Boyne Burnett Inland Rail Trail

Interim Report

BOYNE BURNETT INLAND RAIL TRAIL

INTERIM REPORT

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EXECUTIVE SUMMARY

What Is A Rail Trail?

A rail trail is a multi-use recreation trail running on a disused rail corridor (public land) for non-motorised recreation. There are over 100 established rail trails in Australia, the majority of which are in Victoria. South Australia, Western Australia, Queensland, Tasmania, NSW and the Northern Territory also have rail trails albeit a small number in each state. A number are under consideration in Queensland.

The Boyne Burnett Inland Rail Trail Proposal

The proposed Boyne Burnett Inland Rail Trail would be developed effectively on two disused railway corridors between Taragoola (Calliope) and Reids Creek (Gayndah). These railway corridors are the Gladstone to Monto corridor (though the study area starts at Taragoola) corridor and the Monto to Gayndah corridor (though the study area ends at Reids Creek). The railway corridors (together) cover a distance of some 270.75 kilometres – conversion to a rail trail would make this the longest rail trail in Australia.

In 2012, several community groups from towns along the inland railway line from Gladstone to Maryborough held discussions with Queensland government representatives regarding the future of the corridor. Each district had their own aims and ambitions for the future of the corridor which had not been in use since 2002. In June 2018 the Boyne Burnett Inland Rail Trail Working Group took the necessary steps to incorporate as a not for profit group.

More recently, representatives from Gladstone Regional Council and North Burnett Regional Council (the two councils through which the corridors pass) have been working with the Boyne Burnett Inland Rail Trail Inc, established by the community to champion the development of the rail corridor and represent the expectations of the community.

The historic and heritage listed bridges between Mundubbera and Gayndah are a major factor influencing the attractiveness of this section of disused railway corridor for development of a standalone rail trail.

In 2017, the Queensland Government released its Queensland Cycling Action Plan in 2017 which committed to the investment of $14 million over four years to develop and implement a program to deliver rail trails in partnership with local governments on state-owned disused rail corridors. This funding provided an impetus to examine a range of railway corridors which may have the opportunity to be converted to rail trails.

In early 2018, the Gladstone Regional Council and North Burnett Regional Council agreed to enter into a partnership to commission a feasibility study on the Reids Creek to Taragoola railway corridor.

The six tunnels between Many Peaks and Kalpowar would be a unique feature of the proposed rail trail and a major attraction for potential visitors.

The Feasibility Study

The Gladstone Regional Council (GRC) and North Burnett Regional Council (NBRC), in partnership, have determined to undertake a feasibility study on the decommissioned railway corridors for the purpose of establishing the asset into a highly recognised rail trail destination fit for cycling, walking and horse-riding, as part of the Queensland Inland Rail Trail Network.

This report is intended as an Interim Report within the Feasibility Study process to outline whether a rail trail is feasible between Taragoola and Reids Creek. This will then provide direction for the remainder of the investigation.

Issues

There are a range of issues involved when considering a rail trail project. In this project, the following issues need to be considered:

- **Tenure and land ownership**. The two railway corridors remain in public ownership. However, field investigations reveal two apparent tenure anomalies (neither of which are major but which do have some impact on trail design should a trail proceed). These are near the Dirnbir siding and at the Mundubbera aerodrome.

- **A long trail versus a series of shorter rail trails.** If fully developed along its entire length, the proposed Boyne Burnett Inland Rail Trail would be a rail trail of 270.75 kilometres – the longest rail trail in Australia. Whilst this has some appeal (simply being the longest may attract some particular usage), the case can be made that developing a series of shorter trails provides a better experience for a wider range of users (and provides for a cheaper project to both build and maintain). Long rail trails are relatively rare in Australia and New Zealand (the Brisbane Valley Rail Trail is the longest in Australia at 161 kms). Despite the recent growing popularity of the long walk trails, available research indicates short trails are still the most popular form of trail. The low number of long rail trails in Australia may suggest that demand for such a product is relatively low, though it is hard to make a decisive comment as demand data does not exist.

While the disused railway corridor provides spectacular vistas in numerous locations, several lengthy sections bisect farming areas and development of a trail will mean special measures will need to be put in place to allow farming to continue.

- **Landholder issues.** Adjacent landholders are traditionally – and understandably – apprehensive about trails close to their properties. It is important that these concerns are seriously addressed before any trail conversion takes place. Many landholders resent having things imposed on them or feeling as if they have no say in what is happening around them. Many landholders are resistant to change of any sort, let alone one they perceive will have detrimental impacts on their lifestyle as well as on their farming operations. If conversely, adjacent landholders who understand and support the reasons behind a trail, and who see that the trail is going to be well organised and efficiently managed, will prove to be extremely valuable partners in years to come. Indeed, some of them will take advantage of business opportunities offered by the rail trail project. Landholder consultation always raises a number of issues, all of which have been satisfactorily addressed in other rail trail projects in Australia, New Zealand and America. Issues tend to centre around a number of key elements within three major headings:

- Farm management and disruption to farming practices;
- Non-farm management issues. These are generally concerns around safety, security privacy, theft, trespass, noise, disturbance and a range of related issues; and
- Trail management. These are generally concerns around maintenance, and the behaviour of trail users in regard to littering, toileting and other issues.

- **Bridges: River and creek crossings (and overhead bridges).** Bridges are one of the most obvious reminders of the heritage value of disused railways, one of the most significant attractions of trails along disused railways and also one of the costliest items in the development of trails on former railways. Bridges on this corridor cross standing water, cross waterways that have water in them at certain times and cross roads and stock access points. A number of the existing bridges have been preserved while a number have been left in place pending the completion of the rail trail study. The Department of Transport and Main Roads have given a clear indication that remaining bridges will be assessed for removal on the basis that they are either:
  - Required as the only logical crossing to retain connectivity for a potential rail trail. Bridges are either definitely or probably within this category.
  - Not required as there are alternatives.

  Replacement and re-purposing costs are one of the considerations for rail trail bridges. Work on other timber rail trail bridges across Australia have returned costs of between $3,000 - $6,000/lineal metre up to $11,000/lineal metre.

Many of the bridges traverse steep and deep creek valleys. Retention of the bridges is far preferable to construction of a lower level crossing.

It is understood that the Department of Transport and Main Roads is considering what to do with the remaining bridges (as part of the infrastructure removal process). The preferred position is to retain all the timber bridges that are needed for the rail trails (i.e. those along the three identified short trails). However, it may be that this is not achievable (though the identification of three short trails does take some of the remaining bridges off the "needed for a rail trail" list). Those bridges identified as not being required as there are alternative crossing options can be removed and alternatives put in place (noting that this is not a no-cost or the preferred option). Bridges identified as required as either definitely or probably the only logical crossing to retain connectivity for a potential rail trail should be retained. This is particularly the case for any bridges on the corridor between Nagoorin and Futters Creek on the eastern side of the Gladstone Monto Road. The topography in this location ensures there will be major water flows from time to time from the road towards the dam – bridges represent the best way of ensuring safe crossings even in high flows.

- **Fencing.** There may be a need for new boundary fencing both for insurance purposes and to reduce maintenance costs by allowing grazing of the "excess" corridor. One of the options to maintain the corridor (as oppose to maintaining the actual trail) is to allow adjoining or adjacent landholders grazing permits over those parts of the corridor not required for a trail (a 6 metre envelope incorporating the trail on the railway formation). As the original railway corridor is mostly 20 – 40 metres wide, the excess corridor can be leased to adjoining landholders. This approach will minimise the reduction in land that they currently farm and enable stock to 'maintain' the corridor outside of the fenced trail corridor (noting that some landholders already have stock on the corridor). While this creates a capital cost, it has the potential to significantly reduce maintenance costs.
- **Aesthetics on the corridor.** In addition to the distance between replenishment points, much of the corridor between Kalpowar and Mundubbera runs alongside either Gladstone Monto Road or the Burnett Highway. While the corridor does meander across this landscape and at times is far from these major roads, there are also significant sections of it alongside these roads. This detracts from the user experience.

There are numerous locations where magnificent views of the surrounding landscape can be seen, including between Mundubbera and Gayndah where much of the corridor is alongside the Burnett River.

- **Distances and services on the corridor.** One-way trails (or out-and-back trails) need an anchor at both ends to be attractive to users. The best one-way trails (including many rail trails) have natural terminuses in major centres or towns or pass through major towns. The proposed long trail does not really offer this opportunity given likely start and end points though developing a series of shorter trails may overcome this issue to an extent. There are quite significant distances between established services (this is not to understate the opportunity for services to establish in response to the development of a rail trail). This is particularly the case between Kalpowar and Mundubbera.

- **Costs – construction and maintenance.** Costs – both capital and maintenance – are a major consideration in any public infrastructure project. These need to be offset against a range of benefits – both economic and non-economic. Detailed costings are not part of this project, but the Councils need to have some understanding of the possible construction and maintenance costs.

  Construction costs would vary between $110,000/km and $150,000/km. Sections with a significant number of timber bridges that need re-purposing would be higher, though alternative waterway crossings would also be expensive. Sections with large numbers of bridges would potentially be over $200,000/km. The costs of tunnel repairs are not known at this stage but would add to the project costs.

  If it is assumed that half of the trail can be constructed at the lower cost (an average of $130,000/km) and half can be constructed at the higher cost (allow $200,000/km), building a long trail on the entire distance of the corridor would cost in the order of **$45 million**.

  Ongoing trail maintenance is a crucial component of an effective management program – yet it is often neglected until too late. Ongoing maintenance can be minimised by building a trail well in the first place. A well-constructed trail surface will last considerably longer than a poorly built trail. Evidence of actual trail maintenance costs for individual items along a rail trail, or any trail for that matter, are scarce. It is difficult estimating the costs involved in maintaining a trail until every last bridge and other infrastructure items have been installed. Whilst it is impossible to provide an estimate of ongoing maintenance at this stage, an allowance **of $2,000 - $3,000/km/year** is not an unreasonable basis on which to work. However, there are numerous examples across Australia of volunteers making a major contribution to trail maintenance and reducing costs to the trail manager.

- **Stakeholder positions.** While management arrangements for Queensland rail trails are not set to a standard model, there is no doubt that Local Governments are and will be a key player in ongoing management. Both Gladstone Regional Council and North Burnett Regional Council have expressed general concerns about trail costs - both construction and maintenance (though maintenance costs appear to be a more significant concern). While both Council support this study, their continuing support for a rail trail (or series of rail trails) is partially dependent on the outcomes of the study and a clear articulation of costs and benefits. The community groups that have come forward prior to this study and in the course of the study have indicated a very strong support for the proposal. There is an active group at the Gayndah end who are undertaking restorative works

along the corridor between Gayndah and Mundubbera at their own expense. The Boyne Burnett Inland Rail Trail Inc. has a large number of members who regularly attend meetings and provide resources to the project.

- **Potential other uses of the corridor.** In recent years there has been a proposal to bring some form of tourist train back to the corridor (or at least to parts of the corridor particularly around the tunnels). A proposal by Monto Rail Adventures to develop a railway tourist attraction stalled after the Department of Transport and Main Roads rejected the business plan in 2015.

  The other major potential use of the corridor is heavy rail as proposed in the document entitled *Building the future trade potential of the Wide Bay Burnett: Driving prosperity through greater infrastructure investment*. One of the proposed infrastructure projects is a rail link connecting the Port of Bundaberg with the Wide Bay Burnett Minerals Province. The publicly available report provides no detail of whether the existing railway corridor could be used or whether a completely new alignment is needed. It is understood that the State Government is committed to retaining the railway corridor in public ownership which would allow it to be used for other public purposes should the need arise (other than a rail trail). Unfortunately, very little detail of this proposal is known; it can only be noted for this study. Further details may be made available as the rail trail feasibility study progresses.

Opportunities

Rail trails also provide several opportunities. There are a number of specific elements within the area encompassed by the proposed trail route that provide opportunities and reasons for why a trail should be built.

- **Appealing landscapes and infrastructure.** The Boyne Burnett Inland Rail Trail would pass through some very attractive scenery. The journey alongside Lake Awoonga provides views of and over the lake and the nearby mountains which are quite enjoyable. There are great panoramic views afforded in sections, often due to very high and stunning embankments. This notably the case as the corridor proceeds through the Dawes Range, and along the Burnett River from Mundubbera towards Reids Creek. There are farming vistas through the Boyne Valley and between Kalpowar and Mundubbera (as well as providing near and far views of hilly countryside). Many bridges remain including significant and attractive bridges between Mundubbera and Reids Creek and at the northern end of the corridor in the vicinity of Lake Awoonga. Some of the railway stations remain and have been restored. The tunnels provide an outstanding example of railway tunnels and the presence of 6 in a very short section is probably unmatched on an Australian rail trail. The hog's back sleepers, an unusual feature, add to the appeal of the tunnels.
- **Topography of the preferred route**. One of the major appeals of rail trails is the gentle gradient, suitable for all types of cyclists, and walkers (gradient is typically less of an issue for horse riders). This is the market that would be attracted to a rail trail.

- **Connections between towns.** Taking trail users through towns will provide new business opportunities for service providers. Presently, there are a relatively limited number of services that would appeal to trail users in many of the smaller settlements between Taragoola and Reids Creek. Development of the rail trail may provide a range of new business opportunities (or allow existing businesses to expand). The trail will make an actual connection between the towns and villages en route (whether it is a shorter rail trail or the longer rail trail) – one that reinforces historic connections.
- **Broadening the recreation offerings.** Provision of an additional off-road trail adds to the list of tourist offerings in the region and encourages visitors to stay a little longer to go for a pleasant walk or ride. A new nature-based attraction has the power to retain those visitors for longer, spending money and generating business opportunities. Utilising the Burnett River for canoe and kayak paddling both adds to the outdoor recreation offerings as well as providing an opportunity for a circular trail utilising the river and the rail trail in the southern section of the trail. Lake Awoonga offers a range of outdoor recreation experiences – boating, fishing, swimming, paddling, walking, photography. Boynedale Bush Camp offers accomodation right alongside the rail trail.

The Bush Camp at Boynedale, right alongside the disused railway corridor, is extremely popular. Development of a section of rail trail would enable visitors to cycle or walk to Ubobo and Nagoorin.

- **Community support.** While no formal consultation was carried out for this interim report, the consultants attended a meeting of the Boyne Burnett Inland Rail Trail Inc to meet key stakeholders. The number of people at the meeting (in the order of 50) was an impressive display of support for the project. There does appear to be a ground swell of support from groups and individuals within the surrounding communities. It is also evident that there are strong advocates within the communities who have expressed a desire to get more involved in ensuring the proposed rail trail gets developed. This was particularly demonstrated by another group who took the consultants to inspect the section of corridor between Mundubbera and Reids Creek. A committed community-based group is an important element in a rail trail's success. This commitment can be tapped into to ensure the rail trails succeeds should it proceed for ongoing maintenance and promotion. However, committed non-government groups should not be relied upon to take on the formal task of being the trail manager.

- **Attracting new visitors who spend money**. A trail such as the proposed Boyne Burnett Inland Rail Trail will provide a number of opportunities. A trail will bring additional tourists and keeping them longer in the area. A trail will create opportunities to build on existing industries and enterprises of the area. Australians are increasingly looking for passive, non-organised recreation opportunities, often in natural or near-natural settings. Demand for this type of opportunity will only increase as the population ages. While walking remains the most popular of these activities (and is likely to remain so as the population ages), off-road cycling shows a growing and often unmet demand within the trails market. The Boyne Burnett Inland Rail Trail (either built as a long trail or a series of short trails) would provide experiences for a range of user groups in a series of markets that have been consistent over time – walking and bushwalking and cycling – or growing significantly – off road cycle touring. The trail would provide for both visitors and local people who participate in a range of activities. A number of high-profile trails in Australia and New Zealand provide examples of user numbers that can be achieved on tracks and trails (a product within nature-based tourism). Users are attracted to developed trails that are both 'known' or advertised in some way and offer a range of facilities such as signage and interpretation, parking, toilets and water.

    - Use of the Bibbulmun Track (WA's long-distance walking track linking Perth and Albany) increased from 10,000 in 1998 to 35,000 in 1999-2000 to 137,500 in 2003 to over 167,000 in 2008. In 2015 it was used by over 300,00 people.
    - The Murray to the Mountain Rail Trail (Victoria) attracts almost 60,000 annual visitor days.
    - The Otago Central Rail Trail (NZ) offers a 3-day cycle or 5 day walk experience covering 150 kms. In 2011, over 14,000 users traverse the entire length each year, with the most popular section attracting over 20,000 users. In 2015, 12,000 users rode the trail from end to end. Cyclists undertaking the complete journey often do so in 3 days, while walkers take 5 days.
    - The Old Beechy Rail Trail in central Victoria attracted 23,368 users/year.
    - In the first quarter of 2014, the Great Victorian Rail Trail (a 134 km rail trail between Tallarook and Mansfield) had 27,500 users pass through trail counters.
    - Work on South Australia's Riesling Trail (a 34 km rail trail in the Clare Valley) showed 40,000 people passing through 4 trail counters each year.

The potential expenditures may be quite significant based on trail user expenditures elsewhere.

- The Mundaring Trails Network, 1 hour from the Perth CBD, injected some $12.62 million into the local economy and a further $15.21 million into the State economy annually. Local residents spent $4.06/visit to the network and visitors (primarily day users) spent $23.71/visit. The key is that the total number of trips on the trails studied was a staggering 2.454 million visits annually.
- Users of South Australia's Riesling Trail spend $1.08 million/year ($215/person/visit with daily expenditure of around $100).

- In 2003, the Bibbulmun Track generated $21 million of expenditure annually by track users, well in excess of its one-off construction costs of $5 million. In 2008, annual expenditure was $39 million.
- Users of the Murray to the Mountains Rail Trail in North East Victoria have an average daily expenditure of $258/user/day. The bulk of this expenditure was on food and beverage (57% of daily expenditure which equates to $147/user/day).
- Users of New Zealand's Otago Central Rail Trail are spending $NZ 177/day with the average length of stay in the region of 3.8 days. There is a range of expenditures – users doing the whole trail spend $NZ 166/day while those doing part of the trail spend $NZ 247/day. The trail created 81 direct jobs and a total of 102 jobs. Accommodation derives 41-48% of the benefit, followed by food and consumables.

There is a range of business opportunities for private sector investors arising from the potential development of a rail trail. Providing accommodation, food and beverages, supported and guided tours, and equipment, are some of the businesses that have arisen along other trails. Such services add significantly to the user's enjoyment if done properly. A 2015 user survey of the Otago Central Rail Trail reported that ratings for package operators have consistently improved over time and were rated 9.5 out of a possible 10 in 2015. There is no doubt that this contributed to visitors rating their overall rail trail experience at 9.0 out of a possible 10.

Trails also have a number of non-monetary benefits. They improve community connectivity and provide increasing recreational options for local people thus contributing to both physical and mental health of communities through which they pass.

Conclusions

On the basis of the detailed corridor assessment and due considerations of issues and opportunities, three sections of the corridor appear outstanding candidates for development as stand-alone rail trails. These three are:

- Futters Creek Bridge to Ubobo - this section contains several significant bridges, passes alongside Lake Awoonga and associated wetlands and generally provides outstanding views of the surrounding landscape. **The total trail length to be developed under this scenario is approximately 36.28 kilometres.**
- Builyan to Kalpowar – this section contains the 6 tunnels, has several significant bridges and sidings, outstanding views and has a village at each end. **The total trail length to be developed under this scenario is approximately 31.2 kilometres.**
- Mundubbera to Mt Debateable – this section has many of the heritage listed bridges, spectacular views of the Burnett River, considerable local history and volunteer groups with a passion for the development of the rail trail and the preservation of the local history. It has significant towns at (or near) each end. **The total trail length to be developed under this scenario is approximately 27 kilometres (which includes a spur to the restored stone pitched embankments).**

In total, these three trails would cover a distance of 94.48 kilometres. This would leave some 178 kilometres of the corridor not developed as a rail trail. Discussions on the retention or removal of any bridges within the proposed undeveloped sections will need to focus on issues other than their use in a rail trail (local heritage, advertising the region etc.). Removal of the bridges would make it harder if at any time in the future the remainder of the corridor could be repurposed for other reasons.

The disused railway runs alongside a substantial length of Lake Awoonga and provides outstanding views of the dam and surrounding landscape.

Each of the recommended shorter trails would provide up to a half day excursion and could easily be packaged as a 2 day stay in the region. They would provide access to the highlights of the rail corridors – the tunnels, several bridges (including significant heritage bridges), very attractive landscapes across a range of vegetation types and water (river and lake) views. They also provide the opportunity to package up a "ride/walk and paddle" experience in the region (utilising their proximity to Lake Awoonga and the Burnett River). They provide opportunities for some of the smaller villages in the region to develop as a base for trail adventures.

The recommendations for three shorter trails focus on these sections being the subject of more detailed investigations within this study i.e. the next phase of this study will look at these three sections in more detail. This will include tunnel and bridge inspections which will identify in more detail likely costs of incorporating these key elements into a new rail trail. It is possible (though unlikely) that the costs of rehabilitation of these elements will impact negatively on the likely return on the investment for the three short trails.

Developing a long trail along the whole of the corridor is a very expensive project and one that cannot be justified given the limited demand for a long trail and the ongoing maintenance costs (which will be quite high due to the trail length). There also is a seeming reluctance by both Councils to take on responsibility for the significant maintenance that would be required for a long trail (maintenance will be required for the three shorter trails, but it will obviously be much less than for the long trail).

There is a further option of developing a lower standard trail primarily for horse riders from Eidsvold to Ceratodus offering an alternative recreation opportunity for visitors to the RM

Williams Australian Bush Learning Centre. This trail could be used as it is now given it would be aimed at horse riders. Ideally the trail would end at the relocated Ceratodus Railway Station (in the roadside rest area); however, this would mean expending a large amount of money to repurpose the bridge over the Burnett River for a relatively low number of users. It has been indicated that the bridge would be retained due to its heritage value and riders could ride out to it and then ride back to Eidsvold (a return ride of just over 20 kilometres). This is provided for consideration and is not included as a specific recommendation.

There is little doubt that some sections of the disused railway corridor are more outstanding in their beauty than others. The key to attracting visitors is to offer outstanding scenery, coupled with retention of relics and reminders of the former railway (bridges, tunnels, stations and sidings, embankments, cuttings and signage).

RECOMMENDATIONS

It is recommended that:

- Gladstone Regional Council and North Burnett Regional Council review the Interim Report.
- The Councils determine to proceed with more detailed planning for the three identified candidate rail trails - Futters Creek Bridge to Ubobo, Builyan to Kalpowar, and Mundubbera to Mt Debateable (including a trail to the stone pitched embankments east of Mt Debateable siding). This planning will verify trail development requirements and focus on key infrastructure identified as necessary for rail trail development. A decision to proceed to this stage does not commit either Council (or the Department of Transport and Main Roads) to the development of the three trails.

Several sections of the former railway corridor exhibit all the qualities that would make them very attractive rail trails.

SECTION 1 – INTRODUCTION

The proposed Boyne Burnett Inland Rail Trail would be developed effectively on two disused railway corridors. These railway corridors are the Gladstone to Monto corridor (though the study area starts at Taragoola) and the Monto to Gayndah corridor (though the study area ends at Reids Creek). The railway corridors (together) cover a distance of some 270.75 kilometres – conversion to a rail trail would make this the longest rail trail in Australia (the Brisbane Valley Rail Trail currently holds that achievement at 161 kms).

1.1 A HISTORY OF THE RAILWAY CORRIDORS

The Boyne Valley west of Gladstone was predominantly a dairying region and a railway had little justification. However, a branch was justified in 1906 on the basis of large traffic in timber, fuel, limestone and flexing ores. Progressively opened between 1910 and 1931, the line branched from the North Coast line at Byellee a short distance west of Gladstone and struck a south-westerly route via Many Peaks and Mungungo to Monto. The initial construction was from Byellee to Many Peaks. The line was built to transport low grade ore from Many Peaks to Mount Morgan for processing. A train of copper flexing ore ran to Mount Morgan daily and a mixed train to Gladstone and return ran four days a week. Cream and agricultural goods provided the major source of revenue when the Many Peaks mine closed in 1918. The next stage (Many Peaks to Barimoon), though short, took a long time to construct due to the steep terrain through which it passed. A ten-kilometre section beyond Golembil required the construction of six tunnels totalling 730 metres to negotiate a 239-metre climb of the Dawes Range. In 1930, the railway was extended to Mungungo and in July 1931 finally reached Monto thus completing a semi-circular inland link between Maryborough and Gladstone via the already completed line running north west from Mungar Junction through Gayndah, Mundubbera and Eidsvold.

Many of the timber bridges have been removed from the corridor: however, some of the most strategically positioned bridges have been retained for future rail trail use.

