yass valley council

the country the people

Sustainability Advisory Committee

Tuesday 1 August 2023
6.00pm
Council Chambers
209 Comur Street, Yass

ATTACHMENTS TO REPORTS

Sustainability Advisory Committee

Attachments to Reports

Page No.

[redacted]

28 June 2023

General Manager
Yass Valley Council
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Mr Berry

Submission on the Draft Sustainability Policy

In response to Council's call for submissions on Yass Valley Council's *Draft Sustainability Policy* (the Policy), I offer the following comments for consideration.

1. The Policy appears to rely heavily on a related document that is frequently referred to as a *Sustainability Assessment Framework*. This document reads as if it is the main mechanism to deliver on the intent of the Policy.

   That *Sustainability Assessment Framework* was not put out for public consideration. When I questioned the availability of that document with Council to enable a better consideration of the Policy, I was advised it would not be available as Council had resolved to only seek comment on the *Draft Sustainability Policy.*

   This seems to be an entirely unreasonable position to take, given the prominence of that document in the Policy. It weakens the ability of the community to fully understand and comment on the Policy, while diminishing the work of Council's own Sustainability Advisory Committee.

2. The Policy provides no mechanism for reporting on its implementation or effectiveness. While the Policy appears to require sustainability to be embedded into all Council's activities and decision-making, there is no clear reporting mechanism for the public to understand how this is being carried out. Without an understanding of the *Sustainability Assessment Framework* that Council and Council staff are to use in their operations, there is no means for the community to understand how the Policy will be, or has been, implemented.

   A reasonable approach on reporting on the implementation of the Policy could be:
   - to include a clear statement in all relevant reports to Council, details of consultation with the Sustainability Advisory Committee, along with the Committee's response; and
   - for the Sustainability Advisory Committee to regularly report on the consultations Council staff have had with the it on broader policy and strategic matters.

3. The Policy appears to rely strongly on the ongoing work of the Sustainability Advisory Committee. It sets a forward program for that Committee to work on but provides little to no detail on how Council and Council staff will work towards achieving the Policy objectives.

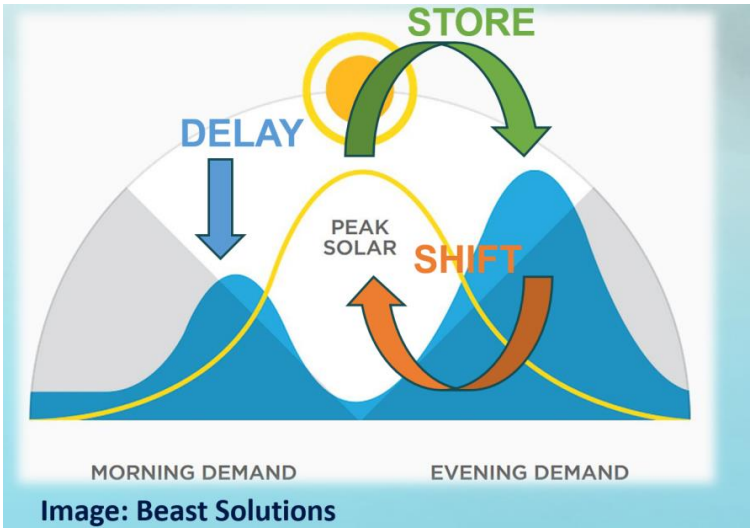
Again, I suspect the provision of the *Sustainability Assessment Framework* document may be of assistance in understanding how Council staff will implement the Policy. It is regrettable – and less than transparent – that the community cannot understand how Council staff will be acting to ensure sustainability is embedded into Council functions, as it appears the Policy is aiming to achieve.

Thank you for the opportunity to comment.

Yours faithfully

[redacted]

COMMUNITY-SCALE BATTERIES store excess renewable energy during peak energy supply (usually daytime for solar), and release it back to the community, and any excess to the grid, when energy demand is highest at night. Such batteries are gaining widespread interest and investment across Australia.



The establishment of community-scale batteries potentially offers –

- Reduced energy costs for all connected
- Income from excess energy provided to grid
- Stabilising the overall electricity grid by providing energy during peak demand
- Disaster resilience when grid shuts down e.g. during bushfires and storms
- Increasing local reliability of power
- Reduction in Carbon Emissions overall
- Social equity in providing cheaper energy to ALL households connected, including renters and those without PV
- Local jobs and skills increase

An ANU Research Report on Implementing Community-Scale Batteries finds that -

'Community-scale batteries have the potential to play an integral role in Australia's transition to a decentralised grid….. our work has shown that the location and sizing of this type of storage makes it uniquely suited to providing social, economic and technical benefits to the broader energy system.." Their research also found that householders wanted affordable, reliable, secure energy for all, with some emphasis on social equity, and believe this is most possible at the community level.

A community battery can be –

a) **Owned** by the community outright and drawn from directly, or
b) **Operated** for the community as virtual storage by a third party, or
c) **Operated to benefit** the community indirectly e.g. by profits flowing back to the community

Who could own a community battery in Yass Valley?

- **Distribution Network Service Providers** - face some regulatory barriers making it difficult to be both a retailer and network provider simultaneously?
- **Retail-owned Batteries** – often face customer trust issues
- **Community Owned (Not for Profit) batteries** - face logistical issues – funding, siting of battery, maintenance, etc. And will probably require a contract with local energy provider
- **Councils** -
- **Community Banks**
- **Other?**

Will the Batteries be provided Behind the Meter, In front of the Meter, or Both?

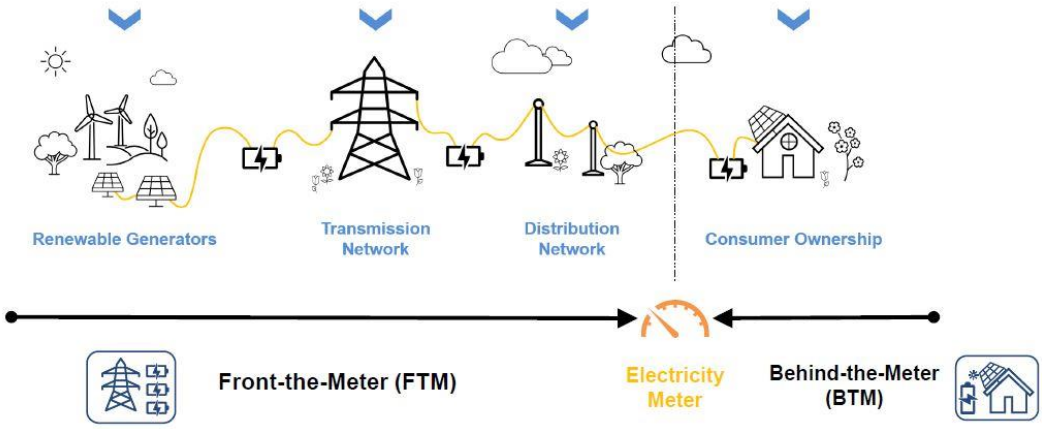
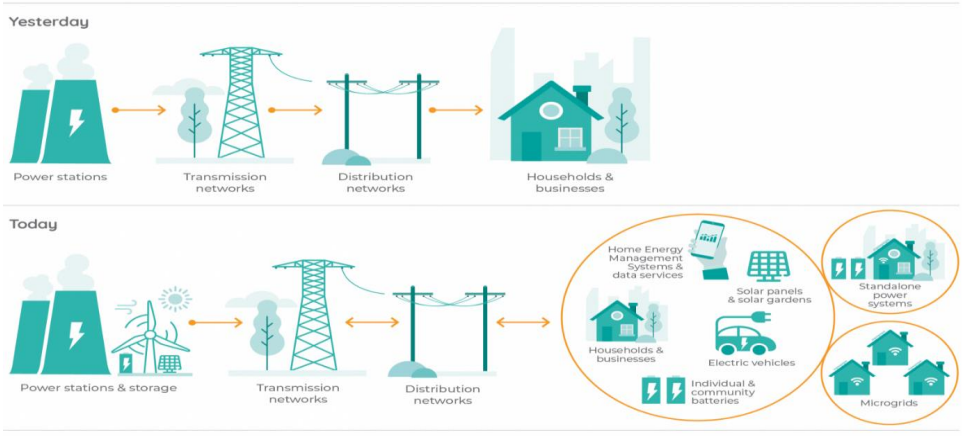


Figure 1: Schematic representation of the electricity grid, showing the separation of front-of-meter and behind-the-meter. Source: IDTechEx



The questions for the Committee are – what are our priorities here?

- Reduce greenhouse gas emissions
- Build community and social equity
- Increase network reliability in the face of climate change
- Increase regional self-sufficiency in energy provision
- Establish an income stream that can be returned to sustainable community ventures

We also need to consider –

1. Will Community-Scale batteries be the answer?
2. Can they be incorporated into new sub-divisions in the Yass LGA? If so, how?
3. Should we simply focus on other forms of improving energy efficiency in Yass LGA?
4. Do we approach the Community on this? If so - How? When? Where? Who?
5. Do we further educate ourselves by engaging with local organisations attempting to establish community-scale batteries, such as ACT Govt and ANU?

It is important to understand that the positive benefits of community batteries are not guaranteed. Batteries can decrease emissions, but only if charging from renewables and displacing fossil fuels.

There is also no guarantee that a community battery will improve social equity either. Emerging models are targeting opportunities to solar owning households, or retail 'savvy' customers, increasing existing inequalities between households rather than fixing them.

POSSIBLE NEXT STEPS:

The Australian Government has provided $200 million to deploy 400 Community Batteries across Australia, being delivered through a series of funding rounds.

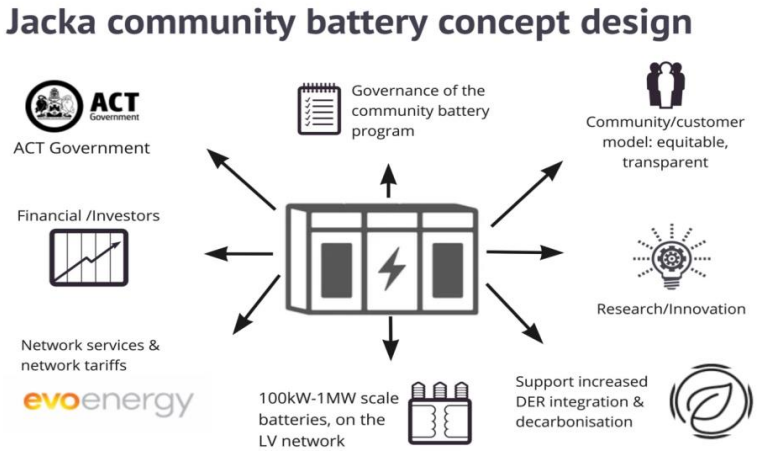
A $120 million grant round closed on 30 June 2023. The remaining $280 million in grants will be distributed in future funding rounds.

It may be warranted approaching Essential Energy as to whether they would be willing to work with Council on developing a trial proposal for funding under this grant scheme.

Consideration might also be given to discussions with Engie as to their level of interest in supporting a community battery initiative given their proposed investment in the Yass Solar Farm.

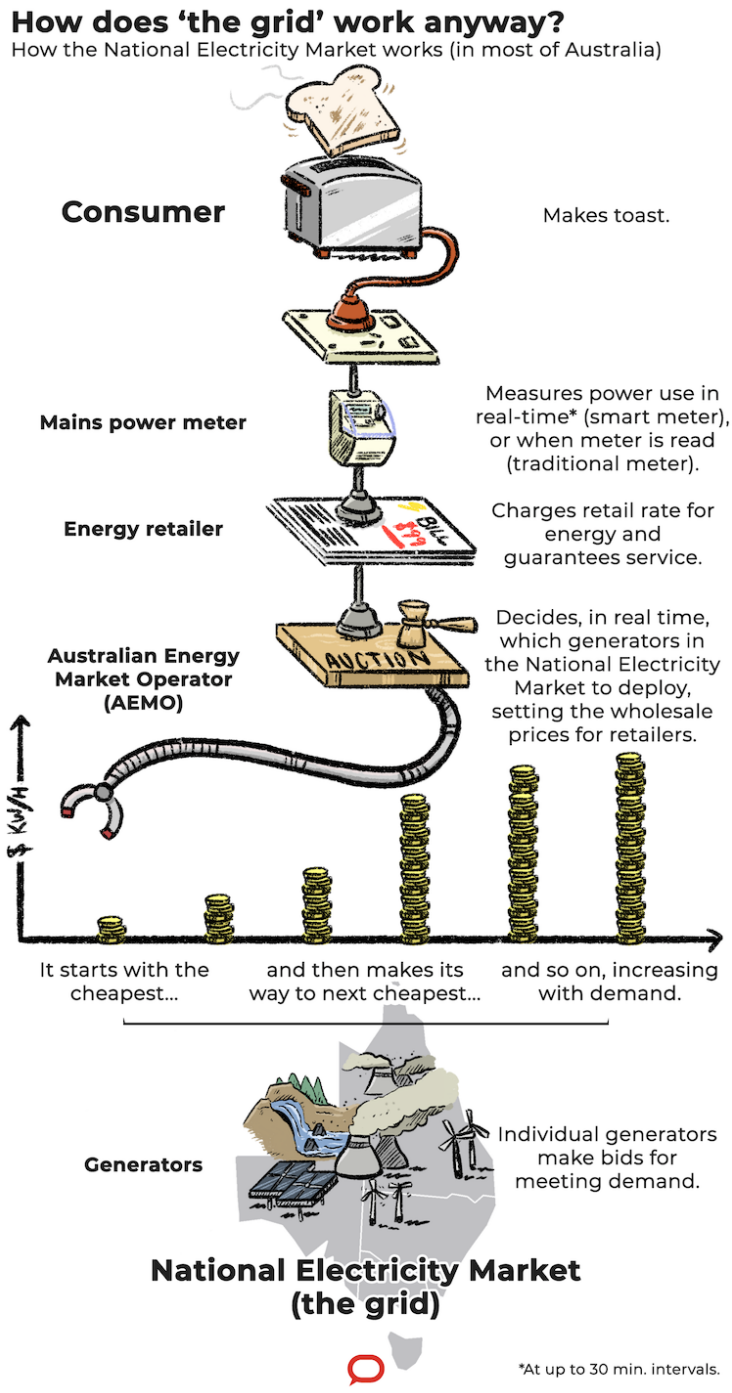
WHAT EXAMPLES ARE THERE ACROSS AUSTRALIA?

Western Australia:	Alkimos Beach Energy Storage trial (2016-2021) Powerbank Program
New South Wales:	Ausgrid Neighbourhood Batteries Enova Beehive project (discontinued 2022) Narara Ecovillage
Victoria:	Yackandandah (installed 2021) CitiPower, Powercor & United Energy – Electric Avenue (currently rolling out pole-top batteries in Melbourne's east, south east and the Mornington Peninsula and a Tarneit community battery) Yarra Energy Foundation North Fitzroy battery (launched 2022) City of Melbourne – Power Melbourne program DEECA Neighbourhood Battery Initiative
Queensland:	Energy Qld (Yurika) – Bohle Plains, Townsville (launched 2020)
ACT:	Ginninderry Battery Trial (installed 2021) Jacka community battery (see below)



SOME USEFUL REFERENCES

The Local Power Plan – Dr Helen Haines, 2020 – proposition to federal government. Proposes to establish an Australian Local Power Agency. Government decided against this, reasoning that ARENA and CEFC cover all that the local power plan does
ARENA – Implementing Community Scale Batteries
ANU – Battery Storage and Grid Integration Program – Linked to ARENA
ACT Solar Share
ACT Jacka Community-Scale Battery Initiative
Junee Community Power
Clean Cowra
Climate Rescue of Wagga Wagga
AUSGRID Community Battery Trial
Totally Renewable Yackandandah
Narara EcoVillage, Central Coast NSW



The National Electricity Market (NEM) spans Australia's South-East and is comprised of five interconnected states that also act as price regions: Queensland, New South Wales (including the ACT), South Australia, Victoria, and Tasmania. Prices for generation are set either through a long-term 'contract' market or in the short-term through a 'spot' market.

The NEM's transmission network carries power from electricity generators to large industrial energy users and local electricity distributors – sometimes referred to as DNSP -

across the five regions. These assets are owned and operated by state governments or private businesses.

DNSP (like Essential Energy which covers the Yass Valley) then take that power from the transmission network and carry it along their poles and wires to homes and businesses across SE Australia. Households and businesses then buy their electricity in retail markets, to which DNSP costs are effectively added.

The Australian Energy Regulator (AER) sets the amount of revenue that transmission and distribution businesses can recover from customers for using these networks. The AER also enforces the laws of the NEM, as well as monitoring the conduct of market participants.

Community batteries (also called community-scale batteries or neighbourhood batteries) are energy storage systems connected at the distribution level which allow, among other things, households that generate their own power – usually rooftop solar - to store their excess electricity in shared storage for later use. These systems typically have capacities of 100kW up to 5MW and can range in size from something like a large fridge, to a shipping container to a small factory. A 1MW battery can power around 1000 typical homes for about 2 hours.

Some 30% of households in Australia have roof-top solar and in Yass Valley LGA in 2022 there was 35% penetration with some 21,000 kWh of generation capacity.

While the take up of rooftop solar is comparatively strong in Australia, few households – perhaps only one in 60 – have battery storage and a community battery is a good way to lower costs by shifting installation, maintenance and replacement costs onto a private company, community entity or council.[1]

Some estimates are that the collective purchase of battery capacity is up to 30% cheaper than going it alone, ie. purchasing a battery for your own home.

Most community battery trials in Australia to date have used something like a so-called Power Bank or Tesla battery which is physically located somewhere within or near the community. This battery storage is however also integrated into the existing electricity grid, and provides customers with an option to virtually store their excess rooftop solar energy (usually to a set maximum kWh).[2]

Participating households feed into the Power Bank during the day and draw electricity back during the afternoon and evening peak when their solar systems stop generating. This can directly save the customer money but only if they can buy back energy at a cheaper price than grid-sourced energy.

[1] There is also an emerging capacity in the EV market for car batteries that can be drawn upon to support electricity usage in the home which will influence the degree of interest in, and viability of community battery models.
[2] Electricity is fungible, ie. once it's in the network you cannot isolate one unit of electricity from any other and thus the storage option is 'virtual'

The Alkimos trial in WA involving 119 household is estimated to have collectively saved participants some $81,000 over 5 years. Roughly $35 off each quarterly bill.[3]

Two other types of battery models are micro-grid batteries and virtual power plants (VPP).

A micro-grid battery is similar to a Power Bank arrangement but can also operate as a backup power supply, which assists when there is a fault on the main electricity network, disruptions due to severe weather, or as part of an independent micro-grid for remote areas.

Virtual power plants (VPP), differ from community batteries in that they typically involve the collaborative input of multiple disaggregated solar batteries (i.e. residential or pole-mounted) at a large commercial scale and can provide on-demand battery power to support the electricity grid in times of need.

In 2021 it was estimated that there is some 300MW of capacity locked up in VPP's in Australia, with some 20 commercial VPP's in operation.

Both a community battery operator and its customers will need to pay network costs as energy leaves a customer, enters the battery, then exits the battery and arrives back at a customer. That is unless supply and access all happens 'behind-the-meter'.

There is no regulatory mechanism for exemption from these network tariffs. However, in limited circumstances the local distributor is (i) permitted to develop a bespoke tariff for a small group of consumers and (ii) able to implement trial tariffs in support of community batteries (usually for a maximum period of 5 years).

The bespoke tariff may well be cheaper than the standard tariff on the grounds that the integration of more distributed generation capacity and storage into the grid reduces the need to build and maintain expensive network assets.

[3] There was also a subsidised $11 monthly fee per household. The economic/business appraisal of the trial was that it was too costly for the retailer and DNSP. However, further trials are proceeding on the basis of different cost structures.

WHAT DO ALL THE ACRONYMS STAND FOR?

AER – Australian Energy Regulator
NEM – National Electricity Market
NEMR – National Electricity Market Regulator
ARENA – Australian Renewable Energy Agency
CEFC – Clean Energy Finance Corporation
DNSPs – Distribution Network Service Providers – in NSW these are Ausgrid, Essential Energy, and Endeavor Energy.
DER – Distributed Energy Resources
VPP – Virtual Power Plant. This is a cloud-distributed Power Plant that combines the capacities of many different energy resources in their Battery storage, to increase overall Power generation; share energy supply; boost grid supply when demand is high, and trade energy for profit for those belonging to the VPP
BTM – Behind The Meter
FOTM – Front Of The Meter
LEM – Local Energy Model
P2P – Peer to Peer – i.e., Customer to Customer
LV – Low Voltage
BAU – Business As Usual
LUOS – Local Use of Service
DUOS – Distributed Use of Service
FCAS – Frequency Controlled Ancillary Services (controls frequency to prevent blackouts and failures)

BURCHILLS
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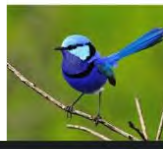

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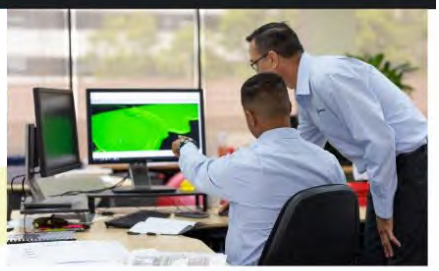

Yass Valley Rail Trail

Strategic Assessment

Client: Yass Valley Council
Project No: BE230076
Document No: BE230076-RP-SA-02

June 2023

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Document Control Record

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Table of Contents

The experience you deserve

Tables

Figures

Appendices

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1. Introduction

1.1 Background

The Yass Rail Trail is a proposed shared pedestrian and bicycle path to be constructed along the disused Yass Tramway corridor between the Great Southern Railway (Yass Junction Railway Station) and Yass Township for approximately 4.5 km as shown in Figure 1.1.

Figure 1.1 Rail Trail Alignment

The Rail Trail route includes a heritage listed steel bridge built in 1892 across the Yass River, and the route ends at the Yass Railway Museum (also heritage listed) near the centre of Yass.

Yass Valley Council required a strategic assessment to be completed for the rail trail to confirm the feasibility of the project based on a range of social, economic, and environmental factors.

1.2 Scope

The brief issued by Yass Valley Council sets out the requirements for this Strategic Assessment and includes the follow tasks:

- Heritage investigations of the route with a special focus on the bridge;
- Structural assessment of the bridge and necessary restoration works;
- Indigenous study of sites of significance within the rail reserve;
- Assessment of the existing traffic issues on Dutton Street and how the rail trail project could help resolve some of these issues;
- Any other constraints and opportunities for the development of the rail trail; and
- Concept design drawings including options for the trail alignment along Dutton Street.

The assessment will also identify and evaluate any social, economic and environmental benefits and opportunities for community involvement as a result of the project:

- Estimate the cost of the necessary works outlined in the concept design;
- Estimate maintenance costs and identification of a suitable maintenance regime;
- Identify whether there will be a demonstrated benefit to trail users and how it can be quantified;
- Identify the number of users the trail could attract, what is a reasonable forecast and what is the estimated economic benefit (average spend) of a rail user using the trail;
- Identify what markets the rail trail could attract. Provide user scenarios for day-trippers, local use, special events and so on;
- Identify opportunities for encouraging visiting trail users to stay longer in the township and/or the trail start/end points;
- Identify potential new business opportunities and how the rail trail contributes to the visitor economy; and
- Outline any other quantifiable health benefits, environmental benefits or culture and learning experiences.

