Trail Hub - Futter Creek Camping Reserve



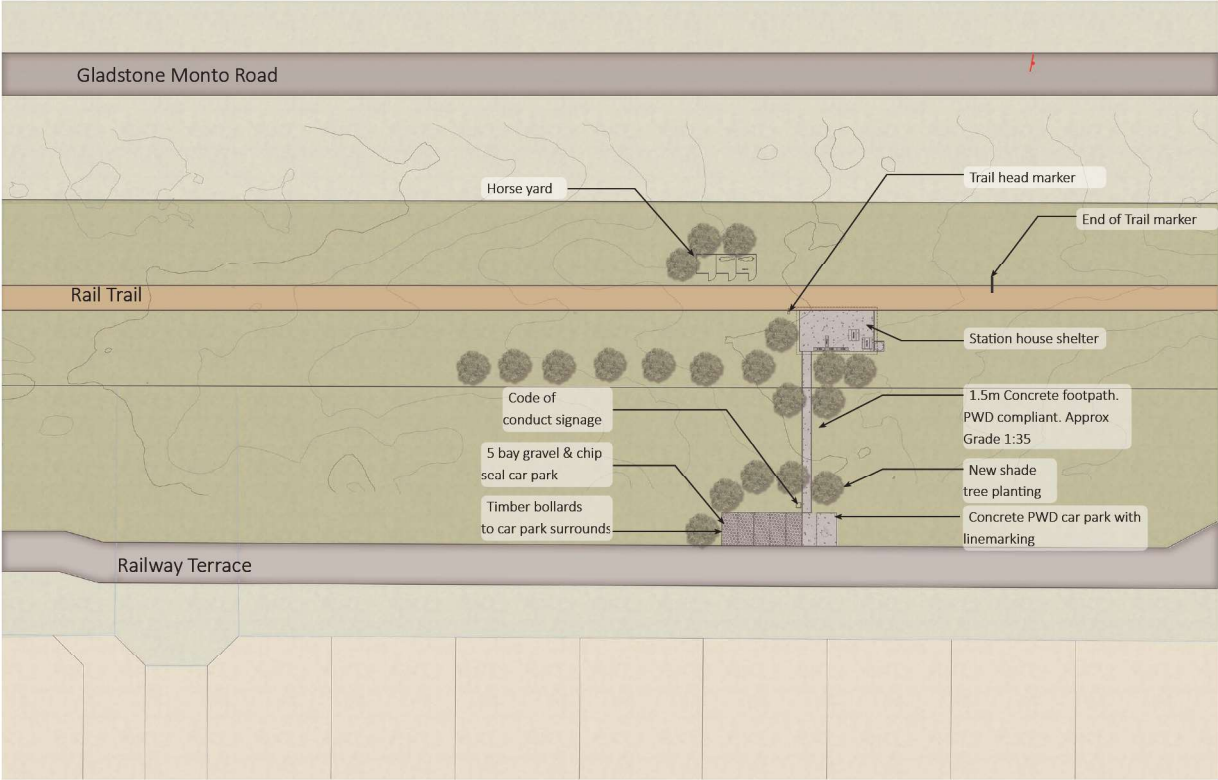
Trail Head - Nagoorin Siding



Boyne Burnett Inland Rail Trail - Project Masterplan

Taragoola to Ubobo 34km trail length
Proposed Trail Infrastructure

Trail Head - Ubobo Siding



Scale 1: 200 at A1



Boyne Burnett Inland Rail Trail - Project Masterplan

Builyan to Kalpowar 32km trail length

Existing Trail Infrastructure

Legend - Existing Trail Features

- Place of Interest

Lookout

Emergency Evacuation Point (Helicopter)

Camping

Picnic Area

Horse yard

Tunnel

Road Crossing
- General Store

Drinking water

Toilet

Food

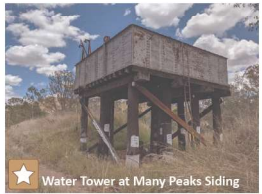
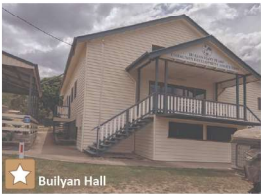
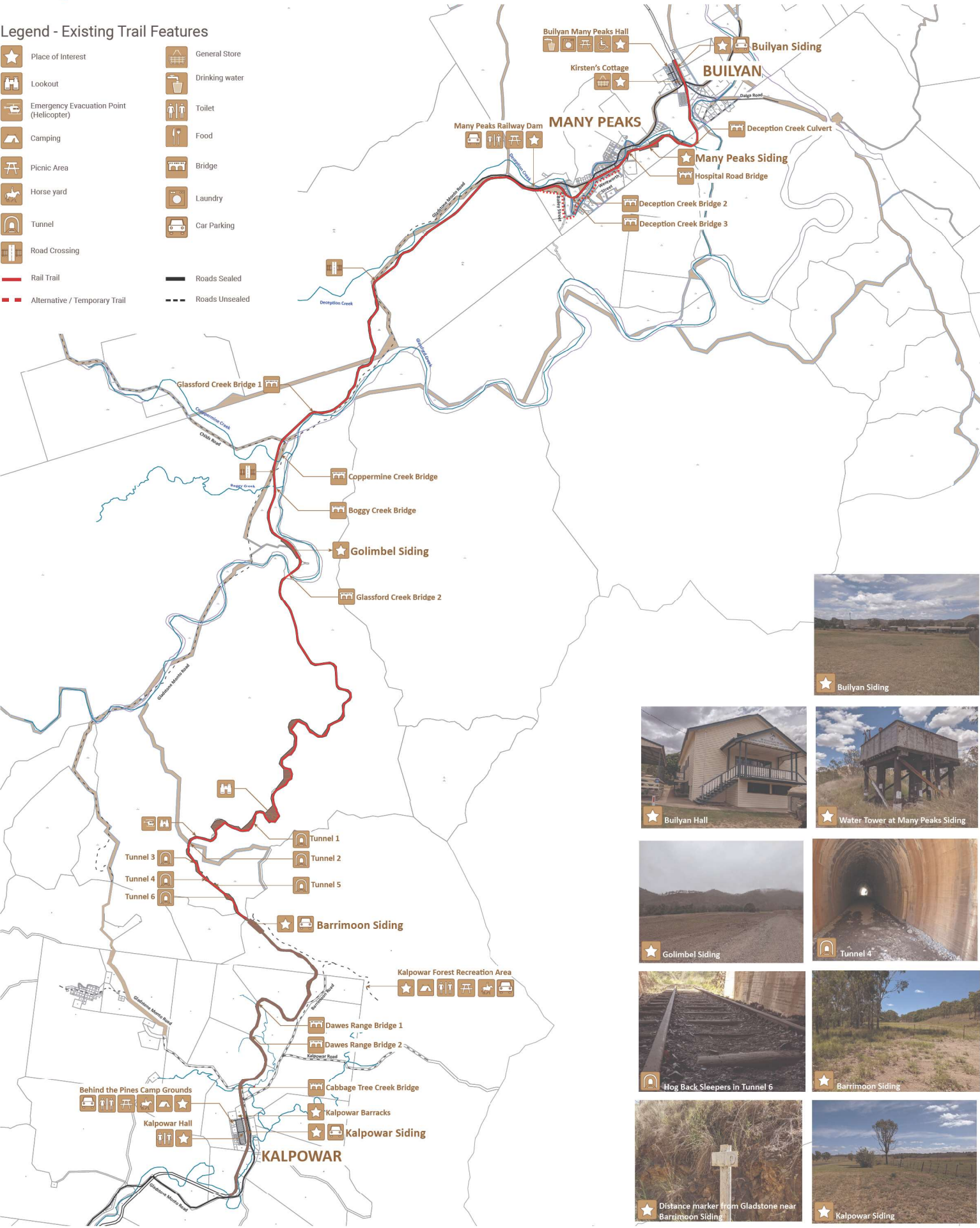
Bridge

Laundry

Car Parking
- Rail Trail

Alternative / Temporary Trail
- Roads Sealed

Roads Unsealed



Scale 1: 30,000 at A1 0 100 250 500 1000meters

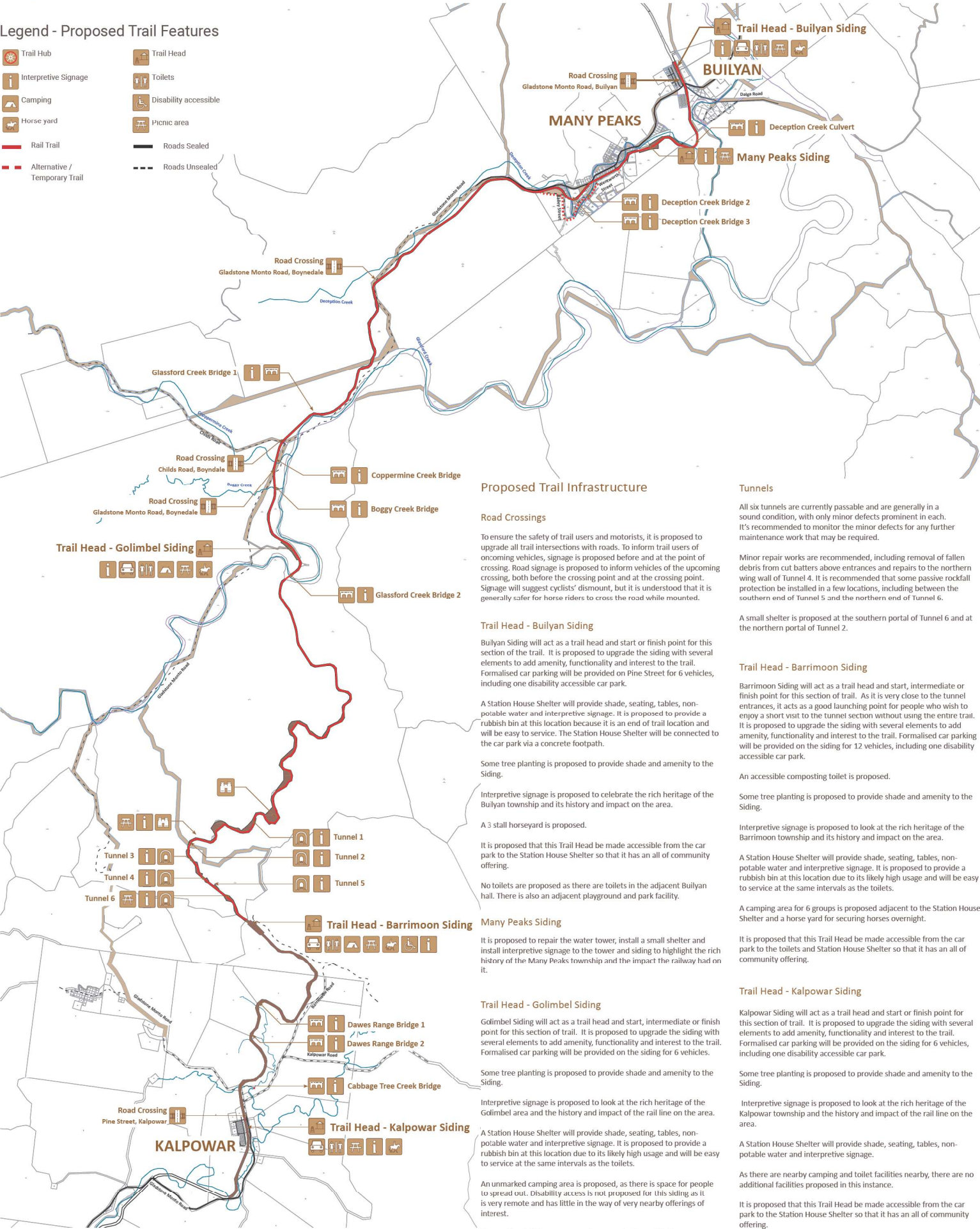
Boyne Burnett Inland Rail Trail - Project Masterplan