Coming from the south east, the Mungar Junction to Monto Branch was a 267 kilometre railway constructed between 1889 and 1928. The line reached Gayndah on 1907 and Mundubbera in 1914. The balance of the line to Monto was opened in three stages – to Ceratodus on 26 April 1924, to Mulgildie on 20 June 1927 and finally to Monto on 15 September 1928. Over time (across Australia), road transport became steadily more efficient during the 1950s and the railways began to lose their primary function. Throughout the following decades, scores of railway lines were abandoned. Many of these corridors remain in public ownership.

The Gladstone Monto line was suspended from use in 2002. The last train on the line from the south was a celebratory journey on an old steam train, which came through from Monto to Maryborough in 2005.

(https://en.wikipedia.org/wiki/Gladstone_to_Monto_railway_line; and https://en.wikipedia.org/wiki/Mungar_Junction_to_Monto_Branch_Railway).

Some important reminders of the former railway remain along the corridors of both lines. Many of the railway stations along the entire section of the corridor remain and have been re-purposed (Mundubbera and Monto are two good examples) or re-located close by (at Ceratodus). Gayndah Station (though outside the study area) has also been restored. Cuttings and embankments are a feature along the corridor. Many bridges remain in some sections and the six tunnels between Kalpowar and Many Peaks are reminders of railway history. These tunnels are locally heritage listed. An active community group has restored much of the signage (siding and railside signs) between Reids Creek and Mundubbera.

The heritage listed railway bridges between Mundubbera and Gayndah are being retained.

1.2 RECENT HISTORY

In 2012, several community groups from towns along the inland railway line from Gladstone to Maryborough held discussions with Queensland government representatives regarding the future of the corridor. Each district had their own aims and ambitions for the future of the corridor which had not been in use since 2002. In June 2018 the Boyne Burnett Inland Rail Trail Working Group took the necessary steps to incorporate as a not for profit group.

Representatives from Gladstone Regional Council and North Burnett Regional Council (the two councils through which the corridors pass) have been working with the Boyne Burnett Inland Rail Trail Inc, established by the community to champion the development of the rail corridor and represent the expectations of the community.

The Queensland Government released its *Queensland Cycling Action Plan* in 2017 which committed to the investment of $14 million over four years to develop and implement a program to deliver rail trails in partnership with local governments on state-owned disused rail corridors. This funding provided an impetus to examine a range of railway corridors which may have the opportunity to be converted to rail trails.

In early 2018, the Gladstone Regional Council and North Burnett Regional Council agreed to enter into a partnership to commission a feasibility study on the Reids Creek to Taragoola railway corridor.

This report is intended as an Interim Report within the Feasibility Study process to outline whether a rail trail is feasible between Taragoola and Reids Creek. This will then provide direction for the remainder of the investigation.

The old railway stations at Mundubbera (above) and at Gayndah have been preserved and restored, thanks to the hard work of local heritage groups.

SECTION 2 – SCOPE OF WORKS

The Gladstone Regional Council (GRC) and North Burnett Regional Council (NBRC), in partnership, have determined to undertake a feasibility study on the decommissioned Taragoola (Calliope) to Reids Creek (Gayndah) railway corridor for the purpose of establishing the asset into a highly recognised rail trail destination fit for cycling, walking and horse-riding.

The feasibility study is anticipated to deliver on the following overarching deliverables:

- A detailed asset review of the proposed rail trail across two (2) Local Government regions.
- Identify the social, economic, emerging and ecological tourism opportunities and benefits for the local and adjacent communities.
- A detailed cost analysis of initial asset development and future maintenance costs for each Council provided on the recommended stage approach.
- Recommendations including a staged approach to the establishment of the rail trail corridor.

The feasibility study is expected to take the key considerations identified by each Council and their communities when developing recommendations regarding the rail trail project. These include:

- Is there a viable trail route?
- Are the key stakeholders supportive and advocate for the project?
- What will the likely impact be to surrounding land uses/owners?
- Is there a market for the trail and will it provide a quality experience to make it attractive to all users?
- Does the trail offer unique opportunities to attract emerging markets such as adventure trail enthusiasts?
- Are there existing trail adventures that will complement/add value to the rail trail proposal?
- What are the costs associated with developing the trail and ongoing maintenance?
- What are the additional facilities required in order to service the rail trail route?
- Is there evidence of social, economic and tourism benefits to the local and adjacent communities?
- Does development of the trail present a viable case to deliver a return on investment and/or be cost neutral to Council?

Each Council intends to use the study to inform future strategic direction on the project. The study will also inform the future development of applications for Australian, State and/or Corporate investment.

The rail trail could ideally begin from the township of Calliope at the rodeo association grounds (although the brief specifies Taragoola as the trail's northern terminus). The rail corridor is

approximately 91.5km long (within the GRC area) and weaves its way south through the localities of Taragoola, Boynedale and Boyne Valley (Dawes Range) where it connects with the township of Kalpowar on the North Burnett Regional Council side of range.

The North Burnett Region consists of six (6) communities and numerous villages and localities. Kalpowar is the most northern village in the North Burnett region and is an hour and a half drive from Gladstone. Gayndah is the most southern community and is situated on the Burnett Highway approximately 360km north west of Brisbane.

Advice provided by the Department of Transport and Main Roads has identified the proposed rail trail within North Burnett Regional Council to be approximately 179.25km long, starting about 5km north of Gayndah at Reids Creek and ending north of Kalpowar.

The boundary between the two Local Governments lies between Kalpowar and the southernmost tunnel.

Retention of the unique hog's back timber railway sleepers within the tunnels is one of the key factors to be considered when developing the rail trail.

SECTION 3 - RAIL TRAILS EXPLAINED

A rail trail is a multi-use recreation trail running on a disused rail corridor (public land) for non-motorised recreation. There are over 100 established rail trails in Australia, the majority of which are in Victoria. South Australia, Western Australia, Queensland, Tasmania, NSW and the Northern Territory also have rail trails albeit a small number in each state. A number are under consideration in Queensland.

3.1 REQUIREMENTS FOR SUCCESSFUL RAIL TRAIL DEVELOPMENT

There is a wide range of features that make rail trails popular. Generally speaking, it is the flatness of the corridor and the many historic features of the railway (embankments, cuttings, bridges, tunnels, signals, switches, stations and sidings, turntables etc) that attract and fascinate visitors to a rail trail.

Not all rail trails are the same: some are located through farming land, some are located in inner urban areas, and others are located through forests.

Rail trails are different from each other, but a number of characteristics often distinguish the good ones. These features are drawn from a number of published sources and the consultants' own extensive experience with rail trails.

- Many successful rail trails have accessibility to large population centres both for visitors and as a stimulus for local demand.
- There are existing or easily developed tourism infrastructure in or near townships along the rail trail - places to eat and drink, explore and stay.
- Good rail trails have some heritage infrastructure in place such as historic stations, bridges, tunnels, goods sheds, sidings, platforms, turntables, switches, signals, and mile posts. Rail trails elsewhere have utilised their railway history as part of their attraction. Remaining major elements of the railway infrastructure (formations, deep cuttings, high embankments, bridges, culverts) add significantly to the user's experience. Built and social heritage values are a critical part of the rail trail experience not often experienced on other types of recreational trails.
- A common feature is community and adjacent landholders' level of support for the project to move ahead. Many (though not all) adjacent landholders are initially suspicious of rail trails; they often become converts once a trail is built.
- A uniqueness of experience is often important – be it landscape, trail type, a 'one-of' nature.
- Many of the good rail trails have a regional or state tourism significance (some have national and international significance). Significance is elevated where extensions are made to connect to services in towns. The best rail trails have natural terminuses in major centres or towns. Intermediate towns easily accessible along the trail are critical when a trail is long and an added bonus when the trail is short.

- The best rail trails are located in highly scenic surrounds, with spectacular views of the surrounding landscapes. These trails are often full of variety and interest. The best rail trails traverse places of cultural and natural history and conservation and provide opportunities to view birds, other wildlife and remnant vegetation.
- The good rail trails often provide opportunities for short, medium and long length rides and walks on the main trail.
- Railway corridors can provide a great insight into the history of the region – both European settlement and Aboriginal use. Good interpretation will mark out an excellent trail. There are many good recreation trails (including rail trails) in Australia – few have good interpretation. Interpretation adds significantly to the user's experience.
- In a similar vein, trails that emphasise local conditions – flora, fauna, history, construction materials, etc. - are very popular. Good interpretation will bring out this local flavour.
- Well-signed and mapped trails - both on the trail and easily available elsewhere - are more successful than those that are not.
- Informed locals make a user's experience more pleasurable.
- The best rail trails offer a challenge, and they offer peace and solitude.
- A well-maintained trail and a strong community support network add to the user's experience, primarily because the trail remains in good condition. Such a community network could include a committed and purpose-dedicated management committee, a strong "Friends of the Trail" Group or even a full-time trail manager. Various rail trails in Australia feature at least some of these elements.

In addition, all rail trails have a number of positive features which mark them out as uniquely rail trails (as opposed to other recreational trails).

- Rail trails are trails for people of all abilities and all types of bicycles. Good trails provide equity for people of many levels of fitness and equipment to gain access to the types of experience within the region.
- All rail trails are motor vehicle free i.e. safe for all types of trail users. Minimising the number of major road crossings adds to the experience. Trails rarely interrupted by road crossings appeal more than those which constantly cross roads – well marked and safe crossings where necessary add to the success.
- All railway formations (through cuttings and along embankments) provide a gentle gradient and sweeping bends, suitable for all types of cyclists, walkers, and where appropriate, horse riders.
- All rail trails offer safety for users compared with urban shared pathways which have driveways, light poles, blind corners, poor sightlines, and are often 'congested' as users cannot see other users approaching due to poor sightlines.

3.2 WHO USES RAIL TRAILS AND WHY?

Observation of many operating rails trails throughout Australia, New Zealand and North America indicates that there is a very wide diversity of people (and groups) that use rail trails in particular.

The predominant user group for rail trails is cyclists, ranging from elderly people, to baby boomers, young couples, family groups with children, teenagers and young children. Walkers and horse riders are also attracted to rail trails, but in far lesser numbers. They all are using rail trails for a reason: they enjoy motor vehicle traffic-free routes, away from the noise and smell of roads, away from trucks and cars.

Rail trails appeal to individuals, to couples, to groups. In fact, a significant proportion of trail users on the Otago Central Rail Trail on the South Island of New Zealand are groups. These groups consist of sporting clubs, work groups, social clubs, Over 50's groups and organised tour groups. Some use the rail trail for team-building, some use it for fitness training, others for a social club outing. Others use the Otago Central Rail Trail simply for the outstanding beauty and scenery that it provides.

A study of the impact of rail trails on the communities through which they pass was undertaken by Professor Sue Beeton of La Trobe University. The study involved interviews and survey of users of the Murray to the Mountains Rail Trail in NE Victoria over the 2009 Easter weekend. It found:

- Of the 128, only 22 identified themselves as living close to the Rail Trail but were all travelling with visitors. Travel companions were evenly spread between travelling with a partner, family or friends, while only a small number of respondents (5 percent) travelled alone.
- The respondents were predominantly employed in professional and administrative positions (47 and 25 percent respectively) with 14 percent retired; however, no respondents identified themselves as unemployed.
- Ages were varied, ranging from one year old to 79, with a slight majority of men (53%). The largest group was aged between 41 and 60 years old, however the high representation of riders in the 0-10 age groups illustrates the significance of mixed family groups and the suitability of the Rail Trail for all ages.
- Half of the respondents had past experience in using rail trails and identified the Murray to the Mountains Rail Trail as one they had visited previously. Over half (53%) considered themselves to be frequent riders, cycling more than once a week, but not daily. The next largest group (23%) were regular weekly riders, suggesting that while the trail is being used by people who cycle often, they are primarily recreational cyclists with a quarter who do not cycle regularly.

The Hauraki Rail Trail in New Zealand is particularly popular with the "baby boomer" and family clientele from Auckland and the wider Waikato, with 24% of users coming from Auckland, 15% from Hamilton, and a large proportion of users being older riders (*New Zealand Ministry of Business, Innovation and Employment 2013*).

Rail trails are not new – they have been established in America for over 50 years and Australia for over 30 years.

3.3 HISTORY OF RAIL TRAILS IN AMERICA

The rails-to-trails movement began in the USA in the mid-1960s. Local people came up with the idea to convert abandoned or unused rail corridors into public trails. Once the rail tracks were removed, people naturally walked along the old grades, socialising, exploring, discovering railroad relics, marvelling at the industrial facilities such as bridges, tunnels, abandoned mills, sidings, switches and whatever else they could find. In the snows of winter, the unconventional outdoor enthusiast skied or snowshoed on the corridor, but these were days before even running and all-terrain bicycles were common, so the predominant activity was walking. Of course, none of the corridors were paved or even graded — they were simply abandoned stretches of land.

"Rails-to-Trails" is what people called the phenomenon. The name was catchy and descriptive enough to give the concept a tiny niche in the fledgling environmental movement that was gathering momentum. However, it was destined to move into the mainstream of the conservation and environmental movements. After all, it had all the ingredients: recycling, land conservation, wildlife habitat preservation and non-automobile transportation - not to mention historical preservation, physical fitness, recreation access for wheelchair users and numerous other benefits.

The Burke-Gilman Rail Trail in Seattle (Washington, USA) is one of that country's oldest and most popular rail trails. Studies along that trail corridor have demonstrated that property values have risen as a result of the development of the trail and are higher with close proximity to the trail.

Today, more than 50 years later, rail trails have made a significant mark in America, with around 100 million users per year enjoying 2,094 rail-trails covering over 37,780 kilometres. There are another 794 rail trail projects being planned and/or developed for a total of 8,494 miles (13,590 kms) (*Rails-to-Trails Conservancy website: http://www.railstotrails.org/our-work/research-and-information/national-and-state-trail-stats/).* The longest trail is the Katy Trail State Park in Missouri (240 miles) while 12 other trails are longer than 100 miles. All American states have a rail trail network. Missouri has the most rail trail miles (2,320 miles on 113 trails), while Pennsylvania has the most trails (169 rail trails covering 1,753 miles). Wisconsin is the home of the first rail trail in America – the Elroy Sparta State Trail opened in 1965.

In Seattle, more than 1,200 people a day cycle along the 16 mile Burke-Gilman Trail, near Lake Washington, while in Florida over 100,000 people stroll, skate and cycle along the 22 mile

Pinellas Trail every month. In Washington D.C. the easy grades and varied topography of the 45 mile Washington and Old Dominion Railroad attract nearly two million users annually, including cyclists, runners, equestrians, people with disabilities, skaters and cross-country skiers.

3.4 HISTORY OF RAIL TRAILS IN AUSTRALIA

In Australia, conversion of corridors to rail trails is a recent phenomenon driven by the closure of many railways in the 1980s and 1990s (though rail closures have been occurring continuously since the end of the Second World War).

Rail trail conversions have proven most popular in Victoria. The Victorian Trails Strategy 2014-2024 reports that there are currently over 800 kilometres of rail trail in Victoria, while the Rail Trails Australia website lists over 30 rail trails throughout Victoria. Some listed are still under construction or require signage and/or publicity materials, though they are in use.

Various styles of interpretation have been used on the Old Beechy Rail Trail in Victoria to highlight the farming history, indigenous history, railway history and natural history of the region. An innovative feature is the use of rusty steel cut-outs. The steel structure pictorially illustrates timber cutting, farming history and other agricultural practices over the years.

One of the best known of Victoria's rail trails is the Lilydale Warburton Rail Trail which is situated some 40km east of Melbourne (at the end of the suburban train line). This trail caters for all types of bikes, walking, horse riding and wheelchairs (for some segments) due to the outstanding surface material used. The trail passes by wineries, cafes, pubs and restaurants following the Yarra River valley.

The Murray to the Mountains Rail Trail, in northern Victoria, is the most developed of all Victorian rail trails with a sealed surface for its entire distance (97 kilometres). The trail follows the picturesque Ovens Valley and has views of Mt Buffalo and a good climb to historic Beechworth.

In South Australia, the Riesling Trail is perhaps the best-known rail trail. This trail is located in the Clare Valley, 130 km north-east of Adelaide. The trail passes several wineries and offers spectacular views from numerous points along the trail. The 35 kilometre long trail allows visitors to experience the Clare Valley from end to end by foot or from the saddle of a bicycle. The idea for the trail is attributed to local business people (winemakers) who saw the potential for the disused railway line from Riverton to Spalding that ran through their region. While the closure of the railway in the 1980's was regarded as a major loss to the area, the conversion of

the former railway corridor into one of Australia's best-known trails has benefited local businesses, as well as users. Local people named the trail after the grape that is so celebrated in the Clare Valley. Several wineries are now creating picnic locations along the trail. There are more than 30 bed and breakfast cottages, several hotel/motels and caravan parks close to the rail trail, enabling users to turn a comfortable one day bicycle ride into several days. In November 2009, this already popular trail was extended another 8 kilometres north to Barinia Siding, the "geographic" northern end of the Clare Valley.

The Coast to Vines Rail Trail (34 kms) continues this very popular South Australian theme, connecting many of the vineyards of McLaren Vale. The trail offers scenic coast to hinterland views with spectacular vineyard vistas and changing landscapes.

Queensland offers Australia longest rail trail. The 161 km Brisbane Valley Rail Trail (BVRT) follows the disused Brisbane Valley rail line that commenced construction at Wulkuraka near Ipswich in 1884 and was completed at Yarraman in 1913. The BVRT winds its way up the Brisbane valley, traversing farmland, forests, picturesque rural settings and country towns. Being on the old railway line, the BVRT provides an off-road climb up the valley for day trippers, overnight camping or longer-term adventures, but some sections can be more challenging. The final section of the trail was opened in 2018. There are also rail trails linking Kingaroy and Kilkivan, and Atherton and Walkamin. There is a short rail trail in Yeppoon. Current investigations (in addition to this project) are a rail trail linking Bundaberg and Gin Gin and the completion of the Mary to Bay Trail (linking Maryborough to Hervey Bay). These investigations have been driven in part by the Queensland Government's commitment of $14 million over 4 years in the Queensland Cycling Action Program. Construction of the Imbil Brooloo Rail Trail in the Mary Valley of the Gympie Region is scheduled to be completed by June 2019.

Above: The Lilydale Warburton Rail Trail (Victoria) is about an hour from the Melbourne CBD. This proximity helps attract over 100,000 users per year.

Above: The Riesling Trail is South Australia's premier rail trail, travelling through the very attractive wine-growing country of the Clare Valley.

Above: The Sidings Rail Trail (WA) makes the most of existing historic rail infrastructure. This trail has two elements – as well as being a rail trail in itself, it is part of the Munda Biddi Trail – the long distance mountain bike trail between Perth and Albany.

Above: The Brisbane Valley Rail Trail (Qld) is Australia's longest rail trail, attracting users from South East Qld, one of Australia's fastest growing regions.

Above: The Fernleigh Track in Newcastle is exceedingly popular with a range of users. One of its key attractions is the Fernleigh Tunnel.

Above: The Murray to the Mountains Rail Trail is one of Australia's highest profile rail trails; users are spending around $250/day while using the trail.

3.5 COMPLEMENTARY USES OF A RAIL CORRIDOR

A linear corridor such as a rail trail does lend itself to a range of potential future uses – many of which are not excluded by the possibility of the corridor being converted into a recreation trail.

These former railway corridors, like so many others around the world, are also ideally suited for the placement of utilities, such as wires, cables and pipes. Data, telephony and energy can and are all carried in pipes alongside or underneath rail trails. These uses can be complementary to the corridor's use as a rail trail.

3.6 HOW DO RAIL TRAILS FUNCTION AND OPERATE?

There are differences in the way rail trails function and operate, primarily due to differing legislative regimes. The next section examines how existing rail trails operate in three states with an established history of rail trails – Victoria, South Australia and Western Australia. It also provided commentary on how some rail trails have begun operating in Queensland where they are a relatively new development.

3.6.1 VICTORIA

Victoria has led the way in converting disused railway lines into recreation and tourism destinations. Consequently, it has the most mature process. A rail reserve is gazetted under the Crown Land (Reserves) Act as a public recreation reserve. Gazettal as a public recreation reserve allows for the setting up of a formal Committee of Management, which has vested management responsibilities for the corridor. Where the corridor traverses more than one Local Government, a Special Joint Committee is required under the legislation.

The Department of Environment and Primary Industries is the lead agency for the establishment of Victorian rail trails and supports the delegated managers.

The State Government has set down a uniform process for establishing rail trail Committees of Management. It involves an Expression of Interest period where applicants prepare and submit their applications. The State Government, in consultation with relevant Local Governments, selects members depending on skill sets required.

Under the Victorian guidelines, the Committee of Management has relevant Local Governments and individual people selected for appointment by the relevant Minister. The term of appointment is for 3 years. The members must be an adult resident or ratepayer within the 'community of interest' of the Reserve. The Minister is also able to appoint nominees of various interest groups that may use a reserve or have an interest in its proper management.

Committees of Management are generally incorporated. Incorporated Committees allow lawsuits, contracts, borrowings and tenancy agreements in the name of the Committee providing security and greater continuity. Sub-committees have no power in themselves; recommendations need to be bought to the full Committee.

Committees of Management under the Crown Land (Reserves) Act have a number of powers and duties:

Powers

- Managing the reserve;
- Undertaking works and improvements;
- Using workers;
- Deriving income;
- Spending, borrowing and investing;
- Controlling users;
- Entering into legal proceedings; and
- Granting tenancies (licences, leases, permits)

Duties

- Financial records and auditing;
- Reporting – financial, annual, performance;
- Liability insurance – duty of care;
- Duties as an employer;
- Council rates (payable by occupiers under lease, licence and tenancies – commercial and agricultural); and
- Responsibilities under Freedom of Information and Ombudsman requirements.

Committees of Management have traditionally absorbed the responsibility for pursuing the development of a rail trail including the preparation of concept plans and business plans.

The CoM guidelines set out the need to determine objectives under heading of recreation, tourism, conservation, economic and social. These objectives translate into a community-driven concept plan that provides the basis for the Business Plan.

3.6.2 SOUTH AUSTRALIA

In South Australia trail management is governed by a partnership between the Office of Recreation, Sport and Racing (an agency of the SA Government) and a community organisation and/or a Council. Land on the rail corridors is granted to the Office of Recreation and Sport by other agencies (notably the Department of Planning, Transport and Infrastructure) to facilitate rail trail development.

The Riesling Trail

As indicated earlier, the Riesling Trail is perhaps the best-known rail trail. Located in the Clare Valley, the 35 kilometre trail passes several wineries and offers spectacular views from numerous points along the trail.

Trail management is governed by a partnership between the Office of Recreation and Sport (ORS) (an agency of the SA Government) and the Riesling Trail Incorporated (RTI), an incorporated association under the Associations Incorporation Act. RTI is a community body with an interest in developing and promoting the trail and facilitating management at the local

level. ORS has formalised management roles and responsibilities of the Association in overseeing and ongoing development of the trail through a partnership agreement. The Government of South Australia (though ORS) covers legal liability insurances as they relate to the trail.

There is also a partnership agreement between RTI and the Clare and Gilbert Valleys Council. The Council will consider funding nominated projects where the trail traverses and interfaces with council roads and will contract to do maintenance and repair work.

RTI is run by a Management Committee. Membership of the Committee comprises representatives from ORS, Clare Valley Tourist Association Inc., Clare Valley Winemakers Inc, Clare and Gilbert Valleys Council, and five community members with experience in areas such as tourism, arts and culture, business and finance etc. Community membership is invited through public notice and is determined at an AGM.

The Office of Recreation and Sport has a $30,000/year maintenance budget to cover both the Riesling Trail and the Riverton Trail network to the south. RTI is responsible for organizing/overseeing the maintenance (done by their own hands or by contractors) for the Riesling Trail and the Riverton trail network. RTI has the main role to pursue grants.

The Shiraz Trail (formerly the Coast to Vines Trail)

This trail on the outskirts of Adelaide is jointly managed by the two Councils – the City of Onkaparinga and the City of Marion in partnership with the Office of Recreation and Sport. It is understood that there are no other special arrangements – the trail is managed as a recreation asset of the Councils.

3.6.3 WESTERN AUSTRALIA

Mundaring Railway Reserves Heritage Trail

This trail is a 72 kilometre multi-use trail opened in the mid 1980s. It is managed solely by the Shire of Mundaring as a recreational asset like all its other recreational assets.

Aware of the tremendous economic and recreational benefits of the Railway Reserves Heritage Trail, the Shire of Mundaring continues to expend funds on improving the trail.