1.3 Methodology

In preparing this strategic assessment, the following tasks were undertaken:

- An inception meeting, involving staff from the Yass Valley Council, and the consulting team lead by Burchills. Follow up progress meetings with officers have also been held;
- Field work to assess the entire disused railway corridor between Yass Junction Railway Station and Yass Township. This fieldwork included an examination of all road crossings, and the condition of the former railway corridor and bridge;

- General observations made of the terrain and topography through which the railway corridor passes, an assessment made of the scenic qualities of the region and observations made of the services available to potential trail users in Yass Valley – and the surrounding towns at either end of the proposed trail;
- Observations and conclusions to be made of a range of factors that will assist in the determination of whether the rail trail is feasible;
- An examination of the expected construction and infrastructure works required along the corridor and the likely costs; and
- An assessment of the likely visitor numbers, where they might come from, what they might spend and consequently an indication of the likely economic benefits of developing the trail.

This strategic assessment does not include any community consultation. If the project is considered financially feasible, and progresses to design development, broader community consultation should be involved in subsequent planning processes.

1.4 History of the Railway

The Yass Tramway was operational between 1892 and 1988, connecting Yass Junction station on the main Sydney-Melbourne railway with Yass town to the south of the line. The tramway corridor is relatively short at 4.5 km but when constructed the rail trail will become an important part of the local Yass cycling and active pathways network, giving locals and tourists the opportunity to enjoy the surrounds of Yass. The tramway corridor includes a large timber trestle and steel truss bridge across the Yass River.

The tramway corridor ends at the Yass Railway Museum housed in the old railway station which also had the shortest platform in the world when operational.

1.5 New South Wales Rail Trail Legislation

Legislation to make it easier to approve new rail trails in NSW has been passed by both houses of the NSW Parliament, with the NSW Legislative Assembly voting in favour on 10 August 2022.

The legislation enables the Minister for Transport to grant 30-year leases to local governments on disused government-owned NSW rail corridors for tourism purposes. Abandoned rail lines on ex-government corridors in NSW are currently regarded as non-operational but not closed. Previously, each rail trail proposal in NSW required a separate act of Parliament to “close” and re-purpose the corridor, resulting in political blockages to progress. This has now been addressed in the new legislation, with a much simpler process.

Rail trail proposals will still need to have demonstrated local community support and a positive business case.

2. Key Considerations

2.1 Trail Route and Trailheads

The proposed rail trail is generally envisaged to follow the historic railway from Yass Junction Railway Station to the northern end of Dutton Street. The existing rail lines along Dutton Street are located in a way that makes traffic movements along this street confusing to the general public. As such there are several proposed route options for the rail trail along Dutton Street to try and improve the existing situation.

The Yass Railway Museum is located at the southern end of Dutton Street and is only open at certain times of the day. Given there is limited access to the museum it is proposed to divert the rail trail around the museum land to connect to the Yass township, however there will be the ability to access the museum from the rail trail via the existing museum car park.

Minor trailhead embellishment is proposed at both Yass Junction Station, around the existing bridge and at the museum. Such embellishment could include information signage and maps, seating, shade, potential water stations, and bike facilities. Additional parking areas should also be provided at Yass Junction Station.

2.2 Tenure and Land Ownership

It is understood that the railway corridor is still entirely in public ownership. There may be a number of access licences held by various parties over the corridor, but these are not seen as any legal impediment to the construction of the rail trail. If the project is to proceed, Council will need to apply to the State for a 30 year lease over the disused rail reserve section as discussed in Section 1.5. It is understood the section along Dutton Street is Council road reserve.

It is understood that the parcel north of Faulder Avenue (near the Yass Junction Railway Station) is still part of the active Country NSW railway network. The section of rail is no longer used for active rail services however as it is within the main railway parcel, additional steps will be required to convert this section into a rail trail. Given the support for the project provided by NSW Government, it is not anticipated that this tenure will be an issue however an alternative route is available along the Faulder Avenue road reserve if needed.

The Yass Railway Museum occupies the railway corridor at the location of the former Yass Railway Station. As the museum is only open on certain days and at certain hours and the rail yards are fenced off, the rail trail will need to divert around this section to connect into the township as mentioned above.

2.3 Heritage Values

There are three (3) key State heritage sites present along the rail trail alignment:

- Yass Railway Museum;
- Yass Tramway Bridge; and
- Yass Junction Railway Station.

All three (3) of these heritage-listed sites are directly associated with the defunct tramway and proposed use as a rail trail. Because of this, their heritage value should be promoted to users of the trail, whilst ensuring that increased usage does not result in any compromise of heritage values.

Navin Officer Heritage Consultants (NOHC) were engaged to complete the desktop assessment to identify any cultural heritage considerations for the proposed rail trail and surrounding areas. Their initial assessment has found this project has the potential to impact heritage listed items, as noted in Table 2.2 of their assessment report. It is recommended that a full Heritage Impact Assessment and Statement of Heritage Impact be undertaken during subsequent stages of project delivery.

The heritage assessment found no Aboriginal sites within or immediately adjacent to the project study area. Given the project is being undertaken within an already disturbed rail corridor it is unlikely that there are unlisted Aboriginal heritage items in the project corridor. However, Navin Officer recommends that a due diligence field survey be undertaken prior to any construction to confirm that there are no Aboriginal sites within the project corridor.

Please refer to Appendix B for the Desktop Cultural Heritage Assessment Report.

2.4 Geotechnical and Drainage

A visual inspection of the existing ground conditions along the rail trail route was conducted by Burchills as part of the full rail corridor walkthrough in March 2023. A significant embankment failure was discovered approximately 1km north of the bridge which will need to be reconstructed as part of the rail trail development.

One other thing to note was the presence of a number of cuttings where drainage has not been maintained and water is allowed to pond. Additional fill material may be required in some of these locations to re-establish the longitudinal drainage.

2.5 Flooding and Hydraulic Impacts

This strategic assessment has not reviewed the flooding conditions at the existing bridge as there are no changes proposed to the existing structure. The proposed rail trail is likely to include the reconstruction of the timber sections of the existing bridge which will need to consider any potential flood debris loadings.

2.6 Environmental Constraints

2.6.1 Terrestrial Biodiversity

Terrestrial Biodiversity Areas, mapped under the Yass Valley Local Environmental Plan 2013, are present within the project area. These are generally located around the Yass River corridor, along with small areas in the north of the original rail alignment.

The intent of Terrestrial Biodiversity areas is to protect native fauna, flora and associated ecological processes and encourage conservation and recovery of native flora and fauna and their habitat. To meet this intent, the proposed works are required to be designed, sited and managed to avoid adverse environmental impacts and, where impacts are unavoidable they are to be minimized and mitigated. Where the proposed works are located within the mapped Terrestrial Biodiversity areas,

an environmental assessment should be undertaken to assess the condition, ecological value and significance of the fauna and flora on the land and determine if these features will be adversely impacted by the development of the rail trail.

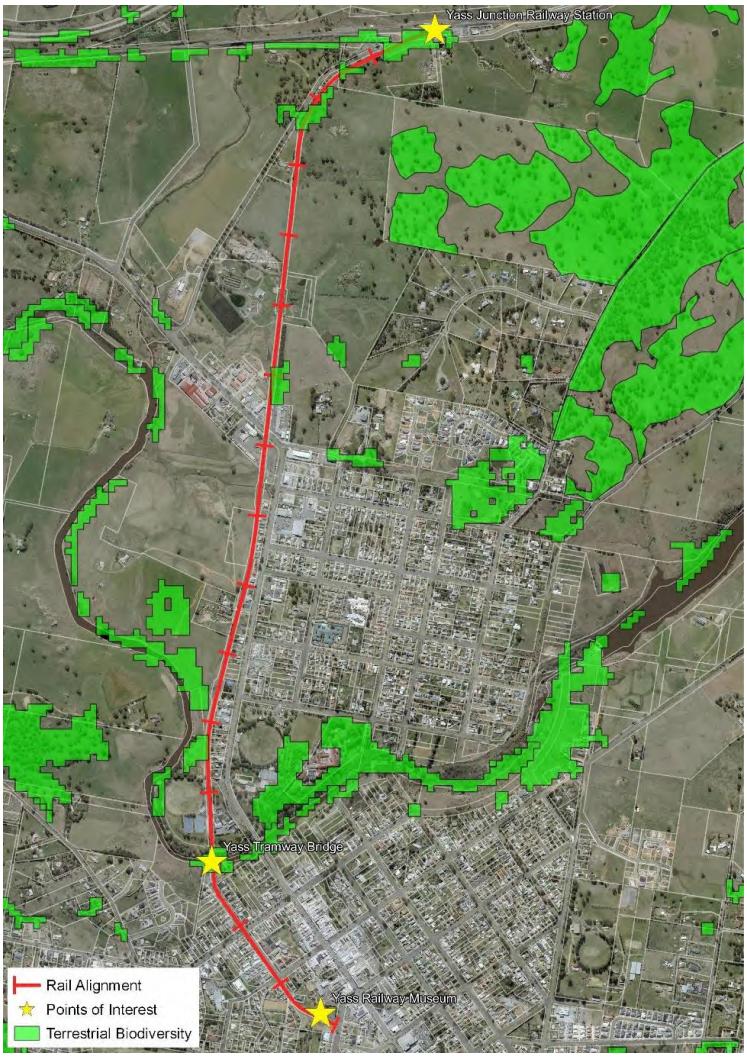

Figure 2.1 Yass Valley Local Environmental Plan 2013 – Terrestrial Biodiversity

2.6.2 Groundwater Vulnerability

Areas of Groundwater Vulnerability, mapped under the Yass Valley Local Environmental Plan 2013, are present in the north of the area of interest, generally between the town of Yass and the Yass Junction railway station. It is considered unlikely that groundwater will be impacted by the development as it does not include storage of waste or chemicals and will not require groundwater extraction.

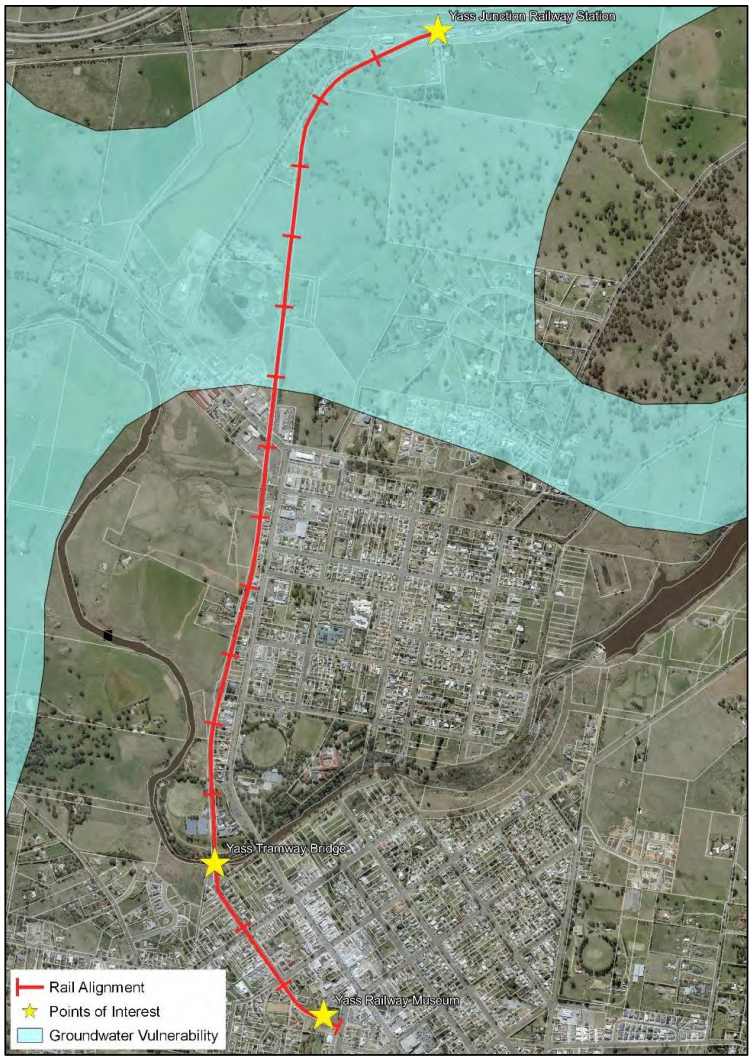

Figure 2.2 Yass Valley Local Environmental Plan 2013 – Groundwater Vulnerability

2.6.3 Riparian Land and Waterways

The Yass Valley Local Environmental Plan 2013 Riparian Land and Waterways mapping shows two (2) waterways within the project area: the Yass River and Bango Creek. The intent of this mapping is to protect and maintain water quality, stability of the bed and banks, aquatic and riparian habitats and ecological processes within these areas.

Where the proposed works are undertaken within or proximate to waterways (e.g. construction of new bridges), they should avoid impacts on water quality and flows, the aquatic ecosystem (including aquatic habitat and flora/fauna), bed and bank stability, passage of fish and other aquatic organisms and any future rehabilitation of the watercourse and riparian areas.

Figure 2.3 Yass Valley Local Environmental Plan 2013 – Riparian Land and Waterways

2.7 Landholder Issues and Concerns

Adjacent landowners are often apprehensive about trails close to their properties for a multitude of reasons, real or perceived. From observations, adjoining land uses include residential, commercial, industrial, rural residential, and agricultural. The range of issues that may arise include:

- Farm/stock 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.

In our experience, there are very few issues that cannot be overcome during the design process through early and open consultation with adjoining landowners and associated stakeholders.

2.8 Public Utility Plant

A review of the existing Public Utility Plant (PUP) has been completed with the following information:

- Available Yass Valley Council and relevant service provider GIS data.
- Before You Dig Australia (BYDA) data.

Table 2.1 provides a list of PUP which has been identified in the vicinity of the proposed rail trail and potential conflicts with the concept design. It is noted that no surface design has been undertaken to determine where cut/fill will occur. For the services that cross the trail, it has been assumed that the earthworks will maintain suitable cover over the existing assets. All PUP conflicts will need to be confirmed during detailed design.

Table 2.1 Potential PUP Conflicts

Asset Description	Asset Owner	Location	Potential for Conflict	Source of Data	Proposed Action
State Rail	ARTC	Yass Junction Station	Certain	GIS	YVC to discuss conflict with ARTC
Electricity	Essential Energy	Various locations – overhead only	Low	GIS	No underground services advised
Gas (high pressure)	Jemena	Along rail corridor	Medium	GIS	No action, review at detailed design
Telecommunications	Telstra	Various locations	Medium	GIS	No action, review at detailed design
Optical Fibre	NBN Co	Various locations	Medium	GIS	No action, review at detailed design
Water	YVC	Laidlaw Street and Dutton Street	Medium	GIS	No action, review at detailed design
Sewer	YVC	Laidlaw Street and Dutton Street	Low	GIS	No action, review at detailed design
Stormwater	YVC	Laidlaw Street and Dutton Street	Low	GIS	No action, review at detailed design

2.9 Dutton Street

The Dutton Street section of the rail trail has the existing rail tracks off-centred between the kerb creating a two-lane, two-way section and a separated one-way lane to provide access to the residents on the western side. This creates additional conflict points at the Meehan Street and Rossi Street intersections and may create further confusion about traffic movement priorities with the inclusion of the rail trail.

2.9.1 Meehan Street intersection

The intersection of Meehan Street and Dutton Street is a four-way priority-controlled intersection with Dutton Street as the minor approach controlled by a Give Way. The intersection is bound by

residential land use on each of the four quadrants except for the north-eastern where Mt Carmel School is situated.

Meehan Street has a wide carriageway with no dividing lines on the western approach which leads to Yass District Hospital. The eastern approach of Meehan Street has a splitter island, kerb extensions and angled parking adjacent to the school. This intersection connects Yass District Hospital with Comur Street which provides access to the wider region.

2.9.2 Rossi Street intersection

The intersection of Rossi Street and Dutton Street is also a four-way priority-controlled intersection with Dutton Street as the minor approach controlled by a Give Way. The intersection is bound by residential land use on each of the four quadrants except for a community use building in the north-western corner.

On the eastern approach of Rossi Street, there is angled parking and the western approach allows for parallel on-street parking. The northern leg of Dutton Street is a no through road and leads to the rail bridge over Yass River.

2.9.3 Crash History

There have been two recorded crashes in the vicinity of Dutton Street in the most recent available five year period (2017-2021). This included one hit pedestrian crash on Rossi Street (eastern leg) who sustained moderate injury. The second recorded crash which involved parking vehicles on the western leg of Meehan Street. This does not indicate a particular trend associated with the traffic movements on Dutton Street.

2.10 Trail Maintenance

Ongoing trail maintenance is a crucial component of an effective management program. Countless quality trails have literally disappeared due to a lack of maintenance. 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. Details on ongoing maintenance activities and costs are discussed in Section 5.

3. Concept Design Development

3.1 Yass Tramway Bridge

The existing heritage listed Yass Tramway Bridge is composed of timber trestle approach spans with a central 62 m long steel truss span on masonry blade piers.

A visual inspection of the bridge in March 2023 found that the existing timber components are in very poor condition and are very unlikely to be made economically serviceable through repairs. Our recommendation is to demolish the existing dilapidated timber structure (subject to heritage approvals) and replace with a brand new timber structure with a much longer design life (typically 50 years for timber structures). A new timber structure would maintain the heritage value and aesthetics as well as being made of lighter weight components than the original rail bridges since the rail trail is not required to withstand the same rail loads.

The central steel truss span and masonry piers appear to be in fair condition with no visible signs of distress and should be able to be reused for the rail trail (subject to detailed condition inspections and heritage approvals). Likely treatment of the steel truss will include repairs to corroded or damaged elements, followed by suitable painting using primers and sealers.

From a heritage perspective, the steel truss was the first of the post-Whitton structures in NSW using American-style steel Pratt trusses. Whitton was chief engineer for NSW Railways from 1856 to 1890 and stuck with heavy lattice trusses, often with overhead arch top-chord bracing. The deep Pratt trusses with simple overhead bracing were much more efficient.

The existing gas holder adjacent to the bridge was also in reasonable condition and it is recommended it be embellished as part of the rail trail development. This may involved fencing, minor landscaping and heritage signage but not public access given potential safety issues.

3.2 Pavement and Finishes

It is proposed to provide a sealed (concrete or asphalt) path along the length of the rail trail rather than an unsealed surface due to its proximity to the urban areas of Yass. The section from Yass up to the bridge is proposed to be 3.0 m wide concrete pavement, subject to the preferred option along Dutton Street. The possibility of providing a stamped and/or coloured railway feature in the concrete or asphalt surface has been considered in some locations. North of the bridge is proposed to be a 3.5 m wide trail formation with a 3.0 m wide asphalt seal.

3.3 Road Crossings

There are six (6) road crossings between Yass Junction and the Yass Township. The identified possible road crossings are as follows:

- Crago Street;
- Meehan Street;
- Rossi Street;
- Yarrah Drive;
- Laidlaw Street (Yass Valley Way); and

- Faulder Avenue.

Generally, the road crossing treatment required includes:

- Installation of signage on the rail trail (both sides of the road crossing) advising (or warning) of the upcoming crossing of the road. The recommended treatment is the installation of either "Give Way" or "Stop" signs and "Road Ahead" signs on both sides of the crossing.;
- "Trail Crossing Warning Signage" on the road (both sides of the trail crossing) alerting road users of the upcoming trail crossing;
- Installation of pipe culverts (where required); and
- Miscellaneous signage (including Rail Trail name and logo; distance signs; Emergency Marker signs; road name signs; users groups permitted, code of conduct, etc.).

Additional safety treatments such as warning signals may be necessary subject to detailed design.

3.4 Local Connections

Pathway connections from the rail trail to key local destinations have been considered in the design development and cost estimates including:

- Yass Public School (direct access to rear gate)
- Yass High School (connect to existing footpaths)
- Irvines Square Shopping Centre (via Orion Street road reserve)

Only the works within the rail reserve have been considered.

3.5 Dutton Street Options

Four (4) different alignment options have been investigated for the Dutton Street section of the rail trail as shown on the concept design drawings in Appendix A. Given the uncertainty of the scope of works for each option, the indicative cost estimate described in Section 3.6 includes a provisional sum for the roadworks (e.g. reprofiling) along Dutton Street. The estimate considers the concrete pavement works, road crossing treatments, signage, and landscaping will be similar for each option.

A brief summary of the pros and cons of each option has been provided below.

3.5.1 Option 1 – Rail Trail on existing rail alignment

Pros	Cons
• Minimal pavement works required (maintain existing surface for traffic lanes) • Path has no horizontal change in direction – direct route. • Can maintain existing street trees and driveways. • Maintains original rail alignment providing beneficial heritage opportunities.	• Conflict points at Rossi Street and Meehan Street with Dutton Street as the minor leg needing to Give Way. Priorities for the rail trail users will need to be clear to reduce potential for incidents with road traffic on the major legs of the intersections. • No connection points between the proposed rail trail and the existing footpaths on the verge. • Current position is least optimal use of road width maintaining the non-standard cross section. • The median island proposed at the Meehan Street intersection may pose a safety risk for trail users and introduce a potential road hazard for drivers.

3.5.2 Option 2 – Rail Trail on eastern side

Pros	Cons
• Zebra crossings provide rail trail user with right of way when crossing Meehan St and Rossi St. • Easily accessible from existing footpath on eastern verge. • Landscaping alongside verge provides separation to road traffic and shade • Optimises Road width to allow for two lanes as well as parking either side.	• Safety concern to cross Dutton Street at southern end and back over just north of Rossi St without right of way. • Traffic lanes on Dutton Street are not aligned at Rossi Street intersection potentially leading to driver confusion • Option does not consider the interaction between parking, trail users and driveways on western verge north of Rossi Street • Introduces conflict point with existing footpath users at the proposed zebra crossing locations • Potential for confusion on right of way between driveways and trail users between Meehan Street and Rossi Street

3.5.3 Option 3 – Rail Trail on western side

Pros	Cons
• Zebra crossings provide rail trail user with right of way when crossing Meehan St and Rossi St. • Landscaping alongside verge provides separation to road traffic and shade • Optimises Road width to allow for two lanes as well as parking either side. • Path has no horizontal change in direction – direct route.	• No connection between rail trail and existing footpath on eastern verge. • Possible driveway reconstruction costs to ensure sufficient grades along rail trail.

3.5.4 Option 4 – Rail Trail centred on road

Pros	Cons
• No conflicts with driveways • Separation between oncoming traffic • Wide carriageway could allow for suitable separation between road and trail users to accommodate signage and potentially street trees for additional shade.	• Rail trail users will not have right of way through crossing Meehan St and Rossi St. • The road would operate as two separate one-way roads resulting in residents not able to access driveways on opposite side without performing potentially unsafe uturn at intersections. • No safe crossings from rail trail to either verge to connect with existing footpath network. • The median island proposed at the Meehan Street intersection may pose a safety risk for trail users and introduce a potential road hazard for drivers.

3.6 Indicative Cost Estimate

A high-level indicative civil construction cost estimate has been completed for the Yass Rail Trail based on our initial site investigations, concept design, and from indicative and actual costs on other comparable rail trails completed by Burchills. The concept design drawings completed as part of this strategic assessment are included in Appendix A.