Builyan to Kalpowar 32km trail length

Proposed Trail Infrastructure

Legend - Proposed Trail Features

- Trail Hub
- Interpretive Signage
- Camping
- Horse yard
- Rail Trail
- Alternative / Temporary Trail

Trail HeadToiletsDisability accessiblePicnic areaRoads SealedRoads Unsealed

Proposed Trail Infrastructure

Road Crossings

To ensure the safety of trail users and motorists, it is proposed to upgrade all trail intersections with roads. To inform trail users of on-coming vehicles, signage is proposed before and at the point of crossing. Road signage is proposed to inform vehicles of the upcoming crossing, both before the crossing point and at the crossing point. Signage will suggest cyclists' dismount, but it is understood that it is generally safer for horse riders to cross the road while mounted.

Trail Head - Builyan Siding

Builyan Siding will act as a trail head and start or finish point for this section of the trail. It is proposed to upgrade the siding with several elements to add amenity, functionality and interest to the trail. Formalised car parking will be provided on Pine Street for 6 vehicles, including one disability accessible car park.

A Station House Shelter will provide shade, seating, tables, non-potable water and interpretive signage. It is proposed to provide a rubbish bin at this location because it is an end of trail location and will be easy to service. The Station House Shelter will be connected to the car park via a concrete footpath.

Some tree planting is proposed to provide shade and amenity to the Siding.

Interpretive signage is proposed to celebrate the rich heritage of the Builyan township and its history and impact on the area.

A 3 stall horseyard is proposed.

It is proposed that this Trail Head be made accessible from the car park to the Station House Shelter so that it has an all of community offering.

No toilets are proposed as there are toilets in the adjacent Builyan hall. There is also an adjacent playground and park facility.

Many Peaks Siding

It is proposed to repair the water tower, install a small shelter and install interpretive signage to the tower and siding to highlight the rich history of the Many Peaks township and the impact the railway had on it.

Trail Head - Golimbel Siding

Golimbel Siding will act as a trail head and start, intermediate or finish point for this section of trail. It is proposed to upgrade the siding with several elements to add amenity, functionality and interest to the trail. Formalised car parking will be provided on the siding for 6 vehicles.

Some tree planting is proposed to provide shade and amenity to the Siding.

Interpretive signage is proposed to look at the rich heritage of the Golimbel area and the history and impact of the rail line on the area.

A Station House Shelter will provide shade, seating, tables, non-potable water and interpretive signage. It is proposed to provide a rubbish bin at this location due to its likely high usage and will be easy to service at the same intervals as the toilets.

An unmarked camping area is proposed, as there is space for people to spread out. Disability access is not proposed for this siding as it is very remote and has little in the way of very nearby offerings of interest.

Composting toilets are proposed as camping is provided.

Tunnels

All six tunnels are currently passable and are generally in a sound condition, with only minor defects prominent in each. It's recommended to monitor the minor defects for any further maintenance work that may be required.

Minor repair works are recommended, including removal of fallen debris from cut batters above entrances and repairs to the northern wing wall of Tunnel 4. It is recommended that some passive rockfall protection be installed in a few locations, including between the southern end of Tunnel 5 and the northern end of Tunnel 6.

A small shelter is proposed at the southern portal of Tunnel 6 and at the northern portal of Tunnel 2.

Trail Head - Barrimoon Siding

Barrimoon Siding will act as a trail head and start, intermediate or finish point for this section of trail. As it is very close to the tunnel entrances, it acts as a good launching point for people who wish to enjoy a short visit to the tunnel section without using the entire trail. It is proposed to upgrade the siding with several elements to add amenity, functionality and interest to the trail. Formalised car parking will be provided on the siding for 12 vehicles, including one disability accessible car park.

An accessible composting toilet is proposed.

Some tree planting is proposed to provide shade and amenity to the Siding.

Interpretive signage is proposed to look at the rich heritage of the Barrimoon township and its history and impact on the area.

A Station House Shelter will provide shade, seating, tables, non-potable water and interpretive signage. It is proposed to provide a rubbish bin at this location due to its likely high usage and will be easy to service at the same intervals as the toilets.

A camping area for 6 groups is proposed adjacent to the Station House Shelter and a horse yard for securing horses overnight.

It is proposed that this Trail Head be made accessible from the car park to the toilets and Station House Shelter so that it has an all of community offering.

Trail Head - Kalpowar Siding

Kalpowar Siding will act as a trail head and start or finish point for this section of trail. It is proposed to upgrade the siding with several elements to add amenity, functionality and interest to the trail. Formalised car parking will be provided on the siding for 6 vehicles, including one disability accessible car park.

Some tree planting is proposed to provide shade and amenity to the Siding.

Interpretive signage is proposed to look at the rich heritage of the Kalpowar township and the history and impact of the rail line on the area.

A Station House Shelter will provide shade, seating, tables, non-potable water and interpretive signage.

As there are nearby camping and toilet facilities nearby, there are no additional facilities proposed in this instance.

It is proposed that this Trail Head be made accessible from the car park to the Station House Shelter so that it has an all of community offering.

Boyne Burnett Inland Rail Trail - Project Masterplan

Builyan to Kalpowar 32km trail length

Rock Cuttings & Steep Fill Embankments

Through this section of trail, there are three distinct areas where the rail line has been cut through localised rock formations or built upon large fill embankments to traverse deep gullies. There is a risk in these areas of landslide or rockfall, or, in falling off the trail, down an embankment, causing injury or death.

Deception Creek Cuttings:

There are some smaller sections of steep cut batters between Deception Creek culvert and the Many Peaks siding. There is some 'small scale' instability on the cut batters through this area that could result in earth or rocks falling onto the rail trail and potentially injuring trail users. It is recommended a detailed slope stability analysis is done in this area to further identify any potential issues or safety hazards. It is recommended to install signage warning people of the hazards and encouraging them to move through the area without stopping. There are also some steep fill embankments in this area, where it is possible that a trail user could come off the trail and fall down an embankment and hurt themselves or worse.

Glassford Cuttings:

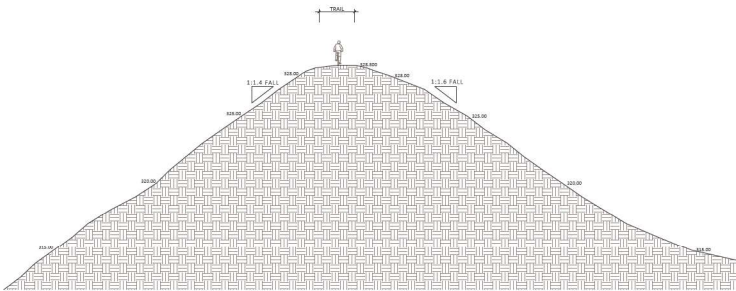
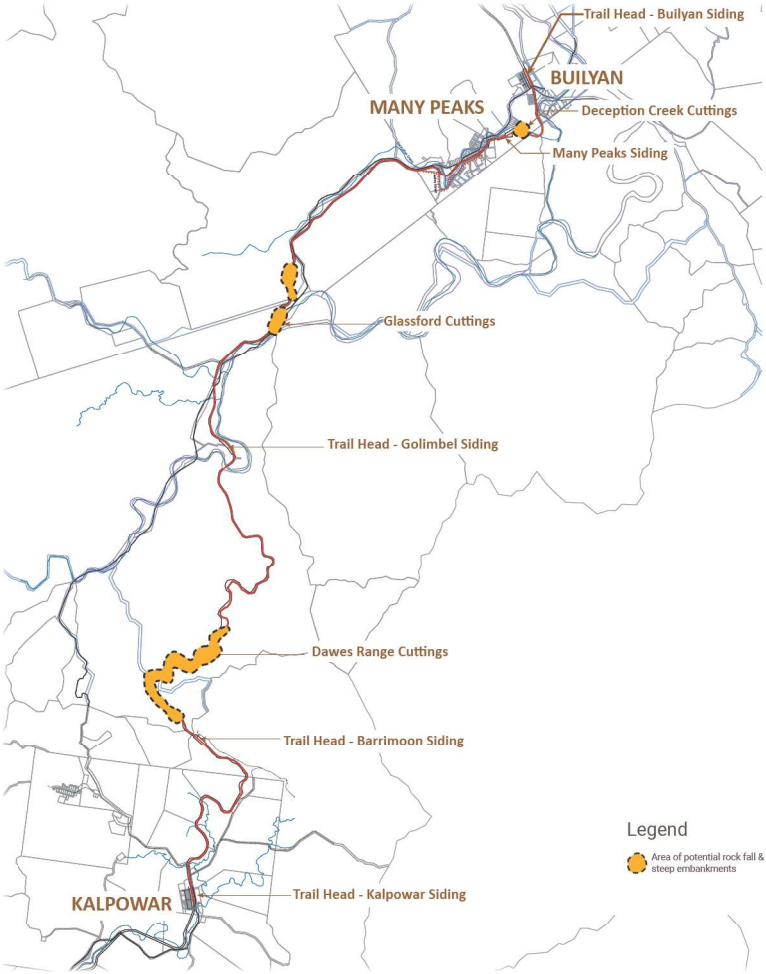
Between Glassford Creek Bridge 1 to the south and the Gladstone Monto Road crossing some 3km to the north, there are several sections of cut batters through rock. There are multiple instances of evidence of landslides and rockfalls (up to 3m³). The chance of occurrence of a landslide or rockfall could be considered to be likely to almost certain but with a relatively low risk to life. It is recommended a detailed slope analysis be done to look further at risk and any remediation that needs doing. It is recommended to install signage warning people of the hazards and encouraging them to move through the area without stopping.