3.6.4 QUEENSLAND

In Queensland, former rail corridors are designated as 'non-motorised transport corridors'. As a relatively new entity, management arrangements are still being settled. The Department of Transport and Main Roads (TMR) is the state agency responsible for the day-to-day management and maintenance of the Brisbane Valley Rail Trail in conjunction with Ipswich City Council, Somerset, South Burnett and Toowoomba Regional Councils, and the Ambassadors of the

BVRT. When the first trail section was opened (the Blackbutt to Linville section), the predecessor to the South Burnett Regional Council was very supportive and took a sub-lease over a section of the trail in neighbouring Esk Shire (as it was then) as the Esk Shire Council was not willing to take on the sub-lease. The Kingaroy Kilkivan Rail Trail was constructed under the management of South Burnett Regional Council and Gympie Regional Council and has recently opened.

3.6.5 OVERVIEW

While legislative regimes differ, the operations of many rail trails across the country are marked by a common set of features. A discussion of successful rail trail development characteristics was included in Section 3.1. Some common characteristics about all aspects of operation include:

- Most rail trails have incorporated Committees of Management; many (but not all) of these draw support from 'Friends of' groups.
- Community involvement in positions of 'power' i.e. on a Committee of Management is critical to community buy-in.
- In Victoria in particular, all Committees follow a template for setting up the organisation and, to a certain extent, pursue the same activities (due to the requirement under legislation and the guidelines).
- All trails predominantly use public land – mostly State Government land (as they are on former rail corridors).
- There are no charges to enjoy any rail trails.
- Many offer leasing arrangements to adjoining landholders as the trail rarely needs the (almost standard) 20 metre corridor. This generates income for the trail, keeps the farmers onside and provides some maintenance.
- Most trails opened section-by-section (i.e. a staged process) while keeping the big picture in mind. However, there is a need to be conscious of how stages are marketed.
- All trails make the most of official 'opening ceremonies' – bridges, sections, etc.

SECTION 4 – CORRIDOR ASSESSMENT

In preparing for the task of determining the feasibility of the disused railway corridor for a rail trail in its entirety, or discrete parts that may be suitable for development as a rail trail, the corridor was divided into 20 segments for assessment.

Generally, these segments were determined by the consultants because they satisfied one or more of the following criteria:

- Section runs from one town to another town (or from a former siding/station to another siding/station);
- Section could be cycled and/or walked in a day;
- Section encompasses a range of topographical situations or a unique topography; and
- Section encompasses a unique built feature or series of built features (e.g. bridges and/or tunnels).

Over a period of 10 days (between Tuesday October 9 and Thursday October 18) the 271km corridor between Calliope and Reids Creek (near Gayndah) was inspected by the consultants. Each section was assessed according to a set of pre-determined criteria, as contained in the set of 20 assessment forms within this report.

Given the length of the corridor (271 kilometres) and the remoteness of much of the corridor from adjoining or nearby roads, not all of the corridor could be inspected in the time available. In addition, at the time of inspections, contractors were removing the old steel railway track and sleepers thereby making parts of the corridor more difficult to access.

The purpose of the traverse of the corridor was to gain an overall impression of it to determine whether all or only some parts of the corridor may be suitable for development as a rail trail. The ranking of each section took into account all the factors/criteria considered relevant.

The consultants are not new to assessments of trails, or rail trails. The consultants have been involved in over 30 rail trail studies in Australia and together have traversed (by walking or cycling) well over 100 rail trails in 5 countries. Our knowledge of what makes a good rail trail, from a users' perspective as well as from a construction and maintenance perspective, is therefore reliable. This background enables us to make sound judgements on the merit or otherwise of developing a rail trail. Although our assessments of the 20 segments of the disused railway corridor could be considered as highly subjective, we are at the forefront of rail trail development in this country and have a thorough understanding of rail trails, how they work, who uses them and how they are maintained. We are therefore well qualified to make decisions about the merit or otherwise of developing a rail trail.

As the corridor assessment sheets reveal, each segment of corridor was assessed against the following (and given a score):

- Towns/villages (trailheads) at each end (incl. availability of accommodation, food/drink (and other services) – towns provide an essential service for users of trails to rest, replenish supplies or to be accommodated. Score is out of 10.

- Potential landholder issues – many adjoining landowners are not favourably disposed towards the prospect of a rail trail, citing a range of factors that they imagine might inconvenience their farming practices or lifestyle. Score is out of 10.
- Estimate of costs of construction (including difficulty of construction – terrain, access, type) – the higher the cost of constructing a trail, the harder it will be for the trail to provide a positive return on investment. Some sections of trail may be much more difficult to construct than others. Score is out of 15.
- Scenery – the scenery as seen from the trail will greatly determine whether people come to experience the trail. Put simply, if it is boring, they won't come. Score is out of 10.
- Railway remnants – rail trail users are excited by the prospect of re-discovering relicts and remnants of the railway era. Items such as bridges, tunnels, railway stations and sidings, railway signage, embankments and cuttings are what rail trail users expect to find and are the reason why rail trails are a unique attraction. Score is out of 10.
- Bridges – one of the most common and desirable features along any disused railway corridor is the number of remaining bridges, usually timber trestle bridges. In the case of this railway corridor, apart from the numerous timber bridges, it has an amazing array of heritage listed steel, stone and concrete bridges. However, with the removal of the steel track and sleepers from sections of the corridor, so too have many of the old timber bridges been removed. Score is out of 10.
- Tunnels - this particular railway corridor has the unique distinction of having 6 tunnels – something no other disused railway corridor in Australia has. Score is out of 10.
- Overall impression including user experience (suitability for development as a standalone rail trail) - as stated above, we are in a favourable position to assess whether a disused railway corridor, or portions of it, are good enough to be converted into a trail for recreational use. Many factors influence our opinion, including all the factors noted above. In particular, we are very interested in whether an individual segment of the corridor has enough going for it to be worthy of becoming a stand-alone rail trail. Score is out of 25.

A summary score of the assessments is set out in the table below. The full assessment is contained within Appendix 1.

On the basis of this assessment, three sections of the corridor appear outstanding candidates for development as stand-alone rail trails. These three are:

- Mundubbera to (near) Gayndah – this section has many of the heritage listed bridges, spectacular views of the Burnett River, considerable local history and volunteer groups with a passion for the development of the rail trail and the preservation of the local history. It has significant towns at (or near) each end.
- (Near) Taragoola to Boynedale and south to Ubobo - this section contains several significant bridges, passes alongside Lake Awoonga and associated wetlands and generally provides outstanding views of the surrounding landscape.

- Builyan to Kalpowar – this section contains the 6 tunnels, has several significant bridges and sidings, outstanding views and has a village at each end.

These assessments, along with consideration of issues and opportunities, provide the basis for the recommendations contained in Section 7.

Table 1: Corridor Assessments Results

Section	Distance	Score
Calliope - Taragoola	11.5	43
Taragoola - Boynedale	16.7	66
Boynedale - Nagoorin	15.6	57
Nagoorin - Ubobo	5.9	51
Ubobo - Builyan	15.0	46
Builyan – Many Peaks	3.0	66
Many Peaks - Kalpowar	29.0	80
Kalpowar - Bancroft	18.0	35
Bancroft - Mungungo	11.0	37
Mungungo - Monto	14.0	56
Monto - Mulgildie	12.0	43
Mulgildie - Kapaldo	12.0	42
Kapaldo - Abercorn	11.0	28
Abercorn - Cynthia	9.5	37
Cynthia - Ceratodus	8.4	46
Ceratodus - Eidsvold	10.0	64
Eidsvold - Grosvenor	9.0	34
Grosvenor - Malmoe	6.0	24
Malmoe - Mundubbera	26	47
Mundubbera - Gayndah	37	75

SECTION 5 - ISSUES

There are a range of issues involved when considering a rail trail project. In this project, the following issues need to be considered:

- Tenure and land ownership;
- The merits of a long trail versus a series of shorter rail trails;
- Landholder issues;
- Bridges: river and creek crossings (and overhead bridges);
- Fencing;
- Distances and services on the corridor;
- Aesthetics on the corridor;
- Costs – construction and maintenance;
- Stakeholder positions; and
- Potential other uses of the corridor.

5.1 TENURE AND LAND OWNERSHIP

The two railway corridors remain in public ownership. However, field investigations reveal two apparent tenure anomalies (neither of which are major but which do have some impact on trail design should a trail proceed).

South west of Dirnbir siding, it appears that a road has been built over some of the old railway corridor (a landholder indicated that parts of Dirnbir Road had been relocated onto the embankment from a lower level to avoid flooding). This is not a major issue given the recommendation is that the trail finish at Mt Debateable but may be of concern in the future if the possibility of extensions to Gayndah became a reality (it is acknowledged that this is unlikely).

The consultants were informed that part of the airstrip at Mundubbera aerodrome is built on the railway corridor. This has not been categorically confirmed on the ground, but it is acknowledged that the trail (should it proceed) may need to be developed on the furthest edge of the corridor from the airstrip (bearing in mind the rail corridor is 20-40 metres wide with the old railway formation generally in the middle of the corridor).

There are also sub-leases held by North Burnett Regional Council and community groups at Gayndah, Mundubbera, Monto and Mungungo and a range of landholder leases in the North Burnett. If a trail proceeds, the trail planning will need to consider whether it is possible for these to continue and, if so (which would be the assumption), how the activities will co-exist.

5.2 A LONG TRAIL VERSUS A SERIES OF SHORT TRAILS

If fully developed along its entire length, the proposed Boyne Burnett Inland Rail Trail would be a rail trail of 270.75 kilometres – the longest rail trail in Australia. Whilst this has some appeal (simply being the longest may attract some particular usage), the case can be made that

developing a series of shorter trails provides a better experience for a wider range of users (and provides for a cheaper project to both build and maintain). As indicated in Section 4, sections of the disused rail corridor have more appeal than other sections. Some sections are easier to develop than other sections primarily because of access issues and necessary building costs. Often, the best sections in terms of user appeals are not the best sections in terms of cost and ease of accessibility. A balance needs to be struck while bearing in mind that there needs to be a return on investment – a rail trail is a piece of publicly owned infrastructure that needs to provide some benefit to the communities through which it passes as well as to the wider community (whether this is the region or the State).

Long rail trails are relatively rare in Australia and New Zealand:

- The Brisbane Valley Rail Trail is the longest at 161 kilometres.
- New Zealand's Otago Central Rail Trail, which is very popular with both New Zealanders and Australians, is around 150 kilometres long.
- The Great Victorian Rail Trail in Victoria's north east is 134 kilometres long.
- The well-known Murray to the Mountains Trail, also in north east Victoria, is 116 kilometres long.

A few rail trails in Victoria, Queensland and Western Australia are in the 80-100 kilometres range, while most rail trails across Australia are less than 50 kilometres and can be cycled (at least) in a day or less.

Long trails are more common in bushwalking, where several bushwalks in Australia and New Zealand take more than one day to complete (i.e. at least one overnight stay is required to traverse from end to end).

The nature of the long walk trail (as actively marketed to bushwalkers) has changed over the years. Such trails have always been aspirational but often primarily for the serious dedicated bushwalker – the Appalachian Trail and the Pacific Crest Trail (on the east and west coast of America respectively) are two long walk trails that are well known to many users. Both trails extend for over 3,000 kilometres and require very dedicated users to walk from end to end. Of course, many users do not walk from end to end but do the trail in sections "ticking off" sections until they have "completed" the trail. In the 4 years from 2010 to 2013, some 2,600 users walked from one end of the Appalachian Trail to the other. Every year, some 3 million people use part of it. Both trails primarily offer a bushwalking experience though they do have constructed shelters (rather than relying on people camping out in tents) and often wander in and out of small towns and villages thus providing an economic boost to these small communities en route. The Bibbulmun Track (in south-west Western Australia) is modelled on the Appalachian Trail and connects Perth to Albany – an 6-8 week bushwalk for keen walkers (a distance of 1,000 kilometres). Again, many users do sections. The most recent research shows over 300,000 users use some section of the trail each year (growing from 10,000/year in its first year of operation in 1997 on a radically altered alignment) whilst some 300 users go from end to end each year (*Hughes et al 2015*). The Munda Biddi Trail parallels the Bibbulmun Track and has been developed for off-road mountain bike riding (i.e. cycle touring). It attracts 21,000 users per year (unfortunately there is no data on how many users go end to end compared to how many cycle sections of it).

Australia has a large number of wilderness long walks – different from those mentioned above in that users are very isolated. These trails are much shorter than the three mentioned above. Many of the Tasmanian walks (such as the Overland Track), the Larapinta Track in the Northern Territory, and the Great Ocean Walk (Victoria) are some of the better known Australian long walks of this nature. The Great Walks of Queensland program has been another development along similar lines (though it has not been as successful as the Tasmanian walks). The Queensland Great Walks program is designed to offer world class walking tracks with a variety of experiences from mid to long-distance as well as short walk sections that can be completed in less than one day.

The long New Zealand walks, such as the Routeburn Track and the Milford Track, have existed for a long time but have taken new steps in popularity using guided walks and "luxury" huts (limiting user numbers adds to the appeal).

The "pilgrimage style" walk has grown in popularity over the years – the Camino de Santiago (Pilgrim's Way) in Spain is the best example. Closer to Australia, the Kokoda Track in Papua New Guinea is also marketed as a pilgrimage style walk. The Camino offers a rural countryside experience whereas the Kokoda Track offers a much different bushwalking experience. The distances also vary greatly.

In recent times, there has been a significant rise in the commercialisation of long walks – people using guided and assisted tours and staying in more "glamorous" accommodation (glamping). Many commercial operators now provide a range of services on these walks. Commercial opportunities have played a major part in increasing the popularity of these long walks. This applies to many of the long walks listed above and a range of other long walks across Australia (the recently opened Three Capes Walk in Tasmania has been clearly geared towards a commercial market). The "ultimate" expression of the commercialisation of long walks has been the development of long trails on private land (in some case, these have used part of the public estate). The Scenic Rim Trail in Spicers Gap is a good example of this development offering guided walks, luxurious accommodation and provisions.

Event walks (of significant distances) have also developed in recent years. The Oxfam 100 hour walk which uses Mt Coot-tha and the adjoining D'Aguilar National Park is one good example. Training for such events also leads to a demand for long walk trails.

On a rail trail, many users can average 40-50 kilometres per day. Under this scenario, if the Boyne Burnett Inland Rail Trail was developed along its entire length, users would probably take 7 days to complete the trail if cycling.

Despite the recent growing popularity of the long walk trails, available research indicates short trails are still the most popular form of trail (this is discussed in Section 6). The low number of long rail trails in Australia may suggest that demand for such a product is relatively low, though it is hard to make a decisive comment as demand data does not exist.

One of the key issues to be considered in determining whether a long trail or a series of short trails is a better option is determining whether the significant cost outlays (discussed below) to build and maintain a long trail are warranted by likely user numbers. There is no convincing evidence that long rail trails are in demand – this may change over time as has occurred with long walk trails.

5.3 LANDHOLDER ISSUES

There will be a range of issues raised by adjoining landholders. Whilst there was no formal consultation undertaken with landholders for the preparation of the Interim Report, the consultants (at the request of the Department of Transport and Main Roads) met with two landholders who had previously indicated opposition to, and concerns with, the proposal. One of these had land in the middle of the corridor while the other was at one end of the corridor. The issues raised in conversations were typical of issues raised by adjoining landholders. One landholder was strongly opposed to the project and indicated that their neighbours along the corridor were also opposed, while the other landholder indicated that, while they were opposed, they could also see the positive aspects and had given some thought as to how they may benefit from the project.

The corridor under scrutiny passes through a range of rural landscapes. Some sections of the corridor run alongside constructed roads. This reduces the potential for adjoining landholder management issues. However, other sections bisect farm land. In some circumstances, farmland on both sides will be owned and/or used by the same landholder, while in other circumstances, different landholders will be on either side of the corridor.

Adjacent landholders are traditionally – and understandably – apprehensive about trails close to their properties. It is important that these concerns are seriously addressed before any trail conversion takes place. Many landholders resent having things imposed on them or feeling as if they have no say in what is happening around them. Many landholders are resistant to change of any sort, let alone one they perceive will have detrimental impacts on their lifestyle as well as on their farming operations. It needs to be appreciated that opposition will never completely cease – some people will never be convinced, despite a plethora of testimonials from people in very similar situations.

Conversely, adjacent landholders who understand and support the reasons behind a trail, and who see that the trail is going to be well organised and efficiently managed, will prove to be extremely valuable partners in years to come. Indeed, some of them will take advantage of business opportunities offered by the rail trail project.

Landholder consultation always raises a number of issues, all of which have been satisfactorily addressed in other rail trail projects in Australia, New Zealand and America. Issues tend to centre around a number of key elements within three major headings:

- Farm management and disruption to farming practices;
- Non-farm management issues. These are generally concerns around safety, security, privacy, theft, trespass, noise, disturbance and a range of related issues; and
- Trail management. These are generally concerns around maintenance, and the behaviour of trail users in regard to littering, toileting and other issues.

Appendix 2 includes a table outlining the issues generally raised by adjoining landholders (and other opponents) and possible solutions and also includes photographic evidence of some solutions to some issues that have worked elsewhere in Australia. The table and photos are provided as guidance; they do not substitute for detailed discussions with adjoining landholders over problems and specific tailored solutions.

Should the trail proceed (either in full or as a series of short trails), detailed trail development planning is a critical phase of the project (beyond the scope of this project). One of the central elements in this phase would be one-on-one consultation with adjoining landholders to determine, in a cooperative manner, solutions to their particular issues. It is time-consuming but absolutely necessary. It is infinitely better to be proceeding with their support (or at least the absence of opposition) than it is to ride 'rough-shod' over these concerns.

Seeking local ideas and advice always helps forge a stronger relationship. Listing concerns and working together to find resolutions is a far more productive approach than creating confrontation.

It is the experience of the consultancy team that landholders will take the time to discuss the potential trail and the problems they envisage. When issues are discussed at the actual site where the perceived problem is, discussion of possible solutions with the landholders often reveals that the problem can be minimised or completely avoided.

Involving landholders in the process, over a period of time, will help avoid feelings of alienation or mistrust. Acknowledgment of the gravity of each issue, and a ‘work together’ approach is likely to be a good starting point. As with all neighbour issues, involvement over time goes a long way to building trust.

While rail trails are hugely popular and successful once they are open, during the development phase trail proponents often have to answer a wide range of concerns that local residents may have about the impact of the proposed trail on their farming operations.

5.4 BRIDGES: RIVER AND CREEK CROSSINGS AND OVERHEAD BRIDGES

Bridges are one of the most obvious reminders of the heritage value of disused railways, one of the most significant attractions of trails along disused railways and also one of the costliest items in the development of trails on former railways.

As well as being an attraction to rail trail users, the bridges along a disused railway corridor perform an important and necessary function: enabling users to cross rivers and creeks and other permanently wet areas.

Bridges on this corridor cross standing water, cross waterways that have water in them at certain times and cross roads and stock access points.

5.4.1 BRIDGES – RETAIN OR REMOVE?

Dealing with bridges has become a significant part of work to date on the corridor prior to the decision to proceed with this study. Within the Gladstone Regional Council local area, the brief identifies approximately 72 rail crossings over permanent water, seasonally dry creeks and/or estuary crossings by culvert, wooden and/or steel bridges (Queensland Rail register records 56 bridges). Within the North Burnett Regional Council local area, the Queensland Rail register records 101 bridges.

In recent years, the Department of Transport and Main Roads has had ongoing discussions with relevant community groups about removing and preserving the railway bridges along the railway corridor between Taragoola and Reids Creek. Discussions have recently advanced as the department has let tenders to remove the rail and bridges along the corridor – a process that has started and will be ongoing during the course of this study. Many bridges (particularly between Kalpowar and Mundubbera) have already been removed. This has created some issues with the trail assessments (see Section 4) as it has reduced the potential rail trail experience. It has also meant that expensive waterway crossings will need to be installed.

A number of the existing bridges have been preserved while a number have been left in place pending the completion of the rail trail study. The Department of Transport and Main Roads have given a clear indication that remaining bridges will be assessed for removal on the basis that they are either:

- required as the only logical crossing to retain connectivity for a potential rail trail. Bridges are either definitely or probably within this category.
- Not required as there are alternatives.

Replacement and re-purposing costs are one of the considerations for rail trail bridges. Work on other timber rail trail bridges across Australia have returned costs of between $3,000 - $6,000/lineal metre up to $11,000/lineal metre (it should be noted that the State heritage listed bridge over Lockyer Creek on the Brisbane Valley Rail Trail is costing far in excess of this figure – however, it has a range of special requirements – it is on the State heritage register and is quite high).

On the Brisbane Valley Rail Trail, the project manager was able to re-use a significant timber bridge over Jimmy's Gully at Harlin. The original advice from the Project Manager was that the original timber bridge was in very poor condition. The superstructure (girders) were completely decayed with no useable timber. However, once the bad timber was cut away near the headstock connection, the substructure (piles) was in pretty good shape (this is not unusual). To get a good engineering and affordable outcome, the bridge was shortened and reduced in height. The refurbished bridge was the cheapest option and meant that a very attractive feature on the rail trail was retained. It also kept the heritage significance with the reuse of the timber piles. The bridge is engineering certified to carry pedestrian loads (including horses) with a 75-year design life.

The cost of re-decking and any other necessary structural repairs (and ongoing maintenance) to existing bridges needs to be offset against the cost of building viable alternatives. Alternatives include reinstating a bridge at the same level or constructing a new bridge, a boardwalk or a concrete floodway lower down in the watercourse. Lower level crossings will need to be built at a height that ensures that the crossing is not underwater at regular flow levels. Bypasses are often suggested as a viable alternative to bridges. In other trail projects, concrete ramps and floodways have been utilised but these are not very attractive, detracting from the user's

Repair work on the bridge over Jimmy's Gully (on left) on the Brisbane Valley Rail Trail was complex and cost $11,000/lineal metre. The Tingoora bridge on the Kingaroy Kilkivan Rail Trail (on right) was around $1,700 lineal metre for re-purposing.

experience and often come with significant maintenance issues. Not using the bridges means the loss of an essential part of the rail trail experience. If the trail proceeds, there is a strong case for retention of bridges for their heritage and convenience/utility value. Riding down a steep path to cross a creek then up an equally steep climb on the other side presents at least some trail users with daunting technical and physical challenges and necessitates careful design, construction and maintenance of gully/watercourse approaches to provide for safety and prevent erosion (use of at-grade culverts can address this issue). Retention of the bridges also retains the positive experience of riding along the top of old bridges with panoramic views of the surrounding landscape. The rail bridges were originally built in their locations primarily because railways need very gentle grades or slopes and the same principle applies to re-use of railways as recreation trails. Bridges also provide a safe crossing when water is flowing in gullies, creeks and rivers. Indicative costs for other options are presented below in Table 2:

Table 2: Waterways Crossing Alternatives

River and creek crossings	Unit costs	Comments
Re-purpose timber rail bridges	$3,000 - $6,000/lineal metre up to $11,000/lineal metre	Costs may be more if heritage or environmental matters such as lead paint need to be managed

Concrete floodways/wash-overs	$20,000 - $30,000	These costs are for simple crossings
Major concrete floodways	$600,000 - $800,000.	These were the costs three concrete floodways recently built on the Brisbane Valley Rail Trail where significant bridges were washed away. It is acknowledged that no watercourses along the potential Rail Trail route where bridges have been removed or may be removed will carry similar volumes of water.
Concrete culverts	$2,000/lineal metre installed (plus handrails where needed)	These costs are for simple crossings
Pre-fabricated bridges (Landmark or similar)	$4,000/lineal metre	Costs will vary but this assumes there are a number to be installed and there are some economies of scale

The bridges are likely to have some prospect of re-use but will require a detailed examination to confirm their true condition. Engineering certification of all bridge supporting structures and abutments is strongly recommended, to ensure their structural soundness. Conditions which affect the stability of bridges during flooding include, but not limited to, the likelihood of underwater scouring around the piers, the amount and speed of water in the waterway and upstream debris that collects against the spans/piers. An engineering test will provide an assessment of past damage. It is worth noting that railway bridges were constructed to hold heavy locomotives – and that, provided the bridge structure is sound, weight is not a significant factor when considering the re-use of rail bridges for walkers and cyclists. Horses (if they are to be permitted on this rail trail) will need to share the bridges with other rail trail users.

Unless there is an obvious reason for not doing so, all bridges should be retained on the assumption that they are potentially structurally sound pending a structural engineering assessment to confirm their capability to carry the weight of trail users (a Level 2 inspection can determine this and can be done for around $7,000/bridge). It is acknowledged that this may become an expensive exercise (at least in the medium term) and it is has been the experience on other Queensland rail trails that Councils are reluctant to take ownership and/or management of timber bridges which may require high maintenance costs. However, not using the bridges means the loss of an essential part of the rail trail experience.