A summary of the estimated civil construction costs and associated development costs are presented in Table 3.1, with the full breakdown of quantities and rates provided in Appendix C. The recommended budget at this time is $11.1m.

Table 3.1 Indicative Project Cost Estimate

Item	Description	Indicative Cost
1	Preliminaries	$270,000
2	Bulk earthworks	$430,000
3	Civil works	$2,652,250
4	Bridge works	$4,210,000
5	Other items (detailed design, project management, embellishments, etc.)	$2,087,450
	Sub Total	**$9,649,700**
6	Contingency (15%)	$1,447,455
	Total Indicative Project Budget	**$11,097,155**

Note the above costs are based on preliminary investigations completed to date and are subject to significant variability as more detailed investigations are carried out. The estimate also includes assumptions about the final surfacing and bridge treatments which are the most significant components of the project.

4. Preliminary Cost Benefit Assessment

4.1 Qualitative Benefits

4.1.1 General Community Benefits

Rail trails provide several notable benefits for both visitors and residents including:

- A mix of relatively appealing urban and rural landscapes and a major bridge crossing leading into town would add to the enjoyment of trail users.
- Gentle gradient and short nature of the route, suitable for all types of cyclists and walkers.
- Providing a dedicated active transport connection in the Yass Region from the Yass Junction Station into Yass CBD;
- A rail trail provides outdoor recreation opportunities for cyclists, walkers, joggers, trail runners, people in wheelchairs, people in mobility scooters (gophers), parents pushing prams, school groups, clubs and families.
- The rail trail will improve community connectivity and provide increasing recreational options for local people thus contributing to both physical and mental health improvements;
- Providing historical information to users with rail trails has proven to have the power to connect users to their heritage by preserving historic places and by providing access to them;
- Showcasing local artists' outdoor art, potentially using rail hardware, tracks and sleepers in innovative ways both along the route and more obviously at the trailheads; and
- Community involvement in the delivery and marketing of the rail trail, bringing the local community together**.**

4.1.2 Opportunities for Business

A rail trail generally offers the opportunity for existing businesses to expand and new businesses to develop and employ more people in the region.

Direct economic benefits, in terms of user expenditure, are likely to be delivered by the rail trail. The rail trail will be one asset that can provide more employment opportunities in tourism and hospitality by offering niche tourism experiences for business in the vicinity of the rail trail.

Identifying specific business opportunities along a trail that may take years to develop is not a simple task, however, businesses that have succeeded elsewhere are in the fields of:

- Equipment Hire;
- Supported Tour Opportunities;
- Guided Walking/Cycle Touring;
- Off-trail Accommodation; and
- Food and Beverages

The *Rail Trails for NSW Evaluation Summary* (June 2022) identified 9 new or expanding businesses in the areas surrounding the Tumbarumba to Rosewood Rail Trail in the first 12 months of operation. Businesses included accommodation, food and beverage, and bike hire.

Interestingly, the *Rail Trails for NSW Evaluation Summary* found that spending on consumer staples increased 14% in Tumbarumba once the Tumbarumba Rosewood Rail Trail opened. The evaluation report identified that it was likely that the rail trail contributed to this increase due to visitors staying in the town, visiting the supermarket and similar outlets.

4.1.3 Health and Wellbeing

According to a public survey undertaken to inform the Yass Valley Council 2017 – 2027 Bike Plan and Pedestrian Access Mobility Plan (PAMP), over 75% of the 42 respondents owned a bicycle. It was noted that about 25% of the respondents described themselves as riding a bike either every day or at least once a week.

One of the key reasons that respondents did not cycle (~43%) was 'a lack of adequate paths / lanes / end of trip facilities), and 'recreation and fitness' accounted for 80% of the primary reason for cycling. As the Yass Rail Trail is easily accessible (within 2km of most of the town) and provides an enjoyable recreational cycling path across the town, it will provide an attractive recreational cycle path as well as a better connection between the north and south sections of the town.

4.1.4 Education

Trails present a unique opportunity for education. People of all ages can learn more about nature, culture or history along trails. Of particular importance, trails provide firsthand experience that educate users about the importance of the natural environment and respect for nature by leading users into a natural classroom.

Enhanced, active education along trails is achieved through the use of comprehensive trail guides and signage to encourage awareness of the natural, cultural and historical attributes of the trail.

Trails have the power to connect users to their heritage by preserving historic places and by providing access to them. They can give people a sense of place and an understanding of the enormity of past events

4.1.5 Liveability

Quality recreational facilities can help create attractive places to live and visit. Walking and cycling are relatively cheap modes of transport. Trails also provide a low impact means of travelling through the landscapes and play an important role in connecting people with nature

4.1.6 Environmental and Cultural Opportunities

Trails provide a number of environmental and cultural benefits. These include:

- Opportunities for the community to experience natural and cultural environments;
- Protection of the adjacent environments by localising impacts and facilitating management of visitation effects;
- Educational and interpretive opportunities and increased environmental and cultural awareness and appreciation;
- Increased community ownership which helps to preserve natural and cultural values;
- Corridor revegetation opportunities; and

- Opportunities for community participation in conservation and revegetation work.

4.2 User and Expenditure Forecasts

4.2.1 Tourists and Visitors

The market for day trippers is well established throughout the Capital Country region of New South Wales, with 2.8 million daytrippers recorded throughout the region in the year ending in December 2022. The town of Yass attracted 310,000 daytrippers in 2021. It is noted that the town of Yass is less than an hour drive from Canberra, making it an ideal daytrip destination for Canberra residents.

It is reasonable to estimate that the Yass Rail Trail, if developed, would attract in the order of 1,550 additional daytrippers / year. This number represents just under 0.5% of the existing day tripper market to the region and is a realistic expectation given the trail's relatively short length and a mix of urban and rural residential landscapes offset against ease of access to the major population centre.

Visitors to trails tend to spend money before coming to a trail and in the towns and villages along the way. Available research indicates that day trippers spend an average of $151.53/day.[1] Key categories of expenditure include food and beverage ($57.88 per day) and retail expenditure ($39.72 per day), with transport expenses such as fuel and maintenance items for bicycles making up the remainder of the expenditure.

Therefore, the daytrippers are expected to bring an additional $234,871 per year into the local economy.

Given the length of the trail, it is unlikely to attract overnight / long term guests specifically for the rail trail. However, it may be attractive enough to entice overnight visitors to prolong their stay, particularly with the attraction of the Yass Tramway Bridge becoming accessible to the public. We have not considered the potential economic impact of overnight visitors.

4.2.2 Local Users

As the proposed Rail Trail will be within 2km of the majority of the town, the entire population of Yass is considered within the local catchment for the rail trail. Based on 2021 population and growth data, the current (2023) population of Yass is 7,700 (www.profile.id.com.au).

Three possible scenarios have been used in calculating likely local user numbers. These are:

- A low / low scenario – 5% of the population within 2km of the trail making 5 visits / year to the trail
- A medium / medium scenario - 10% of the population within 2km of the trail making 10 visits / year to the trail
- A high / high scenario – 20% of the population within 2km of the trail making 20 visits / year to the trail.

[1] Sources: *Beeton (2003); Beeton (2006); Beeton (2009); Central Otago District Council (2011); Colmar Brunton (2009); Hughes et al (2015); Market Equity (2004); Manning et al (2000); NZ Ministry of Business, Innovation and Employment (2013)*

Based on the above scenarios, the potential annual local trail users have been calculated in Table 4.1 below. These figures do not consider the significant population growth forecast for the greater Yass area.

Table 4.1 Potential Annual Visits by Yass Valley Residents

	Low trail usage: 5% of residents	Med trail usage: 10% of residents	High trail usage: 20% of residents
Low (5 visits / yr)	1,925	3,850	7,700
Medium (10 visits / yr)	3,850	7,700	15,400
High (20 visits / yr)	7,700	15,400	30,800

(*Yass Valley Council Population within close proximity to the trail – 7,700*)

It is noted that a number of schools are located within 1.5km of the proposed rail trail, including:

- Mt Carmel School;
- Berinba Public School;
- Yass Public School; and
- Yass High School.

The rail trail provides a convenient cycling and walking route for students to travel to and from these schools. Providing high quality, safe active transport infrastructure encourages students to take active transport to school, which relieves traffic and parking congestion around schools, improves the physical and mental health of the students, and reduces carbon emissions.

According to Profile.ID (2021), there are 3,224 school aged children in Yass. Assuming that a conservative 15% of these walk or ride to and from school 3 days per week, this accounts for an additional 2,904 trips on the rail trail per year.

Expenditure per trip by local residents is always lower than for visitors, as locals are closer to home and more likely to either take all that they need with them or come home to eat and drink following a trail visit. Data collected on the Mundaring Shire trail network in Western Australian in 2001 ($1.44/person/trip in the Shire – mainly food and drink) are a legitimate base to work from (and have been converted into 2022 dollars - $2.46/person/trip).

Using this figure in combination with visitation scenarios generated in Table 4.1 gives a range of expenditure estimates, as shown in Table 4.2.

Table 4.2 Potential Annual Local User Expenditure

	Number of Person Visits	Total Spent ($)
Low / low	1,925	$4,736
Medium / medium	7,700	$18,942
High / high	30,800	$75,768

It would seem that the low / low scenario of 1,925 person visits per year (i.e. 5% of the local population using the trail for 5 visits per year) is a reasonable, if very conservative, scenario to adopt. Such visitor numbers would inject $4,736 into the local economy.

4.3 Summary of Potential Economic Benefits

The Yass Rail Trail will provide numerous benefits to residents and businesses of the region. With the right marketing, the trail will attract local users, day trippers, and potentially longer stay tourists.

Under a relatively conservative scenario, the following direct economic benefits are achievable:

- Significant local use (in terms of relative proportions of the population) – over **1,925 local users / year** is a reasonable expectation. This will result in an economic injection of **$4,736 per year**.
- Expansion of the existing day-tripper market to the region could potentially result in **1,550 day-trippers / year** yielding an injection of **$234,871 / year**.

The proposed rail trail offers a range of other benefits that are difficult to quantify but are important to consider when assessing the project's merits. These include:

- Increase in value added to the regional economy from supply chain and consumption affects associated with construction.
- Direct and indirect employment opportunities from construction and operation.
- Increase in consumer surplus (the price consumers are willing to pay for goods and services).
- Potential direct revenue from new commercial leases along the rail trail.
- Opportunities for existing businesses to extend their offerings and improve the sustainability of businesses reliant on tourism.
- Increases in land values and property prices through the enhancement of open spaces.
- Stimulation of additional private and public investment in the region.
- Increased recreational options for local communities will aid overall community wellbeing, and in the long-term reduce health costs.

As detailed above, there are a significant number of potential qualitative and quantitative benefits presented by the proposed rail trail project.

5. Trail Maintenance

5.1 Introduction

Building good trails in the first place is the very best way of minimising future problems and costs. As a second line of defence, a clear and concise Management Plan with a regular maintenance program written into it will aid significantly in managing ongoing resource demands.

The goals of a Trail Maintenance Plan are to:

- Ensure that trail users continue to experience safe and enjoyable conditions;
- Guard against the deterioration of trail infrastructure, thereby maintaining the investment made on behalf of the community;
- Minimise the trail manager's exposure to potential public liability claims arising from incidents which may occur along the trail; and
- Set in place a management process to cover most foreseeable risks.

Resourcing a maintenance program is crucial and funds will be required on an ongoing basis to ensure appropriate maintenance. This matter should be addressed in the preparation of the maintenance plan. The Trail Maintenance Plan to be prepared for this trail should ensure clear allocation of responsibilities for relevant parties including but not limited to Council, community groups and State Government.

5.2 Public Liability and Risk Management

It is prudent that the nominated trail manager is aware that they carry a significant duty of care towards those visitors accessing the trail. The maintenance of a quality trail is therefore critical from this perspective. Legislative changes across Australia have reduced the number of small claims against land managers. However, liability generally rests with the land managers and hence, every attempt should be made to minimise the risk of accident or injury to trail users and therefore the risk of legal action.

A formal Hazard Inspection process is crucial in the ongoing maintenance plan. Not only will this define maintenance required and/or management decisions to be addressed, but it is also vital in ensuring safe conditions and therefore in dealing with any liability claim which may arise in the future. Further, clearly defined 'User Responsibility' statements in brochures, maps, policy documents, plans and public places will assist this process.

5.3 Trail Maintenance Activities

Maintenance on the rail trail should be divided between regular inspections and simple repairs, a one (or two) person job, and quarterly programs undertaking larger jobs such as significant signage repairs or weed / vegetation control. A range of basic machinery, tools and equipment will be required for this work. At the core of any trail maintenance program is an inspection program. The relevant Australian Standards sets out the basis for frequency of trail inspections. It only covers walking tracks and provides for inspections every 30 days (or less) for Class 1 trails, every 90 days for Class 2 trails, and annually for Class 3-6 trails. This sets the minimum standard for inspections and is a guide only. What the Australian Standards do not include but should include is an inspection of any trail

after significant weather events such as storms, fire, floods, and high winds in addition to the regular inspection program.

In general, Maintenance Plans are based around regular inspections, at which time simple maintenance activities should take place concurrently (Table 5.1 provides a broad outline of activities). More time-consuming maintenance activities should take place every six months, while detailed Hazard Inspections should occur annually. Further, the capacity to respond immediately to random incoming reports of hazards or major infrastructure failures should be built into the Plans.

Some of the most frequent maintenance tasks 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.

Table 5.1 Key Elements for a Trail Maintenance Program

Activity	Notes
Check, repair or replace all trail signage, esp. road-crossings and directional markers	Particular attention needs to be given to signs at road crossings or junctions. Each crossing should be carefully checked to ensure that all signage is present, and that all signs are clearly visible. Particular attention must be given to ensuring that “Trail Crossing ahead” signs (on roadside at approach to trail crossing) are not obscured by overhanging vegetation. Each trailhead should be carefully checked to ensure that all signage is present, and that all signs are clearly visible and legible. An inventory of locations needs to be prepared to assist in regular maintenance. Interpretive panels should be checked for damage and cleaned if necessary. If damage is too great, replacement is essential. An inventory of locations needs to be prepared to assist in regular maintenance.
Check and cut-back overhanging or intruding vegetation	Undergrowth vegetation grows quickly, and over time will continue to intrude into the trail 'corridor'. Such intruding vegetation will need to be cut back to provide clear and safe passage for trail users. Care will be taken to ensure that sharp ends are not left protruding into the trail as these can harm trail users. It should be noted that trailside vegetation hangs lower when wet, and allowances should be made for this when assessing whether or not to prune. "Blow-downs" - trees or limbs that have fallen across the trail - will be cleared as a part of this process. Sight lines must be kept clear either side of road crossings as a part of this process, to ensure that users can clearly see a safe distance either way at road crossings.
Check condition of trail surface for erosion (or other) damage and arrange repairs if necessary; trim off regrowth vegetation	Some of the trail sections will require regular surface maintenance, though this should be minimal as the rail formation was originally constructed with drainage a major consideration. Primary focus will be on erosion damage caused by water flowing down or across the trail and by illegal motor vehicle and trail bike use. This must be repaired as soon as it is noted, or it will get worse, quickly.
Check and clear drains	Drainage maintenance is critical. Drains need to be checked and cleared once or twice/year and after heavy rainfall events. Regular maintenance especially after heavy rainfall is essential. Most maintenance will involve clearing of material from silted up or blocked drains. Any scouring out of table drains should be stabilised as soon as possible. Drain blockages should be cleared as urgent priority. Silt traps at culvert discharges or entry points should be cleared regularly. Drains through cuttings will require attention, though care during construction of trail (through cuttings) will minimise ongoing maintenance requirements.
Check structural stability of built structures such as trailside furniture,	Visual inspection is appropriate though detailed inspection should follow storm events.

culverts, interpretive signage, interpretive shelters	
Check structural stability of cuttings	Visual inspection is appropriate though detailed inspection should follow storm events.
Maintain all non-slip surfaces	Maintenance on these surfaces is critical to prevent build-up of conditions that can lead to deterioration. Leaf blowing, sweeping, gurneying and the application of algaecide are all appropriate techniques. The appropriate technique and efficiency will be subject to site conditions.
Undertake Hazard Inspection and prepare Hazard Inspection Report	This should be done annually

5.4 Maintenance Costs

5.4.1 General Notes

Evidence of actual trail maintenance costs for individual items along a rail trail, or any trail for that matter, are scarce. Limited anecdotal evidence on maintenance costs for other rail trails has been gather from various sources as described below.

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.

The Kilkivan Kingaroy Rail Trail in South East Queensland opened in September 2017. In October 2019, representatives of the South Burnett Regional Council (responsible for approximately half the trail) advised that maintenance costs were in the order of $500/km/year.

The Brisbane Valley Rail Trail in Queensland has an annual maintenance budget of $900,000 (2023) for its 162 km length and is managed by four separate Council's and the State Department of Transport. This figure amount to approximately $5,500/km/year but includes some allowance for capital improvements as well as a dedicated full time ranger.

5.4.2 Estimate of Maintenance Costs

Table 5.2 provides a very preliminary estimate of the amounts that may be required on an annual basis for maintaining the proposed Yass Rail Trail for regular "day to day" maintenance.

Table 5.2 Estimate of "Day to Day" Maintenance Costs

Task	Frequency/note	Possible costs
Inspect and check trailhead facilities and infrastructure: - parking areas (check surfaces) - interpretive panels - picnic tables - trailhead signage (on road) - trailhead (map) panel	2 trailheads at average repairs of $1,000 per site/year	$2,000

Task	Frequency/note	Possible costs
Check side vegetation growth and overhead vegetation and cut back where required. Clearing of fallen trees and branches.	Allowance of 3 person days per year (@ $900/day).	$2,700
Slash corridor both sides of trail to reduce weeds and fire load/risk.	Allowance for 50% corridor, both sides of trail. Corridor slashed 5 times a year.	$4,500
Inspection of bridges (all timber components, decking, handrails, etc.). Check for obstructions and clearing under bridges.	Allowance of 10 hours for inspections and minor repairs	$2,000
Inspection of culverts. Check for obstructions and clearing under culverts.	Allowance of 5 hours for inspections, clearing and minor repairs.	$1,000
Check road crossings. Replace damaged and/or missing signs and undertake other tasks: - Give Way and Road Ahead signs - Trail Crossing warning signs - Road name signs - Regulatory signs - Check sight distances and clear vegetation if necessary	Road crossings at average repairs of $500 per crossing/year	$3,000
Allowance for replacement of trail directional marker logo/arrow plates and trail kilometre posts.	2 replacements/length/year	$1,000
Allowance for repairs to trailside furniture and occasional replacements (when required).	Inspection and minor repairs every 6 months. 1 replacement per year.	$2,000
Check miscellaneous signs along trail (e.g. trail name, distance signs, “No Trespassing”, bridge load signs, etc).	5 replacements/length/year	$2,000
Check gates, other barriers and fences at road crossings. Make repairs where necessary.	Allowance of $2,000 per year for repairs.	$2,000
Check interpretation panels along trail for damage and structural stability.	Allowance for repair of 1 panel per year.	$1,000
Additional weed management	Annual allowance	$5,000
Callout requests for local sections of erosion	Allow 10 visits/year	$4,000
Rubbish and litter collection	Including illegal dumping and rubbish	$5,000
Inspection of rail trail (3 times/year). *(See Note 2).*	Allowance for 3 inspection trips per year.	$3,000
Preparation of annual Hazard Inspection Report.	1 person days @ $1,500/day.	$1,500
	$ excl GST (per annum)	***$41,700***

This equates to a rate of approximately $9,300 per kilometre per annum. The per kilometre rate does not include major asset renewal for surfacing, bridges, and fencing.

Asset renewal provisions should be provided for separately and cover replacement of surfacing, fencing and bridges. These provisions would have separate timeframes for replacement with fencing and surfacing requiring renewal in a shorter time than bridges.

5.5 Reducing Maintenance Costs

Using volunteers is the key element in reducing the maintenance costs. Volunteers could undertake much of the ongoing maintenance of the trail if a volunteer maintenance programme 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 Munda Biddi Trail Foundation assists with planning, developing, marketing and maintaining the trail. It enlists paid memberships, enrolls and manages volunteers, holds trail and community events, and provides information and resources to enhance the quality of the trail experience. Over 85% of that trail is maintained by volunteers.
- Activities of the Friends of the Lilydale to Warburton Rail Trail include revegetation, weed eradication, protection of remnant species, and building and restoration work.
- Parklands Albury Wodonga a community-based, not for profit organisation focused on undertaking the conservation of "bush parks" in and around Albury-Wodonga from an ecological perspective, whilst allowing sympathetic recreational access. One of the Group's projects is managing and maintaining the High Country Rail Trail.

An enormous amount of money is saved as the volunteers carry out many of the inspections and minor repair work.

6. Feasibility Statement

A rail trail on the disused rail corridor between Yass Junction Station and Yass Railway Museum is technically feasible. The issues raised can be overcome with good design and the corridor remains in public ownership.

This Feasibility Study sought to answer several questions as set out in Table 6.1.