Dawes Range Cuttings:

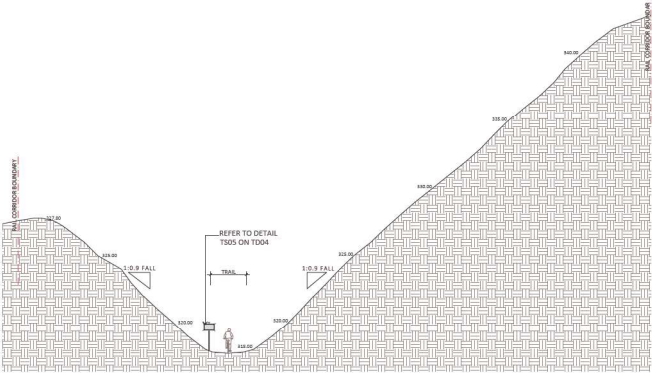
Between Tunnel 6 to approximately 6km north or halfway to Glassford Creek Bridge 2 there are broad-scale rock cuttings with steep embankments, with a frequent undercut or overhanging rock formations. There is frequent evidence of landslides and rockfalls up to 2m³ and numerous instances of potential instability were observed. Landslide or rockfall in this section is considered to be 'likely' to 'almost certain', with the likelihood of danger to a person coming down to the statistical chance of someone being at the point of danger at the time of rockfall. It is recommended a detailed slope analysis be done to look further at risk and any remediation that needs doing. It is recommended to install signage warning people of the hazards and encouraging them to move through the area without stopping. A detailed slope analysis may conclude that active or passive rockfall protection measures such as catch fences or rockfall mesh. Several sections around the tunnel portals are recommended for remediation and catch fence installation.

One of the largest attractions of rail trails is the sense of adventure that comes from an element of risk. Another is the character and amenity of being in a remote location without large amounts of human infrastructure intervention. While it is acknowledged that some safety concerns need actioning to maintain a safe trail, it is not proposed to install large amounts of rockfall protection or safety barriers. Rockfall fences will be proposed to be installed only where necessary to maintain public safety but should be minimised to maintain some sense of adventure and to not clutter the natural landscape with hardware elements. In the same way, some fall protection fencing is proposed where there are sheer drop-offs around retaining structures and bridge abutments, but generally, it is not proposed to fence off the steep embankments. Trail users should be thoroughly informed of the risks via signage and through the registration process.

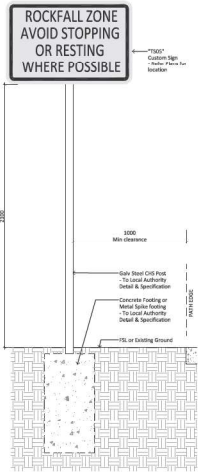
The key to making this rail trail safe in the long term is trail user education. National Parks provide many people each year with adventure recreation options with inherent elements of risk, with little incident. It is thought that a similar approach can be taken here, with the right information.



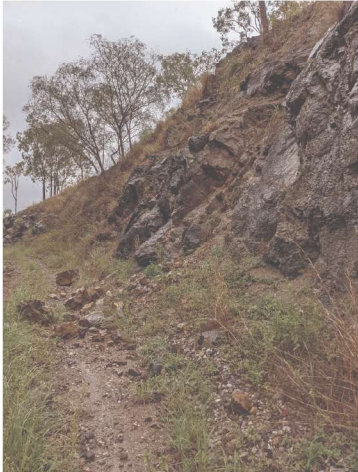
Typical Section - Fill Embankments



Typical Section - Rock Cuttings



Example rockfall safety sign



Typical rock cutting with rockfall evident



Typical steep embankments around existing retaining structure



Typical steep embankments

Boyne Burnett Inland Rail Trail - Project Masterplan

Builyan to Kalpowar 32km trail length

Bridges

Deception Creek Culvert

Deception Creek culvert was a timber bridge that has later been incased in earth to protect it from erosion damage. It can currently be safely traversed and is preserved in its current state, and needs only minor maintenance, vegetation management and monitoring to ensure its retention. It is proposed to install interpretive signage at the northern end of the bridge to highlight its history.

Deception Creek Bridge 2 & 3

Deception Creek Bridge 2 & 3 are short timber bridges within the township of Many Peaks. They are currently unpassable, and need repair works as they both have some minor erosion and scour around the bridge piers and abutments.

There is currently an alternative route around these two bridges along 'The Terrace' loop road.

Effort of repair and conversion: High
Priority to repair and convert: High

Glassford Creek Bridge 1

This short, curved timber bridge is currently unpassable and in a state of disrepair. There is some erosion and scour around the northern bridge abutment that will need repair to ensure it is safe and robust.

There is currently an alternative dry weather route through the invert of the creek the bridge crosses. It needs minor earthworks to make the batters safe to approach if this path is to be used long term.

Effort of repair and conversion: Medium
Priority to repair and convert: Medium

Coppermine Creek Bridge

This is a longer timber bridge that passes approximately 6m high above Coppermine Creek. It is currently unpassable and in a state of disrepair. There is significant scour around some of the bridge piers and the southern bridge abutment needs repair.

There is currently an alternative dry weather route through the invert of the creek the bridge crosses. It needs minor earthworks to make the batters safe to approach if this path is to be used long term.

Effort of repair and conversion: Medium
Priority to repair and convert: Low

Boggy Creek Bridge

This short timber bridge spans over Boggy Creek invert approximately 8m high, and is currently unpassable and in a state of disrepair. It has very minor scour and erosion around the bridge piers that is recommended to repair. There is also a large amount of deposited material and vegetation detritus around the bridge piers that should also be removed.

There is currently an alternative dry weather route through the invert of the creek the bridge crosses. It

needs minor earthworks to make the batters safe to approach if this path is to be used long term.

Effort of repair and conversion: Medium
Priority to repair and convert: Low

Glassford Creek Bridge 2

This very long steel and concrete bridge are currently unpassable and in a state of disrepair. There is some erosion and scour around the bridge piers due to large flows through the creek; it is recommended this be repaired.

There is currently an alternative dry weather route through the invert of the creek the bridge crosses. It needs minor earthworks to make the batters safe to approach if this path is to be used long term.

Effort of repair and conversion: Medium
Priority to repair and convert: Low

Dawes Range Bridges 1 & 2

Dawes Range Bridges 1 & 2 are short timber bridges just north of the township of Kalpowar. They are currently unpassable and they need repair works. Both bridges have minor scouring and erosion around the bridge piers, and abutments recommended to repair but with no observable damage.

There is currently a dry weather alternative route around these two bridges; through the invert. It needs minor works to improve the batter approaches in order for this track to be used as an appropriate alternative.

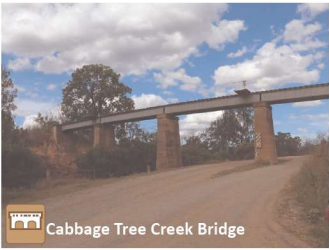
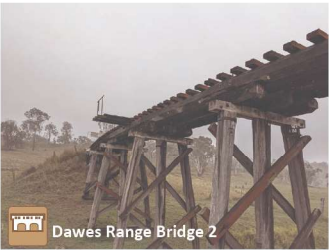
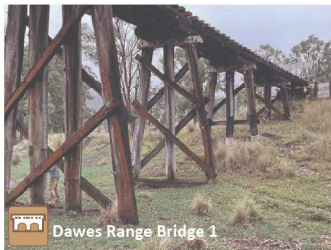
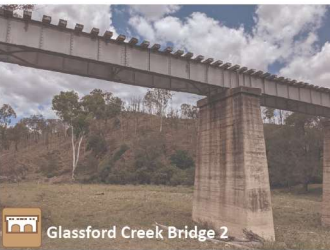
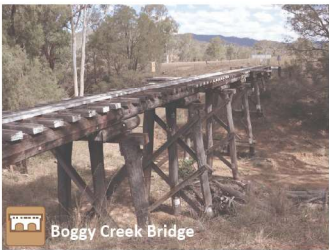
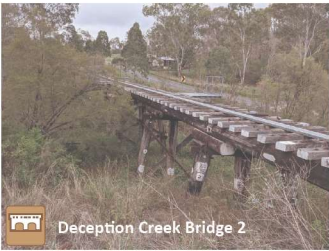
Effort of repair and conversion: Medium
Priority to repair and convert: Medium

Cabbage Tree Creek Bridge

This bridge is a steel and concrete bridge immediately north of the township of Kalpowar, crossing over Gladstone Monto Road and Cabbage Tree Creek. It is currently unpassable and needs repair works. It has some erosion and scour around the north abutment and generally in the creek invert recommended to repair.

The alternative route to crossing this bridge would require leaving the trail ~5km north at Barrimoon and travelling along local roads and Gladstone Monto road. This is seen as undesirable and difficult to manage, so the repair and board and handrail of this bridge is considered a high priority to ensure connectivity of the trail and safety of trail users.

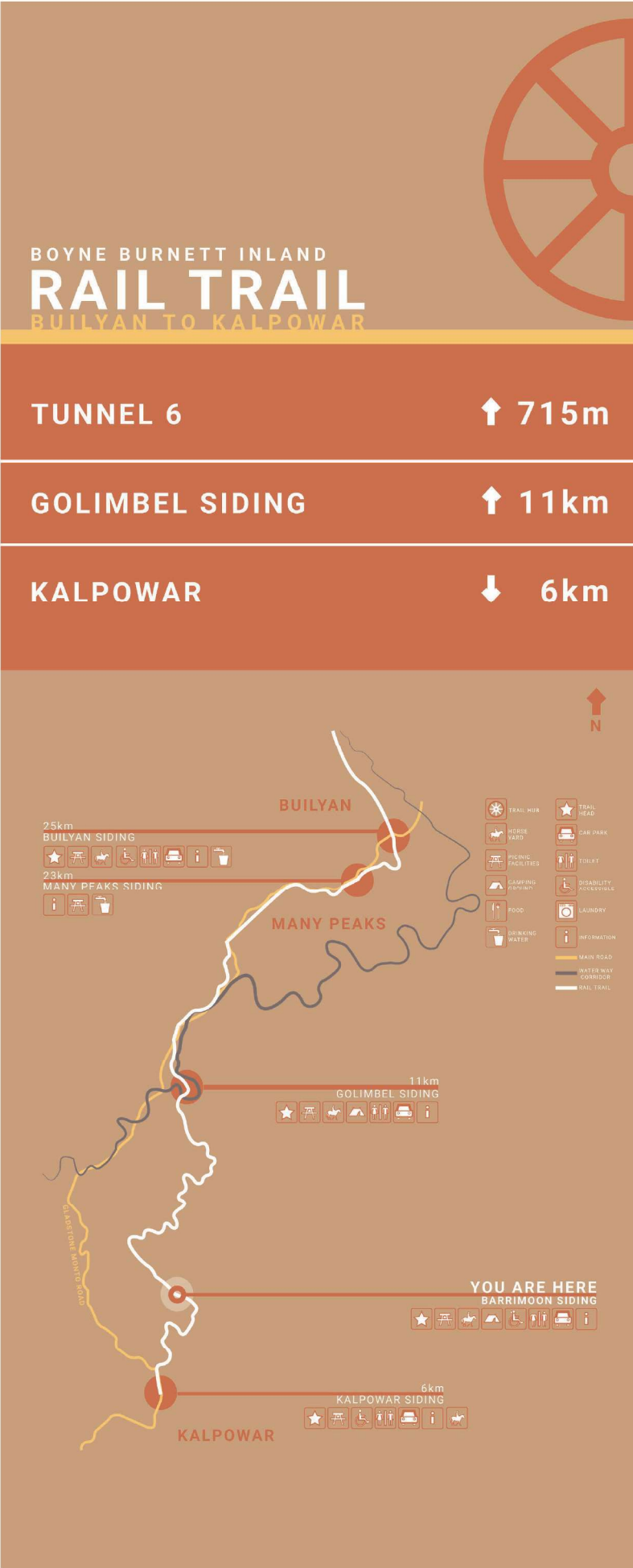
Effort of repair and conversion: Medium
Priority to repair and convert: High