It is understood that the Department of Transport and Main Roads is considering what to do with the remaining bridges (as part of the infrastructure removal process). The preferred

position is to retain all the timber bridges that are needed for the rail trails (i.e. those along the three identified short trails). However, it may be that this is not achievable (though the identification of three short trails does take some of the remaining bridges off the "needed for a rail trail" list). Those bridges identified as not being required as there are alternative crossing options can be removed and alternatives put in place (noting that this is not a no-cost or the preferred option). Bridges identified as required as either definitely or probably the only logical crossing to retain connectivity for a potential rail trail should be retained. This is particularly the case for any bridges on the corridor between Nagoorin and Futters Creek on the eastern side of the Gladstone Monto Road. The topography in this location ensures there will be major water flows from time to time from the road towards the dam – bridges represent the best way of ensuring safe crossings even in high flows.

Above: A low level timber bridge across a creek on the Kingaroy Kilkivan Rail Trail.

Above: A concrete floodway across a creek on the Kingaroy Kilkivan Rail Trail.

Above: A flooded waterway crossing on the Kingaroy Kilkivan Rail Trail.

Various options are available for waterway crossings, where the original bridge no longer exists. However, leaving a waterway crossing in a natural state (see photo at left) can lead to issues with trail usability.

Engineering certification of bridge supporting structures and abutments is strongly recommended, to ensure the structural soundness of the bridges to be re-used. The services of a qualified bridge engineer will need to be utilised to assess both bridges for structural soundness (a Level 2 integrity test is sufficient), to provide drawings of, and specifications for, a typical bridge super-structure and re-decking.

5.4.2 BRIDGE DESIGN FOR RAIL TRAIL USE

Reinstatement and refurbishment of the bridges (notably re-decking and installing handrails in compliance with Australian Standards for bridges) will be a major component of the cost of establishing the Boyne Burnett Inland Rail Trail.

To ensure re-use of the timber trestle bridges, it is critical that the steel rails and sleepers be retained to provide structural integrity to the bridge (by cutting the steel track several metres away from the bridge abutment at both ends). The sleepers and steel track will help tie the entire structure together, thereby resulting in a more rigid, stronger and longer lasting structure. With the sleepers left in place, timber bearers are fixed to them to provide a 'clean' surface to attach decking and handrails. Decking should be attached perpendicular to the direction of travel (an alternative attachment is at 45 degrees to the bearers – the attachment recommended by the Rails to Trails Conservancy). Decking timbers should never be fixed parallel to the direction of travel.

In considering bridge re-use, the use by emergency vehicles and maintenance vehicles also needs to be considered. In these circumstances, the Rails to Trails Conservancy recommends that, as a general rule, multipurpose trail bridges should support a minimum design load of 5.67 tonnes.

Notes for all bridges

Handrails will be required where the fall from the bridge decking (or culvert if used) to the ground is greater than 1 metre. This is a Standards Australia requirement. Handrails will help ensure the safety of users of the bridges, preventing people from falling over the sides and giving a sense of safety, uniformity and consistency along the trail. Timber handrails are best, providing a more aesthetic finish and are more in keeping with rail trail heritage values (although pre-fabricated bridges are unlikely to have timber handrails). One design option is to use galvanised chain link mesh (50mm diamond mesh) with support bracing to prevent children climbing through.

There are designated standards for handrails for pedestrians and cyclists (1.0 – 1.1m high for walkers and 1.3m for cyclists with a number of detailed specifications regarding design). There are no standards for horses, although the UK has adopted a height of 1.8m where fall to ground is significant.

5.5 FENCING

While fencing is covered generally under landholder issues (5.3 above), it is specifically dealt with as an issue due to its positive role in trail maintenance and its negative role in costs. Fencing along a rail trail is required for several reasons:

- To prevent unauthorised access onto the rail trail;
- To prevent authorised trail users (cyclists, walkers, horse riders) from attaining access onto adjoining properties, and to prevent unauthorised trail users (trail bikes, etc.) from illegally trespassing onto private property;
- To minimise disturbance of stock by trail users;
- To prevent encroachments by adjoining landholders;

- To delineate freehold (private property) from Crown land and to minimise encroachments and trespassing, unintended or otherwise;
- To prevent stock from straying (recognising that it is the land owner's responsibility to ensure stock does not stray); and
- To keep stock off the rail trail and away from trail users.

Significant sections of the corridor have a road as one "neighbour"; in these cases, boundary fencing is not needed (though may be necessary to discourage vehicle use). However, where the corridor traverses farming land, fencing is (or most likely is) in place. It is critical that any rail trail corridor be fenced on both sides of the trail where it passes through farms – for public liability insurance and risk reasons. The rail trail corridor cannot remain unfenced where it traverses farmland.

There may be a need for new boundary fencing both for insurance purposes and to reduce maintenance costs by allowing grazing of the "excess" corridor. One of the options to maintain the corridor (as oppose to maintaining the actual trail) is to allow adjoining or adjacent landholders grazing permits over those parts of the corridor not required for a trail (a 6 metre envelope incorporating the trail on the railway formation). As the original railway corridor is mostly 20 – 40 metres wide, the excess corridor can be leased to adjoining landholders. This approach will minimise the reduction in land that they currently farm and enable stock to 'maintain' the corridor outside of the fenced trail corridor (noting that some landholders already have stock on the corridor).

There are four options for corridor maintenance that will impact significantly on fencing requirements:

- Option 1. Adjoining landholders are offered the opportunity to graze the "excess" corridor. Interest needs to be sought before this major cost exercise is undertaken. Use of permanent fencing to facilitate grazing the "remnant" corridor will involve installing new fencing closer in to the trail (rather than at the property boundary). This ensures ongoing grazing access to the "remnant" corridor, even if land ownership changes. This may require the erection of new fences along the entire corridor so that there is a 6 metre trail corridor along the entire route (depending on whether landholders are interested).

  This option will involve a high capital cost. This option provides for low maintenance costs in terms of reduced slashing requirements (though human resources will be required to manage this process).

- Option 2 would allow stock to graze the "remnant" parts of the corridor at given times of the year to manage vegetation growth. The best approach to temporary seasonal grazing may be to allow grazing by the use of temporary electric fencing delineating the grazing areas. This is a low-cost solution and the payment for electric fencing can be negotiated between the landowner and the trail manager. Livestock could be permitted on the corridor at certain times of the year for a limited period of time. Under this management scenario, stock should be moved off the corridor on weekends (this is anticipated to be the highest use time). This approach reduces the opportunities for

negative interactions between stock and trail users (though none are anticipated). The grazing opportunity is offered to adjoining/nearby landholders as needed. This approach needs the trail manager to actively seek and manage temporary licences. This option offers a low capital cost, and relatively low maintenance cost (falling between Option 1 and Option 3). However, advice from one adjoining landholder is that this will not work because cattle will simply push through and damage the fence even though it is electric.

- **Option 3** is basically a 'do nothing' option. No new "internal" fencing would be erected though it may be that boundary fencing will still be required. The trail manager would manage the entire corridor width, slashing up to 5 - 6 times/year depending on growing seasons. This has effectively no capital cost but a very high maintenance cost. It also means that no stock would be permitted on the corridor due to public safety and public liability concerns.
- **Option 4** is the option utilised by the manager of the Brisbane Valley Rail Trail. The corridor is fenced on the boundary with neighbours and cattle graze inside the rail trail corridor with unfettered access across the trail corridor thus reducing the maintenance requirements for the trail manager (in terms of keeping grasses under control). This is not a recommended option due to insurance issues and potential damage to the corridor by livestock particularly in wet weather.

5.6 DISTANCES AND SERVICES ON THE CORRIDOR

One-way trails (or out-and-back trails) need an anchor at both ends to be attractive to users. The best one-way trails (including many rail trails) have natural terminuses in major centres or towns or pass through major towns. The proposed long trail does not really offer this opportunity given likely start and end points though developing a series of shorter trails may overcome this issue to an extent. There are quite significant distances between established services (this is not to understate the opportunity for services to establish in response to the development of a rail trail).

- The trail would ideally start in Calliope (a major town and the biggest town along the corridor). However, Queensland Rail has determined to retain a sub-lease over the corridor from Calliope to Taragoola. The study area begins at Taragoola. Taragoola is not easily accessible and there is little of interest at the former siding. Should the trail proceed, a trailhead for this section is best developed at (or in the vicinity of) Boynedale Bush Camp which is easily accessible. Whilst there are no commercial facilities at this location, it is a well-established and well-used camping area.
- The distance between Taragoola and Ubobo (where there are existing services) is almost 50 kilometres. From Boynedale Bush Camp to Ubobo is 22.5 kilometres – a comfortable ride for many trail users.
- Ubobo to Builyan (where there are existing services) is 15 kilometres and Builyan to Many Peaks (which has limited services) is 3 kilometres.
- From Many Peaks to Kalpowar is 29 kilometres without any services; however, the appeal of the tunnels will be sufficient to override any concerns about services. This

section provides one of the truly remote experiences of the corridor. Kalpowar has limited services though there is some bunkhouse-style accommodation.

- Kalpowar to Mungungo is 29 kilometres, then it is a further 14 kilometres to Monto and 12 kilometres on is Mulgildie. These towns and villages provide services (limited in the case of Mungungo and Mulgildie) so there is some appeal to users (though 29 kilometres is a long distance without any other attractions such as a tunnel).
- Users would then be faced with a 51 kilometre ride from Mulgildie to Eidsvold. There is a village at Abercorn but it appears to have no services other than a public phone box.
- Eidsvold to Mundubbera is a distance of 41 kilometres.
- The trailheads for the Mundubbera-Gayndah rail trail also present issues of a lack of an established village at the Gayndah end. The study area for the project ends at Reids Creek. This is primarily due to the absence of a bridge over Reids Creek (it was washed away in major flooding) and consequently no connection to Gayndah on the disused railway corridor. There appears to be no particular benefit to extending the rail trail to the western bank of Reids Creek. There are plenty of opportunities for river views along the railway corridor parallel to the Burnett River in this section. One possibility is to end the rail trail (create a trailhead) at Dirnbir siding as this is the closest siding to Reids Creek. However, the siding is not easily accessible and work would be required to create a trailhead. In addition, it appears that a road has been built over some of the old railway corridor south west of Dirnbir siding (a landholder indicated that parts of Dirnbir Road had been relocated up the embankment to avoid flooding). Therefore, the logical trail end should be at Mt Debateable siding, which provides plenty of room for parking and is easily accessible from Gayndah. A spur trail is recommended to take users some 1.5 kilometres further east on the rail corridor to the stone pitched embankments which will be of considerable interest.

In summary, there are significant distances between “replenishment points” (with accommodation and other basic services) between Kalpowar and Mundubbera.

5.7 AESTHETICS ON THE CORRIDOR

In addition to the distance between replenishment points, much of the corridor between Kalpowar and Mundubbera runs alongside either Gladstone Monto Road or the Burnett Highway. While the corridor does meander across this landscape and at times is far from these major roads, there are also significant sections of it alongside these roads. This detracts from the user experience (while admittedly reducing construction costs). This is part of the reason that these sections did not score well in the corridor assessments (see Section 4). While trail users will tolerate trail sections alongside major roads, it is best for this not be a major component. In Victoria, (the home of most of Australia’s rail trails), rail trails do not run alongside roads for any significant proportion of their length. Approximately 12% of the Ballarat Skipton Rail Trail (57 kilometres) runs alongside roads (both major and minor), approximately 2% of the Port Fairy Warrnambool Rail Trail (37 kilometres) runs alongside roads (mostly minor roads), and 20% of the highly successful Lilydale Warburton Rail Trail (40 kilometres) runs alongside roads (mostly minor roads).

5.8 COSTS – CONSTRUCTION AND MAINTENANCE

Costs – both capital and maintenance – are a major consideration in any public infrastructure project. These need to be offset against a range of benefits – both economic and non-economic. Detailed costings are not part of this project but the Councils need to have some understanding of the possible construction and maintenance costs. The following presents a broad discussion on costs informed by other projects and real life rail trail costs and broad inspections of the corridor.

5.8.1 CAPITAL COSTS

Per unit construction rates are discussed below. These will be applied more specifically in the next stage of the project but it gives some indication of likely costs:

- Trail construction. Construction includes stripping of top soil, boxing out, cleaning side drains, compacting subgrade (to 150mm), filling with road base, levelling, trimming, shaping and compacting: $60/lineal metre (for 2.5m trail width). This assumes the formation is clean and reasonably level. Recent advice from the Department of Transport and Main Roads was that the contractors on sections of the Brisbane Valley Rail Trail used a 'road stabilizing machine' to create the new surface working out at a cost of $1,000/km (compared with $60,000/km for the more detailed process described above). The use of this machine depends on how much gravel or ballast is left in place. On another recent rail trail project in NSW, the consultants were advised by the relevant Local Government works engineer that, on that particular project, there would be no need for stripping of topsoil. A grader would level the existing ballast material which was uniformly in place and provided a substantial existing formation material. A 150mm of pavement gravel mix on top would require around 0.45 m^3/lineal metre. Allowing $20/lineal metre for cleaning table drains, gravel, trim and compact would result in a cost of around $20,000 per km compared with $60,000/km (as detailed above). Surfacing costs have the potential to vary greatly – however, attention does not need to be paid to getting the treatment right initially otherwise costly repairs will be needed much sooner than anticipated. In addition and just as importantly the user experience can be greatly reduced meaning user numbers decrease and forecast benefits are not realised.
- Clearing. Clearing costs (prior to earthworks) vary:
  - Slashing or side pruning (no heavier clearing will be required along much of the corridor). The cost varies from $1,000/km for slashing of cleared trail route (prior to earthworks), to side pruning at $2,000/km (i.e. track may exist but needs to be widened). An average cost of $1,500/km is reasonable.
  - Minor clearing is $3,000/km.
  - Moderate clearing (most notably the removal of small trees in the formation) is $6,800/km.
  - Heavy clearing (large trees and/or significant undergrowth in the formation) is $14,000/km.
- Bridge Costs:

- Installing pre-fabricated bridges (Landmark or similar) - $4,000/lineal metre. Handrails will be required (except where specified) as fall to the ground generally exceeds one metre.
- Bridge repurposing costs can vary from $3,000/lineal metre to $6,000/lineal metre for re-decking and erecting handrails on existing timber bridges (where the bridge is sound). Costs can be up to $11,000/lineal metre.

- Alternative waterway crossings costs:
  - $2,000/lineal metre for culverts.
  - $4,000/lineal metre for pre-fabricated bridges.
  - $20,000 - $30,000/unit for simple concrete floodways.
  - $600,000 - $800,000 for complex concrete floodways (it is likely that none of these more expensive concrete floodways will be required as bridges will be retained over major waterways).
- Purchase and installation of “Trailhead” sign pointing in to trailhead from road(s) - $1,600/unit.
- Purchase and installation of “Trailhead” map panels at trailhead - $5,500/unit.
- Purchase and installation of “Trail crossing” signs on roads - $600/sign.
- Purchase and installation of Trail Directional Markers (incorporating emergency markers) - $600/unit installed.
- Purchase and installation of signage for road crossings (i.e. “No Trail Bikes”, Road Ahead, Stop/Give Way, road name, trail name/logo etc.) – cost varies depending on complexity of road crossing, traffic volumes, extent of barrier fencing and gating etc. - $600/crossing (general allowance).
- Chicane gate and management access gate (primarily at road crossings) - $2,700/set with additional $200/’panel’ if required (additional width of timber fencing either side of gate and chicane).
- Stock and machinery crossing point - $3,800 ea. (includes management access gates and self-closing trail user gates on both sides of crossing).
- Farm access gate/management access gate (installed in new or existing fence) - $1,000/unit.
- Removal of fences across corridor - $200.
- Fencing - $15/metre installed. This is discussed above in 5.5. The default situation would be to provide a trail corridor of 6 metres wide (with the formation in the middle forming the basis of the trail) along the entire length of the rail corridor. This allows the remaining corridor beyond the 6 metre “envelope” to be grazed by adjoining or other landholders thus reducing the maintenance costs. This adds to the construction costs but significantly reduces the maintenance costs.

Bringing all this together (without preparing detailed works lists for the entire rail corridor), construction costs would vary between $110,000/km and $150,000/km. Sections with a significant number of timber bridges that need re-purposing would be higher, though alternative waterway crossings would also be expensive. Sections with large numbers of bridges would potentially be over $200,000/km. The costs of tunnel repairs are not known at this stage but would add to the project costs.

It is worth noting that these costs do not include approvals (2.5%), contingencies (15%) and project management (5%) which are likely to add 22.5% to the project costs.

If it is assumed that half of the trail can be constructed at the lower cost (an average of $130,000/km) and half can be constructed at the higher cost (allow $200,000/km), building a long trail on the entire distance of the corridor would cost in the order of **$45 million**.

The walls of the 6 tunnels between Many Peaks and Kalpowar appear solid and safe. However, a detailed inspection will provide further information on their integrity.

5.8.2 MAINTENANCE COSTS

Ongoing trail maintenance is a crucial component of an effective management program – yet it is often neglected until too late. Countless quality trails have literally disappeared because no one planned a maintenance program and no one wanted to fund even essential ongoing repairs. It is therefore essential that funds be set aside in yearly budgets for maintenance of this trail - to ensure user safety and enjoyment, and to minimise liability risks for land managers.

Ongoing maintenance can be minimised by building a trail well in the first place. A well-constructed trail surface will last considerably longer than a poorly built trail. Signs, gates, and posts installed in substantial footings stand less risk of being stolen or damaged. Well designed, well-built and well installed management access gates and trail user gates will keep motor vehicles and motorised trail bikes off the trail with a consequent lessened need for surface repairs.

Trail furniture (such as bench seats, trail directional marker posts and interpretation) should be installed in substantial footings sufficient to withstand high winds and theft. These should require minimal ongoing maintenance. Care needs to be taken by maintenance vehicles when travelling along the trail so as not to damage the surface.

The most frequent maintenance task will be attending to fallen branches and limbs, repairing trail surfaces, replacing stolen or damaged signs (including road signs), clearing culverts and under bridges and ensuring gates and fences are functioning as intended.

Resourcing a maintenance program is crucial, and funds will be required on an ongoing basis to enable this essential maintenance. It would be short sighted to go ahead and build the Boyne Burnett Inland Rail Trail (or parts of it) and then baulk at the demands of managing and maintaining it.

Estimating the cost of maintaining a trail is difficult due to the unpredictability of events such as floods, fires, high winds and stormwater runoff, as well as the tenure and management arrangements for the trail. Deliberate and wilful damage and vandalism can also contribute significantly to the need for ongoing maintenance and replacement of infrastructure. Volunteers can be organised (through a coordinated program) to carry out much of the work at a limited cost to the trail manager.

Trail managers and "Friends of …" groups often arrange 'Adopt-a-Trail' programs to ensure the rail trail is well maintained – by volunteers. The majority of some trails, such as the Bibbulmun Track, is maintained by volunteers.

Evidence of actual trail maintenance costs for individual items along a rail trail, or any trail for that matter, are scarce. The Rail to Trails Conservancy in the USA (*Rail-Trail Maintenance and Operation – Ensuring the Future of Your Trails – A Survey of 100 Rail-Trails, July 2005*) provides two general answers for why it is difficult to estimate maintenance costs. First, the trail may be part of a larger budget for a single park or even an entire parks and recreation department. Specific costs for the trail aren't separated out. Second, small trail groups, though run by competent and extremely dedicated volunteers, tend to be 'seat-of-the-pants' operations. Maintenance is done "as needed," funds are raised "as needed," and the people are volunteering because they love the trail, not because they love doing administrative tasks like budgeting.

Maintenance responsibility does appear to significantly affect cost. Approximately 60% of the surveyed trails reporting costs were maintained primarily by a government agency, implying paid staff and/or contractors. The other 40% of trails were primarily maintained by a non-profit or volunteer organisation. Annual costs for government-run trails were just over $2,000 per mile ($1,250/km). This is not much more than the overall average of $1,500/mile ($940/km), but it nearly triples the average for volunteer-run trails of just under $700 per mile ($440/km). (*Note: these are US dollars*).

In Victoria, the Murrindindi Shire Council manages and maintains approximately 85% of the (134km) Great Victorian Rail Trail. It spends around $2,000/km on maintenance activities each year which the trail manager believes is insufficient. Anecdotal information indicates that initial construction issues necessitate an increased level of maintenance of the trail surface (and drainage through cuttings). A higher level of (initial) construction quality (i.e. better trail surfacing) would mean less ongoing maintenance.

Local volunteers from Mundubbera and Gayndah have already been doing an outstanding service by renovating signs and keeping sidings well maintained. This volunteer effort – before a rail trail is already in place – augurs well for any future volunteer input that may be required should a trail be developed.

Volunteers could undertake much of the ongoing maintenance of the trail if a volunteer maintenance program is arranged. It should be ensured that whoever is charged with ongoing responsibility for managing the trails has genuine and specific trail knowledge. It is not sufficient to be a skilled gardener, conservationist or environmental scientist. If training is required to bring staff knowledge levels up to a high standard, this should be seen as a priority to be undertaken early in the construction process. Trail skills are better learned over a longer time, with hands-on practice, than in short briefing sessions.

The biggest maintenance costs involved are obviously maintenance of the items that initially cost the most to install – surfacing and bridges.

It is difficult estimating the costs involved in maintaining a trail until every last bridge and other infrastructure items have been installed.

As stated earlier, ongoing maintenance can be minimised by building a trail well in the first place. This means the better the initial trail surface, the lower will be the ongoing maintenance of that trail surface. A similar situation applies to bridges. Re-constructed and refurbished bridges will require little or no maintenance for many years. However, after perhaps a decade

of use they will require more and more maintenance of decking timbers (if used) and more scrutiny of fixings (depending on what materials are used for decking).

The use of volunteers to undertake many of the routine repairs and cleaning tasks can substantially reduce the costs.

Whilst it is impossible to provide an estimate of ongoing maintenance at this stage, an allowance of $2,000 - $3,000/km/year is not an unreasonable basis on which to work. Some notes on these figures follow:

- This general cost is on the high side of figures that have been obtained in research (noting the caveats about very limited available data).
- Good asset management practice suggests money be put aside every year for maintenance, even though much of it will not be spent in the first 5-10 years as there will be limited need for maintenance. The annual figure is an "end-case scenario".
- This figure range represents full commercial rates (but of course this would be far less if volunteers are involved). US evidence suggests significant savings using volunteer maintenance (trails maintained by volunteers costs one-third of those maintained by Government entities).
- The maintenance estimate provided in the report is an estimate only based upon certain design parameters and construction standards. For example, restored timber bridges using timber decking and timber handrails provide the essential rail trail experience. However, bridges could be re-purposed using other material such as expanded steel mesh or fibreglass reinforced plastic for the decking which would have a different maintenance regime and costing. It is impossible to estimate maintenance costs to the most accurate possible level until construction is finished and every construction item is catalogued (noting that events like wildfires and major floods are events that maintenance budgets never account for).
- Almost 50% of any maintenance budget is usually surface repair. There is often very limited need for surface repairs in the first 5 years (depending on how the trail is constructed).
- Bridges are even less likely to need repair for the first 5 years (or even 10 years) of a trail's life. Re-constructed and refurbished bridges will require little or no maintenance for many years. However, after perhaps a decade of use they will require more and more maintenance of decking timbers (if used) and more scrutiny of fixings (depending on what materials are used for decking). Pre-fabricated bridges, culverts and concrete causeways require less maintenance over time.
- Maintenance on these two critical elements (surface and bridges) Is even less likely to be needed in the first 5-10 years if the trail is built well in the first place. The key message is spend more on construction and spend less on maintenance.
- The likely maintenance costs in the first few years of a trail's life will focus on sign damage and inspections.

Reducing These Costs

The Bibbulmun Track Volunteer Program relies on the bushwalking community, and Bibbulmun Track walkers in particular, to commit their time to assist in the maintenance and delivery of

the Foundation's Programs and services (the Bibbulmun Track is 1,000 kms walking track from Perth to Albany). Volunteers:

- Undertake a range of light maintenance tasks including pruning, clearing debris from the Track, replacing missing trail markers, installing water bars, removing litter and monitoring the campsite.
- Attend to their section at least 4 times per year (i.e. once every 3 months). In areas closer to Perth, or on sections that require a higher level of maintenance, more frequent visits are preferred.
- Submit a report to the Volunteer Coordinator after each maintenance visit. These reports are vital in assisting the Bibbulmun Track Foundation and the Parks Department in dealing with immediate problems and in planning for the future of the Track.

It is estimated that around 80% of the Bibbulmun Track in maintained by volunteers in this program. Hence, an enormous amount of money is saved as the volunteers carry out many of the inspections and minor repair work.

There are numerous other examples across Australia of volunteers making a major contribution to trail maintenance.

5.9 STAKEHOLDER POSITIONS

While management arrangements for Queensland rail trails are not set to a standard model, there is no doubt that Local Governments are and will be a key player in ongoing management. Local Governments have the most significant role in managing the Kilkivan Kingaroy Rail Trail, the Atherton Tablelands Rail Trail, the Capricorn Coast Pineapple Rail Trail (Yeppoon), and Mary to the Bay Rail Trail (Hervey Bay) and key roles in the management of the Brisbane Valley Rail Trail. It is likely that this will continue into the future – community support is critical and vital to a rail trail's success, but Local Governments' role will be a key success factor (or otherwise).