Table 6.1 Trail Feasibility Assessment

Key Question	Answer
Is there a viable trail route?	Yes, no major constraints on the proposed route
Are there alternative uses for the corridor that will provide more value to the community? Are these alternative uses viable?	No proposals for alternative uses of the corridor have been made as far as the consultants are aware. Previously proposal for tourist train were found to be unfeasible.
Will the trail provide a quality user experience (terrain/landscape/history)?	Yes, multitude of attractions including but not limited to Yass Junction Station, various historical locations along route, Yass River Bridge, Rail Museum.
Is there a market for the proposed trail?	Yes, with some limitations given short length in comparison to other rail trails.
Will the rail trail create any unmanageable or unmitigated impacts on adjoining landholders' farming practices and lifestyles?	No, none uncovered as part of this assessment
Is the local government and key stakeholders supportive of the concept?	Yes, government and key stakeholders support
Is there a supportive community?	Yes, majority of community support
Would the trail be value for money?	Yes, with some limitations. Per km costs for construction and maintenance are above the average for rail trails in Australia given the expense in remediating the Yass River Bridge.
Is there a commitment to maintenance ("friends of …" group or support network)?	We are not aware of any such groups but this has not been explored in detail.
Will the trail provide a unique experience?	No, similar features to other rail trails in Australia although the age, condition, and scale of the Yass Tramway Bridge is a significant attraction.
Is there a demonstrated benefit to trail users and, especially, the host communities?	Yes, strong tourism and active transport opportunity to the Yass community

7. References

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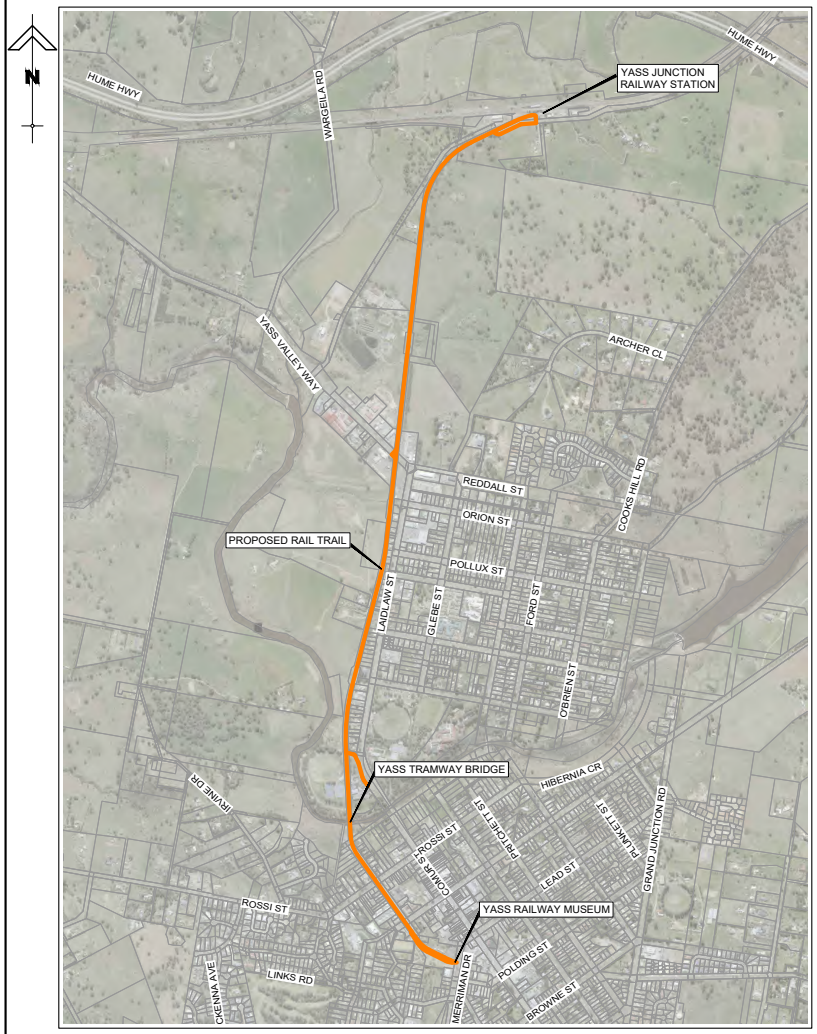
Appendix A – Concept Design Drawings



YASS RAIL TRAIL

CONCEPT DESIGN DRAWINGS

CONTRACT BE230076

DRAWING INDEX

DWG No.	DESCRIPTION
C000	LOCALITY PLAN AND DRAWING SCHEDULE
C100	RAIL TRAIL TYPICAL CROSSING SECTIONS
C101	RAIL TRAIL TYPICAL PAVEMENT DETAILS
C200	RAIL TRAIL - KEY PLAN
C201	PLAN - SHEET 1
C202	PLAN - SHEET 2
C203	PLAN - SHEET 3
C204	PLAN - SHEET 4
C250	DUTTON STREET - OPTION 1 - SHEET 1
C251	DUTTON STREET - OPTION 1 - SHEET 2
C260	DUTTON STREET - OPTION 2 - SHEET 1
C261	DUTTON STREET - OPTION 2 - SHEET 2
C270	DUTTON STREET - OPTION 3 - SHEET 1
C271	DUTTON STREET - OPTION 3 - SHEET 2
C280	DUTTON STREET - OPTION 4 - SHEET 2
C281	DUTTON STREET - OPTION 4 - SHEET 2
C290	TYPICAL DUTTON STREET SECTIONS
C301	RAIL TRAIL - CROSSING - SHEET 1
C302	RAIL TRAIL - CROSSING - SHEET 2
C303	RAIL TRAIL - CROSSING - SHEET 3
C400	RAIL TRAIL - BRIDGE

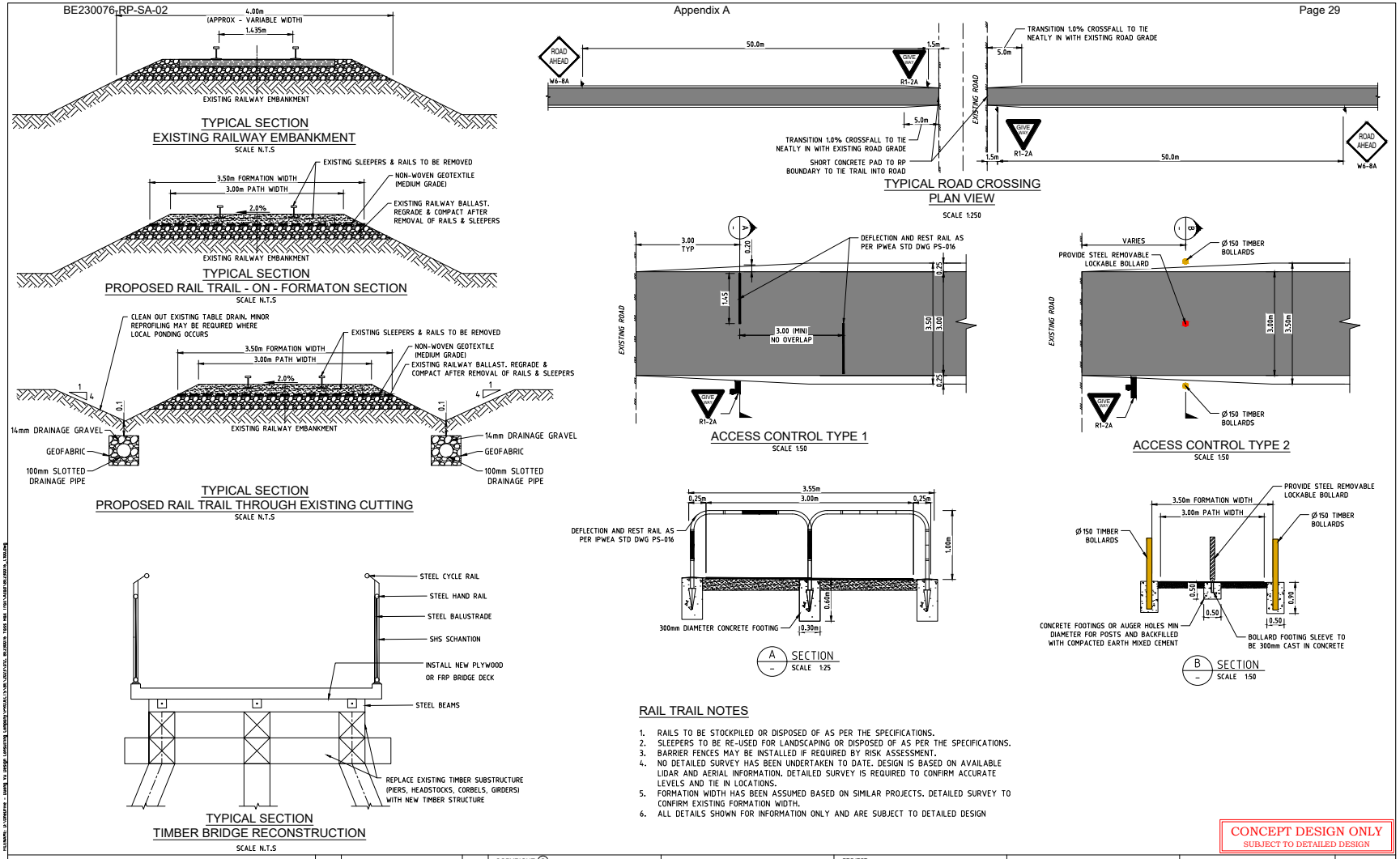
PREPARED FOR

yass valley council

the country the people

DATE : 19-04-2023

PROJECT No.:	DRAWING No. :	VERSION
BE230076	C000	A



RAIL TRAIL NOTES

1. RAILS TO BE STOCKPILED OR DISPOSED OF AS PER THE SPECIFICATIONS.
2. SLEEPERS TO BE RE-USED FOR LANDSCAPING OR DISPOSED OF AS PER THE SPECIFICATIONS.
3. BARRIER FENCES MAY BE INSTALLED IF REQUIRED BY RISK ASSESSMENT.
4. NO DETAILED SURVEY HAS BEEN UNDERTAKEN TO DATE. DESIGN IS BASED ON AVAILABLE LIDAR AND AERIAL INFORMATION. DETAILED SURVEY IS REQUIRED TO CONFIRM ACCURATE LEVELS AND TIE IN LOCATIONS.
5. FORMATION WIDTH HAS BEEN ASSUMED BASED ON SIMILAR PROJECTS. DETAILED SURVEY TO CONFIRM EXISTING FORMATION WIDTH.
6. ALL DETAILS SHOWN FOR INFORMATION ONLY AND ARE SUBJECT TO DETAILED DESIGN

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YASS RAIL TRAIL
CONCEPT DESIGN DRAWINGS
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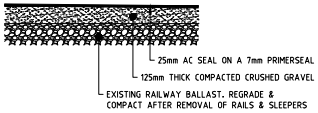
PROJECT: YASS RAIL TRAIL

DRAWING TITLE: RAIL TRAIL TYPICAL CROSSING SECTIONS

DEVEL. APPLIC. No. :	DATE : 19-04-2023
PROJECT LEADER : TOBY BENNETT	DESIGNER : THUY VU
DRAFTSPERSON : THUY VU	CHECKED : TOBY BENNETT
APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365	
RPEQ No. :	
SCALE : AS NOTE	DATUM : AHD / FULL SIZE : A1
PROJECT No. : BE230076	DRAWING No. : C100 / VERSION: A



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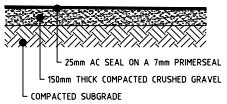

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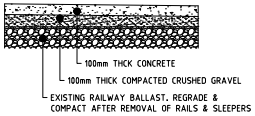
SEALED PAVEMENT DETAILS
SCALE N.T.S



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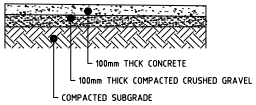

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CONCRETE PAVMENT DETAILS
SCALE N.T.S

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PROJECT: YASS RAIL TRAIL

DRAWING TITLE: RAIL TRAIL TYPICAL PAVEMENT DETAILS

DEVEL. APPLIC. No. :	DATE : 21-04-2023
PROJECT LEADER : TOBY BENNETT	DESIGNER : THUY VU
DRAFTSPERSON : THUY VU	CHECKED : TOBY BENNETT
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RPEQ No. :	
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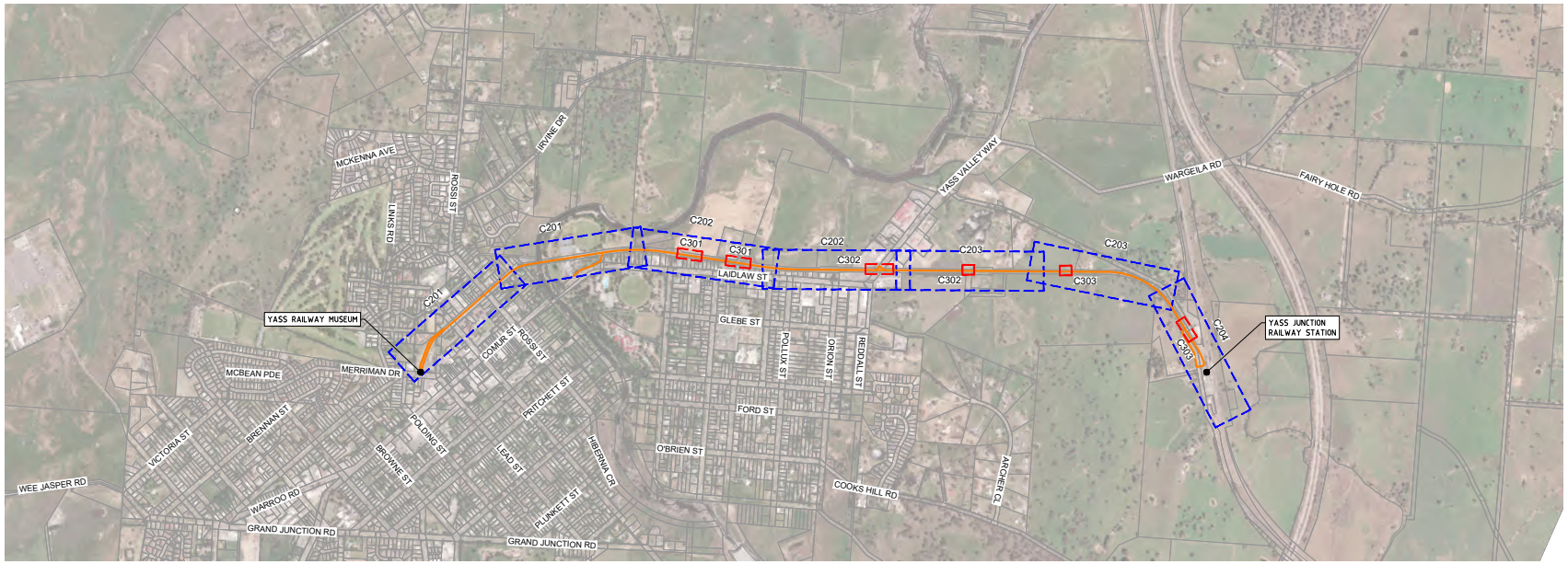

LEGEND

- EXISTING CONTOUR
- EXISTING LOT BOUNDARY
- EXISTING RAIL FORMATION
- EXISTING BRIDGE
- EXISTING EARTHWORKS BATTER
- CH100 PROJECT CHAINAGE
- B01-01 EXISTING RAILWAY BRIDGE
- RB01-01 EXISTING ROAD OVERBRIDGE
- R01-01 EXISTING ROAD LEVEL CROSSING
- D01-01 EXISTING DRIVEWAY CROSSING (PRIVATE)
- C01-01 EXISTING CULVERT
- PROPOSED CONTOUR
- PROPOSED SWALE DRAIN
- PROPOSED BATTER
- PROPOSED CONTROL LINE
- PROPOSED PEDESTRIAN FENCE
- PROPOSED RAIL TRAIL - ON FORMATION - ASPHALT SEALED
- PROPOSED RAIL TRAIL - ON FORMATION - CONCRETE
- PROPOSED RAIL TRAIL - STRUCTURE BRIDGE
- PROPOSED RAIL TRAIL - OFF-FORMATION - ASPHALT SEALED
- PROPOSED RAIL TRAIL - OFF-FORMATION - CONCRETE
- PROPOSED LANDSCAPE BUFFER

KEY PLAN

SCALE 100 0 100 200 300 400 500 (metres)
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DRAWING TITLE: RAIL TRAIL - KEY PLAN

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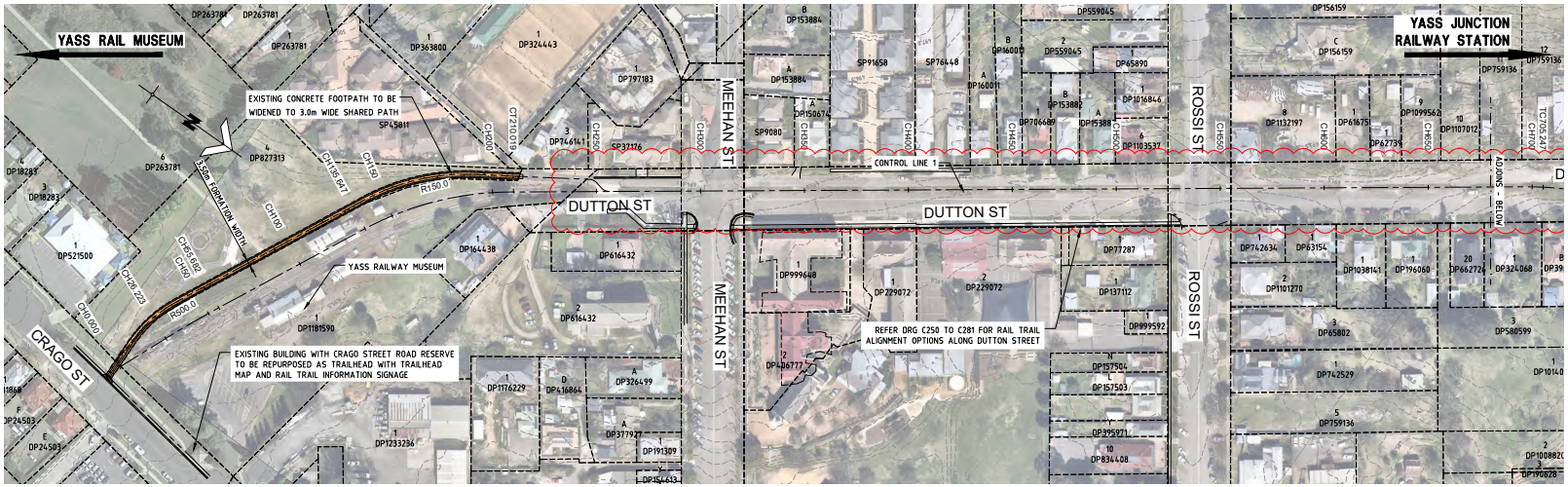

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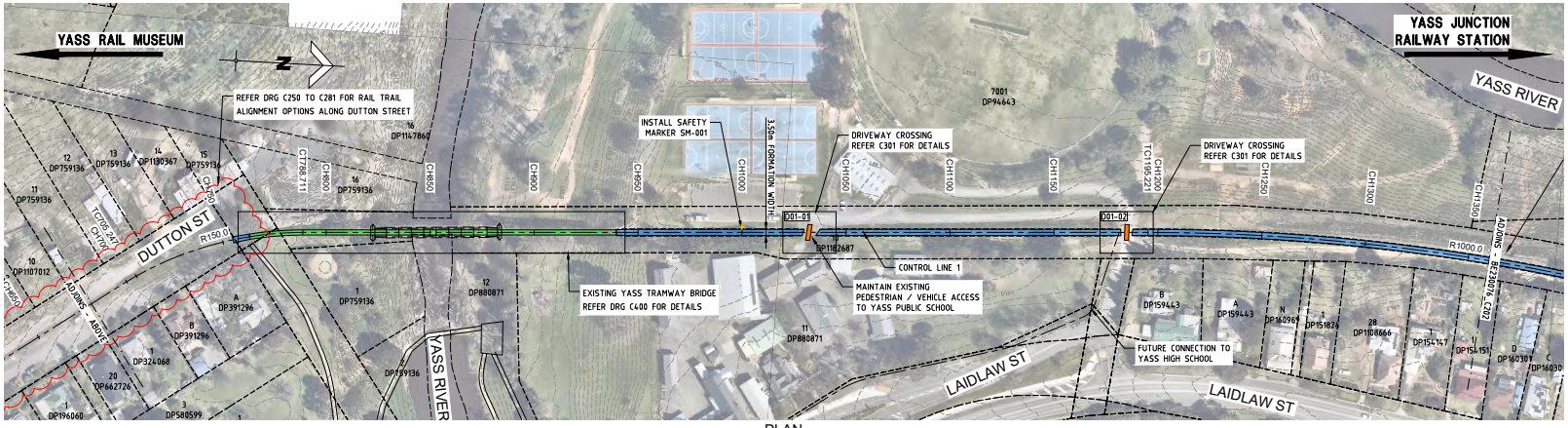

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DRAWING TITLE : PLAN - SHEET 1

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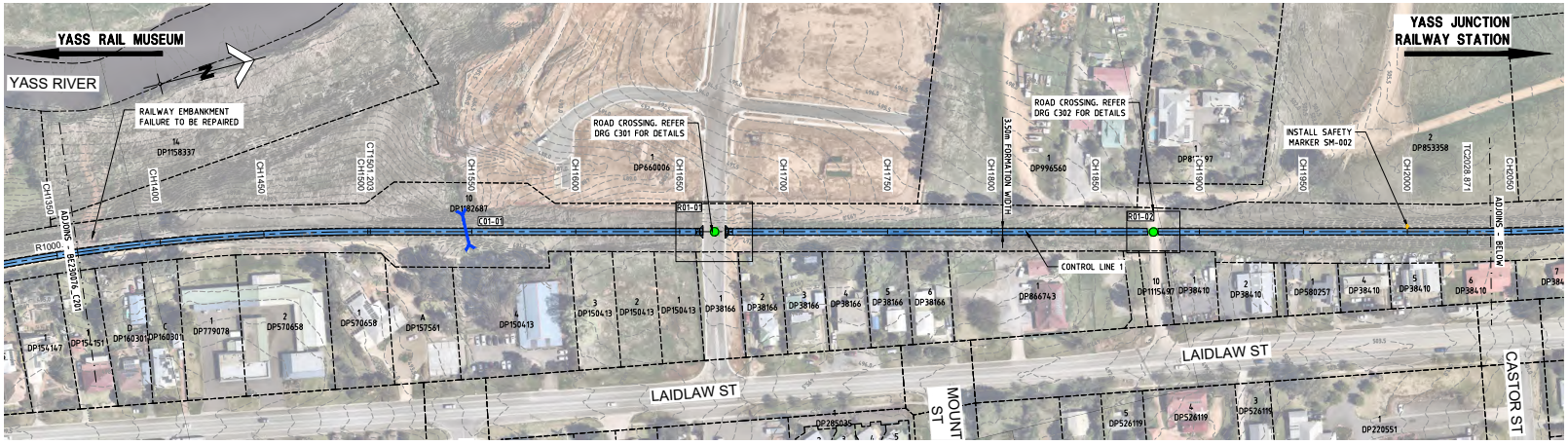

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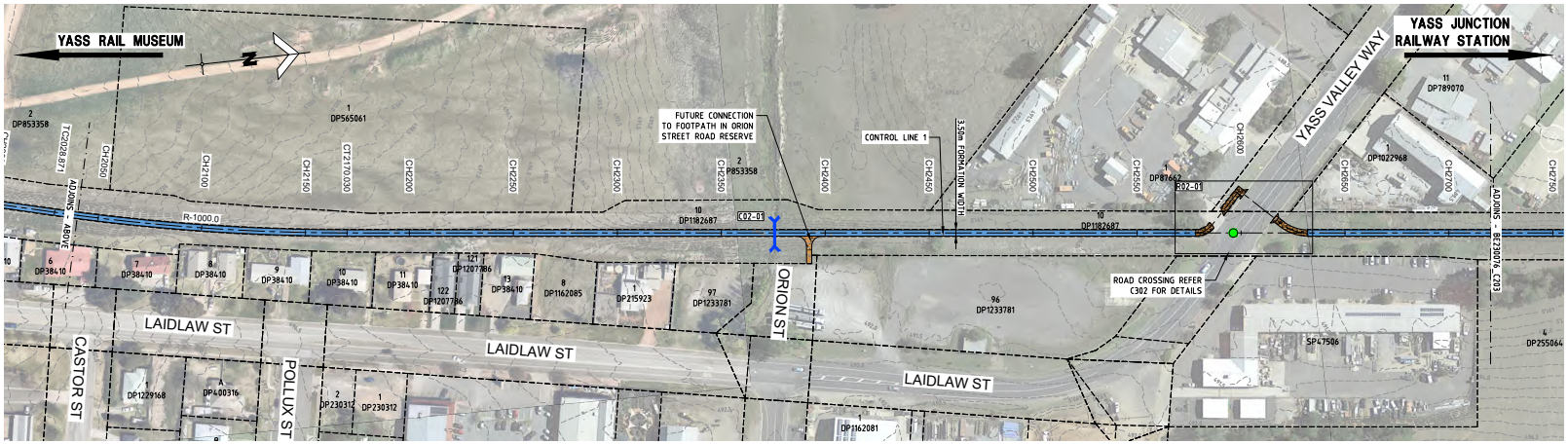

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DRAWING TITLE : PLAN - SHEET 2