Boyne Burnett Inland Rail Trail - Project Masterplan

Builyan to Kalpowar 32km trail length

Proposed Trail Wayfinding



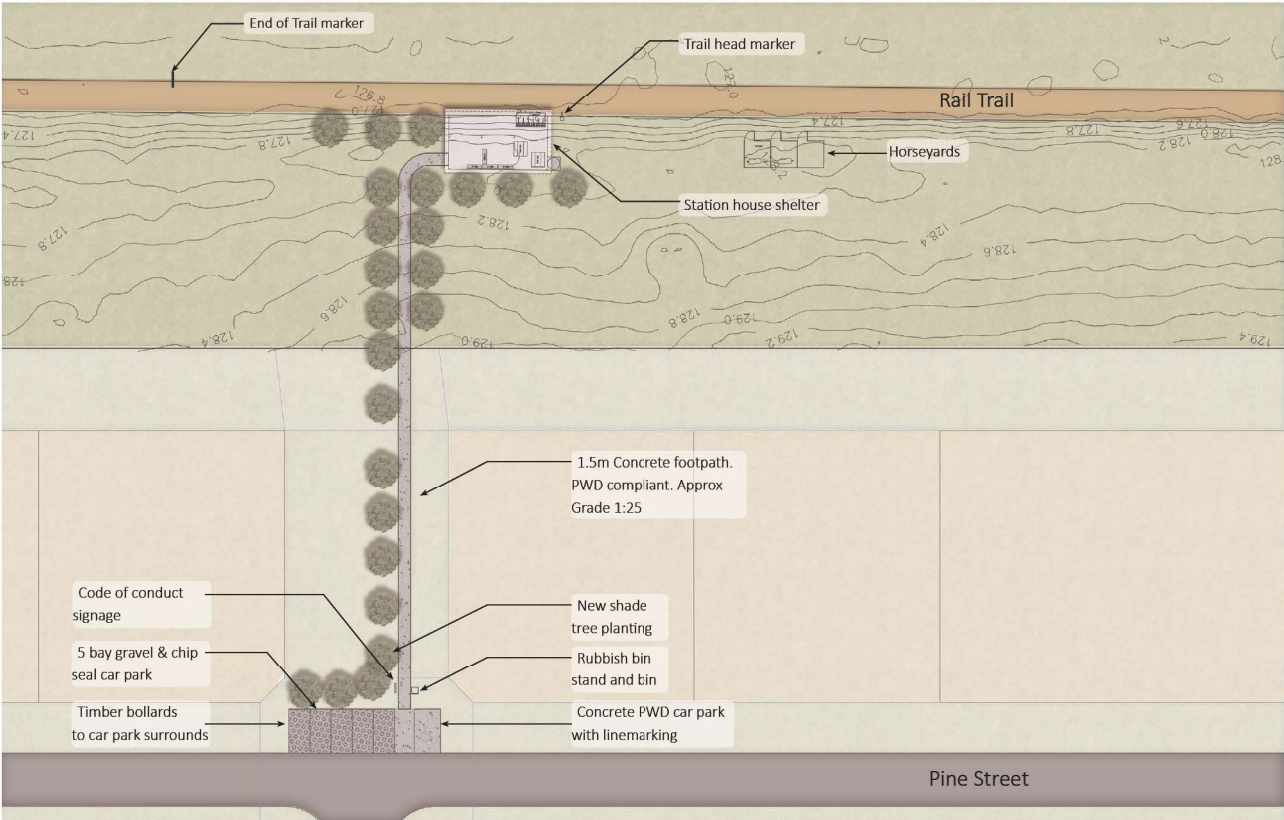
Trail Head Marker

Boyne Burnett Inland Rail Trail - Project Masterplan

Builyan to Kalpowar 32km trail length

Proposed Trail Infrastructure

Trail Head - Builyan Siding



0 2 4 6 8 10 12 14 16 18 20
(A1) 1:200
(A2) 1:100

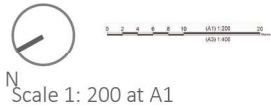
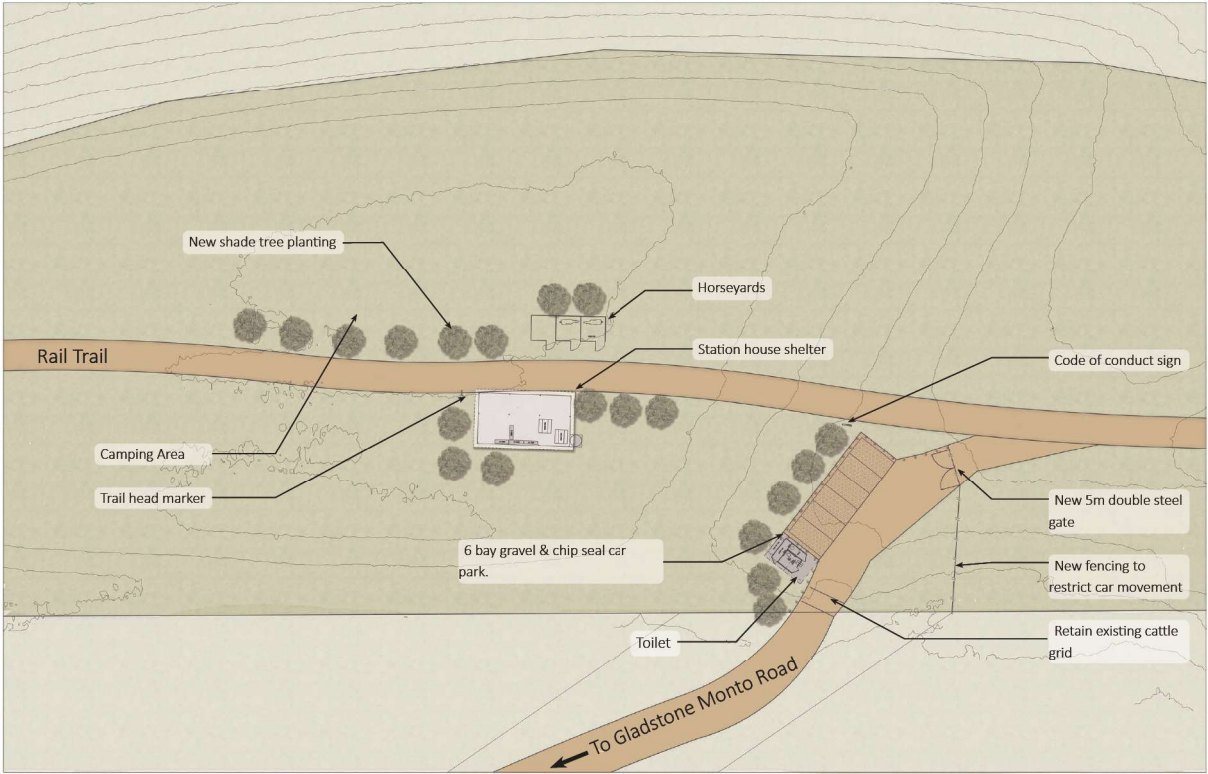
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Boyne Burnett Inland Rail Trail - Project Masterplan