In discussions with both Gladstone Regional Council and North Burnett Regional Council, there are general concerns about trail costs - both construction and maintenance (though maintenance costs appear to be a more significant concern). While both Councils support this study, their continuing support for a rail trail (or series of rail trails) is partially dependent on the outcomes of the study and a clear articulation of costs and benefits.

The community groups that have come forward prior to this study and in the course of the study have indicated a very strong support for the proposal. There is an active group at the Gayndah end who are undertaking restorative works along the corridor between Gayndah and Mundubbera at their own expense. The Boyne Burnett Inland Rail Trail Inc. has a large number of members who regularly attend meetings and provide resources to the project.

There has been no formal consultation with landholders along the corridor for this project but two landholders have been spoken to at the request of the Department of Transport and Main Roads. As noted above in 5.3, one landholder was strongly opposed to the project and indicated that their neighbours along the corridor were also opposed, while the other landholder indicated that, while they were opposed, they could also see the positive aspects and had given some thought as to how they may benefit from the project.

5.10 POTENTIAL OTHER USES OF THE CORRIDOR

In recent years there has been a proposal to bring some form of tourist train back to the corridor (or at least to parts of the corridor particularly around the tunnels). A proposal by Monto Rail Adventures to develop a railway tourist attraction stalled after the Department of Transport and Main Roads rejected the business plan in 2015. The proposal was for a light rail tourist venture to operate from Kalpowar to Golembil, with plans to stretch to Many Peaks in later stages. It is understood that this proposal has also been bought to the attention of the Boyne Burnett Inland Rail Trail Inc., but the group has determined to focus on the rail trail proposal. Such proposals are commonplace on disused rail corridors. There are however a limited number of successful operations across Australia – running costs including the need to address various safety issues are one of the most significant issues contributing to the low number of successfully operating proposals.

The other major potential use of the corridor was bought into recent focus by the preparation of the document entitled *Building the future trade potential of the Wide Bay Burnett: Driving prosperity through greater infrastructure investment*. The report was commissioned by Bundaberg Regional Council, Wide Bay Burnett Regional Organisation of Councils and the Gladstone Ports Corporation. A summary document was released in October 2018 (it is understood that a much more comprehensive document has been prepared but not released publicly). Of relevance to this study is that the document articulates that one of the infrastructure projects necessary to develop the region is to develop a rail link connecting Port of Bundaberg with the Wide Bay Burnett Minerals Province. The publicly available report provides no detail of whether the existing railway corridor could be used or whether a completely new alignment is needed. When this issue has arisen with other rail trail projects, the advice has generally been that existing historic railway corridors cannot be used (either in whole or part) due to their alignments – newer high speed trains need straighter alignments than historic railways have. However, it is not known whether any new rail line should it ever be built could use the existing railway alignment. It is understood that the State Government is committed to retaining the railway corridor in public ownership which would allow it to be used for other public purposes should the need arise (other than a rail trail).

Unfortunately, very little detail of this proposal is known; it can only be noted for this study. Further details may be made available as the rail trail feasibility study progresses.

SECTION 6 - OPPORTUNITIES

There are a number of specific elements within the area encompassed by the proposed trail route that provide opportunities and reasons for why a trail should be built.

6.1 APPEALING LANDSCAPES AND INFRASTRUCTURE

The proposed Boyne Burnett Inland Rail Trail would pass through some very attractive scenery.

The journey alongside Lake Awoonga provides views of and over the lake and the nearby mountains which are quite enjoyable. There are great panoramic views afforded in sections, often due to very high and stunning embankments. This is notably the case as the corridor proceeds through the Dawes Range, and along the Burnett River from Mundubbera towards Reids Creek.

There are farming vistas through the Boyne Valley and between Kalpowar and Mundubbera (as well as providing near and far views of hilly countryside). The attractiveness of these quintessential rural landscapes to city dwellers in particular should not be underestimated. Views of gently undulating countryside, containing water bodies and trees are the most attractive and relaxing for many people (St Leger 2004).

The quality of intact railway heritage items varies along the corridor. Many bridges remain including significant and attractive bridges between Mundubbera and Reids Creek and at the northern end of the corridor in the vicinity of Lake Awoonga. Some of the railway stations remain and have been restored. The tunnels immediately north of Kalpowar provide an outstanding example of railway tunnels and the presence of 6 in a very short section is probably unmatched on an Australian rail trail. The hog's back sleepers, an unusual feature, add to the appeal of the tunnels. Much of the original railway signage has been removed, though it is being restored in the section between Mundubbera and Reids Creek.

Appealing landscapes and scenery are certainly evident along sections of the former railway corridor.

There are also a range of other interesting features along the railway corridor – a stone pitched embankment near Mt Debateable, potential koala habitat, and hand dug mine shafts can all be found at the southern end of the corridor.

6.2 TOPOGRAPHY OF THE PREFERRED ROUTE

One of the major appeals of rail trails is the gentle gradient, suitable for all types of cyclists, and walkers (gradient is typically less of an issue for horse riders). This is the market that would be attracted to a rail trail. Their demands are paramount in considering trail feasibility.

6.3 CONNECTIONS BETWEEN TOWNS

Taking trail users through towns will provide new business opportunities for service providers. Presently, there are a relatively limited number of services that would appeal to trail users in many of the smaller settlements between Taragoola and Reids Creek. This is not surprising given that the towns are not particularly large (Calliope, Monto, Mundubbera and Gayndah are the largest settlements close to the trail). Development of the rail trail may provide a range of new business opportunities (or allow existing businesses to expand). Such opportunities are examined later in this section.

The trail will make an actual connection between the towns and villages en route (whether it is a shorter rail trail or the longer rail trail) – one that reinforces historic connections.

The distances between towns is also important when considering likely users. The good one-way trails often provide opportunities for short, medium and long length rides and walks on the main trail. There are such options on this trail should it proceed though the major towns are some distance apart.

Connecting the towns and villages via a trail will also provide an opportunity for local residents to choose a non-motorised connection for visiting friends or undertaking some exercise. A non-motorised trail provides another psychological link between the towns on the route.

Development of a series of rail trails, including installation of decking and handrails on bridges, will enable easy walking and cycling between towns.

6.4 A TRAIL WITH ANCHORS AT EACH END

One-way trails (or out-and-back trails) need an anchor at both ends to be attractive to users. The best one-way trails (including many rail trails) have natural terminuses in major centres or towns or pass through major towns. The proposed long trail does not really offer this opportunity given likely start and end points (discussed in Section 5) though developing a series of shorter trails may overcome this issue to an extent.

6.5 BROADENING THE RECREATION OFFERINGS

Provision of an additional off-road trail adds to the list of tourist offerings in the region and encourages visitors to stay a little longer to go for a pleasant walk or ride. A new nature-based attraction has the power to retain those visitors for longer, spending money and generating business opportunities. Natural assets that are utilised for outdoor recreation are found in the region. There are a number of national parks and state forests in the region including the Cania Gorge National Park and Mt Walsh National Park; adding a rail trail to that list will encourage more visitors looking for that type of experience. Utilising the Burnett River for canoe and kayak paddling both adds to the outdoor recreation offerings as well as providing an opportunity for a circular trail utilising the river and the rail trail in the southern section of the trail. Lake Awoonga offers a range of outdoor recreation experiences – boating, fishing, swimming, paddling, walking, photography. Boynedale Bush Camp offers accomodation potentially right alongside the rail trail.

Provision of a rail trail within the region will increase the attractiveness of the region for those people who like outdoor recreation combined with food opportunities. The region provides a rural experience supported by a limited number of events and festivals. A rail trail would add to this range of attractions for a number of markets.

It is worth noting that many rail trail users come from the (generally) higher paying professional and managerial occupations; combined with the typical age profile, food and wine consumption form a major motivator for those using rail trails and many rail trails (in South Australia and Victoria) have built upon this desire by users.

6.6 COMMUNITY SUPPORT

One of the key questions to be considered in determining whether a trail is feasible is to determine whether there are supportive and/or strong advocates within the community through which the proposed trail passes. This covers two key elements – promotion of the trail idea and the trail itself once constructed, and ongoing maintenance. While no formal consultation was carried out for this interim report, the consultants attended a meeting of the Boyne Burnett Inland Rail Trail Inc to meet key stakeholders. The number of people at the meeting (in the order of 50) was an impressive display of support for the project (and this was one of the smaller meetings). There does appear to be a ground swell of support from groups and individuals within the surrounding communities. It is also evident that there are strong advocates within the communities who have expressed a desire to get more involved in ensuring the proposed rail trail gets developed. This was particularly demonstrated by another group who took the consultants to inspect the section of corridor between Mundubbera and

Reids Creek. As noted in 6.1, much of the original railway signage is being restored by this group in the section between Mundubbera and Reids Creek. It is acknowledged that there are (and will be) opponents to the project who have not had the opportunity to contribute to any discussion (ta potential range of issues raised in opposition to the project is included in Section 5). A committed community-based group is an important element in a rail trail's success. This commitment can be tapped into to ensure the rail trails succeeds should it proceed for ongoing maintenance and promotion. However, committed non-government groups should not be relied upon to take on the formal task of being the trail manager.

6.7 VISITOR MARKETS

A trail such as the Boyne Burnett Inland Rail Trail will provide a number of opportunities generally associated with recreation trails. These opportunities will be provided in general whether the trail runs the whole length of the corridor, or whether a series of shorter trails is developed.

A trail will bring additional tourists and keep them longer in the area. Other possible benefits from developing the trail include:

- Improvements to community connectivity;
- Increasing recreational options for local people; and
- Creating opportunities to build on existing industries and enterprises of the area.

6.7.1 GENERAL VISITOR TRENDS

Tourism Research Australia and Destination NSW have undertaken research on a number of visitor markets relevant to rail trails. While the research focusses on NSW, there are a number of general observations of relevance.

Regional destinations offer key experiences for what Australians are seeking from their holidays. While Australian travellers do not have one typical destination in mind when they think about regional travel, there are some experiences common to everybody's idea of what is on offer in regional Australia. It looks at these experiences for each of the three major markets – millennials, families and over 55s.

- The millennials age group seeks authentic and genuine travel experiences, together with a variety of active and passive ways to enjoy them. For older millennials, in the 25-34 age group, travel is about rejuvenation and search for self. Through travel, this group seeks to recover from work and is a way of getting away from responsibilities of everyday life. They feel the need for regular breaks to sustain and keep themselves going and seek out relaxing experiences that they can't have at home. (*Tourism Research Australia, 2017(a*)). For regional destinations to attract millennials, they need to offer something unique and have basic, yet sophisticated experiences. This could include nature-based experiences, as well as country food and wine. Short breaks offer millennials an opportunity to relax and reflect, often with friends. Importantly, in this context, rest and relaxation does not mean just passive experiences, but rather experiences that promote discovery, rejuvenation and an opportunity to forget about routine life, and these can include very active pursuits. (*Tourism Research Australia, 2017(a)).*

- At the opposite end of the age range, the over 55s is one of most powerful age groups in Australia in terms of financial capability and life expectancy is increasing. In a recent survey of Australians aged over 55 years, 96% of respondents took at least one leisure trip within Australia in the past 12 months, and the percentage of respondents who took two and three leisure trips was 26% and 23% respectively. This age group preferred domestic travel to international travel. According to the survey, the most important reasons for over 55s taking overnight leisure trips are spending time with family and friends, getting away from daily routine, having fun, spending time with partner and to relax mentally. (*Destination NSW, May 2015*).
- Within the over 55s market (and perhaps importantly a distinct sub-set of it), the research identifies a global mega-trend that the fifties are the new demographic for travel brands – more people are choosing to travel earlier than retirement to enjoy the more active or immersive experiences that destinations have to offer. This is one of the key demographics for rail trails.

For families, domestic travel offers an opportunity to have a break from normal routine, to reconnect and open the lines of communication between adults and children without time pressures. Ease and convenience are the key drivers for domestic travel by families in Australia, and they are looking for destinations that are relaxed and easy with beautiful surroundings, preferably only a few hours' drive from home. (*Destination NSW, June 2015*). Destinations that offer relaxation, novelty, outdoor activities, arts and heritage sites are appealing to families. However, family travellers seek destinations for relaxation more than non-family travellers. Family travellers seek holidays offering experiences that are authentic, different to normal and which create positive memories. The future of family tourism lies in catering for the increasing diversity of the family market. It includes offering opportunities for relaxation as well as activities that help create happy memories that appeal to the different ages of travellers in diverse family group structures. This market (particularly the 35-54 age group) is higher yield and is continuing to show positive growth *(Schänzel and Yeoman 2015).*

6.7.2 GENERAL VISITOR NUMBERS

Available figures for the two regions which the rail corridor traverses show:

- In 2017, the Gladstone region hosted 469,000 domestic overnight visitors and 427,000 domestic day trippers, 54,000 international visitors also came to the region (for a total of 950,000 visitors). 171,000 international and domestic visitors were unaccompanied and 139,000 were couples. Holidaying and visiting friends and relatives made up the highest percentage of purpose of visit (75% of domestic visitors came for these two reasons). (*Tourism Research Australia, 2017(b)).*
- Tourism data for North Burnett is limited as it does not appear in the Tourism Research Australia profiles. The *Bundaberg North Burnett Destination Tourism Plan 2014 -2020* (though dated) provides information on tourism numbers to the region. The report notes that on average (between 2009 and 2012) 93,000 visitors travelled to the North Burnett. 64% of these visitors came for either holidaying or visiting friends and relatives. 71% came from Regional Queensland and 23% from Brisbane.

The short break market (1-3 days) has been a predominant market for domestic tourism for some time and it remains a key market for visitors to the region. People on short breaks often look for a trail experience as part of their holiday.

6.8 TRAIL USERS – A SIGNIFICANT MARKET

While general visitor numbers and motivations are a guide, it is important to look more closely at trail user numbers and motivations to fully understand who uses trails and why.

6.8.1 TRAIL USER NUMBERS

6.8.1.1 Visitors

Recreation trails provide an important piece of tourism infrastructure and provide experiences in the nature-based tourism market and particularly the adventure tourism market. Nature-based tourism is estimated to be growing at 10-30% per annum – a significant growth market to target *(Victorian Nature-based Tourism Strategy 2008-2012).*

Research (cited in *Destination Country and Outback NSW's Destination Management Plan 2018-2020*) reports that Australians have participated in a broad range of nature-based activities as part of their overnight travel over the last year (2017). This includes:

- An increase of 12% to 10.8 million visitors to national parks;
- More people undertaking bushwalking, which grew by 9% to 11.3 million; and
- Growth of 12% in water-based activities and sports, up to 3.4 million visitors.

There has also been an increase in the number of domestic overnight travellers who connect with local communities, in particular through attending festivals, events and fairs, which grew by 14% to around 3.4 million.

Tourism Research Australia estimates that 51% of domestic overnight nature visitors take part in bushwalking / rainforest walks, whilst 39% of domestic day visitors and 37% of international visitors enjoy this type of activity (*TRA Snapshots 2009*).

A number of high-profile trails in Australia and New Zealand provide examples of user numbers that can be achieved on tracks and trails. Users are attracted to developed trails that are both 'known' or advertised in some way and offer a range of facilities such as signage and interpretation, parking, toilets and water. Each trail has its own reasons for success. One of the common elements is that the trail itself is the physical element (and is often managed by a Government agency) while private sector businesses and community-based organisations (such as the Bibbulmun Track Foundation) provide the 'experiences' of and around the trail.

- Use of the Bibbulmun Track (WA's long-distance walking track linking Perth and Albany) increased from 10,000 in 1998 to 35,000 in 1999-2000 to 137,500 in 2003 *(Colmar Brunton 2004)* to over 167,000 in 2008 *(Colmar Brunton 2009).* In 2015 over 300,000 people used the track (*Hughes et al 2015*). 79% of 2007/08 users came to the track specifically to use the track. The Bibbulmun Track offers a wide range of experiences, from a gentle stroll to enjoy the peace and beauty of the natural environment, to an epic eight-week adventure. The trail offers a diversity of accommodation – users can

enjoy a wilderness experience by camping out, they can join a guided group, a tour, or they can do it in comfort by staying in the towns along the Track and enjoying day walks in the area (*Bibbulmun Track Foundation website*).

- The Munda Biddi Trail is WA's off-road cycle touring equivalent of the Bibbulmun Track. Running from Perth to Albany (a distance of 1,088 km), it attracts 21,000 users per year *(Munda Biddi Website).*
- The Great Ocean Walk in Victoria attracts 100,000 visitors per year *(pers com Parks Victoria).*
- The Wilsons Promontory Walk (Victoria) attracts some 60,000 visitors/year *(pers com Parks Victoria)*.
- The Murray to the Mountain Rail Trail (Victoria) attracts almost 60,000 annual visitor days *(SGS Economics and Planning 2011)*
- The Otago Central Rail Trail (NZ) offers a 3-day cycle or 5 day walk experience covering 150 kms. Over 14,000 users traverse the entire length each year, with the most popular section attracting over 20,000 users *(Central Otago District Council 2011)*. This figure was slightly less in a recent survey (*Central Otago District Council 2015*) but 12,000 users riding the trail from end to end is a significant figure. Cyclists undertaking the complete journey often do so in 3 days, while walkers take 5 days (*Otago Central Rail Trail Trust 2005).* A number of tour operators offer a "guided" service for cyclists in particular, allowing users to spend all day riding between accommodation options carrying only what they need for a day and their gear is transported from accommodation place to accommodation place (*Central Otago District Council 2015*).
- Data from Colac Otway Shire (Victoria) shows that the total usage on monitored sections of the Old Beechy Rail Trail for 2013 was 23,368. Monitors were not in place along the whole trail.
- In the first quarter of 2014, the Great Victorian Rail Trail (a 134 km rail trail between Tallarook and Mansfield) had 27,500 users pass through trail counters. This figure is unlikely to represent total numbers of users as some users would have travelled past more than one counter, but it does represent significant trail usage.
- Recent counts (2011-2013) for South Australia's Riesling Trail (a 34 km rail trail in the Clare Valley) show 40,000 people passing through 4 trail counters each year.

6.8.1.2 Local Users

Tourism numbers are important. However, it is important not to overlook the contribution of local residents to the success of a trail. In 2001, the Mundaring Shire (in Western Australia) trail network was used by over 200,000 people *(Jessop and Bruce 2001)*, having grown from a low base when the network was first fully opened. Only 10% of these users were locals (residents of Mundaring Shire) with many other users drawn from the Perth metropolitan area. The total annual visits (people generally use trails more than once a year) were a staggering 2.454 million visits annually, with local residents accounting for 63% of these visits. Their expenditure on the trail was also significant. While the individual value was low (i.e. expenditure per person per visit), the cumulative economic impact was significant. Local trail users spent an average of

$1.44 per visit to the trails in the Shire. This injected a further $2.23 million into the local economy annually. The same local trail users spent an additional $2.62 per visit outside the Shire, adding a further $4.05 million to the total State economic benefit.

While the local populations along the trail are not particularly large (Calliope, Monto, Mundubbera and Gayndah are the largest settlements close to the trail, while Gladstone is some distance from the trail's start), the population of towns at the southern end of trail is significantly changed during the fruit picking season. For example, Mundubbera's population can double in size as many itinerant workers come to the town looking for work on the orchards.

6.8.2 TRAIL USER CHARACTERISTICS

6.8.2.1 Broad Trends

A number of broad trends are influencing the way people participate in outdoor recreation:

- Increased demand for informal recreation (as opposed to formally organised sport);
- Increased demand for access and contact with the natural environment associated with urban to rural residential shift;
- Increased visitation to natural areas as an escape from modern lifestyles;
- Increased awareness and concern for health, with obesity and stress on the rise;
- Increased use of technology to support outdoor recreation (e.g. geocaching, Strava, EveryTrail, Trailforks); and
- Increased computer-based leisure including the internet.

In general, the population are making increased 'lifestyle' choices that associate with greater access and contact with the natural environment. This includes aspects of urban to rural residential drift ('sea change' and 'tree change'), increased demand for open space (parks, recreation trails etc.) in urban developments, and increasing demands for recreational time in the outdoors (changing work patterns and day trips from home).

Two other trends have also driven higher outdoor recreation participation - increasing health and environmental awareness and increasing affluence and expectations of recreation.

People are becoming increasingly concerned about their health, with conditions such as obesity and stress on the rise. This, combined with society's growing environmental awareness, has facilitated a growth in visitation to natural areas. A term referred to as 'returning to nature', where people feel the desire to become reconnected to their natural environments from which they can escape their modern lifestyles.

As individuals become more affluent, the proportion of income spent on goods and leisure increases. As people spend more money on outdoor recreation and associated equipment, an increase in outdoor recreation activities, previously offered by commercial operators, has been observed. As such, a diversification for natural areas offering unique experiences and higher levels of infrastructure are often in demand.

6.8.2.2 What Do People Do on a Trail?

An Overall View

The Department of National Parks, Sport and Racing conducted the Queensland Sport, Exercise and Recreation Survey Adults (QSERSA) in 2015.

Unfortunately, the survey results lumped Gladstone City and North Burnett Region in with a large number of Councils in "Central" including Barcaldine, Central Highlands and Longreach meaning that information for regional levels is of little meaning. The State-wide results provide more reliable data.

The survey indicated that:

- Any walking activity is the most popular activity participated in by 63% of respondents.
- Bushwalking was participated in by 14% of respondents.
- Mountain biking (specifically) was participated in by 3% of respondents while a further 9% participated in leisure cycling (not on-road cycling).
- Horse riding and equestrian events was participated in by 2% of respondents.

These numbers are somewhat different (in terms of returning lower participant numbers) to other surveys conducted over recent years both in South East Queensland and other locations. A number of earlier survey-based studies are available which together give a consistent indication of participation levels relevant to trails-related outdoor recreation activities. These studies come from South East Queensland (1998, 2001 and 2007), South Australia (Adelaide and Adelaide Hills, and *Market Equity 2004*), and the ACT. Table 3 provides a summary of the relevant participation rates.

Table 3: Participation Rates in Outdoor Recreation Activities

Study	Walking	Cycling	Horse riding
SE Qld (1998)	60%	25%	7%
SE Qld (2001)	50%	26%	7%
SE Qld (2007)	35%	29%	7%
South Australia	59%	26%	*
SA – Market Equity	69%	29%	*
ACT	73%	58%	*

** no horse riding trails were considered in these surveys*

The figures for participation show the percentage of the population for the town or region who had participated at least once in walking, cycling or horse riding in the previous 12 months. All studies used large samples. (A number of other outdoor-related activities such as bird watching, canoeing and scuba diving were included as possible responses – this is why the figures do not add up to 100%). The ACT study included a large number of school-aged children, which may explain the higher participation rates, particularly for cycling. The very extensive Canberra bike path network may also have contributed to the high participation in

cycling. The point of most significance in these figures and the 2016 QSERSA figures is the relative proportion or level of participation for each of the three activities.

Walking

Clearly walking is the most popular trail related activity and is in fact one of the most popular outdoor activities amongst all Australians. It is likely to remain so as the population ages. Walking continues to be the most popular activity for people aged over 34 (*ERASS 2010*). Bushwalking continues to be a relatively popular activity.

Off-Road Cycling

Unfortunately, none of the surveys distinguish between cycling generally and off-road cycling - both off-road cycle touring and traditional mountain biking (though the recent QSERSA did make this distinction as noted above). Off-road cycle touring and mountain biking is a rapidly growing recreational pursuit around Australia, and there is growing usage of non-urban areas for this activity. Cycle tourism is a growing market within the Australian tourism sector, particularly within the nature-based tourism segment. Available research demonstrates that cycle tourism has the potential to make an active contribution towards the economic revitalisation of regional Australia as well as improve quality of life for its residents *(Victoria's Cycle Tourism Action Plan 2011-2015)*. Domestic overnight visitors who participate in cycling on their trip stay longer and do more while on holiday when compared with other tourists, making them a stronger source of income for regional communities.

Mountain biking underwent a tremendous increase through the 1990's. It has been one of the 'boom' recreational pastimes of the last two decades. Cross-country mountain biking (the oldest type of mountain biking) remains the most popular type of mountain biking activity. It can be undertaken in a variety of places and terrains, from management trails to shared trails to purpose-built single track.

The draft *Kosciuszko National Park Cycling Strategy* (2016) identified that mountain bike riders can be broadly divided into core and non-core riders:

- Core mountain bikers tend to be more experienced riders who may differentiate into one or more different genres.
- Non-core mountain bikers include novices, families seeking safe enjoyable places to ride away from cars, school groups (often guided by tour operators), off-road bike tourers (from rail trails to trails in steeper and more difficult terrain) and people seeking a different outdoor experience or adventure (such as undertaking a guided experience or hiring a bike while on holiday). This is the group to which rail trails appeal.