DEVEL. APPLIC. No. :		DATE : 19-04-2023
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DRAFTSPERSON : THUY VU	CHECKED : TOBY BENNETT	
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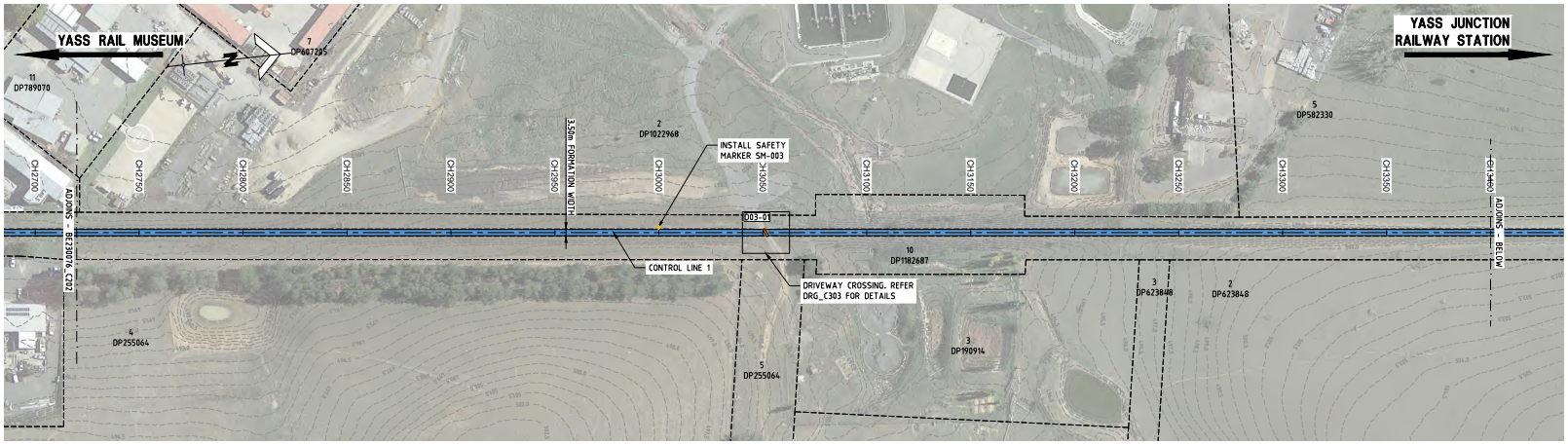

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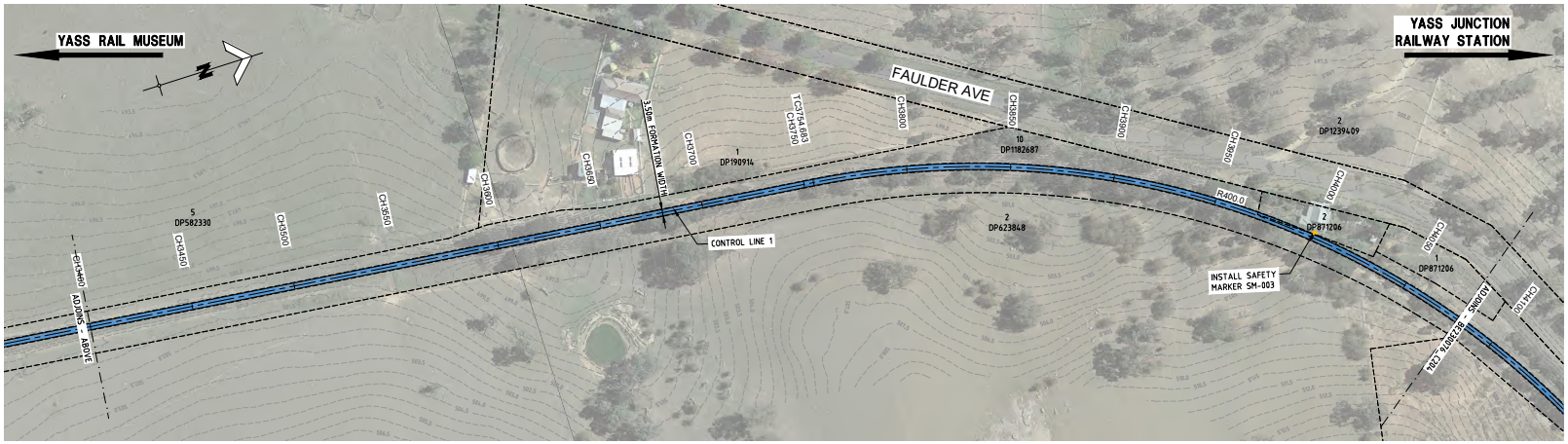

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PROJECT: YASS RAIL TRAIL

DRAWING TITLE : PLAN - SHEET 3

DEVEL. APPLIC. No. :		DATE : 19-04-2023
PROJECT LEADER : TOBY BENNETT	DESIGNER : THUY VU	
DRAFTSPERSON : THUY VU	CHECKED : TOBY BENNETT	
APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365		
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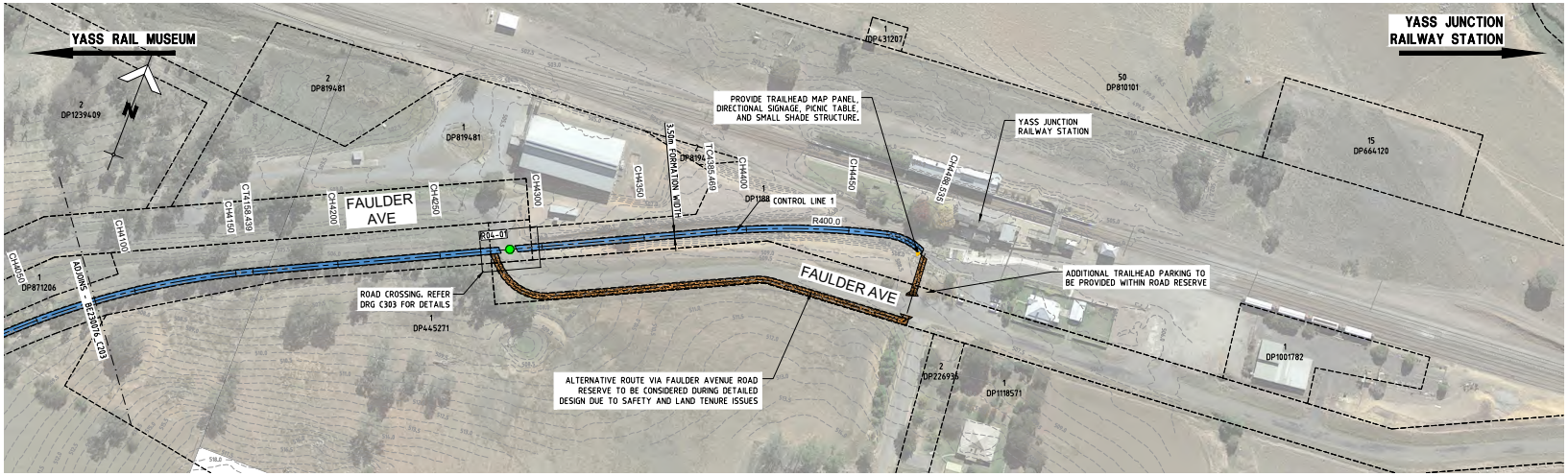
PROJECT No. : BE230076	DRAWING No. : C203	VERSION: A



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PROJECT: YASS RAIL TRAIL

DRAWING TITLE : PLAN - SHEET 4

DEVEL. APPLIC. No. :	DATE : 19-04-2023
PROJECT LEADER : TOBY BENNETT	DESIGNER : THUY VU
DRAFTSPERSON : THUY VU	CHECKED : TOBY BENNETT
APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365	
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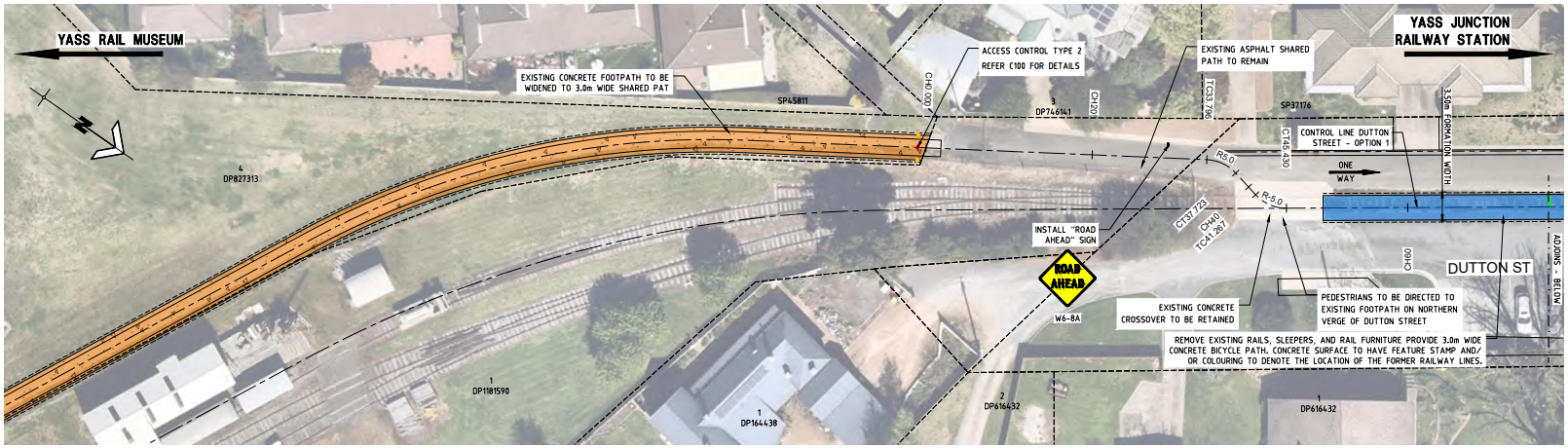

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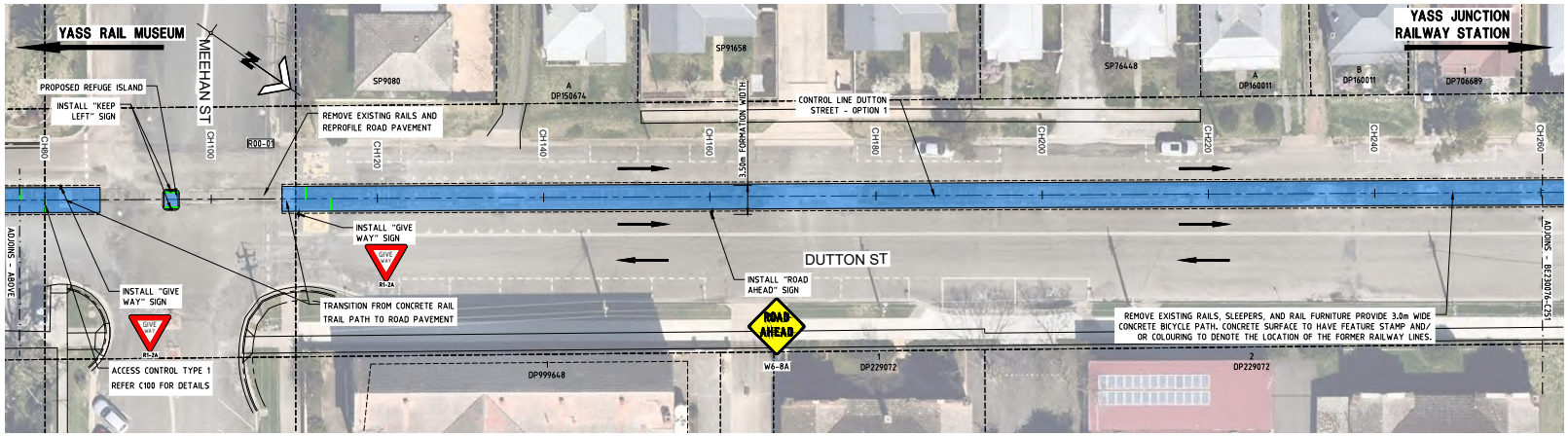

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CONCEPT DESIGN ONLY
SUBJECT TO DETAILED DESIGN

YASS RAIL TRAIL
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ABN 76 166 942 365

PROJECT: YASS RAIL TRAIL

DRAWING TITLE: DUTTON STREET - OPTION 1 - SHEET 1

DEVEL. APPLIC. No. :	DATE : 19-04-2023
PROJECT LEADER : TOBY BENNETT	DESIGNER : THUY VU
DRAFTSPERSON : THUY VU	CHECKED : TOBY BENNETT
APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365	
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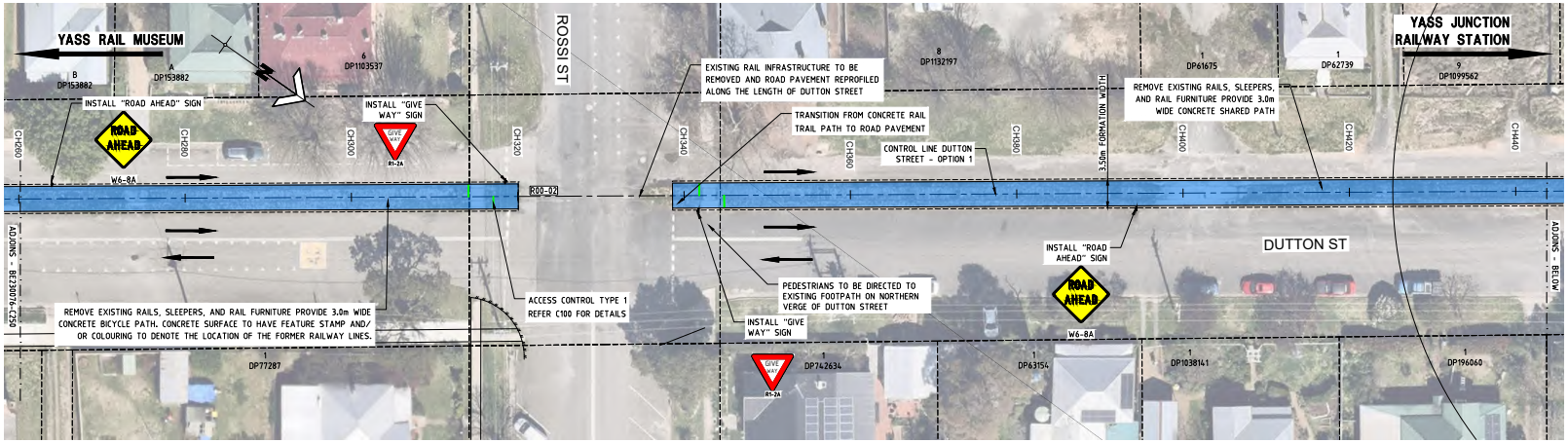

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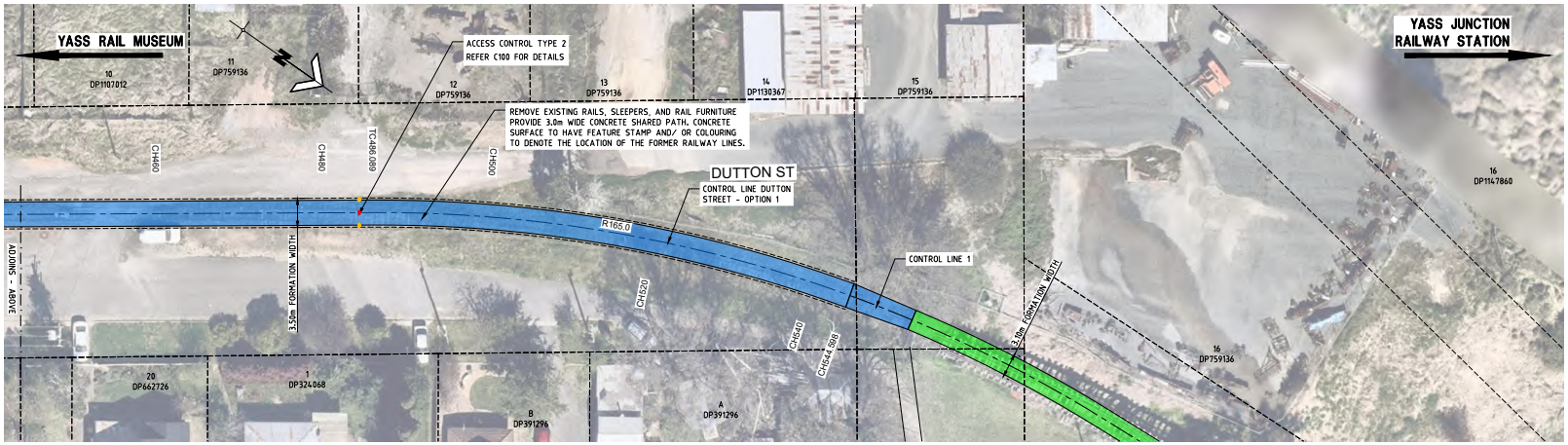

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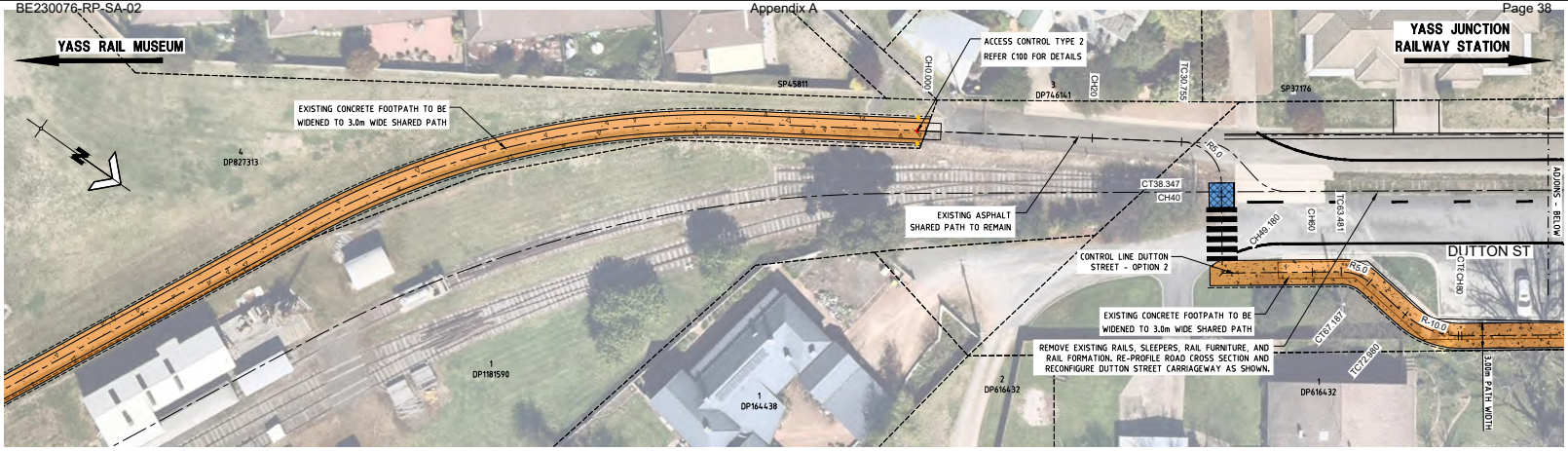
IPSWICH | MORETON BAY
PHONE: +61 7 5509 6400
FAX: +61 7 5509 6411
EMAIL: ADMIN@BURCHILLS.COM.AU
COOTE BURCHILLS ENGINEERING PTY LTD
ABN 76 166 942 365

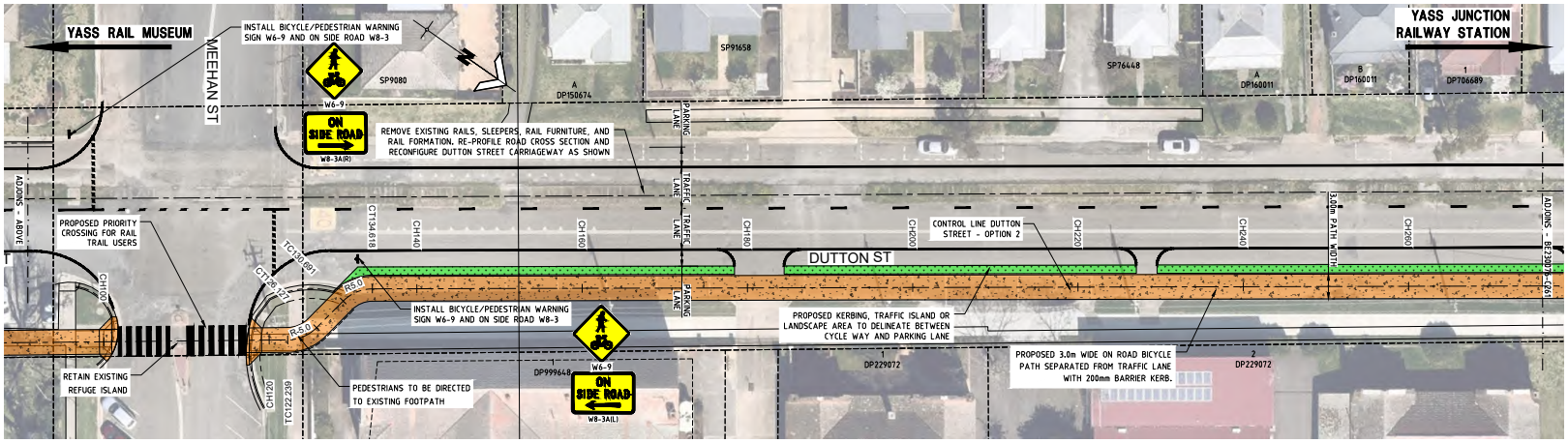
PROJECT: YASS RAIL TRAIL

DRAWING TITLE: DUTTON STREET - OPTION 1 - SHEET 2

DEVEL. APPLIC. No. :	DATE : 19-04-2023
PROJECT LEADER : TOBY BENNETT	DESIGNER : THUY VU
DRAFTSPERSON : THUY VU	CHECKED : TOBY BENNETT
APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365	
RPEQ No. :	
SCALE : AS NOTE	DATUM : AHD FULL SIZE : A1
PROJECT No. : BE230076	DRAWING No. : C251 VERSION: A



PLAN
SCALE 1 : 250 (FULL SIZE) (metres)



PLAN
SCALE 1 : 250 (FULL SIZE) (metres)

CONCEPT DESIGN ONLY
SUBJECT TO DETAILED DESIGN

YASS RAIL TRAIL
CONCEPT DESIGN DRAWINGS
FOR
YASS VALLEY COUNCIL
yass valley council
the country the people
A1 ORIGINAL SIZE BEFORE REDUCTION