Builyan to Kalpowar 34km trail length

Proposed Trail Infrastructure

Trail Head - Golimbel Siding

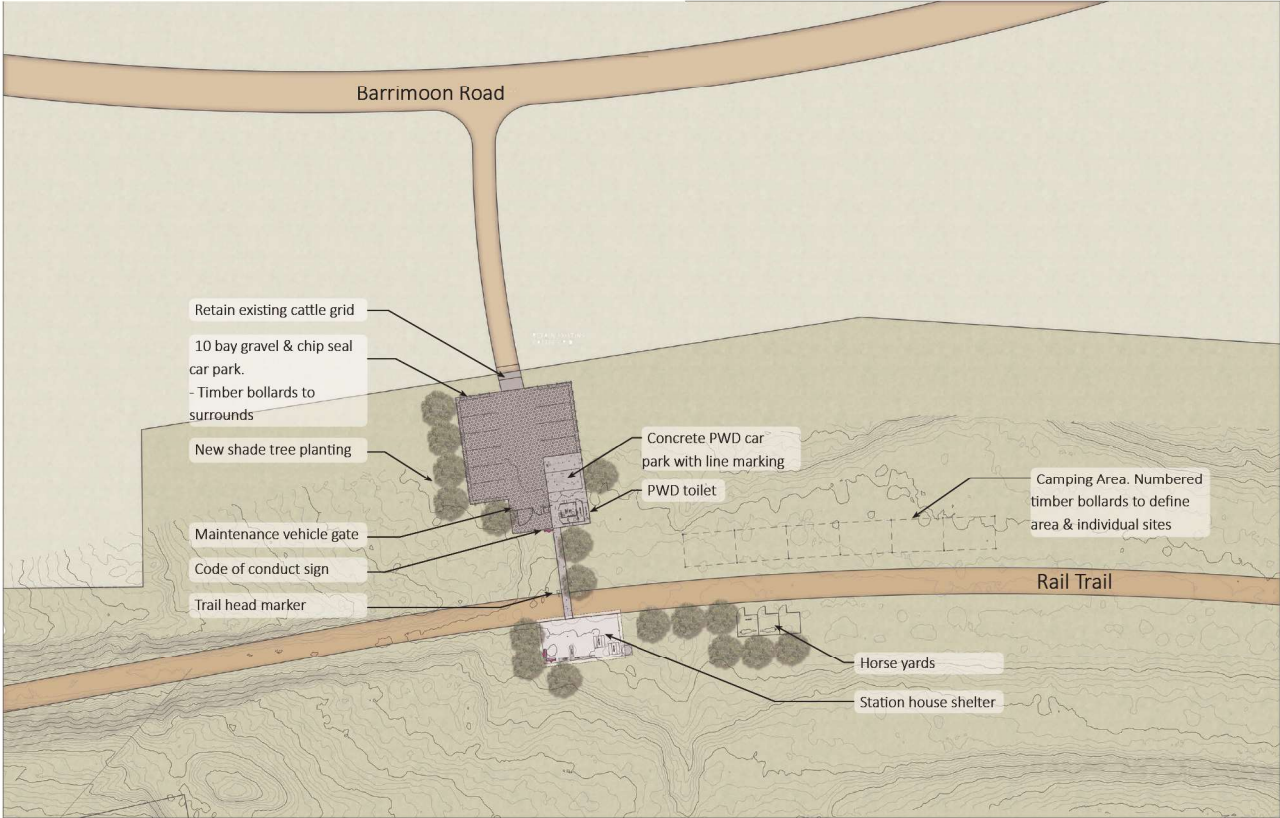


Boyne Burnett Inland Rail Trail - Project Masterplan

Builyan to Kalpowar 32km trail length

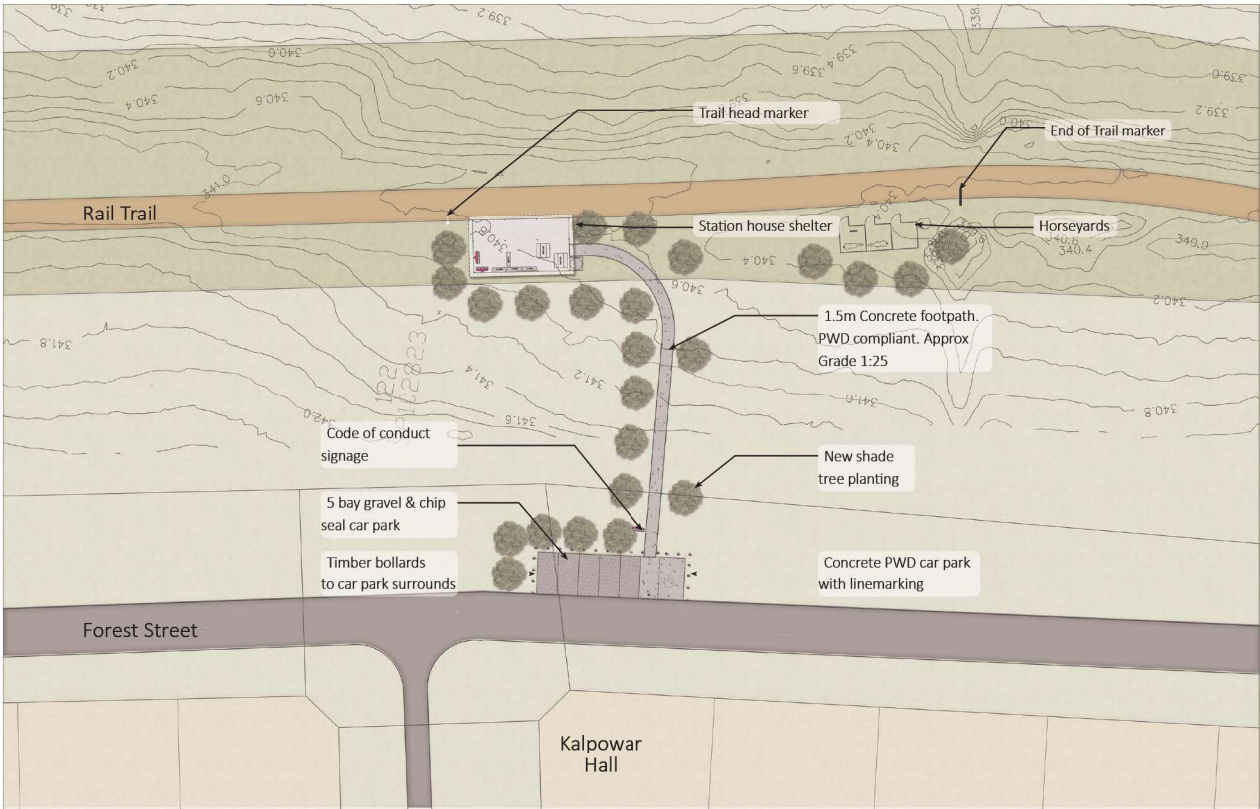
Proposed Trail Infrastructure

Trail Head - Barrimoon Siding



Scale 1: 200 at A1

Trail Head - Kalpowar Siding




Scale 1: 200 at A1


Boyne Burnett Rail Inland Trail - Project Masterplan


Mundubbera to Gayndah 32km trail length


Existing Trail Infrastructure


Legend - Existing Trail Features


-  Place of Interest


 General Store


 Drinking water


 Toilet



 Camping


 Picnic Area


 Crossing


 Car Parking


 Rail Trail


 Alternative / Temporary Trail
-  General Store


 Drinking water


 Toilet


 Food

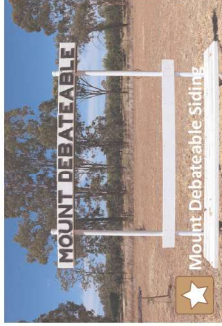
 Hospital

 Bridge

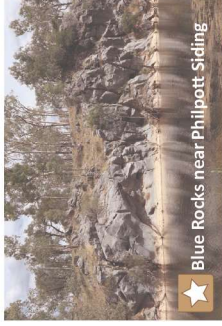
 Trail Hub

 Roads Sealed

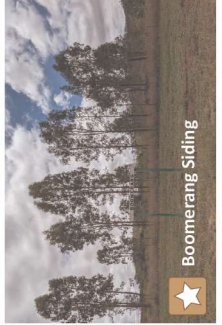
 Roads Unsealed



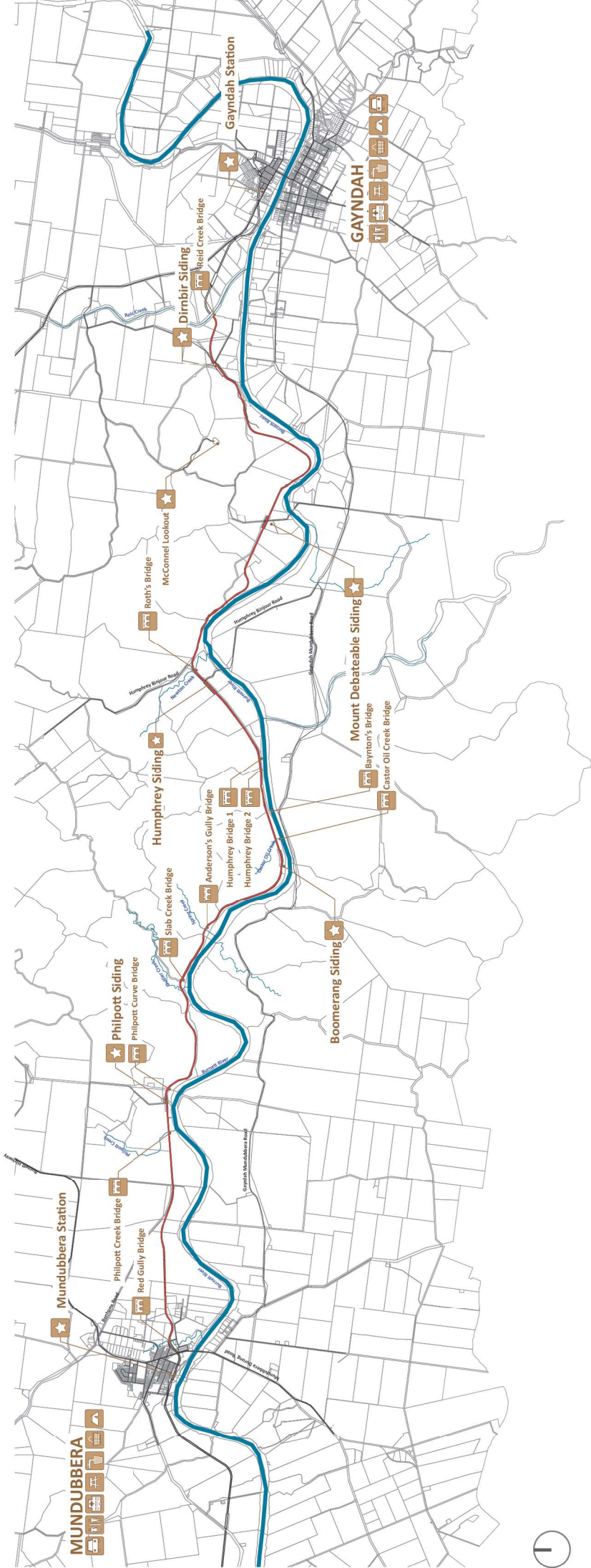
Mount Debateable Siding



Blue Rocks near Philpott Siding



Boomerang Siding



Boyne Burnett Rail Inland Trail - Project Masterplan

Mundubbera to Gayndah 32km trail length

Proposed Trail Infrastructure

Road Crossings

To ensure the safety of trail users and motorists, it is proposed to upgrade all trail intersections with roads. To inform trail users of oncoming vehicles, signage is proposed before and at the point of crossing. Road signage is proposed to inform vehicles of the upcoming crossing, both before the crossing point and at the crossing point. Signage will suggest cyclists' dismount, but it is understood that it is generally safer for horse riders to cross the road while mounted.

Trail Head - Philpott Siding

Philpott Siding will act as a trail head and start, intermediate or finish point for this section of trail. It is proposed to upgrade the siding with several elements to add amenity, functionality and interest to the trail. Formalised car parking will be provided for five vehicles on the siding, off Benhams Road.

Some tree planting is proposed to provide shade and amenity to the Siding.

Interpretive signage will be provided to look at the rich heritage of the Philpott village and the history and impact of the rail line on the area.

A Station House Shelter will provide shade, seating, tables, non-potable water and interpretive signage.

Boomerang Siding

It is proposed to repair and reinstate fencing to the perimeter of the siding and provide a trail grid & gate at either end to allow trail access. It is also proposed to put in a small shelter and interpretive signage.

Humphrey Siding

It is proposed to repair and reinstate fencing to the perimeter of the siding and provide a trail grid & gate at either end to allow trail access. It is also proposed to put in a small shelter and interpretive signage.

Trail Head - Mount Debateable Siding

Mount Debateable Siding will act as a trail head and start, intermediate or finish point for this section of trail. It is proposed to upgrade the siding with several elements to add amenity, functionality and interest to the trail. Formalised car parking will be provided on the siding for 6 vehicles, including one disability accessible car park.