The Mawson Trail in South Australia was primarily designed for off-road cycle touring, and the 1,000km Munda Biddi Trail in WA is designed exclusively for off-road cycle touring. These projects indicate a growing demand for cycle trails, as does the popularity of rail trails in Victoria. Work by Market Equity (2004) for the South Australian Office of Recreation and Sport adds to the body of evidence on the popularity of cycling, particularly on rail trails. Market Equity's survey of five trails in South Australia included the Riesling Trail (a rail trail); the percentage of trail users that were cyclists was quite high at 65% (compared to an average of 29% of cyclists across the five trails).

The *New Zealand Cycleway Market Research (2009)* found that, in general, international cycle tourists want easy multi-day trips with good supporting services or events. The holidays can also be location-based and utilise nearby trail networks. Domestic cycle tourists and recreational riders are not primarily focused on cycling but on the broader experience. This group is likely to be older or consist of families rather than single visitors or couples. Both markets are looking for easy access to safe and traffic-free trails. Trail gradient is a critical factor in successfully designing a trail for a specific market or type of rider. For a large portion of the location-based cycling and cycling holiday market, average trail gradients of 2-3 degrees are required (this explains the popularity of rail trails for this market).

Horse Riding

Horse riding is an activity by a relatively small number of participants (around 7% of outdoor recreation activities). Horse riding demand can also be highly localised – certain localities attract residents who are horse riders. A rail trail could offer this opportunity (as it does in some other locations – some 25% of rail trails in Australia allow horse riding).

6.8.2.3 How Long Do People Spend on a Trail?

A Victorian study (prepared for the Victorian Trails Strategy 2005-2010) found that there is a clear preference for shorter walks (up to 6 kilometres and taking between 30 minutes and 2 hours to walk) both in metropolitan and "remote" trails.

The QSERSA tends to confirm this finding. Four options were given – less than 30 minutes, 30 - 45 minutes, 45 minutes – 1 hour, and more than 1 hour. This unfortunately does not provide much useful information on upper limits. The results show that:

- 98% of bushwalkers undertaking their activity for 30 minutes to more than 1 hour.
- 93% of mountain biking is undertaken over the same period (30 mins – more than 1 hour).
- Horse riding activities generally take longer with 93% of their activities taking 45 minutes to more than 1 hour (it is understandable that horse riders take longer, given the preparation needed for horse riding).

The Market Equity work in South Australia confirms this finding with 76% of walkers using trails for less than 2 hours. Recent work done by the Bibbulmun Track Foundation showed that 40% of the users spent less than 4 hours on the trail, while another 29% spent between 4 hrs and a day, meaning that 69% of all users (115,000 of a total of 167,000) spent no more than a day on the track *(Colmar Brunton 2009)*. The tremendous success of the Great Short Walks of Tasmania program is testimony to the fact that there is a huge market for this type of walk. Many of the 60 walks promoted through this program are around this length.

Use patterns for cyclists are somewhat different (although most use takes up less than a day). Results from a recent survey carried out by the Queensland Outdoor Recreation Federation (June 2013) on mountain bike riding indicate that the most popular "ideal length of ride" for biking was 21-30km followed by 10-20km. Most rides are between 1 and 3 hours. Market Equity's 2004 South Australian work showed slightly different results. The majority of cyclists surveyed (74%) use a trail for 3-4 hours and are more prepared than walkers to travel to use a trail (36% of cyclists interviewed on the five trails were non-locals). The longer times may be

due to the fact that the trails involved in the SA study were 'easier' than the trails involved in the Queensland study.

Though there is limited background research of how long horse riders seek to ride for, industry knowledge indicates that horse riders are generally looking for rides of approximately 3-4 hours (about 25 -30 kilometres) – in addition to short 'after school' or 'after work' rides.

There is no doubt that visitors in particular are likely to put aside the time to travel along the potential trail (or parts of it) – people have more time on holidays than they do in their normal day.

6.8.2.4 Who Uses Trails and Why?

What sort of person is a trail user? Unfortunately, there is limited Australian research on who uses trails. The limited research that has been done shows some interesting attributes of trail users across Australia:

- The majority of people (53%) who participate in outdoor recreation are aged between 25 and 54 (*South East Queensland Outdoor Recreation Demand Study 2007*).
- The single biggest group (53%) of users of the Bibbulmun Track (WA's primary long-distance walk track) are aged between 25 and 39, with 25% between 15 and 24, and 17% between 40 and 65 *(Colmar Brunton 2009)*.
- People over 30 years of age are the most common users of the Otago Central Rail Trail. The average age of people surveyed was 41 years; the average age of users has decreased over the course of 3 surveys (over 10 years) (*Central Otago District Council 2015*).
- The City of Greater Geelong conducted a very extensive survey of walkers (not just on trails) in the City. 82.9% of survey respondents who had a degree or post-graduate qualifications had walked for exercise or pleasure in the last 2 weeks, while only 62.9% of those who had left school in Year 10 or earlier had walked for exercise or pleasure in the last 2 weeks. The authors of this survey concluded that walking participation increases with educational achievement *(City of Greater Geelong 2003).*
- People using a series of walk and cycle trails in SA (including the Riesling Trail) are motivated by a desire to attain a sense of well-being (95% of users listed this as a motivation), to unwind and relax (91%), to be close to nature (87%), and to be close to family and friends (70%) *(Market Equity 2004).*
- Taking time out and participating in an activity are more important to domestic cycle tourists than international cycle tourists. On the other hand, exploring a unique place or must-see destination, experiencing local culture and learning about other cultures are all more important to international cycle tourists than their domestic counterparts *(Tourism Resource Consultants 2009).*

Observation of many operating rails trails throughout Australia, New Zealand and North America indicates that there is a very wide diversity of people (and groups) that use rail trails.

As discussed in Section 3, the predominant user group for rail trails is cyclists, ranging from elderly people, to baby boomers, young couples, family groups with children, teenagers and young children. Walkers and horse riders are also attracted to rail trails, but in far lesser numbers. They all are using rail trails for a reason: they enjoy routes free from motor vehicles, routes that are away from the noise and smell of roads, and away from trucks and cars.

6.8.3 THE ECONOMIC OPPORTUNITIES OF TRAILS

6.8.3.1 How Much Do Trail Users Spend?

Successful trails are already attracting large numbers of visitors and they are spending reasonable amounts of money both in the local economies and in the broader economy. The following figures provide a snapshot of expenditures from a range of trails to demonstrate user expenditures.

- The Mundaring Trails Network, 1 hour from the Perth CBD, injected some **$12.62 million** into the local economy and a **further $15.21 million** into the State economy annually. Local residents spent $4.06/visit to the network and visitors (primarily day users) spent $23.71/visit. The key is that the total number of trips on the trails studied was a staggering 2.454 million visits annually *(Jessop and Bruce 2001)*.
- Users of South Australia's Riesling Trail (a 35 km rail trail in the Clare Valley) who come primarily to use the trail are estimated to spend **$1.08 million/year** ($215/person/visit with daily expenditure of around $100). This does not count the other 50% of trail users who use the trail as a secondary purpose for their visit *(Market Equity 2004)*.\
- The economic impacts of the Bibbulmun Track (WA's long-distance walking track) have been studied over two periods (in 2003 and 2007/08). In 2003, the track was shown to have generated **$21 million** of expenditure **annually** by track users, well in excess of its one-off construction costs of $5 million (*Colmar Brunton 2004*). More recent figures show an increase in this amount (due to an increase in both users and how much time they spend on the track). The estimated expenditure in 2008 is around **$39 million annually** (*Colmar Brunton 2009*). The 2007/08 study shows that the average day walker (some 70% of all users) is spending $50-$60/day, while those walking the track for 2-3 days are spending around $200/visit. Those using the trail for 6 weeks or more, while small in number, are spending $1,400/visit.

Above: a variety of users are encountered on the Otago Central Rail Trail. Recent research (2015) shows that the majority of international users of the trail are from Australia.

- The Murray to the Mountains Rail Trail in North East Victoria is one of the better known rail trails in Australia. Research work undertaken over Easter 2006 *(Beeton*

2006) found that average daily expenditure was **$258/user/day**. The bulk of this expenditure was on food and beverage (57% of daily expenditure which equates to $147/user/day). Beeton applied accepted economic multipliers to these figures and calculated that the direct contribution to the local economy per user per day was in excess of $480. (Recent follow-up work by Beeton (2009) made similar findings).

- Users of New Zealand's Otago Central Rail Trail are spending **$NZ 177/day** with the average length of stay in the region of 3.8 days *(Central Otago District Council 2015)*. There is a range of expenditures – users doing the whole trail spend **$NZ 166/day** while those doing part of the trail spend **$NZ 247/day**. The benefits to the New Zealand economy of the rail trail are quite significant. The 2015 study showed that the trail had direct output of over $6.9 million/year, with a total output of almost $10.4 million/year (taking into account regional multipliers). The trail directly increased New Zealand GDP by $3.5 million/year with a total increase of $5.2 million/year. The trail created 81 direct jobs and a total of 102 jobs. Accommodation derives 41-48% of the benefit, followed by food and consumables.

There is a range of business opportunities for private sector investors arising from the potential development of a rail trail. Providing accommodation, food and beverages, supported and guided tours, and equipment, are some of the businesses that have arisen along other trails.

It is important to understand how trail users spend their money. Trail users spend money before coming to a trail and in towns and villages along the way. The expenditure data shown below represents an amalgam of existing research data. There are a number of specifically trails-related research projects on user expenditures. These are:

- Use and Users of the Appalachian Trail: A Source Book (*Manning et al 2000*);
- Bibbulmun Track User Research Report (*Colmar Brunton 2009*);
- An Economic Analysis of Rail Trails in Victoria, Australia (*Beeton 2003*);
- Regional Communities and Cycling: The Case of The Murray To the Mountains Rail Trail, Victoria, Australia (*Beeton 2006*);
- Cycling in Regional Communities: A Longitudinal Study of the Murray to the Mountains Rail Trail, Victoria, Australia (*Beeton 2009*);
- Trails Research Project (South Australia) (*Market Equity 2004*);
- Nga Haeranga – The New Zealand Cycle Trail Evaluation Report (*NZ Ministry of Business, Innovation and Employment 2013*);
- Otago Central Rail Trail User Survey 2010/11 (*Central Otago District Council 2011*); and
- Otago Central Rail Trail User Survey 2014/15 (*Central Otago District Council 2015*) (the calculations use this report's average expenditure rather than the range of expenditures identified).

Reviewing the expenditure data from these 9 studies allows an understanding of average expenditure patterns of trail users. Tables 4, 5 and 6 show average amount spent by trail users and the broad sectors in which they spend their money. (Table 5 is included to allow for the fact that the non rail-trails provide free or low cost camping options on-trail). It should be noted that:

- Not all studies included day tripper expenditures.
- average expenditure per sector is drawn from most of the studies listed above.
- Not all studies provided detailed data. Where detailed sector breakdown is not available nominal percentage allocations to each sector have been made reflecting general trends.
- The data was collected at different times and noted in different currencies. The figures below represent averages converted to 2017 Australian dollars.

The Otago Central Rail Trail on the South Island of New Zealand is an outstanding success, stimulating the establishment of 20 tour operators that provide logistical support. The rail trail has also stimulated private developments including chalet accommodation at Wedderburn, developed by the owners of an adjoining farming property.

Table 4: Trail User Expenditure by Category for Overnight Visitors (all trails)

(Overnight users include those staying 1 night or more in the region to use a specific trail)

Sector	Average
Accommodation	$44.66
Food and beverage	$70.30
Transport	$24.30
Retail	$44.40
Other (including cycle maintenance)	$18.44
TOTAL	$202.10

Table 5: Trail user expenditure by category for overnight visitors (rail and cycle trails only)

(Overnight users include those staying 1 night or more in the region to use a specific trail)

Sector	Average
Accommodation	$52.00
Food and beverage	$80.56
Transport	$22.93
Retail	$33.74
Other (including cycle maintenance)	$19.81
TOTAL	$209.04

Table 6: Trail user expenditure by category for day-trippers (day tripper expenditure was only available for some of the studies)

Sector	Average
Accommodation*	$0
Food and beverage	$55.42
Transport	$26.90
Retail	$38.03
Other (including cycle maintenance)	$24.75
TOTAL	$145.10

(at least one study reported accommodation expenses for day trippers, but this was related to a visit to the region to undertake various activities including trail use. The expenditure therefore cannot be attributed to the trail)*

6.8.3.2 What Types of Businesses Serve Rail Trail Users?

Identifying specific business opportunities along a trail that may take years to develop is not a simple task. Some success stories from other trails are worth considering. It is important for those providing a business service and those considering doing so to remember that such services add significantly to the user's enjoyment if done properly. A 2015 user survey of the Otago Central Rail Trail reported that ratings for package operators have consistently improved over time and were rated 9.5 out of a possible 10 in 2015. There is no doubt that this contributed to visitors rating their overall rail trail experience at 9.0 out of a possible 10 (*Central Otago District Council 2015*).

Equipment Hire

While many visitors will bring bikes, some will not and a business opportunity presents itself to address this market. A number of cycle hire, cycle repair and guided cycle tour businesses are accredited businesses under the Munda Biddi Trail Foundation's *Cycle Friendly Business* program. These businesses offer a range of services along the length of the trail and pay an annual subscription fee to remain in the accredited program.

Supported Tour Opportunities

Cycle tourism is a growing market. Domestic overnight visitors who participate in cycling on their trip stay longer and do more while on holiday when compared with other tourists, making them a stronger source of income for regional communities. Many of the cycle touring trips would be confined to bitumen (quiet back country roads etc.) but a significant portion may be interested in an off-road cycling experience. International visitors participating in cycling spend $NZ 3,800/person/visit while in New Zealand compared with the average of $NZ 2,500/person/visit for all other categories of international visitor. 22% of cycle tourists spend more than $NZ 5,000/person/visit (*Nga Haeranga – The New Zealand Cycle Trail Evaluation Report 2013*).

Supported tour opportunities are offered on Otago Central Rail Trail where some 10% of visitors take advantage of this service. A recent survey by the Otago Central Rail Trail Trust showed that total expenditure was $NZ 472.61 per person per trip along the rail trail. The largest component of expenditure is on package expenses (as it was in 2008/2009 when a previous survey was carried out). 'Off the Rails' is one such bicycle tour company that offers premium, eco-friendly and fully supported bike tours. The company offers various tours including accommodation, bike hire and guided sightseeing activities. All tours include transfers, care of all luggage during the tour and meals, providing a fully inclusive cycling experience. A key to its success is its ease of planning/organising for visitors – once the tour is booked in they do not have to think about anything else. (*SGS Economics and Planning and Quantum 2012*)

Such services are not confined to cycling tours. These services are also offered on the Bibbulmun Track. The Bibbulmun Walking Breaks (run by the Bibbulmun Track Foundation) provide packages for those who enjoy walking but do not want to carry a heavy pack or camp overnight. The Walking Breaks program has won a national award for innovation in travel in the Jaguar Awards for Excellence. The Foundation organises "best of the Bibbulmun 8-day tours". Both of these tours are carefully compiled to combine a variety of day walks with off-Track accommodation. A bus service transports users to the Track each day and returns them to accommodation in rural towns and villages at the end of the day. On the walks, users carry only a small daypack carrying food and other items.

A number of private providers offer similar supported activities on a number of trails – both walking and cycling. Tour de Vines – a cycling company – offers various cycling tours on Australian rail trails (as well as other cycle touring opportunities in Australia and overseas) (see http://tourdevines.com.au/cycling-tours/cycling-tours-australia).

Qualitative research done by SGS Economics and Planning and Quantum (2012) (focusing on Victoria's north east) indicates respondents wanting activities and experiences that are easy to

organise – the 'facilitated' experience, which would complement the existing 100km of scenic and safe trails through iconic rural villages. Facilitated itineraries would seek to emulate the best facilitated road cycling experiences in Europe, including the provision of regional interpretation, food and wine. The report noted that the North East's Rail Trail is a key asset for the region, providing infrastructure from which a cycling experience could be leveraged.

The *Destination Country and Outback NSW's Destination Management Plan 2018* notes a global trend that tourism activities such as tours are finally coming into their own. However, the focus is on small-scale, immersive and locally curated activities. This is particularly important in relation to Indigenous and nature-based tourism.

A long trail on the Taragoola to Reids Creek rail corridor could attract this type of business; a series of attractive shorter trails could also be packaged together and possibly with other outdoor recreation experiences in the region to provide opportunities for supported tours.

Guided Walking/Cycling Touring

This facility provides an even greater level of support for trail users; all "traversing" is done with the accompaniment of a knowledgeable guide (as well as the provision of all necessary equipment).

This type of service is offered on the Great Ocean Walk (e.g. Bothfeet Walking Lodge and Tours). Internationally renowned adventure company World Expeditions offer a 7-day guided and supported hike along the Bibbulmun Track. One of the key features of these packages is that users simply pay just one flat fee for their entire holiday.

Comments on the length of the trail above apply.

Several accommodation establishments are clearly benefiting for locating close to the Riesling Trail, resulting in economic benefits to the businesses and a bigger range of accommodation options cyclists and walkers using the trail.

Off-trail Accommodation

There is some opportunity to provide users with off-trail accommodation of varying qualities (adding to the existing relatively limited stock of options) as the trail passes private property. Riesling Trail Cottages and Riesling Trail Bush Cottages provide self-contained accommodation adjacent to South Australia's famous Riesling Trail through the Clare Valley. When these were first constructed, the owner was often asked "How close are your cottages to the wineries"; over time, the more common enquiry became "how close are the cottages to the rail trail".

Supporting Existing Businesses

A trail increases the opportunities offered to existing businesses that currently provide relevant services to provide such services on a more regular basis. These types of examples are critical economic opportunities to diversify and solidify the sub-region's economic base. In New Zealand across four recreation trails subject to detailed research (*New Zealand Ministry of Business, Innovation and Employment 2013*), 1 in 5 businesses surveyed reported that they had either expanded their services (e.g. added capacity) or added new services since the trail opened in their region. These ranged from provision of cycle tours to cellar door tasting sessions, but were commonly in the provision of accommodation, transport or shuttles, or cycle hire. There was anecdotal evidence that trails have been beneficial for existing businesses either by absorption of existing excess capacity and by spreading the risk through the diversification of product.

6.9 CONCLUSION

Australians are increasingly looking for passive, non-organised recreation opportunities, often in natural or near-natural settings. Demand for this type of opportunity will only increase as the population ages. While walking remains the most popular of these activities (and is likely to remain so as the population ages), off-road cycling shows a growing and often unmet demand within the trails market.

The Boyne Burnett Inland Rail Trail (either built as a long trail or a series of short trails) would provide experiences for a range of user groups in a series of markets that have been consistent over time – walking and bushwalking and cycling – or growing significantly – off road cycle touring. The trail would provide for both visitors and local people who participate in a range of activities. The potential expenditures may be quite significant based on trail user expenditures elsewhere.

SECTION 7 - CONCLUSIONS AND RECOMMENDATIONS

7.1 CONCLUSIONS

On the basis of the detailed corridor assessment and due considerations of issues and opportunities, three sections of the corridor appear outstanding candidates for development as standalone rail trails. These three are:

- (Near) Taragoola to Boynedale and south to Ubobo - this section contains several significant bridges, passes alongside Lake Awoonga and associated wetlands and generally provides outstanding views of the surrounding landscape.
- Builyan to Kalpowar – this section contains the 6 tunnels, has several significant bridges and sidings, outstanding views and has a village at each end.
- Mundubbera to (near) Gayndah – this section has many of the heritage listed bridges, spectacular views of the Burnett River, considerable local history and volunteer groups with a passion for the development of the rail trail and the preservation of the local history. It has significant towns at (or near) each end.

Developing a long trail along the whole of the corridor is a very expensive project and one that cannot be justified given the limited demand for a long trail and the ongoing maintenance costs (which will be quite high due to the trail length). There also is a seeming reluctance by both Councils to take on responsibility for the significant maintenance that would be required for a long trail (maintenance will be required for the three shorter trails, but it will obviously be much less than for the long trail). Other sections are not as attractive or suffer from other negative aspects to warrant development as standalone trails. There is a further option of developing a lower standard trail primarily for horse riders from Eidsvold to Ceratodus offering an alternative recreation opportunity for visitors to the RM Williams Australian Bush Learning Centre. This trail could be used as it is now given it would be aimed at horse riders. Ideally the trail would end at the relocated Ceratodus Railway Station (in the roadside rest area); however, this would mean expending a relatively large amount of money to repurpose the bridge over the Burnett River for a relatively low number of users. It has been indicated that the bridge would be retained due to its heritage value and riders could ride out to it and then ride back to Eidsvold (a return ride of just over 20 kilometres).

The key unresolved issue if these are accepted as the three trail projects is where each trail is to begin and end.

- Taragoola is not easily accessible and there is little of interest at the former siding. The trailhead for this section is best developed at (or in the vicinity of) Boynedale Bush Camp which is easily accessible. Trail users could then head north to Futters Creek bridge which would mark the northern extent of the trail (a distance of some 13.78 kms) making for a pleasant return ride of almost 28 kilometres). Alternatively, they could head south to Ubobo (a distance of some 22.5 kilometres). The trail section between Nagoorin and Ubobo did not score as highly as other sections (with a score of 51/100) primarily due to much of it being alongside the Gladstone Monto Road. However, it did score highly due to the range of services available (a service station and

a range of accommodation options) which Nagoorin does not have. **The total trail length to be developed under this scenario is approximately 36.28 kilometres.** More detailed costings will be provided in the subsequent planning.

- Builyan and Kalpowar are logical trailheads. While there are limited commercial enterprises at both locations and en route at Many Peaks, a rail trail may provide an incentive for new developments. **The total trail length to be developed under this scenario is approximately 31.2 kilometres.**
- The trailheads for the Mundubbera-Gayndah rail trail also present issues of a lack of an established village at the Gayndah end. The study area for the project ends at Reids Creek. This is primarily due to the absence of a bridge over Reids Creek (it was washed away in major flooding) and consequently no connection to Gayndah on the disused railway corridor. There appears to be no particular benefit to extending the rail trail to the western bank of Reids Creek. There are plenty of opportunities for river views along the railway corridor parallel to the Burnett River in this section. One possibility is to end the rail trail (create a trailhead) at Dirnbir siding as this is the closest siding to Reids Creek. However, the siding is not easily accessible and work would be required to create a trailhead. In addition, it appears that a road has been built over some of the old railway corridor south west of Dirnbir siding (a landholder indicated that parts of Dirnbir Road had been relocated up the embankment to avoid flooding). Therefore, the logical trail end should be at Mt Debateable siding, which provides plenty of room for parking and is easily accessible from Gayndah. A spur trail is recommended to take users some 1.5 kilometres further east on the rail corridor to the stone pitched embankments which will be of considerable interest. **The total trail length to be developed under this scenario is approximately 27 kilometres (which includes a spur to the restored stone pitched embankments).**

In total, these three trails would cover a distance of 94.48 kilometres. This would leave some 178 kilometres of the corridor not developed as a rail trail. Discussions on the retention or removal of any bridges within the proposed undeveloped sections will need to focus on issues other than their use in a rail trail (local heritage, advertising the region etc.). Removal of the bridges would make it harder if at any time in the future the remainder of the corridor could be repurposed for other reasons.

Each of the recommended shorter trails would provide up to a half day excursion and could easily be packaged as a 2 day stay in the region. They would provide access to the highlights of the rail corridors – the tunnels, several bridges (including significant heritage bridges), very attractive landscapes across a range of vegetation types and water (river and lake) views. They also provide the opportunity to package up a “ride/walk and paddle” experience in the region (utilising their proximity to Lake Awoonga and the Burnett River). They provide opportunities for some of the smaller villages in the region to develop as a base for trail adventures.

The recommendations for three shorter trails focus on these sections being the subject of more detailed investigations within this study i.e. the next phase of this study will look at these three sections in more detail. This will include tunnel and bridge inspections which will identify in more detail likely costs of incorporating these key elements into a new rail trail. It is possible (though unlikely) that the costs of rehabilitation of these elements will impact negatively on the likely return on the investment for the three short trails.

7.2 RECOMMENDATIONS

It is recommended that:

- Gladstone Regional Council and North Burnett Regional Council review the Interim Report.
- The Councils determine to proceed with more detailed planning for the three identified candidate rail trails - Futters Creek Bridge to Ubobo, Builyan to Kalpowar, and Mundubbera to Mt Debateable (including a trail to the stone pitched embankments east of Mt Debateable siding). This planning will verify trail development requirements and focus on key infrastructure identified as necessary for rail trail development. A decision to proceed to this stage does not commit either Council (or the Department of Transport and Main Roads) to the development of the three trails.