VER.	DESCRIPTION	DATE
A	ORIGINAL ISSUED	19-04-23

BURCHILLS ENGINEERING SOLUTIONS
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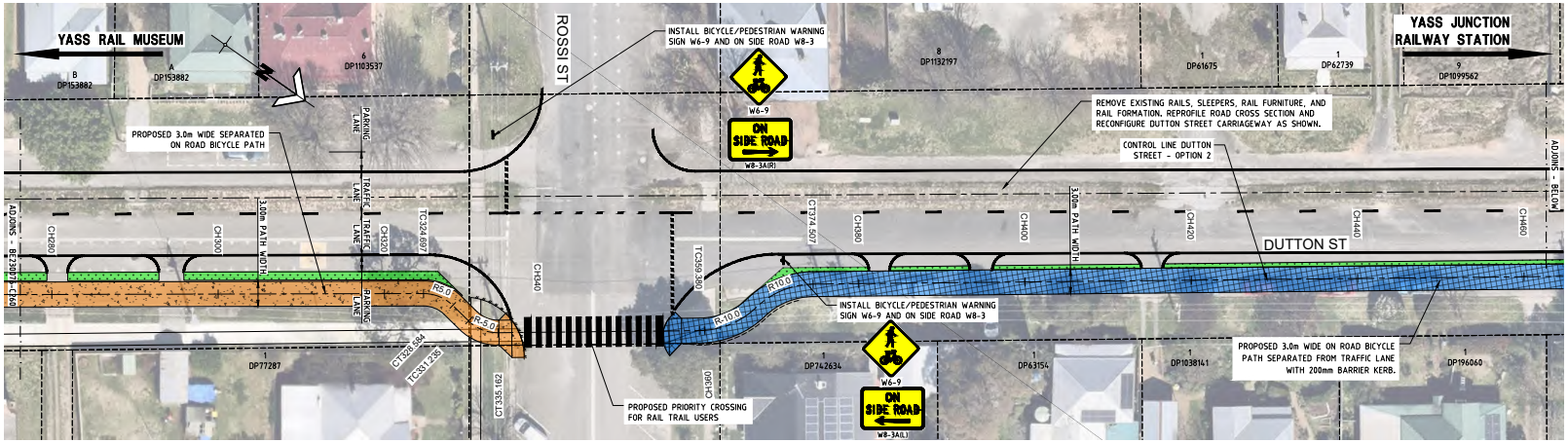
FAX: +61 7 5509 6411
EMAIL: ADMIN@BURCHILLS.COM.AU
COOTE BURCHILLS ENGINEERING PTY LTD
ABN 76 166 942 365

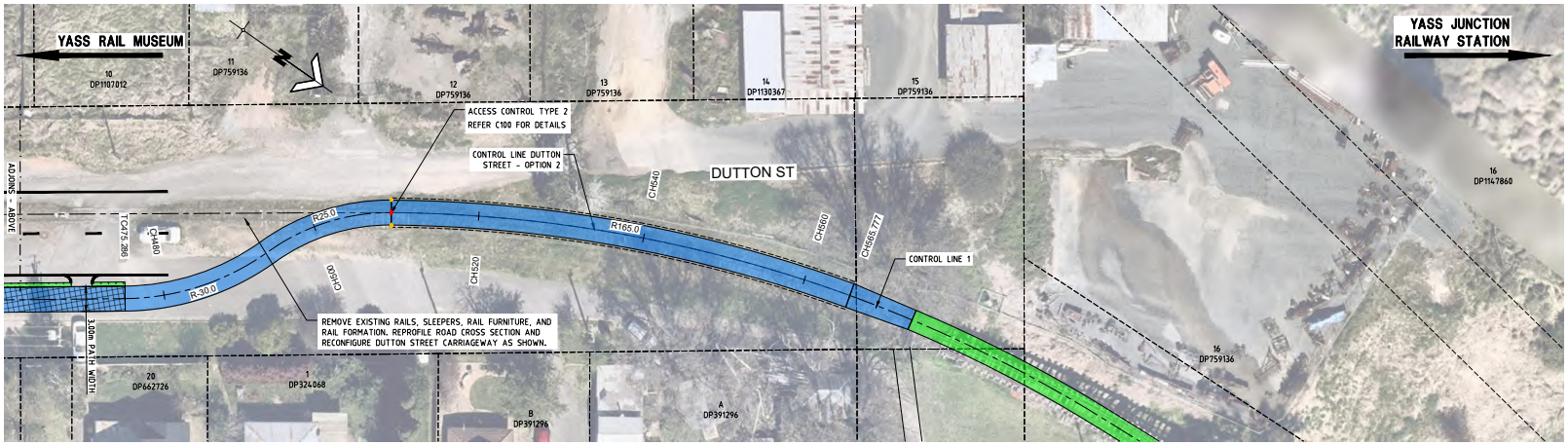
PROJECT: YASS RAIL TRAIL

DRAWING TITLE: DUTTON STREET - OPTION 2 - SHEET 1

DEVEL. APPLIC. No. :	DATE : 19-04-2023
PROJECT LEADER : TOBY BENNETT	DESIGNER : THUY VU
DRAFTSPERSON : THUY VU	CHECKED : TOBY BENNETT
APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365	
RPEQ No. :	
SCALE : AS NOTE	DATUM : AHD / FULL SIZE : A1
PROJECT No. : BE230076	DRAWING No. : C260 / VERSION: A



PLAN
SCALE 1 : 250 (FULL SIZE) (metres)



PLAN
SCALE 1 : 250 (FULL SIZE) (metres)

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A1 ORIGINAL SIZE BEFORE REDUCTION

VER.	DESCRIPTION	DATE
A	ORIGINAL ISSUED	19-04-23

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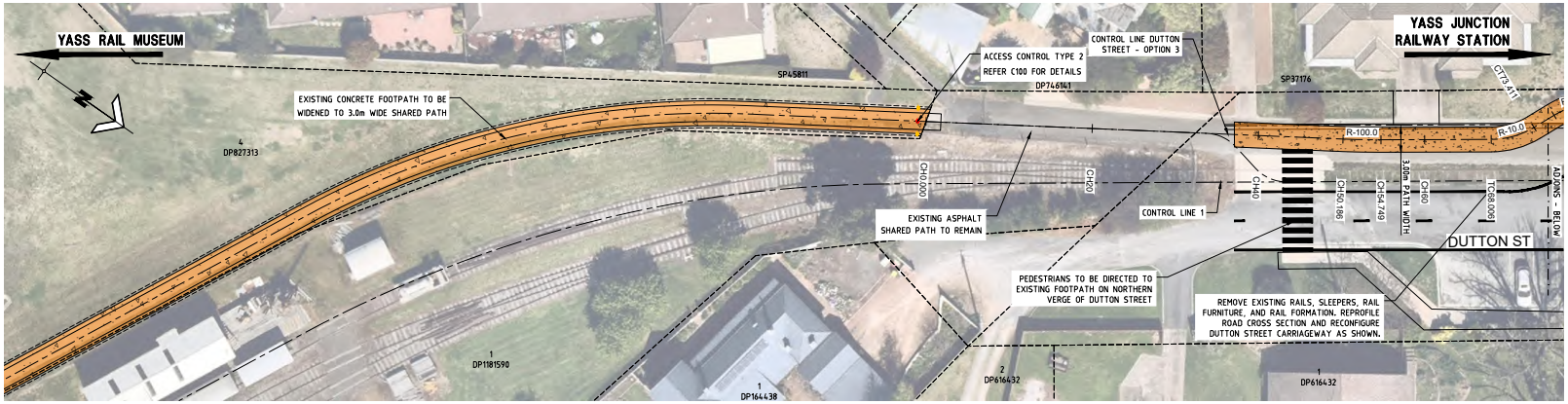
EMAIL: ADMIN@BURCHILLS.COM.AU
COOTE BURCHILLS ENGINEERING PTY LTD
ABN 76 166 942 365

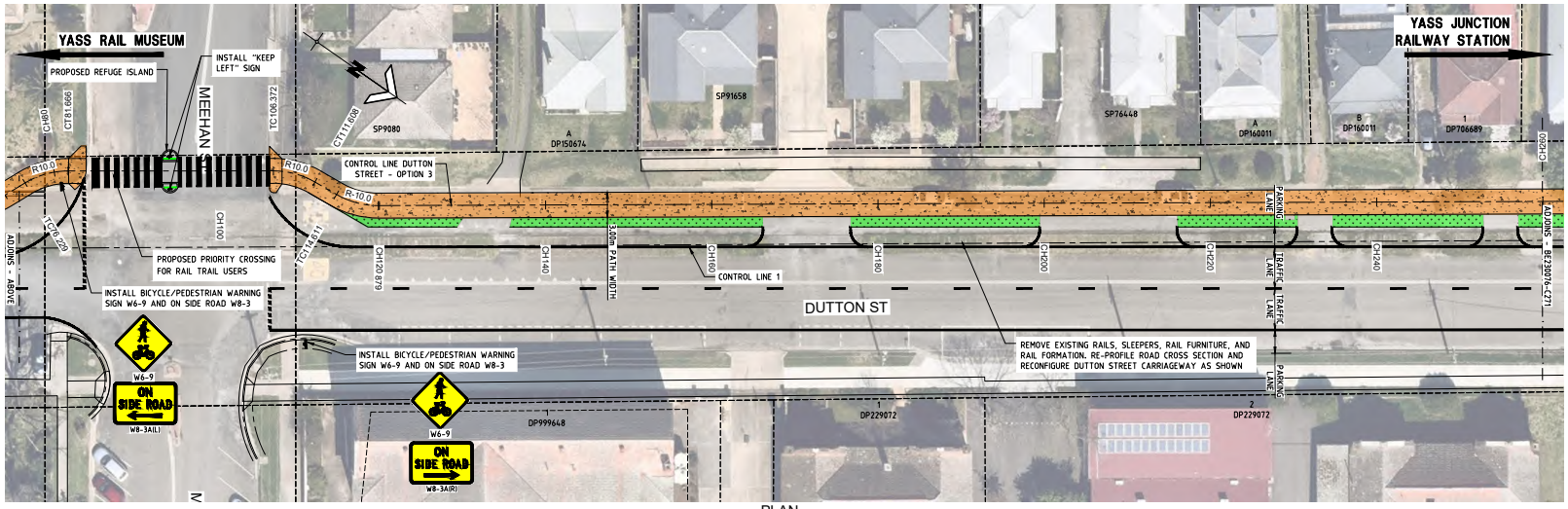
PROJECT: YASS RAIL TRAIL

DRAWING TITLE: DUTTON STREET - OPTION 2 - SHEET 2

DEVEL. APPLIC. No. :		DATE : 19-04-2023	
PROJECT LEADER : TOBY BENNETT		DESIGNER : THUY VU	
DRAFTSPERSON : THUY VU		CHECKED : TOBY BENNETT	
APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365			
RPEQ No. :			
SCALE : AS NOTE	DATUM : AHD	FULL SIZE : A1	
PROJECT No. : BE230076	DRAWING No. : C261	VERSION: A	



PLAN
SCALE 1 : 250 (FULL SIZE) (metres)



PLAN
SCALE 1 : 250 (FULL SIZE) (metres)

CONCEPT DESIGN ONLY
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YASS RAIL TRAIL
CONCEPT DESIGN DRAWINGS
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A1 ORIGINAL SIZE BEFORE REDUCTION

VER.	DESCRIPTION	DATE
A	ORIGINAL ISSUED	19-04-23

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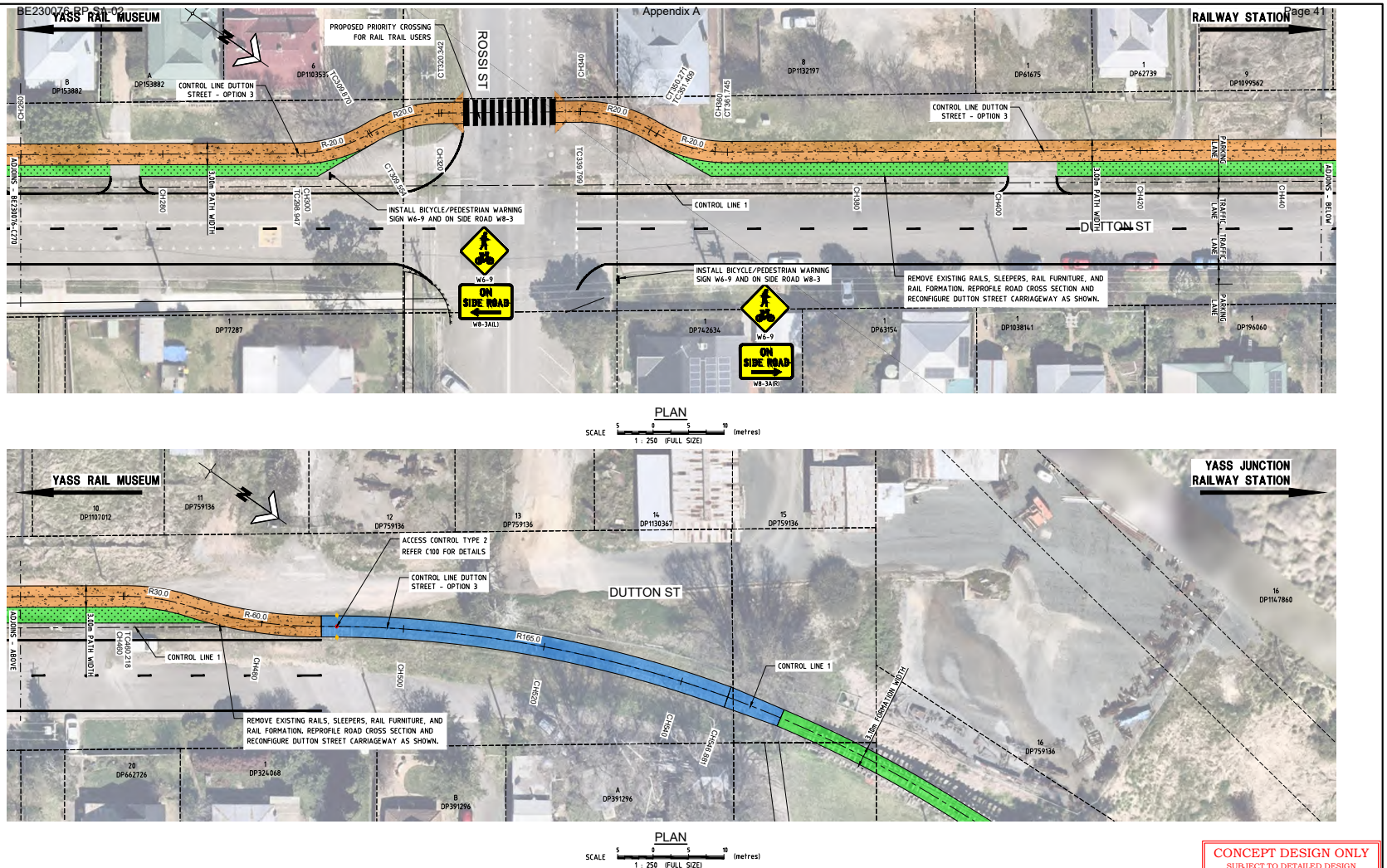
ABN 76 166 942 365

PROJECT: YASS RAIL TRAIL

DRAWING TITLE: DUTTON STREET - OPTION 3 - SHEET 1

DEVEL. APPLIC. No. :	DATE : 19-04-2023
PROJECT LEADER : TOBY BENNETT	DESIGNER : THUY VU
DRAFTSPERSON : THUY VU	CHECKED : TOBY BENNETT
APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365	
RPEQ No. :	
SCALE : AS NOTE	DATUM : AHD / FULL SIZE : A1
PROJECT No. : BE230076	DRAWING No. : C270 / VERSION: A



CONCEPT DESIGN ONLY
SUBJECT TO DETAILED DESIGN

YASS RAIL TRAIL
CONCEPT DESIGN DRAWINGS
FOR
YASS VALLEY COUNCIL
yass valley council
the country the people

A1 ORIGINAL SIZE BEFORE REDUCTION

VER.	DESCRIPTION	DATE
A	ORIGINAL ISSUED	19-04-23

BURCHILLS ENGINEERING SOLUTIONS
GOLD COAST | BRISBANE | TOOWOOMBA
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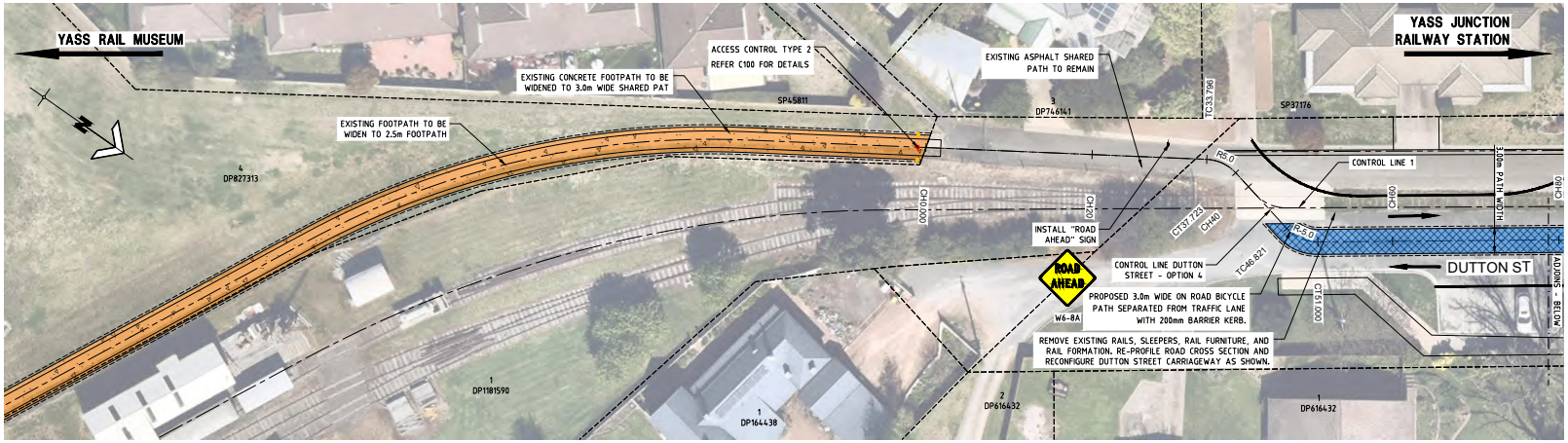
PHONE: +61 7 5509 6400
FAX: +61 7 5509 6411
EMAIL: ADMIN@BURCHILLS.COM.AU
COOTE BURCHILLS ENGINEERING PTY LTD
ABN 76 166 942 365

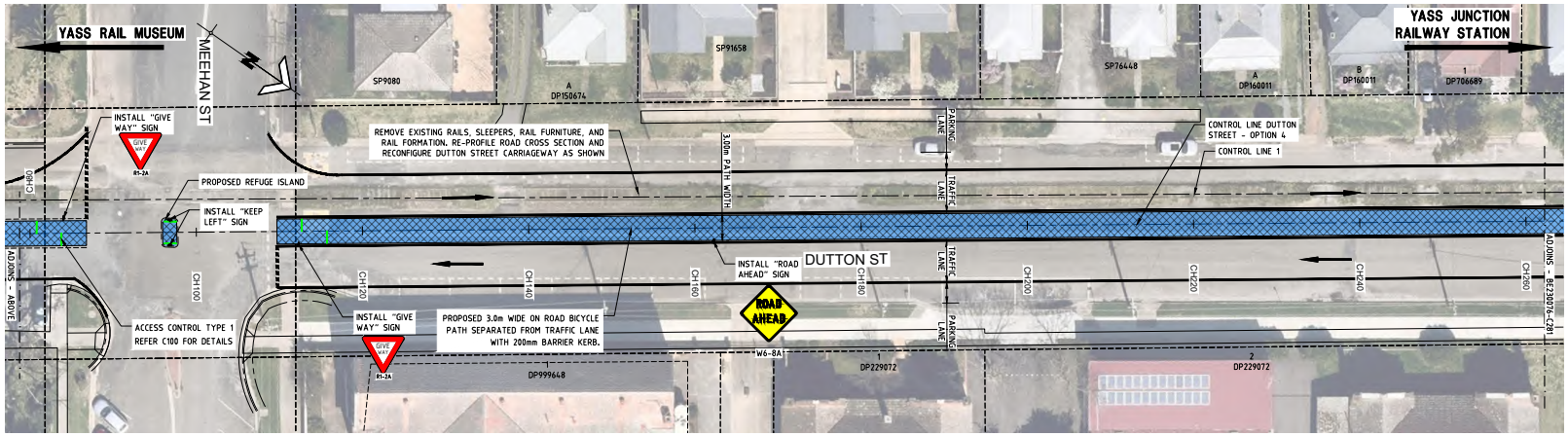
PROJECT: YASS RAIL TRAIL

DRAWING TITLE: DUTTON STREET - OPTION 3 - SHEET 2

DEVEL. APPLIC. No. :	DATE : 19-04-2023
PROJECT LEADER : TOBY BENNETT	DESIGNER : THUY VU
DRAFTSPERSON : THUY VU	CHECKED : TOBY BENNETT
APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365	
RPEQ No. :	
SCALE : AS NOTE	DATUM : AHD — FULL SIZE : A1
PROJECT No. : BE230076	DRAWING No. : C271 — VERSION: A



PLAN
SCALE 5 0 5 10 (metres)
1 : 250 (FULL SIZE)



PLAN
SCALE 5 0 5 10 (metres)
1 : 250 (FULL SIZE)

CONCEPT DESIGN ONLY
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YASS RAIL TRAIL
CONCEPT DESIGN DRAWINGS
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yass valley council the country the people
A1 ORIGINAL SIZE BEFORE REDUCTION

VER.	DESCRIPTION	DATE
A	ORIGINAL ISSUED	21-04-23

BURCHILLS ENGINEERING SOLUTIONS
GOLD COAST | BRISBANE | TOOWOOMBA
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PHONE: +61 7 5509 6400
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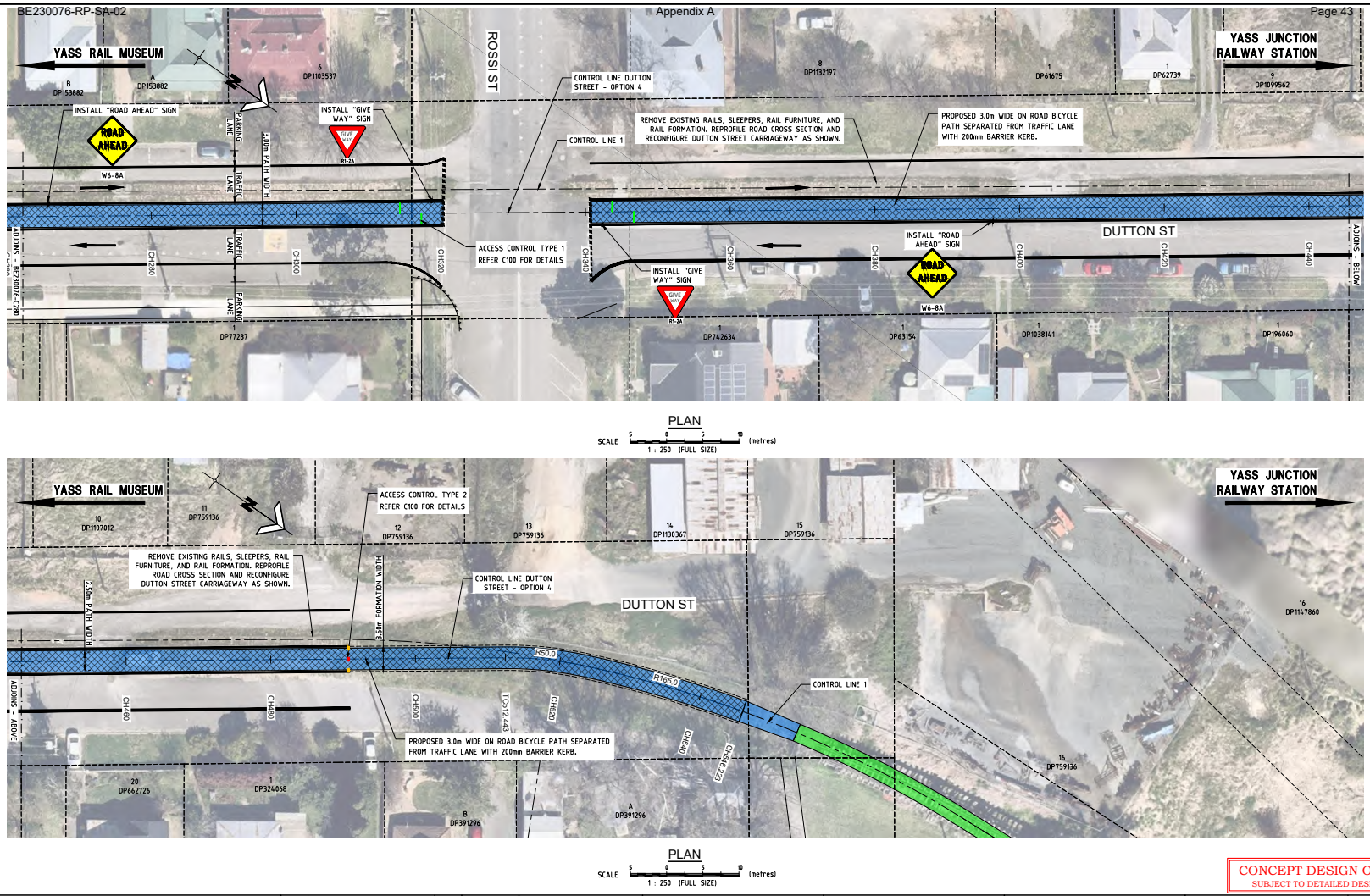
EMAIL: ADMIN@BURCHILLS.COM.AU
COOTE BURCHILLS ENGINEERING PTY LTD
ABN 76 166 942 365