An accessible composting toilet with a rubbish bin is proposed. New tree planting is proposed to provide shade and amenity to the Siding.

Interpretive signage is proposed to look at the rich heritage of the local area and the impact the rail line had on it.

A Station House Shelter will provide shade, seating, tables, non-potable water and interpretive signage. It is proposed to provide a rubbish bin at this location due to its likely high usage and will be easy to service at the same intervals as the toilets.

A camping area for 6 groups is proposed adjacent the Station House Shelter, as well as a horse yard for securing horses overnight.

It is proposed that this Trail Head be made accessible from the car park to the Toilets and Station House Shelter so that it has an all of community offering.

Trail Head - Dimbir Siding

Dimbir Siding will act as a trail head and start, intermediate or finish point for this section of trail. It is proposed to upgrade the siding with several elements to add amenity, functionality and interest to the trail. Formalised car parking will be provided on the siding for 6 vehicles, including one disability accessible car park.

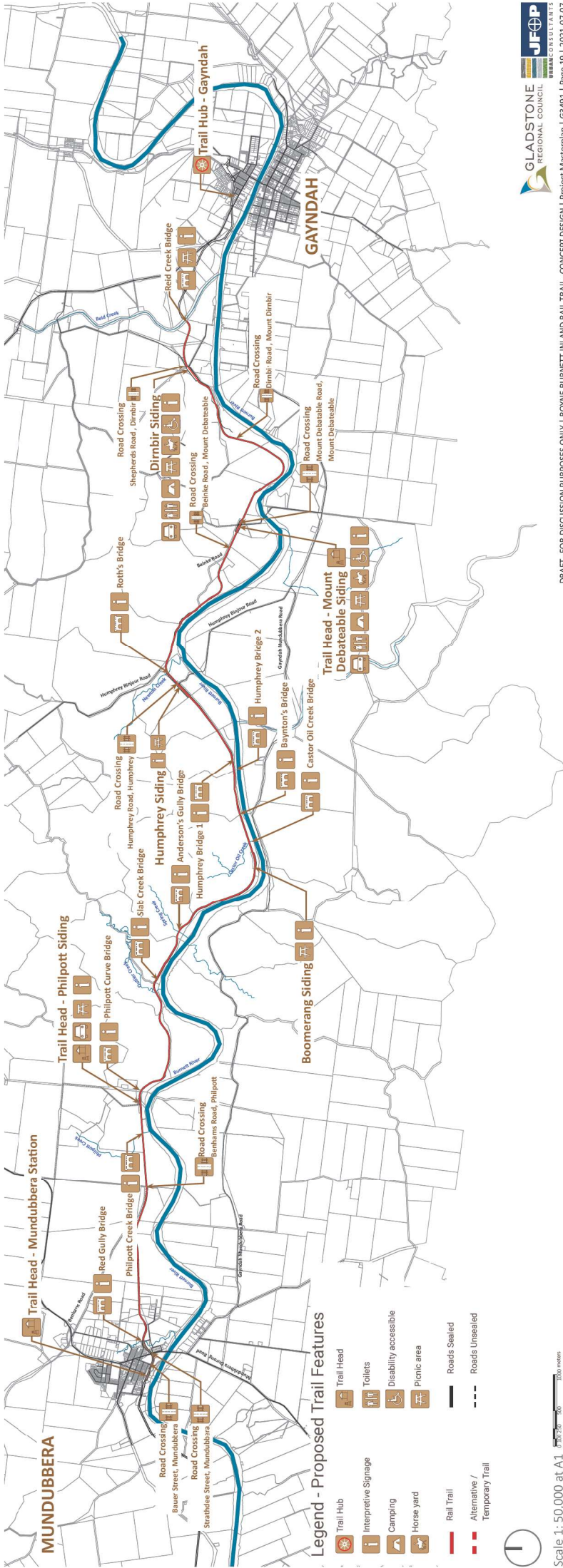
An accessible composting toilet with a rubbish bin is proposed. New tree planting is proposed to provide shade and amenity to the Siding.

Interpretive signage is proposed to look at the rich heritage of the local area and the impact the rail line had on it.

A Station House Shelter will provide shade, seating, tables, non-potable water and interpretive signage. It is proposed to provide a rubbish bin at this location due to its likely high usage and will be easy to service at the same intervals as the toilets.

A camping area for 6 groups is proposed adjacent the Station House Shelter, as well as a horse yard for securing horses overnight.

It is proposed that this Trail Head be made accessible from the car park to the Toilets and Station House Shelter so that it has an all of community offering.



Boyne Burnett Rail Inland Trail - Project Masterplan

Mundubbera to Gayndah 32km trail length

Bridges

Red Gully Bridge

Red Gully Bridge is a short timber bridge within the township of Mundubbera, crossing approximately 4m high over Stuart Russell Road. It is currently unpassable and requires minor repair works to be safely traversable. It has minor erosion issues around the bridge piers and western abutment.

The alternate route around the bridge would require trail users to ride along local roads, which makes repairing and upgrading this bridge a priority to give continuity to the trail and a seamless journey out of or into Mundubbera.

Effort of repair and conversion: Medium
Priority to repair and convert: High

Phillpott Creek Bridge

Phillpott Creek Bridge is a longer timber, steel and concrete bridge approximately 20m high over Phillpott Creek. It is currently unpassable and needs extensive investigation and repair work to be safely traversable. There is significant erosion and scouring to the eastern abutment and creek bank and undermining of 3 eastern bridge piers, likely caused by large volumes of fast-moving water travelling through the creek. There is potentially further scouring and undermining under the bridge piers in the standing water of the creek.

The banks of Phillpott Creek are too steep to traverse, and it currently has wide, deep standing water. The only practical alternative route is to loop back onto the track by heading north along Shallcross road and then west, a 7km detour. Considering the extensive repairs required for this bridge, it should still be seen as the highest priority for giving the rail trail continuity, connecting Phillpott Siding to Mundubbera.

Effort of repair and conversion: High
Priority to repair and convert: High

Phillpott Curve Bridge

Phillpott Curve Bridge is a shorter timber bridge over the end of Shallcross Road, approximately 5m high. It is currently unpassable and requires minor repair works to be safely traversable. It has minor erosion issues around the bridge piers and western abutment.

There is an adequate dry weather alternate route around the bridge. It is proposed to install interpretive signage at the eastern end of the bridge.

Effort of repair and conversion: Medium
Priority to repair and convert: Low

Slab Creek Bridge

Slab Creek Bridge is a longer timber, steel and concrete bridge approximately 15m high over Slab Creek. It is currently unpassable and requires extensive repair works to be safely traversable and robust long term. It has widespread erosion and scour around the abutments and through the creek invert that requires repair and monitoring, but no observable damage to the abutment structures or bridge piers as a result.

There is an adequate dry weather alternate route through the creek invert, it needs earthworks and potentially drainage structures to be used as a long term alternative to the bridge crossing.

Effort of repair and conversion: Medium
Priority to repair and convert: Low

Anderson's Gully Bridge

Anderson's Gully Bridge is a longer timber, steel and concrete bridge spanning approximately 10m over the gully. It is currently unpassable and requires extensive repair works to be safely traversable and robust long term. It has significant erosion and scour around the western abutment and through the creek invert that requires repair and monitoring, but no observable damage to the abutment structures or bridge piers.

There is an adequate dry weather alternate route through the invert of the gully that needs minor earthworks to be used long term.

Effort of repair and conversion: Medium
Priority to repair and convert: Medium

Castor Oil Creek Bridge

Castor Oil Bridge is a longer timber, steel and concrete bridge spanning approximately 10m over the creek. It is currently unpassable and requires extensive repair works to be safely traversable and robust long term. The eastern abutment and first span have been removed. There is significant erosion and scour through the creek invert and eastern bridge piers that require repair and monitoring, but no observable damage to the abutment structures or bridge piers as a result.

Due to the extensive repairs required to make this bridge traversable, it is proposed for this project to have only immediate required repair works to ensure its preservation and safety of nearby trail users. If repair was decided to be viable in the future, a new bridge to span the missing existing spans may be an option rather than repair the missing spans. The dry weather access through the creek invert requires minor earthworks to make it a safe and robust longer-term solution. It is proposed to install interpretive signage at the eastern end of the bridge.

Effort of repair and conversion: High
Priority to repair and convert: Low

Baynton's Bridge

Baynton's Bridge is a longer timber, steel and concrete bridge spanning approximately 15m high over the gully. It is currently unpassable and requires extensive repair works to be safely traversable and robust long term. There are some areas of erosion and scour around the bridge piers and abutments that requires repair and monitoring.

There is an adequate dry weather alternate route around the bridge that would need minor earthworks to be used long term.

Effort of repair and conversion: Medium
Priority to repair and convert: Low

Humphrey Bridge 2

Humphrey Bridge 2 is a shorter, steel and concrete bridge approximately 15m high over a large creek line. It is currently passable, but requires repair works to be safely traversable and robust long term. It has significant erosion and scour around the abutments, bridge piers and through the creek invert that requires repair and monitoring. There is observable damage to the wing walls of the eastern abutments.

There is an adequate but cumbersome alternate route, doubling back to Humphrey Road and then back onto the trail. This route would require directional signage if it were to be used longer-term instead of repairing the bridge.

Effort of repair and conversion: Low
Priority to repair and convert: High

Humphrey Bridge 1

Humphrey Bridge 1 is a shorter, steel and concrete bridge approximately 20m over a large creek line. It is currently passable and but requires repair works to be safely traversable and robust long term. It has significant erosion and scour around the western abutment and through the creek invert that requires repair and monitoring, but no observable damage to the abutment structures or bridge piers.

There is an adequate but cumbersome alternate route, doubling back to Humphrey Road and then back onto the trail. This route would require directional signage if it were to be used longer-term instead of repairing the bridge.

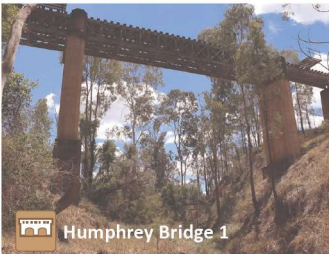
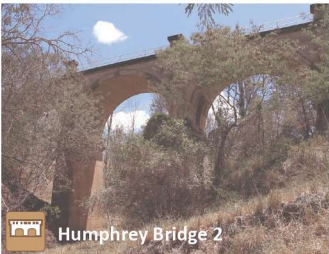
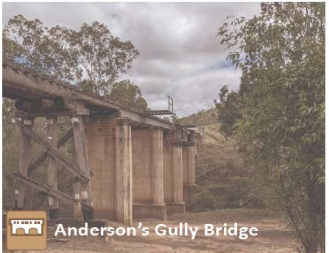
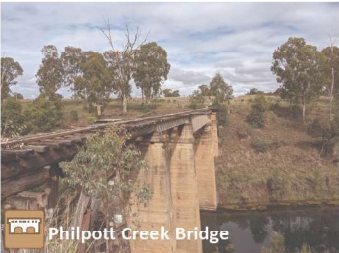
Effort of repair and conversion: Low
Priority to repair and convert: High

Roth's Bridge

Roth's Bridge is a shorter timber bridge, crossing approximately 7m high over a dry creek line. It is currently unpassable and requires minor repair works to be safely traversable. It has some minor erosion issues around some bridge piers and eastern abutment.