The Mundubbera to Mt Debateable section of the former railway corridor has the potential to become a well used rail trail and should be developed along with the other standalone trails mentioned throughout this report.

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APPENDIX 1: CORRIDOR ASSESSSMENT SHEETS

Corridor Assessment – Boyne Burnett Inland Rail Trail

Section	***Calliope - Taragoola***	***Dist: 11.5km***
Special Features Characteristics Issues	***Comments***	***Score***
Towns (trailheads) at each end (incl. availability of accommodation, food/drink (and other services)	Calliope at Northern end. Accommodation and all usual town services Taragoola – unknown (inaccessible at present by conventional vehicle. Only access road is by rough 4WD track).	5/10
Potential landholder issues	Yes - along Nuggety Rd. Potential for in-town opposition by adjoining landowners in Calliope.	3/10
Estimate of costs of construction (including difficulty of construction – road crossings, terrain, access, type)	Parts that could be seen would be easy. Comparatively high cost due to number and length of bridges.	6/15
Scenery	Northern half - low quality being in town and edge of town, and alongside road. Southern half unknown (could not be accessed).	5/10
Railway remnants	Plenty of bridges. Signage – along trail and at road crossings. Taragoola not inspected so unknown.	5/10
Bridges	Plenty of bridges – some long. Mostly low level.	6/10
Tunnels	None.	0/10
Overall impression (suitability for development as a standalone rail trail)	Northern half is very accessible. Southern half (at/near Taragoola) is inaccessible (except by 4WD). Low merit. Nothing at Taragoola presumably. QR is to retain corridor for freight train movement.	13/25
	Total	43/100

Corridor Assessment - Boyne Burnett Inland Rail Trail

Section	***Taragoola - Boynedale***	***Dist: 16.7km***
Special Features Characteristics Issues	***Comments***	***Score***
Towns (trailheads) at each end (incl. availability of accommodation, food/drink (and other services)	Nothing at Taragoola. Boynedale Bush camp provides excellent trailhead due to existing facilities and parking. Futters Creek campground (potential trailhead): picnic tables, toilets, grass camping areas.	5/10
Potential landholder issues	Water catchment may be an issue. One landowner probably (Gladstone Water Authority).	7/10
Estimate of costs of construction (including difficulty of construction – road crossings, terrain, access, type)	Easy construction. Roads nearby. Ample stockpile sites. Several lengthy bridges. Missing bridges. Moderately high cost due to bridges.	8/15
Scenery	Outstanding. Views of lake. Alongside dam. Nice vegetation.	8/10
Railway remnants	Sign. Road crossings. Old bridges. Bridge across dam.	7/10
Bridges	Plenty of bridges. Outstanding examples. Included heritage bridge across dam.	8/10
Tunnels	None.	0/10
Overall impression (suitability for development as a standalone rail trail)	Easy access. Tracks into and/or alongside corridor. Outstanding scenery. Easy construction. Well established trailhead. High profile camping area. Fabulous bridge. High heritage value.	23/25
	Total	66/100

Corridor Assessment - Boyne Burnett Inland Rail Trail

Section	***Boynedale - Nagoorin***	***Dist: 15.6km***
Special Features Characteristics Issues	***Comments***	***Score***
Towns (trailheads) at each end (incl. availability of accommodation, food/drink (and other services)	Boynedale Bush camp provides excellent trailhead due to existing facilities and parking. Nagoorin – established town. No commercial facilities. Produce stand. School.	7/10
Potential landholder issues	Potential for some adjoining landowners to raise issue.	4/10
Estimate of costs of construction (including difficulty of construction – road crossings, terrain, access, type)	Some sections are remote from nearby road. Limited road access. Few entry points. Plenty of bridges. Generally shorter, but there are many of them. Moderately high construction costs.	5/15
Scenery	Outstanding views and scenery along dam. Bushland is moderately attractive. Distant views to hills to East and West. Passes alongside wetlands and Awoonga Lake.	7/10
Railway remnants	Plenty of bridges. Signage along corridor and at road crossing.	7/10
Bridges	Numerous. Some short and some moderately long – add to experience.	7/10
Tunnels	None.	0/10
Overall impression (suitability for development as a standalone rail trail)	Relatively difficult to access. Some parts comparatively remote. Few roads into corridor. Very scenic section of corridor. Adjacent to lake and wetland and thereby excellent views. Provides access into/out of Nagoorin. Would be a very good section of rail trail.	20/25
	Total	57/100

Corridor Assessment - Boyne Burnett Inland Rail Trail

Section	***Nagoorin - Ubobo***	***Dist: 5.9km***
Special Features Characteristics Issues	***Comments***	***Score***
Towns (trailheads) at each end (incl. availability of accommodation, food/drink (and other services)	Nagoorin – No commercial activity. Ubobo – General store; Discovery Centre; has camping and accommodation. Picnic facilities. Good trailhead possibilities at Ubobo.	7/10
Potential landholder issues	Corridor runs alongside road. No landowner issues anticipated.	9/10
Estimate of costs of construction (including difficulty of construction – road crossings, terrain, access, type)	Easy construction. No major road crossings. Moderately low. One bridge only. Straight forward construction.	12/15
Scenery	Alongside road, so road noise an issue. Has distant views to hills to east and west. Limited vegetation on corridor.	4/10
Railway remnants	One bridge. Railway signage.	4/10
Bridges	One bridge only.	2/10
Tunnels	None.	0/10
Overall impression (suitability for development as a standalone rail trail)	Easy access. Not remote at all. Provides link from Nagoorin to Ubobo where various facilities exist including general store and accommodation. Otherwise not worth pursuing. Provides access back to Boynedale.	13/25
	Total	51/100

Corridor Assessment - Boyne Burnett Inland Rail Trail

Section	***Ubobo - Builyan***	***Dist: 15km***
Special Features Characteristics Issues	***Comments***	***Score***
Towns (trailheads) at each end (incl. availability of accommodation, food/drink (and other services)	Ubobo – picnic area, Discovery Centre (camping, accommodation), general store, fuel. A well kept town. Builyan – café/store, Post Office, phone, playground with picnic tables. Good potential for trailhead.	8/10
Potential landholder issues	Potential for landowner issues on Southern section. Northern section runs along road.	4/10
Estimate of costs of construction (including difficulty of construction – road crossings, terrain, access, type)	Several lengthy bridges push up costs. Easy construction along road. Difficult where corridor is remote meaning higher construction costs.	5/15
Scenery	Attractive views of nearby hills. Distant views of hills to east. Remote area passes through bushland.	5/10
Railway remnants	Several lengthy bridges. Signage.	6/10
Bridges	Several lengthy bridges. Bridge removed.	5/10
Tunnels	None.	0/10
Overall impression (suitability for development as a standalone rail trail)	Northern half easy as runs alongside road. Southern half is remote and distant from roads. Remoteness may add to attractiveness. Potentially expensive section to construct due to lengthy bridges. Some attractive sections but lengthy piece alongside road is not attractive. Nothing outstanding as a stand alone or as a part of longer trail.	13/25
	Total	46/100

Corridor Assessment - Boyne Burnett Inland Rail Trail

Section	***Builyan – Many Peaks***	***Dist: 3km***
Special Features Characteristics Issues	***Comments***	***Score***
Towns (trailheads) at each end (incl. availability of accommodation, food/drink (and other services)	Towns at each end. Builyan – Kirsten's Cottage (not always open), playground with picnic tables (could be good trailhead), phone, Health Care Centre. Many Peaks – Toilets, picnic shelter, parking, barbecue, mown grass, Grand Hotel, railway dam and viewing platform.	7/10
Potential landholder issues	Minimal. Heavily forested. No agricultural pursuits.	9/10
Estimate of costs of construction (including difficulty of construction – road crossings, terrain, access, type)	Short section. Not difficult. No major road crossings. Straightforward. Underpass and over bridge add interest.	10/15
Scenery	Very attractive sections through hills. Interesting "hamlets" at each end.	8/10
Railway remnants	Tank stand, signage, bridges.	9/10
Bridges	2 bridges – 1 underpass and 1 overbridge, cuttings.	8/10
Tunnels	No	0/10
Overall impression (suitability for development as a standalone rail trail)	Short section but remote. Access is not an issue. As a standalone it is too short but as part of longer trail, would be good to include. If tunnel section to be considered as standalone, this section would be included.	15/25
	Total	66/100

Corridor Assessment - Boyne Burnett Inland Rail Trail

Section	***Many Peaks - Kalpowar***	***Dist: 29km***
Special Features Characteristics Issues	***Comments***	***Score***
Towns (trailheads) at each end (incl. availability of accommodation, food/drink (and other services)	Towns at either end. Bunkhouse accommodation at Kalpowar. Siding at Kalpowar. Services at Many Peaks - Toilets, picnic shelter, parking, barbecue, mown grass, Grand Hotel, railway dam and viewing platform.	7/10
Potential landholder issues	One farmland. Owner sees positives and negatives with trail proposal.	8/10
Estimate of costs of construction (including difficulty of construction – road crossings, terrain, access, type)	Most of corridor is remote with few access points. Access is difficult. Minimal number of road crossings. Moderate cost. Tunnels may require lighting. Several lengthy bridges.	7/15
Scenery	Outstanding. Elevated location with views of hills and valleys.	9/10
Railway remnants	Bridges, 6 tunnels, siding with switch, signage etc. Barrimoon Siding. Golimbel Siding has many artefacts remaining in place.	9/10
Bridges	Numerous bridges.	7/10
Tunnels	6 tunnels within relatively short distance of each other. Outstanding feature of this section.	10/10
Overall impression (suitability for development as a standalone rail trail)	Much of corridor is remote and access is difficult. High quality section of corridor with outstanding potential. Likely to have minimal landowner opposition. Tunnels, sidings and bridges provide major attractions.	23/25
	Total	80/100

Corridor Assessment - Boyne Burnett Inland Rail Trail

Section	***Kalpowar - Bancroft***	***Dist: 18km***
Special Features Characteristics Issues	***Comments***	***Score***
Towns (trailheads) at each end (incl. availability of accommodation, food/drink (and other services)	Kalpowar Bunkhouse accommodation. Siding at Kalpowar. Bancroft is tiny settlement with no commercial activity.	3/10
Potential landholder issues	High potential as corridor traverses a considerable amount of private farmland.	3/10
Estimate of costs of construction (including difficulty of construction – road crossings, terrain, access, type)	Much of corridor is through farmland with few roads nearby and few crossings. Moderately high due to numerous missing bridges and remoteness of corridor.	5/15
Scenery	Runs near to road occasionally. Distant views to hills. Views of farmland. Only moderately attractive.	5/10
Railway remnants	Some bridges remain. Many bridges have been removed. Some signs remain especially at road crossings. Remnants in siding at Kalpowar.	5/10
Bridges	Some remain, many removed.	4/10
Tunnels	None.	0/10
Overall impression (suitability for development as a standalone rail trail)	Access to corridor at either end but few opportunities to access corridor in between. Long sections of corridor remote from road. Absence of facilities at either end, missing bridges and only moderately attractive scenery does not provide for good rail trail experience.	10/25
	Total	35/100

Corridor Assessment - Boyne Burnett Inland Rail Trail

Section	***Bancroft - Mungungo***	***Dist: 11km***
Special Features Characteristics Issues	***Comments***	***Score***
Towns (trailheads) at each end (incl. availability of accommodation, food/drink (and other services)	Bancroft is tiny settlement with no commercial activity. Mungungo has hotel but opportunity for trailhead development.	3/10
Potential landholder issues	Corridor alongside road mostly so limited disruption of farming activities and therefore minimal potential for landowner issues.	8/10
Estimate of costs of construction (including difficulty of construction – road crossings, terrain, access, type)	Low difficulty due to road alongside majority of corridor. Road crossings also provide access. Moderately low cost due to ease of access. However most bridges have been removed.	10/15
Scenery	Trail would be alongside road limiting aesthetic appeal and attractiveness. Distant views to hills.	3/10
Railway remnants	Some signage remains but bridges have been removed.	3/10
Bridges	Most bridges have been removed.	2/10
Tunnels	None.	0/10
Overall impression (suitability for development as a standalone rail trail)	Not remote at all as corridor runs alongside parallel with road. Easy access at either end. Low potential for standalone rail trail due to presence of road alongside corridor and limited aesthetic appeal.	8/25
	Total	37/100

Corridor Assessment - Boyne Burnett Inland Rail Trail

Section	***Mungungo - Monto***	***Dist: 14km***
Special Features Characteristics Issues	***Comments***	***Score***
Towns (trailheads) at each end (incl. availability of accommodation, food/drink (and other services)	Mungungo has hotel but opportunity for trailhead development. Monto – all services available including several accommodation options.	7/10
Potential landholder issues	Minimal as most alongside road, thereby minimising disruption of farming.	8/10
Estimate of costs of construction (including difficulty of construction – road crossings, terrain, access, type)	Mostly easy due to corridor running alongside road. Low – moderate cost due to ease of access, however numerous missing bridges (including over wet areas).	10/15
		7/10
Scenery	Mostly alongside road. Distant views of hills. Not especially attractive.	4/10
Railway remnants	Most bridges removed; some remain. Monto has original station.	5/10
Bridges	Most removed; some remain.	2/10
Tunnels	None.	0/10
Overall impression (suitability for development as a standalone rail trail)	Mostly alongside road, however several kilometres are remote from road adding to appeal. Whilst Monto is a good trailhead, corridor has limited appeal due to lack of bridges and because it mostly runs alongside road. Limited appeal.	13/25
	Total	56/100

Corridor Assessment - Boyne Burnett Inland Rail Trail

Section	***Monto - Mulgildie***	***Dist: 12km***
Special Features Characteristics Issues	***Comments***	***Score***
Towns (trailheads) at each end (incl. availability of accommodation, food/drink (and other services)	Towns at either end. Monto – all services available including several accommodation options. Mulgildie – playground, rest area, Mulgildie pub with accommodation.	8/10
Potential landholder issues	Minimal as vast majority of corridor is located alongside Burnett Highway.	8/10
Estimate of costs of construction (including difficulty of construction – road crossings, terrain, access, type)	Easy construction, although water crossings will be numerous. Easy access on to corridor via minor road crossings. Low to moderate cost as country is flat and corridor is beside road. However all bridges have been removed. Several minor road crossings.	11/15
Scenery	Flat country but some decent views to hills. Being alongside Burnett Hwy detracts from experience.	4/10
Railway remnants	Bridges have been removed. Some signage remains along corridor. Railway Station and other artefacts at Monto.	5/10
Bridges	All have been removed. Concrete culverts have been retained.	0/10
Tunnels	None.	0/10
Overall impression (suitability for development as a standalone rail trail)	Easy access via towns at each end and numerous minor road crossings. Not remote due to corridor being located alongside Burnett Hwy. Although towns at either end, corridor is not particularly attractive as it is located alongside Burnett Hwy.	7/25
	Total	43/100

Corridor Assessment - Boyne Burnett Inland Rail Trail

Section	***Mulgildie - Kapaldo***	***Dist: 12km***
Special Features Characteristics Issues	***Comments***	***Score***
Towns (trailheads) at each end (incl. availability of accommodation, food/drink (and other services)	Mulgildie – playground, rest area, Mulgildie pub with accommodation. Kapaldo – nothing, just siding.	4/10
Potential landholder issues	Majority of corridor passes through farmland so potential for many issues from adjoining landowners.	2/10
Estimate of costs of construction (including difficulty of construction – road crossings, terrain, access, type)	Water crossings and remoteness increase difficulty. Several road crossings do offer access to corridor. Moderately expensive as corridor is remote from adjoining roads. Several bridges have been removed. Two bridges retained.	6/15
Scenery	Views of distant hills. Some of corridor runs alongside road.	5/10
Railway remnants	Two bridges remain intact. Signage generally remains in place. Several bridges missing.	6/10
Bridges	Not all bridges have been retained. Two bridges remain.	6/10
Tunnels	None.	0/10
Overall impression (suitability for development as a standalone rail trail)	Much of corridor is remote. Some road crossings enable access. Access available at each end. Mulgildie provides good northern trailhead but nothing at Kapaldo. Corridor itself is reasonably interesting but as a standalone rail trail is probably not worth developing.	13/25
	Total	42/100

Corridor Assessment - Boyne Burnett Inland Rail Trail

Section	***Kapaldo - Abercorn***	***Dist: 11km***
Special Features Characteristics Issues	***Comments***	***Score***
Towns (trailheads) at each end (incl. availability of accommodation, food/drink (and other services)	Kapaldo – nothing at siding. Abercorn – no commercial activity.	2/10
Potential landholder issues	Much of corridor passes through farmland so adjoining landowners may raise issues.	2/10
Estimate of costs of construction (including difficulty of construction – road crossings, terrain, access, type)	Much of corridor is remote from road so access will be difficult. Not many built roads service the corridor. Moderately high cost due to number of missing bridges. 10 missing bridges; none remain (includes 97.8m bridge).	5/15
Scenery	High quality scenery with hills surrounding corridor. Remoteness of corridor does provide an attraction.	7/10
Railway remnants	No bridges remain; nothing at siding. Some signage remains along corridor.	2/10
Bridges	None remain.	0/10
Tunnels	None.	0/10
Overall impression (suitability for development as a standalone rail trail)	Much of corridor is remote. Access is very limited, including up to 10km without road access. Corridor has potential from a scenery and remoteness point of view but absence of bridges is a major detraction. Absence of facilities at trailheads also reduces the attractiveness of a standalone rail trail. As a rail trail it is isolated from other potential rail trails.	10/25
	Total	28/100

Corridor Assessment - Boyne Burnett Inland Rail Trail

Section	***Abercorn - Cynthia***	***Dist: 9.5***
Special Features Characteristics Issues	***Comments***	***Score***
Towns (trailheads) at each end (incl. availability of accommodation, food/drink (and other services)	Abercorn – no commercial activity. Cynthia – siding only, nothing more.	2/10
Potential landholder issues	Limited as corridor runs alongside road for all its length.	8/10
Estimate of costs of construction (including difficulty of construction – road crossings, terrain, access, type)	No road crossings but corridor alongside road for entire length. Relatively low cost as access is easy. Some water crossings but only small.	11/15
Scenery	Vegetated corridor. Quite attractive from that point of view. Alongside road but road is quiet hence not too detrimental.	6/10
Railway remnants	None.	0/10
Bridges	None.	0/10
Tunnels	None.	0/10
Overall impression (suitability for development as a standalone rail trail)	Easy access. Alongside road. Not remote. Not unpleasant as it is shaded alongside quiet road. Very limited trailhead development at Abercorn. None at Cynthia. Isolated as a standalone trail but also even as part of a longer one.	10/25
	Total	37/100

Corridor Assessment - Boyne Burnett Inland Rail Trail

Section	***Cynthia - Ceratodus***	***Dist: 8.4km***
Special Features Characteristics Issues	***Comments***	***Score***
Towns (trailheads) at each end (incl. availability of accommodation, food/drink (and other services)	Cynthia – siding only, nothing more. Ceratodus – Rest area with relocated station building, signal, switch. Has picnic shelter, gas barbecue, wood barbecue, several tables, toilet block, bins, interpretation. Would make ideal trailhead.	5/10
Potential landholder issues	Corridor runs alongside roads (including Burnett Hwy) so unlikely to be any adjoining landowner issues.	8/10
Estimate of costs of construction (including difficulty of construction – road crossings, terrain, access, type)	Easy construction, as corridor runs alongside roads and access would be straightforward. Several bridges/water crossings required. Moderately low cost given proximity to road, and few water crossings.	12/15
Scenery	Corridor runs alongside Burnett Hwy which is detrimental to attractiveness. Some views to distant hills.	4/10
Railway remnants	Bridges have been removed. Nothing remains at Cynthia Siding. Relocated Ceratodus Station building, signal and switch are at picnic area on north side of Burnett River.	6/10
Bridges	All bridges have been removed. However the 101m timber bridge over the Burnett River remains nearby.	3/10
Tunnels	None.	0/10
Overall impression (suitability for development as a standalone rail trail)	Corridor is very accessible as it is alongside Burnett Hwy. Corridor is not remote. Although the picnic area at Ceratodus is very pleasant, and contains numerous railway items and would make an excellent trailhead, the corridor itself is not particularly attractive and would not be a standalone trail.	8/25
	Total	46/100

Corridor Assessment - Boyne Burnett Inland Rail Trail

Section	***Ceratodus - Eidsvold***	***Dist: 10km***
Special Features Characteristics Issues	***Comments***	***Score***
Towns (trailheads) at each end (incl. availability of accommodation, food/drink (and other services)	Ceratodus – Rest area with relocated station building, signal, switch. Has picnic shelter, gas barbecue, wood barbecue, several tables, toilet block, bins, interpretation. Would make ideal trailhead. Eidsvold – Significant commercial facilities with all services including accommodation. Ample trailhead opportunities.	7/10
Potential landholder issues	Majority of corridor runs alongside road so minimal impact on adjoining landowners.	6/10
Estimate of costs of construction (including difficulty of construction – road crossings, terrain, access, type)	Plenty of access to majority of corridor. A 3km section is isolated from road where access is difficult. Few major road crossings. Some missing bridges but not over standing water. May not need to be finished to a standard suitable for walking/cycling.	10/15
Scenery	Corridor is mostly alongside road but does divert from road around hillier country. Does cross Burnett River providing good views.	5/10
Railway remnants	Lengthy remaining bridge at Burnett River crossing. Relocated station and other items at picnic/rest area at Ceratodus. Station, goods shed at Eidsvold.	8/10
Bridges	101m bridge across Burnett River is a highlight. Remainder of bridges have been removed.	7/10
Tunnels	None.	5/10
Overall impression (suitability for development as a standalone rail trail)	Majority of corridor is alongside road, with a 3km deviation away from road, providing a mixed experience. Given proximity to RM Williams Bush Learning Centre, a bridle trail to Ceratodus is a potential. Intact railway infrastructure at Ceratodus so this section could be developed as a bridle trail at low cost.	16/25
	Total	64/100

Corridor Assessment - Boyne Burnett Inland Rail Trail

Section	***Eidsvold - Grosvenor***	***Dist: 9km***
Special Features Characteristics Issues	***Comments***	***Score***
Towns (trailheads) at each end (incl. availability of accommodation, food/drink (and other services)	Grosvenor – only a siding. Nothing remains. Potential for trailhead. Eidsvold – Significant commercial facilities with all services including accommodation. Ample trailhead opportunities.	6/10
Potential landholder issues	Likely to be many as entire corridor passes through many farms. Very little of corridor runs alongside roads.	2/10
Estimate of costs of construction (including difficulty of construction – road crossings, terrain, access, type)	Road crossings at either end but none in middle so majority of corridor is remote, resulting in moderately difficult construction. All bridges have been replaced, including some lengthy bridges. Most of corridor is remote from adjoining roads.	6/15
Scenery	Mostly flat farmland and rural residential and residential blocks. Some distant views of hills.	4/10
Railway remnants	Eidsvold Station Ground – Station, goods shed. Some railway signage along corridor.	6/10
Bridges	None remain.	0/10
Tunnels	None.	0/10
Overall impression (suitability for development as a standalone rail trail)	Road access available at each end. Remainder of corridor is remote. Easy access at Eidsvold. While Eidsvold is interesting, with all services available, corridor is not particularly interesting as a multi-use trail but could be developed at low cost for horse use.	10/25
	Total	34/100

Corridor Assessment - Boyne Burnett Inland Rail Trail

Section	***Grosvenor - Malmoe***	***Dist: 6km***
Special Features Characteristics Issues	***Comments***	***Score***
Towns (trailheads) at each end (incl. availability of accommodation, food/drink (and other services)	Malmoe – only an old siding. Nothing remains. Potential for trailhead. Grosvenor – only a siding. Nothing remains. Potential for trailhead.	2/10
Potential landholder issues	Likely to be many as corridor passes through many farms. None of corridor alongside road.	2/10
Estimate of costs of construction (including difficulty of construction – road crossings, terrain, access, type)	Road crossings at either end, one in middle (near Mesner Bridge). 3 bridges of medium length all removed. Moderate cost. Whole corridor remote from road.	7/15
Scenery	Mostly flat farmland.	2/10
Railway remnants	Nothing remains along corridor (couple of railway signs).	3/10
Bridges	None remain.	0/10
Tunnels	None.	0/10
Overall impression (suitability for development as a standalone rail trail)	Remote from road. Access at 3 points. Not very interesting. No railway remnants and countryside is a bit dull. Not aesthetically pleasing.	8/25
	Total	24/100