PROJECT: YASS RAIL TRAIL

DRAWING TITLE: DUTTON STREET - OPTION 4 - SHEET 2

DEVEL. APPLIC. No. :	DATE : 21-04-2023
PROJECT LEADER : TOBY BENNETT	DESIGNER : THUY VU
DRAFTSPERSON : THUY VU	CHECKED : TOBY BENNETT
APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365	
RPEQ No. :	
SCALE : AS NOTE	DATUM : AHD / FULL SIZE : A1
PROJECT No. : BE230076	DRAWING No. : C280 / VERSION: A



CONCEPT DESIGN ONLY
SUBJECT TO DETAILED DESIGN

YASS RAIL TRAIL
CONCEPT DESIGN DRAWINGS
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yass valley council
the country the people

A1 ORIGINAL SIZE BEFORE REDUCTION

VER.	DESCRIPTION	DATE
A	ORIGINAL ISSUED	21-04-23

BURCHILLS ENGINEERING SOLUTIONS
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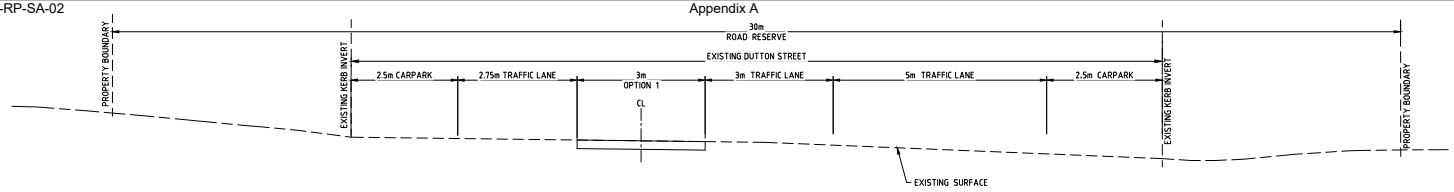
COOTE BURCHILLS ENGINEERING PTY LTD
ABN 76 166 942 365

PROJECT: YASS RAIL TRAIL

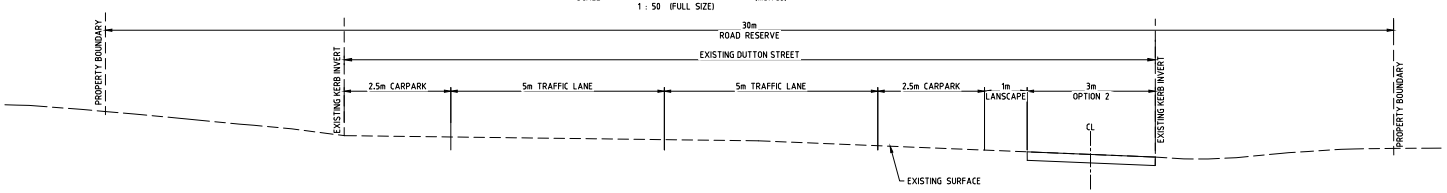
DRAWING TITLE: DUTTON STREET - OPTION 4 - SHEET 2

DEVEL. APPLIC. No. :		DATE : 21-04-2023	
PROJECT LEADER : TOBY BENNETT		DESIGNER : THUY VU	
DRAFTSPERSON : THUY VU		CHECKED : TOBY BENNETT	
APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365			
RPEQ No. :			
SCALE : AS NOTE	DATUM : AHD	FULL SIZE : A1	
PROJECT No. : BE230076	DRAWING No. : C281	VERSION: A	



TYPICAL DUTTON STREET SECTIONS - OPTION 1

SCALE 1.0 0 1.0 2.0 (metres)
1 : 50 (FULL SIZE)



TYPICAL DUTTON STREET SECTIONS - OPTION 2

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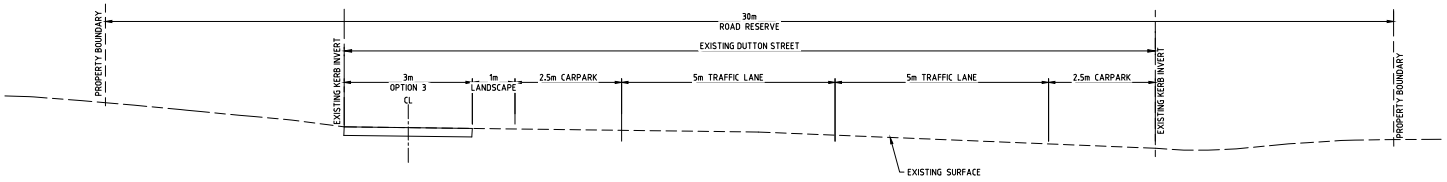
1 : 50 (FULL SIZE)



TYPICAL DUTTON STREET SECTIONS - OPTION 3

SCALE 1.0 0 1.0 2.0 (metres)
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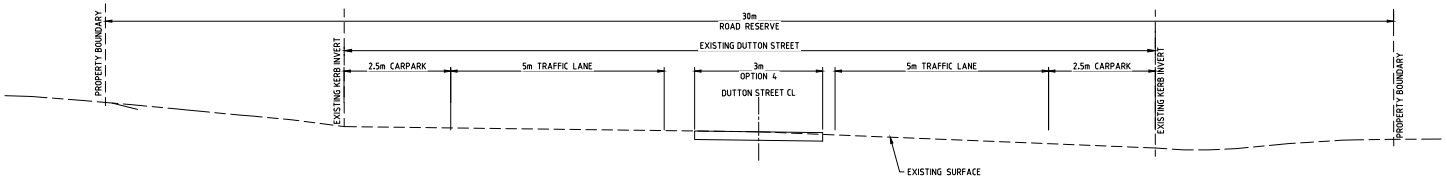

TYPICAL DUTTON STREET SECTIONS - OPTION 4

SCALE 1.0 0 1.0 2.0 (metres)
1 : 50 (FULL SIZE)

CONCEPT DESIGN ONLY
SUBJECT TO DETAILED DESIGN

YASS RAIL TRAIL
CONCEPT DESIGN DRAWINGS
FOR
YASS VALLEY COUNCIL
yass valley council
the country the people
A1 ORIGINAL SIZE BEFORE REDUCTION

VER.	DESCRIPTION	DATE
A	ORIGINAL ISSUED	21-04-23

BURCHILLS ENGINEERING SOLUTIONS
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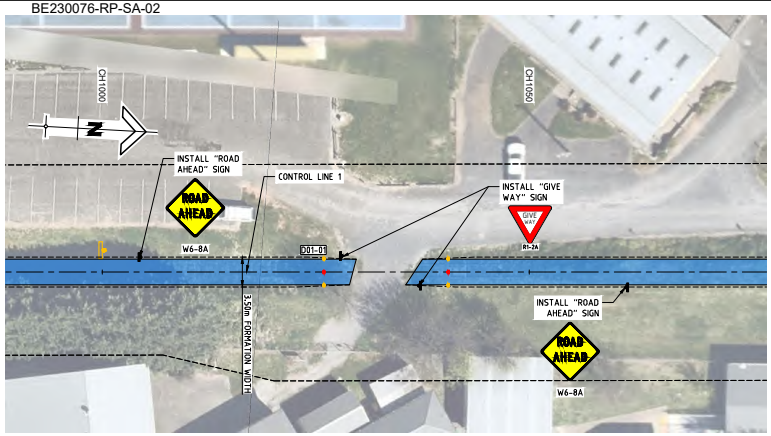
EMAIL: ADMIN@BURCHILLS.COM.AU
COOTE BURCHILLS ENGINEERING PTY LTD
ABN 76 166 942 365

PROJECT: YASS RAIL TRAIL

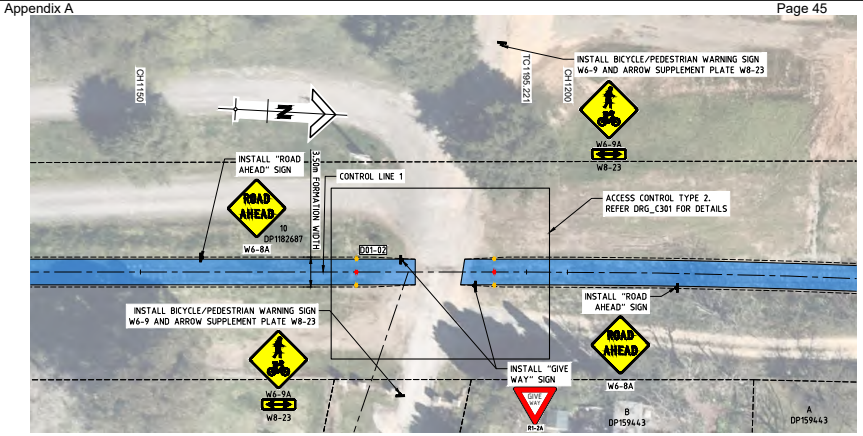
DRAWING TITLE: TYPICAL DUTTON STREET SECTIONS

DEVEL. APPLIC. No. :		DATE : 21-04-2023
PROJECT LEADER : TOBY BENNETT		DESIGNER : THUY VU
DRAFTSPERSON : THUY VU		CHECKED : TOBY BENNETT
APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365		
RPEQ No. :		
SCALE : AS NOTE	DATUM : AHD	FULL SIZE : A1
PROJECT No.: BE230076	DRAWING No.: C290	VERSION: A



D01-01 CROSSING PLAN

SCALE 5 0 5 10 (metres)
1 : 250 (FULL SIZE)



D01-02 CROSSING PLAN

SCALE 5 0 5 10 (metres)
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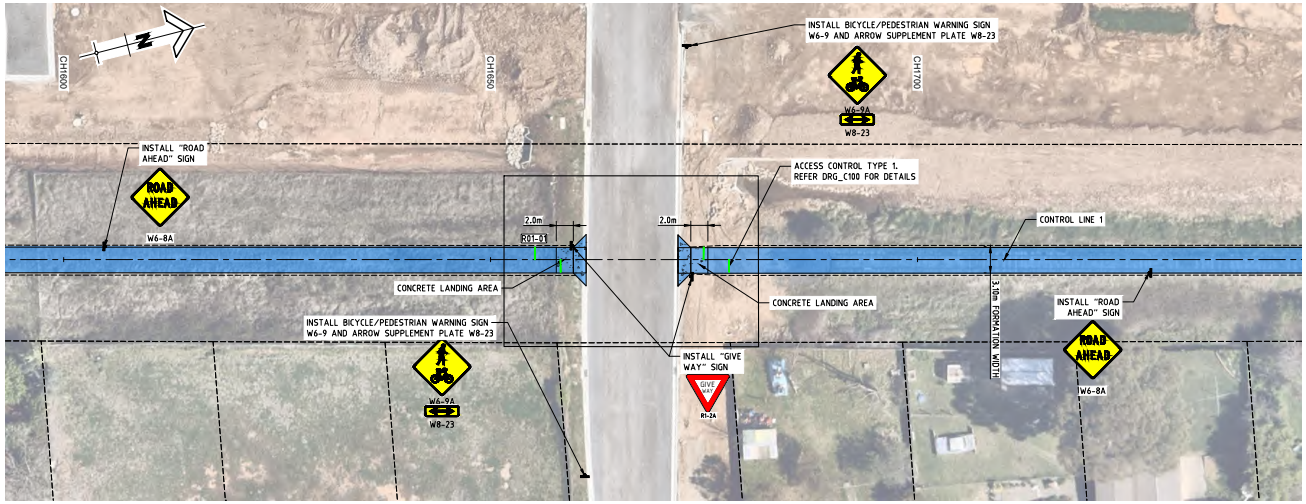

R01-01 CROSSING PLAN

SCALE 5 0 5 10 (metres)
1 : 250 (FULL SIZE)

CONCEPT DESIGN ONLY
SUBJECT TO DETAILED DESIGN

YASS RAIL TRAIL
CONCEPT DESIGN DRAWINGS
FOR
YASS VALLEY COUNCIL
yass valley council the country the people

A1 ORIGINAL SIZE BEFORE REDUCTION

VER.	DESCRIPTION	DATE
A	ORIGINAL ISSUED	19-04-23

BURCHILLS ENGINEERING SOLUTIONS
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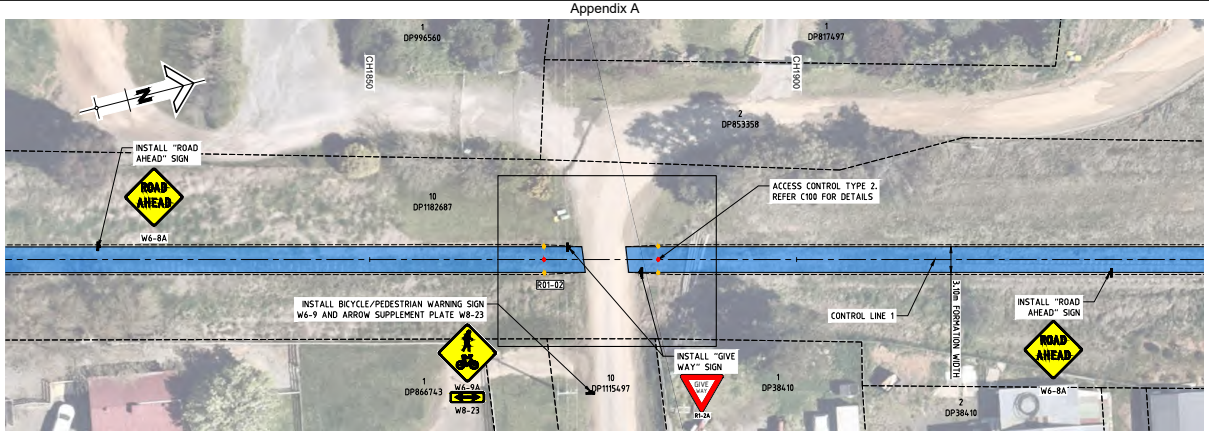
EMAIL: ADMIN@BURCHILLS.COM.AU
COOTE BURCHILLS ENGINEERING PTY LTD
ABN 76 166 942 365

PROJECT: YASS RAIL TRAIL

DRAWING TITLE: RAIL TRAIL - CROSSING - SHEET 1

DEVEL. APPLIC. No. :		DATE : 19-04-2023
PROJECT LEADER : TOBY BENNETT	DESIGNER : THUY VU	
DRAFTSPERSON : THUY VU	CHECKED : TOBY BENNETT	
APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365		
RPEQ No. :		
SCALE : AS NOTE	DATUM : AHD	FULL SIZE : A1
PROJECT No. : BE230076	DRAWING No. : C301	VERSION: A



R01-02 CROSSING PLAN

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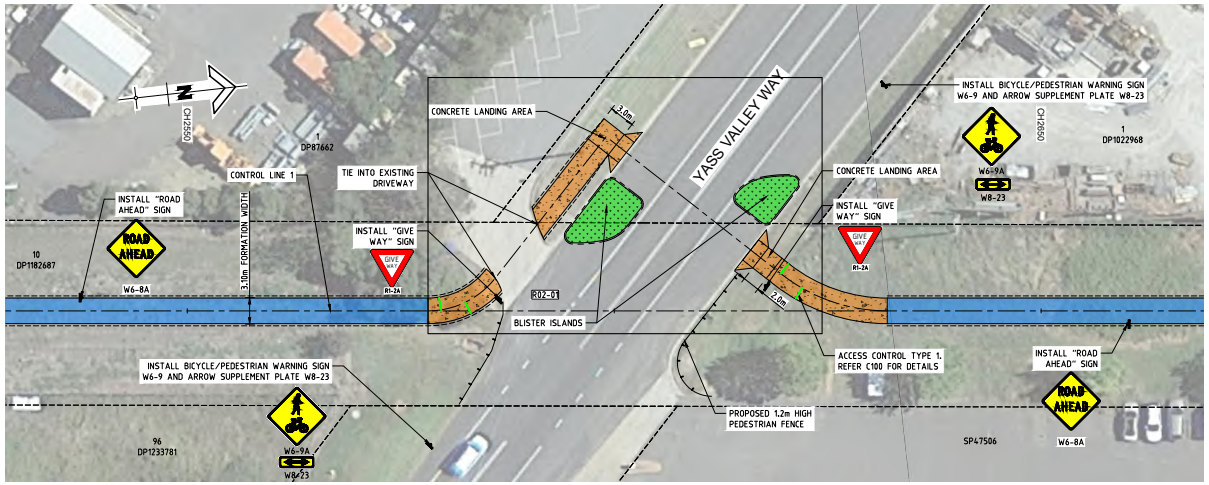
1 : 250 (FULL SIZE)



R02-01 CROSSING PLAN

SCALE 5 0 5 10 (metres)
1 : 250 (FULL SIZE)

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A1 ORIGINAL SIZE BEFORE REDUCTION

VER.	DESCRIPTION	DATE
A	ORIGINAL ISSUED	19-04-23

BURCHILLS ENGINEERING SOLUTIONS
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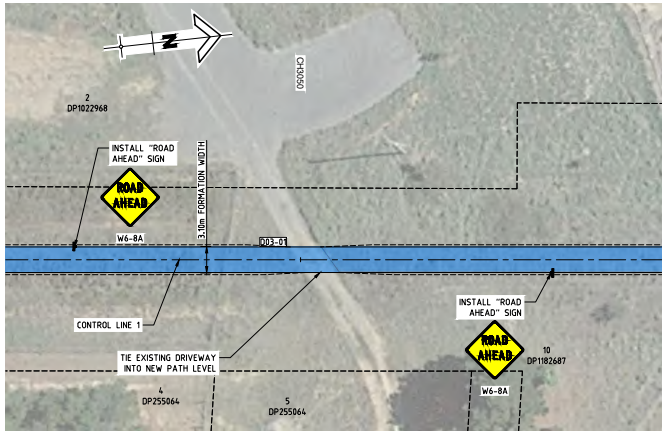
EMAIL: ADMIN@BURCHILLS.COM.AU
COOTE BURCHILLS ENGINEERING PTY LTD
ABN 76 166 942 365

PROJECT: YASS RAIL TRAIL

DRAWING TITLE: RAIL TRAIL - CROSSING - SHEET 2

DEVEL. APPLIC. No. :		DATE : 19-04-2023
PROJECT LEADER : TOBY BENNETT	DESIGNER : THUY VU	
DRAFTSPERSON : THUY VU	CHECKED : TOBY BENNETT	
APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365		
RPEQ No. :		
SCALE : AS NOTE	DATUM : AHD	FULL SIZE : A1
PROJECT No. : BE230076	DRAWING No. : C302	VERSION: A



D03-02 DRIVEWAY CROSSING PLAN

SCALE 5 0 5 10 (metres)
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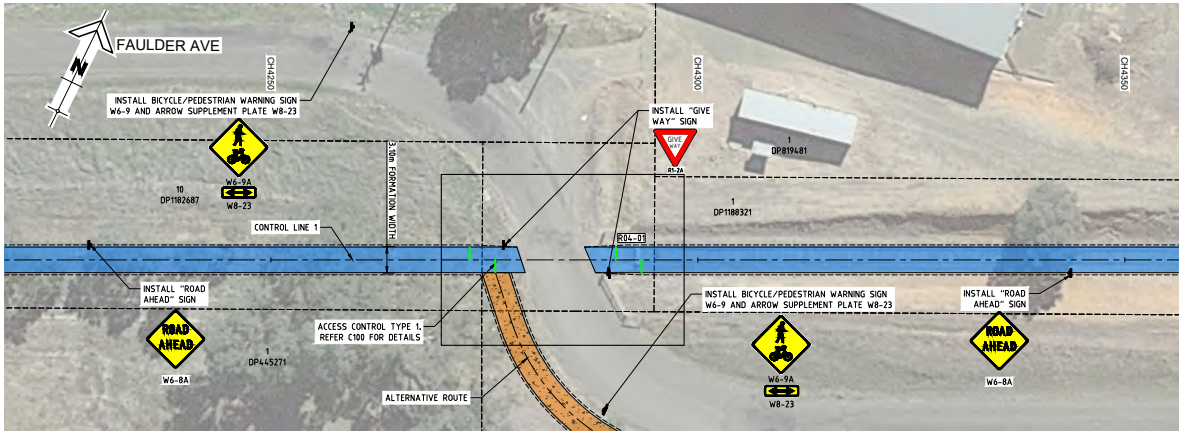

R04-01 CROSSING PLAN

SCALE 5 0 5 10 (metres)
1 : 250 (FULL SIZE)