There is an adequate dry weather alternate route through the creek invert, which needs minor earthworks to be used long term.

Effort of repair and conversion: Medium
Priority to repair and convert: High



Boyne Burnett Rail Inland Trail - Project Masterplan

Mundubbera to Gayndah 32km trail length

Proposed Trail Wayfinding

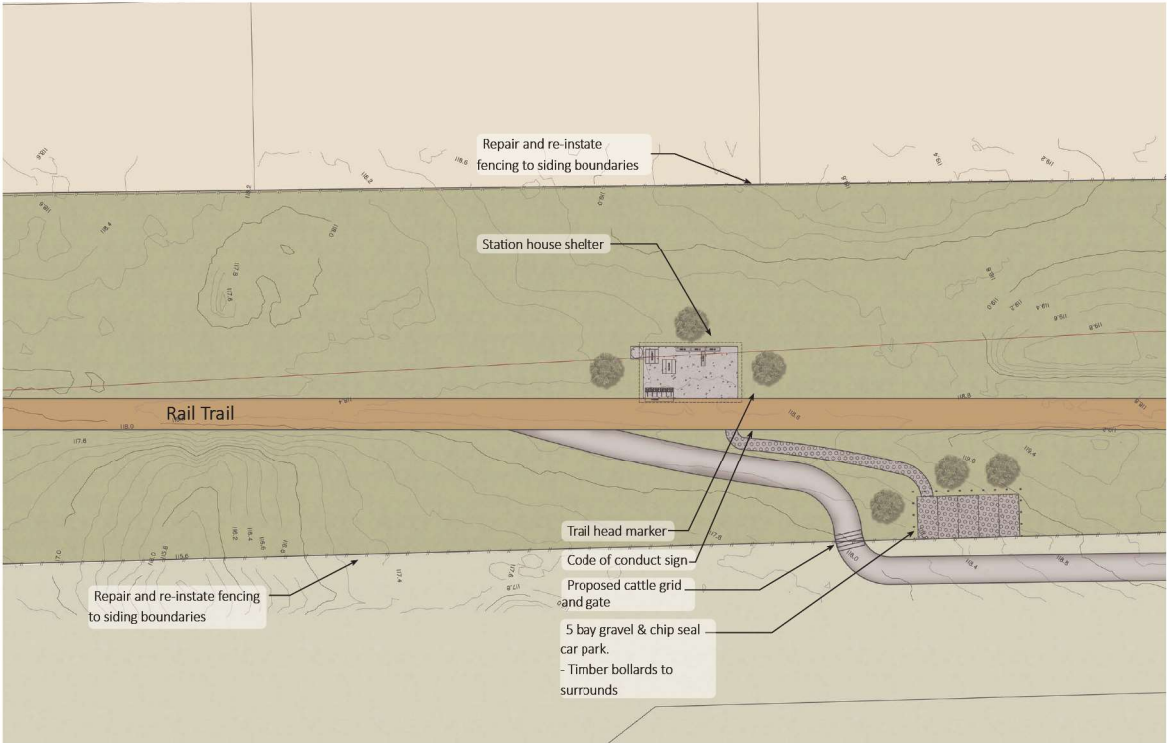


Boyne Burnett Rail Inland Trail - Project Masterplan

Mundubbera to Gayndah 32km trail length

Trail Heads

Trail Head - Philpott Siding



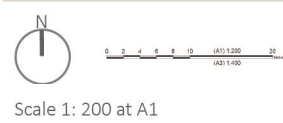
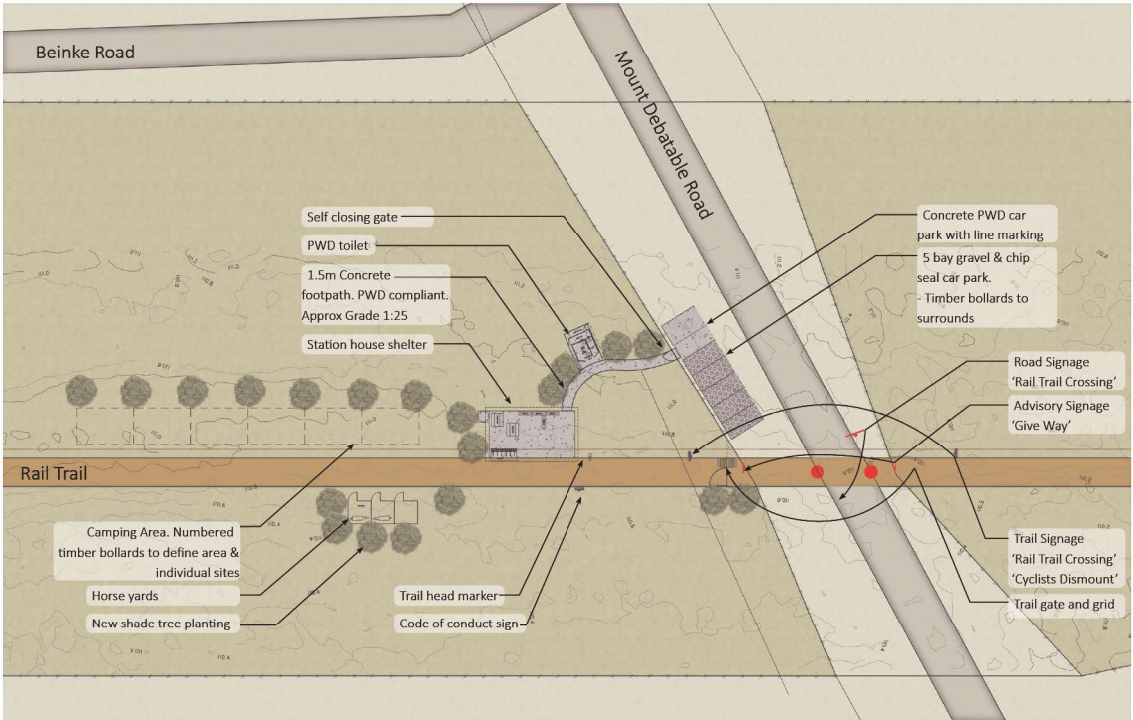
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Boyne Burnett Rail Inland Trail - Project Masterplan

Mundubbera to Gayndah 32km trail length

Trail Heads

Trail Head - Mount Debateable Siding

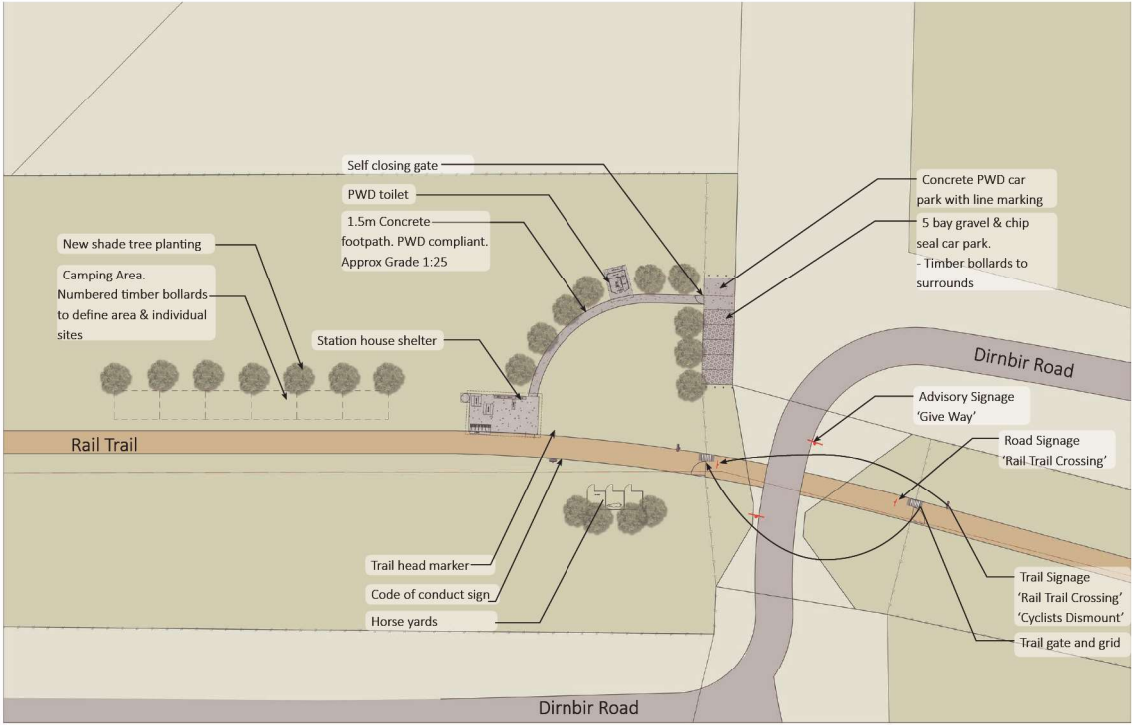


Boyne Burnett Rail Inland Trail - Project Masterplan

Mundubbera to Gayndah 32km trail length

Trail Heads

Trail Head - Dirnbir Siding



Scale 1: 200 at A1

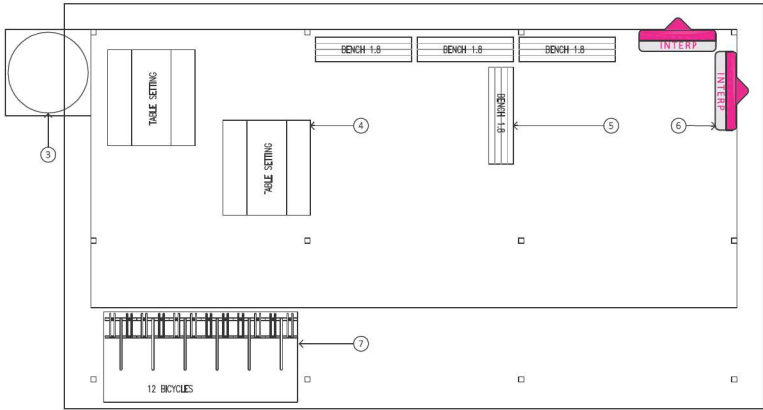
Boyne Burnett Inland Rail Trail - Project Masterplan