Corridor Assessment - Boyne Burnett Inland Rail Trail

Section	***Malmoe - Mundubbera***	***Dist: 26km***
Special Features Characteristics Issues	***Comments***	***Score***
Towns (trailheads) at each end (incl. availability of accommodation, food/drink (and other services)	Malmo – only an old siding. Nothing remains. Potential for trailhead. Mundubbera – at west end has obvious trailhead at/near old railway station. Town has all services including accommodation.	6/10
Potential landholder issues	Likely to be many as corridor passes through numerous farms. Very little of corridor is alongside road.	2/10
Estimate of costs of construction (including difficulty of construction – road crossings, terrain, access, type)	Some lengthy bridges have been removed. Some parts of corridor are remote from road. Several road crossings provide access for trail construction. Section alongside road.	8/15
Scenery	Mostly flat although parts of corridor are located along Burnett River.	5/10
Railway remnants	Several bridges remain along corridor. Station and other railway relics at Mundubbera. Signs remain. Nothing at siding.	5/10
Bridges	Several remain, including lengthy steel bridges. 4 bridges have been removed.	6/10
Tunnels	None.	0/10
Overall impression (suitability for development as a standalone rail trail)	Several road crossings provide access to corridor. Access available at either end. Pieces of corridor alongside river are attractive. Lengthy steel bridge provides interest. Otherwise not particularly attractive as a standalone trail.	15/25
	Total	47/100

Corridor Assessment - Boyne Burnett Inland Rail Trail

Section	***Mundubbera - Gayndah***	***Dist: 37km***
Special Features Characteristics Issues	***Comments***	***Score***
Towns (trailheads) at each end (incl. availability of accommodation, food/drink (and other services)	Mundubbera – at west end has obvious trailhead at/near old railway station. Town has all services including accommodation. East end doesn't connect to Gayndah, but trailhead opportunities at old sidings (especially Mt Debateable). Gayndah – has all services and plenty of accommodation.	7/10
Potential landholder issues	Known to be some opposition. Corridor passes through several orchards (however some adjoining landowners are supportive).	6/10
Estimate of costs of construction (including difficulty of construction – road crossings, terrain, access, type)	Road access all along corridor provides easy construction. Several road crossings provide access. Believed to be a section of the former railway corridor with sealed road constructed on it. Moderately high cost due to number of bridges (including several missing bridges).	9/15
Scenery	Outstanding and diverse. Burnett River views from many parts of trail. Rocky outcrops and views of mountains. Vegetation is diverse.	9/10
Railway remnants	Restored railway signs, Mundubbera station and facilities, Silver Bullet train on display, museum in Gayndah, signal.	9/10
Bridges	Outstanding collection of heritage bridges (of steel, stone, timber) of various designs.	10/10
Tunnels	None.	0/10
Overall impression (suitability for development as a standalone rail trail)	Access is easy but location alongside Burnett River gives sense of remoteness. Outstanding potential for development of standalone rail trail with historic bridges and river views. Extremely supportive and dedicated community groups with record of volunteer work along corridor and commitment to ongoing maintenance and support.	25/25
	Total	75/100

APPENDIX 2: LANDHOLDER ISSUES AND SOLUTIONS

Issues and Solutions	
IMPACT / ISSUE / PROBLEM	SOLUTIONS SUCCESSFULLY USED ELSEWHERE / COMMENTS FROM EXPERIENCE ELSEWHERE
Impacts on adjoining land owners' lifestyles	
Crime - Trespassing, vandalism and theft. Landholders often express a range of concerns in regard to the issue of trespassing on to farmland, especially where the railway corridor is remote from farm buildings and public roads.	Comments *Crime* • Numerous studies have concluded rail trails do not generate crime. Research and anecdotal evidence suggest conversion of rail trails tends to reduce crime by cleaning up the landscape and attracting people who use the trail for legitimate reasons such as recreation and transport. • There have been no reports of trespassing, theft or vandalism on the Murray to the Mountains Rail Trail (Victoria) since the establishment of the trail. • Similarly, the Collie to Darkan Rail Trail (Western Australia) has had no incidents of crime. • The Clare Valley (South Australia) Riesling Trail has had 2 incidents along the trail in over 25 years of operation. One of these, a burglary, would have occurred regardless of whether the trail existed at the rear of the property. The other, an incident involving an unrestrained dog attacking stock in an adjoining paddock, is one that can be avoided by trail users following trail rules. • The Linville-Blackbutt Rail Trail (part of the Brisbane Valley Rail Trail in South East Queensland) had 2 incidents with trail bike access in almost 10 years, but these were easily dealt with by the local police. • The Rails to Trails Conservancy work in the USA includes dozens of testimonials from law enforcement officers in a number of jurisdictions confirming that the expected/perceived crimes simply do not occur. Possible solutions *Crime prevention* • Design solutions to minimise theft include installation of security (and additional) fencing and planting.

	• Trail design can eliminate overgrown vegetation and tall shrubs that minimises hiding places and creates long sight lines. • Security lighting at trail heads and parking areas adds security. • Emergency phone boxes and emergency vehicle access helps increase user security. • Keeping trail corridors clean and well maintained increases sense of community ownership and 'passive surveillance' reducing minor crime such as litter, graffiti and vandalism. • Plantings of tree-lined corridors along parts deemed 'vulnerable' by adjoining landowners could also provide a way of reminding trail users to stay on the trail – these provide a form of visual fence. • Many trails have a signposted Code of Conduct as a means of reinforcing what is expected of trail users and highlighting inappropriate behaviour. • Prohibiting motor vehicle use (by regulation and design) reduces property crime. Locked management access gates are a proven method of restricting access on to a trail. • Volunteer or professional trail patrols ranging from informal monthly clean-ups and maintenance crews to daily patrols.
Loss of privacy for adjoining landowners Often residences have been constructed in close proximity to the railway corridor. Landowners living near to or alongside the proposed rail trail anticipate that noise and reduction of privacy will occur.	Possible solutions • Some effective design solutions are possible and have been used to good effect on other rail trail projects. Fencing and security screening are the obvious methods. • Re-routing the trail off the formation away from the affected residence onto an adjacent road reserve or elsewhere in the rail corridor. • Substantial additional vegetation planting to provide a visual barrier between the trail and the residence (while minimising 'hiding' places). • Installation of screen fencing to obscure views of houses from the trail.

Land value devaluation	Comment • What empirical evidence exists comes from the USA *(American Trails website)*. The evidence is that rail trails positively add value to properties along their route. Research and anecdotal evidence suggest conversion of rail trails tends to either have a positive impact or a neutral impact on land values. It is positive where land use is changing to more intensive uses (such as from rural production to rural living/rural residential). Single family residential property values along the Little Miami Scenic Trail (Ohio) were positively impacted by proximity to the trail *(Karadeniz 2008)*. Properties along the Minuteman Bikeway and Nashua River Rail Trail (Massachusetts) sell for a higher proportion of the asking price and in about half the time that it took for houses in the general inventory *(Della Penna)*. Properties near, but not immediately adjacent to the Burke Gilman Trail (Seattle) sold for an average premium of 6% while those immediately next to the trail sold for a minimal premium (around 0.5%). Neutral-to-positive expectations for property values were held by 87% of adjacent neighbours to the Luce Line Trail (Minnesota). In the same 1988 study, 56% of farm neighbours held that same view, as did 61% of suburban neighbours *(American Trails website)*. • The consultants are not aware of any documented evidence to suggest property values decrease.
Stress and concerns about the impacts of trails on farmers lifestyles and incomes An element of uncertainty in both the short-term (until a decision is made) or the long-term (from rail trail operations)	Comments • Any change is difficult and causes stress for many people, especially where it is a change to the way people have operated their businesses and lifestyles for many years. • All public infrastructure projects create stress and concerns for those who will be negatively affected (or perceive they will be negatively affected). The experience in rail trail projects elsewhere is that the problems that adjoining landholders believe will occur do not occur. They are managed primarily by ongoing consultation and good design.

	Possible solutions • Staging of the project so that landholders and the responsible committee can see how sections work and what problems and issues arise and then react accordingly in subsequent stages is one possible way to minimise the concerns of landholders (given that these concerns may be felt differently by different people in different parts of the corridor).
Impacts on farming practices	
Threat of fire Landowners are often concerned about the possibility of increased fire risk along a rail trail with fires spreading unimpeded along the corridor and consider that additional fire protection will be required if the reserve is used for a rail trail.	Possible solutions • Development of an effective fire management plan in close consultation with the local rural fire service. • Areas of the trail deemed high fire risk can have more active management controls. • Trail closure during periods of fire bans – as occurs on other tracks in high fire areas. The Hume and Hovell Track (in southern NSW) is one example of the use of specific closures. Trails in fire-prone areas can be closed for the duration of the high fire risk season. • Smoking can be prohibited on the trail. Councils can declare the pubic area a smoke-free zone, just as it can with other public areas. (Note: trail users are usually people interested in healthy pursuits and are therefore predominantly non-smokers).
Weeds There are weeds on the corridor at present – who will remove them and who will keep them under control.	Possible solutions • Preparation of a regularly reviewed Trail Management Plan covering all maintenance issues prepared in advance of construction. • Focus of maintenance – erosion, vegetation regrowth, weed control and signage damage. • Division of maintenance into regular inspections and simple repairs and once/twice yearly programs undertaking larger jobs such as vegetation control.
Interactions between nervous livestock and trail users with dogs Farmers whose properties adjoin the corridor are often concerned at unrestrained dogs being allowed along the	Comments • It is well recognised that people walking dogs is a pastime with considerable physical and mental health benefits. On other rail trails, some sections of the trail (notably within the urban areas) permit this activity.

proposed rail trail and causing difficulties for their livestock.	Possible solutions • On other trails, dogs are usually either banned altogether, or trail users are required by regulation to keep their dogs on a lead at all times. • If the rail trail is declared 'dog free', Council's rangers could issue infringement notices and the offender can be fined.
Interactions between nervous livestock and trail users on horseback Farmers whose properties adjoin the corridor are often concerned at horses being allowed along the proposed rail trail, potentially bringing in weeds via faecal matter and a range of bacterial diseases and causing difficulties for their livestock.	Comments • Rail trails around Australia vary on whether they permit horses. Of the trails listed as open on the Rail Trails Australia website, some 75% do not allow horses (for a range of reasons). • The debate about whether horses carry weeds in faecal matter has been around for a number of years and is particularly topical in discussions about whether horses are allowed into national parks. There appears to be no agreed consensus (though some national parks managers are permitting horses). Possible solutions • The impact on trail feasibility is always relatively low (given the small number of horse riders in any community) and it is more properly a decision for the community to make. • If horses are to be allowed, a separate slashed bridle trail should be developed within the corridor.
General biosecurity There are concerns that the use of rail reserve by trail users will increase the risk of contamination of livestock.	• Advice obtained by the proponents of the Great Victorian Rail Trail (in central Victoria) from the Department of Primary Industries (Victoria) was that a trail should not jeopardise the landowner's ability to sign the National Vendors Declaration. The rail trail would be considered in the same way as any public thoroughfare would be. Farmers have no control over who uses and what is done on adjoining roads, so they have 'no knowledge' unless they are notified (the Declaration specifies that "to the best of a farmers knowledge and from information they have control over that their livestock comply with the conditions on the declaration"). Trail users are no different to road users in that people may trespass onto private land, but most are unlikely to cause significant damage, unless there is some malicious intent. Again, the farmer has to have some

	knowledge of this before the declaration is declared false. Cars and particularly tractors moving at high speed would disperse more dirt from roads and tracks than collective effort of numerous bikes (in particular). • The NSW Government document assesses the risk of trail users introducing exotic animal diseases as an unlikely risk with catastrophic consequences, giving it a high risk rating. The documents suggest that risk treatment options reduce likelihood and result in a low residual risk rating. The document identifies that current national border control and quarantine protocols are in place. Suggested solutions include providing bins which fully contain rubbish (or instructing people not to leave rubbish and why), provide information on the general biosecurity duty to which the general public must adhere, and using signage to prevent contact between people and animals. Information on the trail should also include biosecurity risks and responsibilities including warnings about food scraps, human waste, soil, seeds, organisms and people who have been outside Australia in the last 7 days. The assessment also notes that trespass laws apply. • The NSW Government document assesses the risk of trail users introducing non-endemic animal diseases as an unlikely risk with moderate consequences, giving it a medium risk rating. The documents suggest that risk treatment options reduce likelihood and result in a low residual risk rating. Solutions are similar to the risk of introducing exotic animal diseases and also includes signage to indicate wheels and shoes must be clean and free of dirt and vegetable matter before entering the trail. (Such facilities could be included at trailheads). Trailheads could also include wash down areas for bikes, prams, and footwear in high risk areas. • The NSW Government document assesses the risk of trail users spreading established diseases between farms as an unlikely risk with moderate consequences, giving it a medium risk rating. The documents suggest that risk treatment options reduce likelihood and result in a low residual risk rating. Suggested solutions are as above.

	• The NSW Government document also recommends that the trail proponent include in their emergency response plan a provision to close the trail during a disease emergency.
Exclusion from markets with Quality Assurance programs	• The NSW Government document assesses the risk as a likely risk with minor consequences, giving it a medium risk rating. The documents suggest that risk treatment options by active management result in a negligible residual risk rating. In preparing the risk assessment, the report authors contacted two meat processors who indicated there were no know QA issues.
Fencing of the corridor Farmers often believe that the rail trail project will result in them needing to pay for additional fencing. Farmers have adopted their practices to suit – moving livestock and machinery across, moving vehicles across, developing watering points on both sides etc. Farmers often believe fencing will cause problems with farming practices and not fencing will create havoc with livestock / trail user interactions & liability.	Comments • There will be sections that 'dissect' properties or are used by the adjoining landholder. Possible solutions • Fencing may be appropriate in some places and not in other places – this depends on a number of factors.
Splitting of farm paddocks Splitting properties and the resultant impact on farm practices (particularly getting stock to watering points).	Comments • There will be sections that 'dissect' properties or are used by the adjoining landholder. Possible solutions • There are several options for dealing with "paddock splitting". They involve providing fenced and gated crossing points for stock and machinery at appropriate locations as determined by the landholder and trail manager. • Another option to deal with watering points issue is to provide watering points (new water tanks or similar) on both sides of the corridor for stock (these

	could be provided by the project construction budget).
Impacts of trail users	
Management of litter and toilet waste	Comment • Some landowners whose properties adjoin a former railway corridor expect high levels of litter. • It has not been a problem elsewhere. The Lilydale Warburton Rail Trail (Victoria) is kept spotless, with little or no visible signs of litter. The Gippsland Plains Rail Trail was involved with Clean Up Australia Day, but their involvement was curtailed because they effectively had nothing to do. There was no litter to clean up. The Clare Valley Riesling Trail (in SA) is also litter-free. Possible solutions • Thoughtful placement of rubbish bins at trailheads on the trail. • Regular maintenance patrols by council staff or volunteers, or the trail manager. • While installation of composting toilets is one appropriate solution, these are costly and are generally recommended only where there are long stretches between towns.
Farm safety Adjoining landholders can be concerned that farms are unsafe work places and people are being invited into such unsafe workplaces.	Possible solutions • Good design and appropriate information (as discussed above) will discourage people from going off the trail onto farm property and thus placing themselves in dangerous work environments or in close proximity to unpredictable livestock. • Particular attention to the trail design issues around sites where agricultural buildings are close to the rail trail (some of these solutions are discussed above in the section on crime prevention).
Trail Management issues	
Funding for construction A major concern for opponents to rail trails is "Who is going to pay for trail project?" How will it affect rates?	Comment • Many Federal and State Government funding programs are available for tourism/recreation projects such as trails. Numerous trails around Australia have been funded by major grants worth hundreds of thousands of dollars.

	• Major companies, such as mining companies, have contributed to trail projects. For example, BHP Billiton has contributed $200,000 towards the Camperdown-Timboon Rail Trail in Victoria. • Volunteers and other low cost resources, including low risk prison crews, can be brought into trail construction and maintenance projects. • Entire construction costs for trails are rarely borne by local government, therefore there is minimal impact on ratepayers for construction (even though ratepayers do benefit directly from trails, and indirectly by visitors spending in the community).
Liability – who is liable for the safety of users both on-trail and when they stray off-trail	Comment • In recent years public liability has become a major issue right across the community. Trails are not immune from concerns related to liability, or from the resulting issues. Indeed, liability – who is liable and who will pay – is often raised as a potential 'problem' with rail trail projects. Possible solutions • Primary project partners must take responsibility and ensure that their role is clear and unambiguous. • Management body takes liability responsibility along the full length of the trail regardless of ownership. Farmers do not carry any additional liability. • Effective signposting at trail heads and access points indicating trail regulations and trail use rules and user responsibilities. • In respect of farmers' general insurance, this has not been an issue in other rail trails. Fire management plans address the possible fire risk increase, while reports of theft of property have been virtually non-existent (as noted above). • Courts are increasingly ruling that people are responsible for their own actions, marking a different emphasis to that which occurred in the late 1990s/early 2000s when managing authorities were held responsible for inappropriate behaviour.

Unauthorised trail users There are often concerns over whether motor bikes would use the trail	Comments - Unauthorised access to the trail by users of cars, motor bikes, etc, is often stated as one the major concerns of adjoining landowners (it is also a concern of potential trail users). Possible solutions - Prohibit motor vehicle and motor bike use through motor vehicle exclusion barriers and effective signage at each road crossing - On the Lilydale Warburton Rail Trail, as with other rail trails in Victoria, a standard gate configuration has been designed for use at all road crossings and trailheads. The design allows unimpeded access by walkers, cyclists, people in wheelchairs, etc. The design is such that motorbikes cannot squeeze past the gate posts of the narrow maze. Access by authorised vehicles, such as management vehicles, adjoining landowners (where needed) and emergency vehicles is gained through an adjoining (locked) management gate. - Encourage reporting of vehicle/bike registration numbers of illegal users. Experience on the Murray to the Mountains Rail Trail was that motorbikes tended to use the same sections at the same time – enforcement was therefore relatively easy.
Ongoing maintenance costs Who is responsible, who will pay, what effect will it have on rates?	Comment - There are often concerns about the capacity of Councils to maintain the trail. Possible solutions - Preparation of a regularly reviewed Trail Management Plan covering all maintenance issues (including fencing) prepared in advance of construction is critical. The plan will provide a clear definition of who is responsible for what. - Proper design and construction will minimise ongoing maintenance costs. - Focus of maintenance – erosion, vegetation regrowth, weed control and signage damage. - A clear definition of who is responsible for what. - Division of maintenance into regular inspections and simple repairs and once/twice yearly programs

	undertaking larger jobs such as signage repairs, culvert cleaning or vegetation control. • Hazard inspection program (to limit liability and to define maintenance activities).
Environmental issues Who is responsible for environmental effects of rail corridor? Environmental issues include construction concerns – noise impacts on wildlife and vegetation destruction on rail formation.	Comment • With respect to construction concerns, good trail design and appropriate construction techniques on a site-by-site basis can mitigate environmental concerns. Significant vegetation stands on the boundaries of the formation should be untouched – vegetation growing between the rails is likely to be removed during construction.
Responsibility for policing trail Adjoining landowners are often concerned about undesirable people using the trail and causing a nuisance	Comment • Rail trails do not attract undesirable people. Adjoining landowners need not be concerned about the typical trail users as they do not cause trouble. They are using the trail for a relaxing and enjoyable outing in an attractive environment, free of motor vehicles. Possible solutions • Volunteer or professional trail patrols ranging from informal monthly clean-ups and maintenance crews to daily patrols. • Preparation of a regularly reviewed Trail Management Plan contains a clear definition of who is responsible for what. • Police and/or Council ranger patrols (including on bikes); or by trail manager on regular patrols.

This table is informed by the consultants' own experiences and also draws upon a NSW Government document *Strategic Risk Assessment – Biosecurity Risks Associated with Rail Trails.*

Some Examples of Successful Solutions from Other Rail Trails

Self-closing trail user access gate and locked management access gate at a road crossing on the Brisbane Valley Rail Trail.

Re-constructed railway bridges, complete with decking and handrails, on the Lilydale Warburton Rail Trail in Victoria. Bridges were re-built by the Country Fire Authority, which used the contract fee to acquire a new fire tender.

Cattle crossing gates, as used on the Port Fairy Warrnambool Rail Trail in Victoria, enable adjoining farmers, and their cattle/sheep, to cross the trail whenever necessary – thereby not hindering farming practices. Gates are closed across the trail and side gates on side boundaries opened to allow stock to cross when required. This spectacle - when it occurs - is of considerable interest to trail users.

The gating system at road crossings used on the Lilydale Warburton Rail Trail in Victoria makes it difficult for unauthorised users (such as motor bikes and 4WD vehicles) to gain access to the rail trail.

Additional tree planting (such as on the Lilydale Warburton Rail Trail) can provide a necessary screening where residences are located close to the rail trail. On this rail trail, the fences of the original railway corridor have been relocated closer to the trail to enable the adjoining landowner to utilise the superfluous area of the corridor.

Various studies have indicated that local communities and businesses benefit from the development of a rail trail. Local bakeries, delis and accommodations are highly sought after by rail trail users.

If the fencing of the railway corridor is brought in to that needed for the rail trail, adjoining farmers can make use of the remainder of the corridor. Fencing of the Lilydale Warburton Rail Trail has been relocated, bringing trail users in close proximity to farm animals without any problem.

User Codes of Conduct, and signposted regulations and rules, can prevent most undesirable and unwanted activities from occurring as well as instructing users where they can legitimately carry on their activities (such as walking dogs within stipulated areas).

Regular maintenance of the trail surface, vegetation of the corridor, bridges, culverts, weeds, gates and fences are all matters that should be the subject of a Corridor Management Plan and ongoing maintenance schedule. The Friends of the Lilydale Warburton Rail Trail undertake routine maintenance.

Considerable trail surface and bridge re-constructions have occurred on the O'Keeffe Rail Trail (in Victoria) all assisted by grants from various state and Federal Governments.

Various techniques are available to make road crossings safe for trail users, including this simple technique used on the O'Keeffe Rail Trail (in Victoria). On other rail trails, road crossings have been made safer by the installation of underpasses, bridges and traffic lights.

A detailed trail development plan would compile a detailed list of works required along the entire corridor, including regulatory signage, distance and directional signage and interpretive signage (such as these signs on the Riesling Trail in the Clare Valley in South Australia).

Appropriately placed signage advising/reminding trail users not to trespass has worked successfully on the Riesling Trail – an area where high value vineyards are immediately alongside the rail trail. Interestingly, on other sections of this rail trail, fences have not been erected (despite vineyards being located immediately alongside the trail).

Well located interpretive panels alongside the rail trail providing information on the history of exploration of the region, settlement history, agricultural pursuits, indigenous history and natural history can add significantly to the experience of trail users – whether they be visitors to an area or local people using the trail. The Riesling Trail has numerous interpretive panels along it 34km length.

Brice Hill Lodge, immediately alongside the Riesling Trail, sees a benefit in advertising its upcoming sale to trail users – an indication that proximity to a rail trail is regarded by many as an added advantage and adding to the value of the property (as studies have indicated).

Wineries immediately alongside the Riesling Trail in South Australia see no need to erect fences between the vineyards and the rail trail, as evidence from that (and other rail trails) shows that trespass and theft and other commonly perceived problems do not eventuate.

The Murray to the Mountains Rail Trail in Victoria, a sealed rail trail, enables users to appreciate the beautiful landscapes of this part of Victoria. The sealed surface enables use by all types of bicycles and other small-wheeled vehicles (such as wheelchairs, prams, gophers, skateboards, etc), as well as walkers.

The Murray to the Mountains Rail Trail has a Code of Conduct sign board at regular intervals along the trail ensuring that all trail users are aware of their rights and responsibilities. An improved signage system could be derived using pictograms, although the use of 'wordy' signs is probably a legal requirement.

The Railway Reserves Heritage Trail in Mundaring (a rail trail established in the 1970's) accommodates all three non-motorised trail user groups (cyclists, walkers and horse riders). Local businesses benefit greatly from this very popular and incident free rail trail.

The Rail Trail in Margaret River, Western Australia, also advertises the proximity of local accommodations, cafes, wineries and other points of interest to rail trail users.

The Shiraz Trail in the McLaren Vale in South Australia has operated for many years and runs alongside numerous residences – with negligible reports of trespass, theft, vandalism and other crimes. Neighbours feel no need to install fences.

Individuals, community groups, schools and local businesses have adopted every mile of the Row River Rail Trail in Oregon, USA – as is typically found along many rail trails in the USA.

It is apparent that rail trail use and farming use can co-exist on the rail trail between Collie and Darkan. Sheep graze this paddock, which is in fact part of the railway corridor. Self-closing gates can be used in such situations to ensure that gates are not inadvertently left open and stock do not escape.

Grids are commonly used on rail trails at fence lines and property boundaries to prevent stock from escaping, but still allowing the passage of cyclists and walkers. This example is from the Otago Central Rail Trail in New Zealand. Similar examples can be found on the Brisbane Valley Rail Trail and the High Country Rail Trail in Northern Victoria.