Proposed Trail Infrastructure

Detail - Shelter - Station House Shelter



Artists Impression



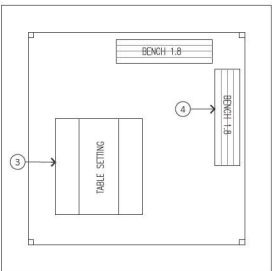
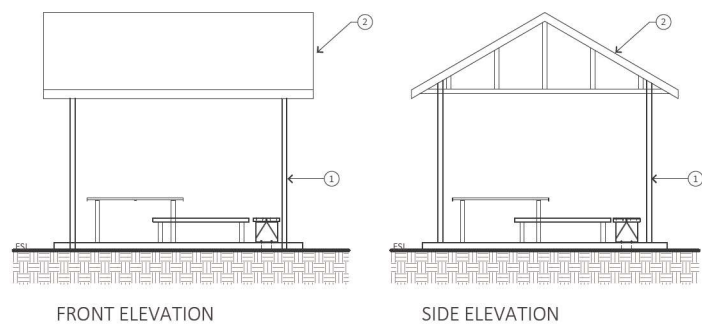
FLOOR PLAN

- NOTES:**
- ① **FRAME:** Lightweight Galvanised SHS steel Frame.
Finish: White powder coat finish to all exposed framing.
 - ② **ROOF:** Lightweight Steel Frame
"QR" Red colourbond sheeting
 - ③ **WATER TANK:** 5000L Galvanised water tank with tap outlet.
"NOT POTABLE" Sign
All roof water to be captured for reuse.
 - FURNITURE:**
 - ④ -2 x Picnic table settings
 - ⑤ -4 x 1.8m Trail seats - Refer TD08
 - ⑥ -2 x Large Interp signs - Refer TD04
 - ⑦ -1 x 12 Bicycle Rack

Boyne Burnett Inland Rail Trail - Project Masterplan

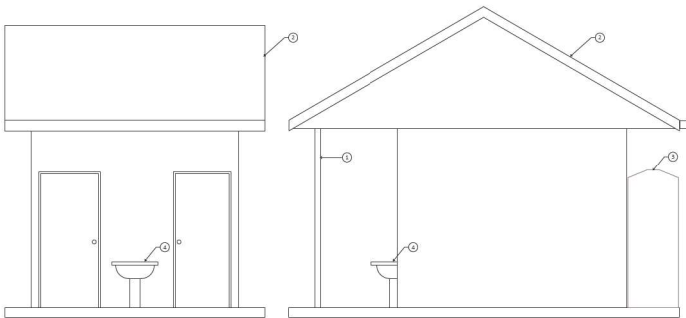
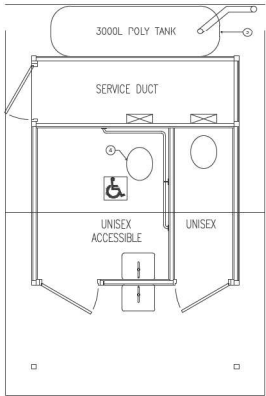
Proposed Trail Infrastructure

Detail - Shelter - Small



- NOTES:**
- ① **FRAME:** Lightweight Galvanised SHS steel Frame.
Finish: White powder coat finish to all exposed framing
 - ② **ROOF:** Lightweight Steel Frame
QIR Red colourbond sheeting
- FURNITURE:**
- ③ -1 x Picnic table settings
 - ④ -2 x 1.8m Trail seats - Refer TD08

Detail - Amenities Block

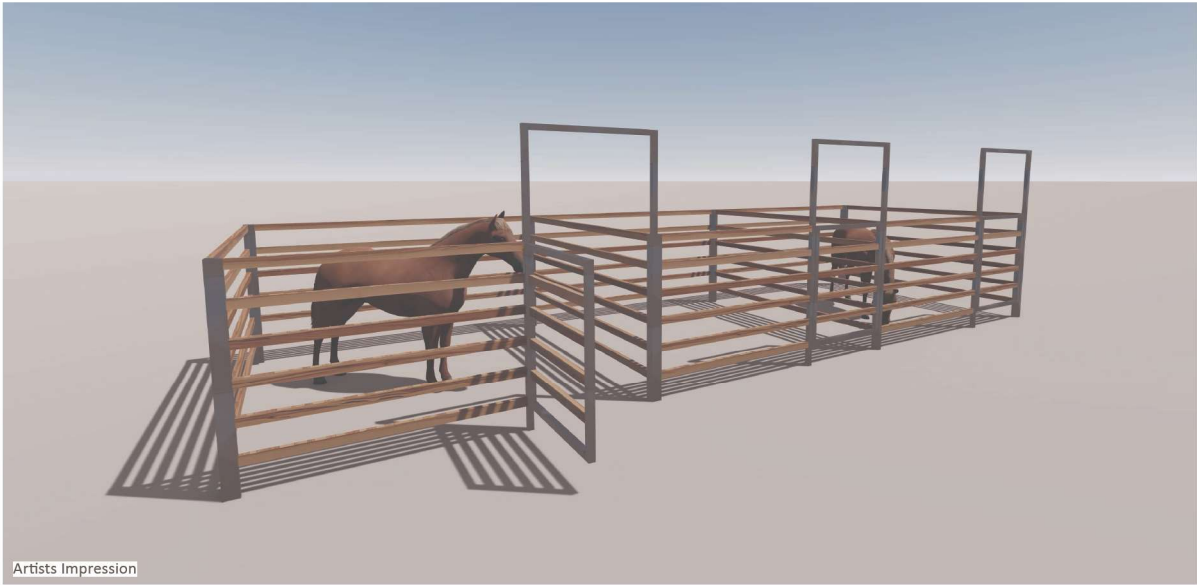
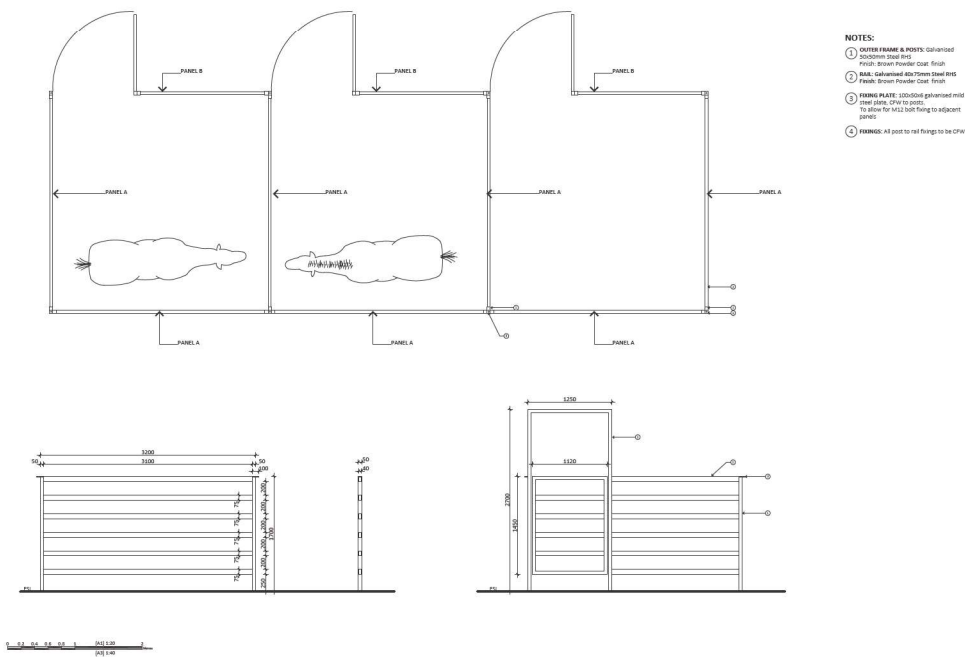


- NOTES:**
- ① **FRAME:** Lightweight galvanised SHS steel Frame.
Finish: White powder coat finish to all exposed framing
 - ② **ROOF:** Lightweight Steel Frame
QIR Red colourbond sheeting
 - ③ **WATER TANK:** 3000L Galvanised water tank.
All roof water to be captured for reuse.
 - ④ **FITTINGS:** All hardware and plumbing fittings to be accessible including basin.

Boyne Burnett Inland Rail Trail - Project Masterplan

Proposed Trail Infrastructure

Detail - Horse Yard



Artists Impression

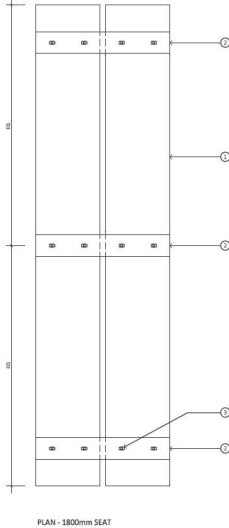
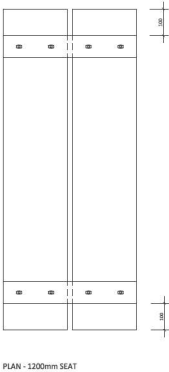
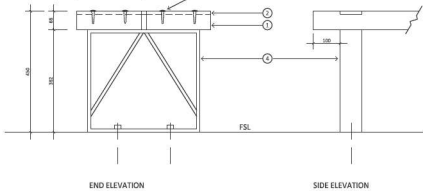
Boyne Burnett Inland Rail Trail - Project Masterplan

Proposed Trail Infrastructure

Detail - Seating

NOTES:

- ① **TIMBER TOP:** Ironbark . 240 x 68mm rough sawn with arrised edges
Finish: Wire brushed and Light Sanded finish. No Oil to achieve "aged" look
- ② **STEEL TOP STRAP:** 80x12mm Steel strap inlayed into both timber lengths, to finish flush
Finish: TBC
- ③ **TOP FIXING:** 4x 2 inch "Common Rose Head Nails" per steel strap. Steel to be predrilled to accept nail penetration
- ④ **BASE:** 80x12 flat plate steel frame, CFW at each join.
Finish: TBC
- 2 per 1200mm seat
- 3 per 1800mm seat



NOTES:

- ① **TIMBER POST - ROUND:** Ironbark Bush Pole, 300-350mm diameter fixed to frame with 4 M16 4.6/S Bolts.
(2 top, 2 bottom)
Finish: Wire brushed and Light Sanded finish. No Oil to achieve "aged" look
- ② **ROUTED 'HOG BACK' STYLE CAVITY:**
- ③ **LOCATION SIGN:**
One for each town. To both sides of sign.
Lettering: 3mm, Laser cut, Powder-coated Aluminium plate mounted on the backing plate to sizes shown on details. Colour: TBC
Backing Plate: 3mm Galv. Steel Plate to sizes shown on details.
Fixed to Timber Sleepers with vandal proof screws
- ④ **SIGNAGE PLATE:**
600x420mm (A2 Paper size) signage panel
- Artwork and materials TBC
Fixed to Timber Sleepers with vandal proof screws

Detail - Signage