CONCEPT DESIGN ONLY
SUBJECT TO DETAILED DESIGN

YASS RAIL TRAIL
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A1 ORIGINAL SIZE BEFORE REDUCTION

VER.	DESCRIPTION	DATE
A	ORIGINAL ISSUED	19-04-23

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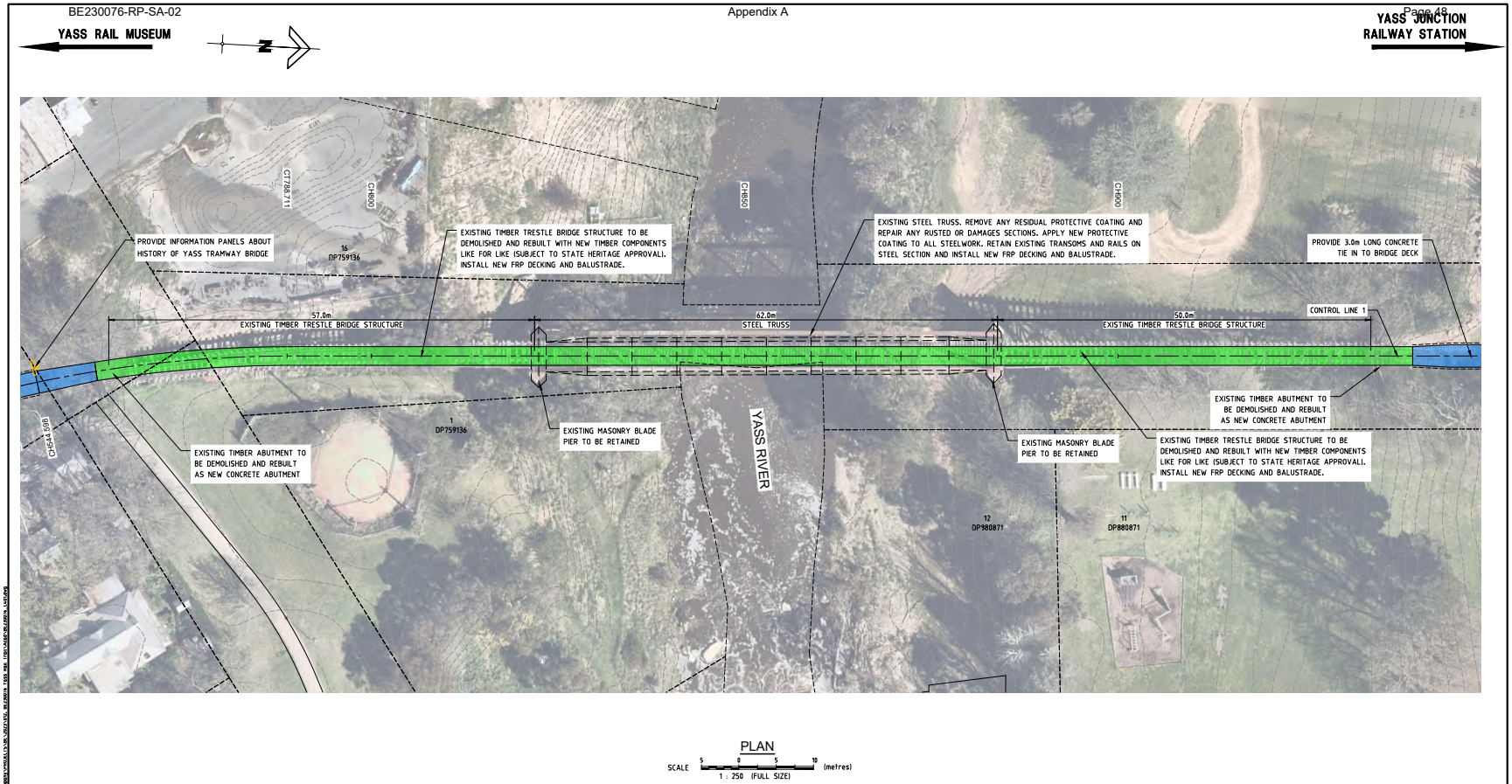
COOTE BURCHILLS ENGINEERING PTY LTD
ABN 76 166 942 365

PROJECT: YASS RAIL TRAIL

DRAWING TITLE: RAIL TRAIL - CROSSING - SHEET 3

DEVEL. APPLIC. No. :	DATE : 19-04-2023
PROJECT LEADER : TOBY BENNETT	DESIGNER : THUY VU
DRAFTSPERSON : THUY VU	CHECKED : TOBY BENNETT
APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365	RPEQ No. :
SCALE : AS NOTE	DATUM : AHD
PROJECT No. : BE230076	DRAWING No. : C303
	VERSION: A



PLAN
SCALE 1 : 250 (FULL SIZE) 5 0 5 10 (metres)

CONCEPT DESIGN ONLY
SUBJECT TO DETAILED DESIGN

YASS RAIL TRAIL
CONCEPT DESIGN DRAWINGS
FOR
YASS VALLEY COUNCIL
yass valley council the country the people
A1 ORIGINAL SIZE BEFORE REDUCTION

VER.	DESCRIPTION	DATE
A	ORIGINAL ISSUED	19-04-23

BURCHILLS ENGINEERING SOLUTIONS
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COOTE BURCHILLS ENGINEERING PTY LTD
ABN 76 166 942 365

PROJECT:	YASS RAIL TRAIL
DRAWING TITLE :	RAIL TRAIL - BRIDGE
DEVEL. APPLIC. No. :	DATE : 19-04-2023
PROJECT LEADER : TOBY BENNETT	DESIGNER : THUY VU
DRAFTSPERSON : THUY VU	CHECKED : TOBY BENNETT
APPROVED FOR AND ON BEHALF OF BURCHILLS ENGINEERING SOLUTIONS ABN 76 166 942 365	RPEQ No. :
SCALE : AS NOTE	DATUM : AHD FULL SIZE : A1
PROJECT No.: BE230076	DRAWING No. : C400 VERSION: A

The experience **you deserve**

Appendix B – Cultural Heritage Report

Yass Valley Rail Trail

Desktop Heritage Assessment

May 2023

Navin Officer

heritage consultants Pty Ltd

acn: 092 901 605

Number 4
Kingston Warehouse
71 Leichhardt St.
Kingston ACT 2604

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Document control

Project no.:	230068
Project client:	Burchills
Document description:	Desktop heritage assessment
Project Manager:	Nicola Hayes
Authors:	Nicola Hayes
Internal review:	Susan McIntyre-Tamwoy
Document status:	Final
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Nicola Hayes	final		23/05/2023

TABLE OF CONTENTS

Tables

Figures

1 INTRODUCTION

1.1 Project Description

The proposed Yass Rail Trail (hereffaterruns along the disused Yass Tramway corridor between the Great Southern Railway (Yass Junction Railway Station) and Yass Township in southern New South Wales, for a distance of 4.5km (Figure 1-1).

The Rail Trail route includes a heritage listed steel bridge built in 1892 across the Yass River, and the route ends at the Yass Railway Museum (also heritage listed) near the centre of Yass.

When constructed, the Rail Trail will run from Yass Junction Railway Station through woodland down to Yass Town, crossing the Yass River before running the length of Dutton Street in Yass and ending at the Yass Railway Museum.

The Rail Trail route has one major road crossing at Yass Valley Way, to the north-west of the Yass township.

This report documents the results of a desktop heritage assessment of the Yass Valley Rail Trail.

The report was commissioned by Burchills.

1.2 This Report

1.2.1 Outline

This report:

- Describes the proposal (Section 1);
- Describes the methodology employed in the study (Section 2);
- Describes the results of the data review, (Section 2); and
- Provides management recommendations based on the results of the investigation (Section 3).

Figure 1-1 Project study area

2 SITE SEARCH AND LITERATURE REVIEW

2.1 Methodology

A range of archaeological and historical data was reviewed for the Yass Valley Rail Trail study area and its surrounds. This literature and data review was used to determine if known Aboriginal and historical sites were located within the area under investigation. The review of documentary sources included heritage registers and schedules. Searches were undertaken of the following statutory and non-statutory heritage registers and schedules:

- Statutory Listings:
  - Aboriginal Heritage Information Management System (AHIMS);
  - Aboriginal Places listed under NPW Act;
  - World Heritage List;
  - The National Heritage List;
  - The Commonwealth Heritage List;
  - The State Heritage Register; and
  - Heritage Schedule(s) from the Yass Valley Council Local Environmental Plan.
- Non-Statutory Listings:
  - The State Heritage Inventory; and
  - The former Register of the National Estate.

Appendix 1 provides a summary of relevant legislation.

2.2 AHIMS Search Results

There are 73 Aboriginal recordings are listed on the AHIMS for the area around the study area within the following (MGA/GDA) map grid references: Lat, Long From: -34.8665, 148.8564 - Lat, Long To: -34.7961, 148.98. A copy of the AHIMS search is provided in Appendix 2.

Of these no AHIMS listed Aboriginal sites are located within or immediately adjacent to the study area corridor.

2.3 Previous Aboriginal Archaeological Research

A number of Aboriginal heritage assessments have been undertaken for the Yass Township and region. These studies have been mainly commissioned due to residential developments and associated infrastructure required as the region has expanded. The most relevant of these studies are summarised below in Table 2-1.

Table 2-1 Heritage Assessments Undertaken

Author and Date	Project Aims	Findings
Packard (1986)	This project investigated Aboriginal sites associated with 35 modern salinisation and salt scalding locations sites around the Yass area.	Aboriginal sites were located on areas of level ground with gradient never greater than 5°

Author and Date	Project Aims	Findings
White (1986)	White completed an assessment of burial and settlement patterns through the Yass district	The locations favoured for campsites are related to water and resource availability. Site modelling based on water resources was developed.
Witter (1980)	Witter surveyed a lproposed gas pipeline from Dalton to Canberra. The route travelled across the Yass River in the centre of the Upper Yass catchment.	Witter recorded eleven low density artefact scatters and thirty-two isolated artefact sites. Sites were mainly located on water courses.
Silcox and Koettig (1985)	Koettig and Silcox carried out a survey for a proposed alternate Yass bypass route. The survey identified nine stone artefact scatters and six isolated stone artefacts.	Most of the identified sites were situated on ridgeline slopes or hill crests within 200 metres of a waterway. The majority of artefacts were unmodified flakes or flaked pieces, and quartz was the dominant artefact material.
Silcox and Koettig (1988)	As a follow on from their 1985 survey Koettig and Silcox conducted more survey work and test excavations within a 6km route of the proposed Barton Highway extension.	Five isolated artefacts, a large stone artefact scatter and two moderately dense subsurface stone artefact sites were located. The artefacts were included flaked pieces, cores and backed blades. The main artefact material was silcrete and the rest was made up of quartz, mudstone, volcanic and chert.
Navin Officer (2001)	Assessment for the proposed Yass substation on low gradient slopes along the middle reaches of Booroo Ponds Creek was investigated.	A One small artefact scatter was located along a spur crest. The site comprised four flakes of volcanic, silcrete and chert.
AHS (2003)	AHS surveyed a 60 ha block of land for a residential subdivision in East Yass.	Only one low density stone artefact scatter was located during the site inspection and one area of archaeological potential. The artefacts were all quartz flakes located on the crest of a ridgeline..
Thompson (2003)	This report documents the results of an archaeological survey for a residential subdivision along Yellow Creek Road, Yass.	Six archaeological sites were recorded during the survey. These consisted of three scarred trees and three isolated stone artefacts within 200m of the creek line.
NSW Archaeology (2009a)	This report documents the results of an archaeological survey for the Yass Dam Raising Project.	Four isolated Aboriginal stone artefact sites were recorded within the study area.
NSW Archaeology (2009b)	Survey work for a wind farm proposal within the Yass Valley.	The project involved survey work over a large study area (approximately 1237ha). Five hundred and eighty-three Aboriginal stone artefact sites were recorded all along the crests of hills or on gentle slopes.

Author and Date	Project Aims	Findings
Kayandel (2010)	Survey for Tulla Park Residential Development	The survey identified a number of sites consisting of scarred trees, isolated finds and artefact scatters along Rainbow Creek.
Bowen Heritage Management (2016)	Assessment for residential development at Lot 107/108 Irvine Drive Yass	The field survey covered 106 acres. The survey identified 3 Aboriginal sites (2 isolated finds and one small surface scatter) located close to creek lines.
Umwelt (2018)	Assessment of Edgerton Aboriginal Reserve	The reserve was found to be of high significance to local community. Registered on LEP and AHIMS

2.4 Heritage Listed Items

There are 15 heritage listed items within or immediately adjacent to the study area corridor (Table 2-2). Of these three are listed on the state heritage register (SHR) as places of demonstrable significance to the State and 12 are listed on the local environmental plan (LEP). Two of these items were also listed on the former register of the national estate (RNE). No items listed on the National Heritage List, Commonwealth Heritage List or World Heritage List are within or immediately adjacent to the study area corridor.

Table 2-2 Heritage items within or immediately adjacent to the study area corridor

HID	ITEMNAME	LISTING	TYPE
State Heritage Register			
I194	Yass Town Railway Station and yard group	SHR, LEP	Complex / Group
I198	Yass Town rail bridge over Yass River	SHR, LEP	Built
I209	Yass Junction Railway Station Group	SHR, LEP, RNE	Complex / Group
Local Environmental Plan			
I207	Brick cottage	LEP	Item - General
I203	Brick cottage	LEP	Item - General
I200	Brick cottage	LEP	Item - General
I271	Cottage	LEP	Item - General
I202	Cottage	LEP	Item - General
I265	Goodradigbee Shire Council Chambers (1910) (former)	LEP	Item - General
I204	Mt Carmel School, presbytery, chapel, St Augustine's Hall, Convent of Mercy, Mt Carmel School	LEP	Item - General
I201	Squatters Home Inn (stone outbuildings)	LEP	Item - General
I206	Station master's house (former)	LEP	Item - General
C4	Yass	LEP, RNE	Conservation Area - General
I232	Yass Public School and grounds	LEP	Item - General
I199	Yass tramline	LEP	Item - General

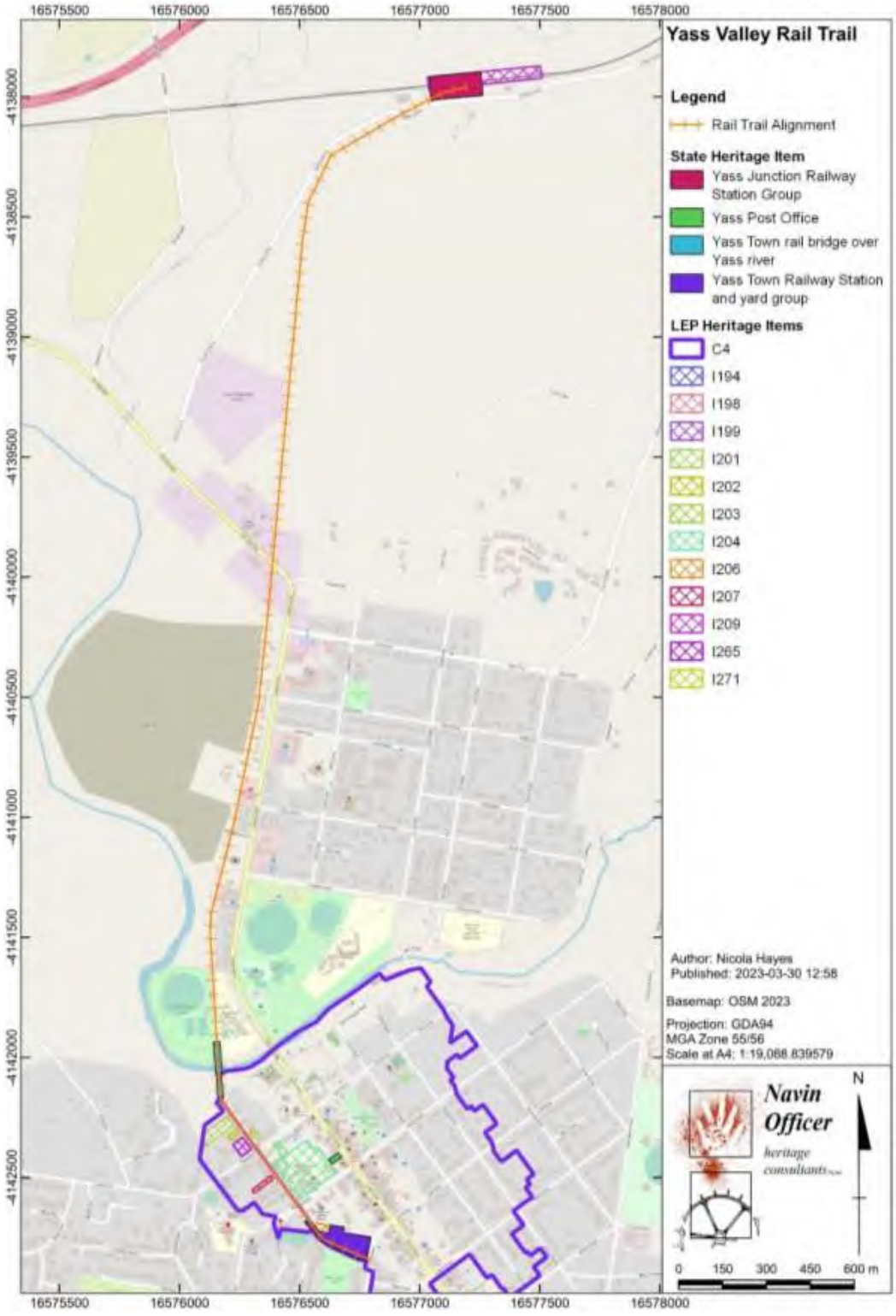

Figure 2-1 Location of heritage listed items in relation to the study area

Table 2-3 lists all additional heritage items with 2 kilometres of the study area corridor, there are 127 such items.

Table 2-3 Heritage items with 2 kilometres of the study area corridor

HID	ITEMNAME	LISTING	TYPE
State Heritage Register			
I168	Yass Post Office	SHR	Built
Local Environmental Plan			
I218	Albury Villa	Local	Item - General
I162	Allambee Club	Local	Item - General
I139	Attached cottages	Local	Item - General
I181	Australian Hotel	Local	Item - General
I153	Bank and post office (former)	Local	Item - General
I252	Benochy	Local	Item - General
I196	Boree-log cottage	Local	Item - General
I228	Brick and rubble stone cottage	Local	Item - General
I257	Brick and stone cottage	Local	Item - General
I238	Brick cottage	Local	Item - General
I246	Brick cottage	Local	Item - General
I256	Brick cottage	Local	Item - General
I251	Brick cottage	Local	Item - General
I247	Brick cottage	Local	Item - General
I279	Brick cottage	Local	Item - General
I272	Brick cottage	Local	Item - General
I240	Brick cottage	Local	Item - General
I250	Brick cottage	Local	Item - General
I224	Brick house	Local	Item - General
I144	Brick house	Local	Item - General
I223	Brick house	Local	Item - General
I143	Brick house	Local	Item - General
I236	Brick house	Local	Item - General
I258	Brick house	Local	Item - General
I142	Brick house	Local	Item - General
I150	Brick house	Local	Item - General
I235	Brick house	Local	Item - General
I149	Brick house and garden	Local	Item - General
I151	Brick house and garden	Local	Item - General
I166	Cafe and residence	Local	Item - General
I226	Catholic pioneer cemetery with grave of Thomas Laidlaw	Local	Item - General
I262	Chief Constables- residence and grounds	Local	Item - General
I261	Chinaman's Creek culvert	Local	Item - General
I230	Cliftonwood	Local	Item - General
I188	Club House Hotel	Local	Item - General
I234	Cobblestone Drain	Local	Item - General
I178	Coens- Department Store (former)	Local	Item - General
I167	Commercial building	Local	Item - General
I176	Commercial building	Local	Item - General

HID	ITEMNAME	LISTING	TYPE
I173	Commercial building	Local	Item - General
I184	Commercial building	Local	Item - General
I169	Commercial building	Local	Item - General
I175	Commercial building	Local	Item - General
I171	Commercial building	Local	Item - General
I174	Commercial building	Local	Item - General
I163	Commercial building	Local	Item - General
I159	Commercial building	Local	Item - General
I158	Commercial building	Local	Item - General
I183	Commonwealth Bank (former)	Local	Item - General
I249	Corona	Local	Item - General
I213	Cottage	Local	Item - General
I239	Cottage	Local	Item - General
I269	Cottage	Local	Item - General
I268	Cottage (pre-1898)	Local	Item - General
I270	Cottage (pre-1898)	Local	Item - General
I267	Cottage (pre-1898)	Local	Item - General
I189	Crago's Mill (former)	Local	Item - General
I205	Crona	Local	Item - General
I260	Darcyville	Local	Item - General
I195	Devonia	Local	Item - General
I191	Drinking fountain, Coronation Park	Local	Item - General
I210	Fifield and garden	Local	Item - General
I156	General store (former)	Local	Item - General
I237	Hawthorn	Local	Item - General
I161	Herfort building	Local	Item - General
I248	Holly Lynne cottage	Local	Item - General
I215	House	Local	Item - General
I259	Iona	Local	Item - General
I220	Kerrowgair	Local	Item - General
I186	Liberty Cafe	Local	Item - General
I187	Liberty Theatre	Local	Item - General
I217	Linton and garden	Local	Item - General
I273	Masonic Hall	Local	Item - General
I182	Mechanics- Institute (former)	Local	Item - General
I276	Methodist church (former)	Local	Item - General
I135	Milltown-house	Local	Item - General
I136	Montrose-house	Local	Item - General
I170	National Australia Bank, residence, stables and hitching posts	Local	Item - General
A287	Oak Hill (former Aboriginal Reserve)	Local	Aboriginal Place of Heritage Significance
I160	Oddfellows- Hall	Local	Item - General
I140	Pair of semi-detached cottages	Local	Item - General
I134	Pair of semi-detached cottages	Local	Item - General
I140	Pair of semi-detached cottages	Local	Item - General
I190	Pair of semi-detached cottages	Local	Item - General

HID	ITEMNAME	LISTING	TYPE
I263	Police Sergeant's residence and stables	Local	Item - General
I164	R. Caspers- building	Local	Item - General
I222	Rathluba	Local	Item - General
I264	Ronnoco	Local	Item - General
I253	Ronola	Local	Item - General
I216	Rose Cottage	Local	Item - General
I241	Rose cottage and kitchen building	Local	Item - General
I154	Rose Inn	Local	Item - General
I233	Rosebank	Local	Item - General
I172	Royal Hotel	Local	Item - General
I278	Shantalla	Local	Item - General
I157	Shops (former Oriental Bank, later Williamson Building)	Local	Item - General
I227	Slab cottage	Local	Item - General
I165	Soldiers- Memorial Hall	Local	Item - General
I148	St Andrew's Uniting Church	Local	Item - General
I138	St Clement's Anglican Church and cemetery	Local	Item - General
I137	St Clement's Anglican rectory	Local	Item - General
I180	State Bank (former)	Local	Item - General
I211	Stone cottage	Local	Item - General
I244	Stonehaven	Local	Item - General
I214	Taralula	Local	Item - General
I192	The Australian Arms (former)	Local	Item - General
I243	The Cabin	Local	Item - General
I221	The Elms	Local	Item - General
I266	The Globe Hotel (former)	Local	Item - General
I274	The Manse	Local	Item - General
I277	The Parsonage	Local	Item - General
A288	Town Camp (former)	Local	Aboriginal Place of Heritage Significance
I231	Trigg memorial gateway and memorial obelisk, Victoria Park	Local	Item - General
I177	Triggs- office (former)	Local	Item - General
I145	Weatherboard cottage	Local	Item - General
I275	Weatherboard cottage	Local	Item - General
I212	Weatherboard cottage	Local	Item - General
I146	Weatherboard cottage	Local	Item - General
I197	Weatherboard cottage	Local	Item - General
I147	Weetalabah-house	Local	Item - General
I179	Westpac Bank	Local	Item - General
I229	Yass Cemetery (includes Hamilton Hume's grave)	Local	Item - General
I155	Yass Courthouse, Police Station and grounds	Local	Item - General
I242	Yass Fire Station	Local	Item - General
I280	Yass railway weir	Local	Item - General
I225	Yass Showground group	Local	Item - General

2.5 Previous European Heritage Studies

Freeman in 2001 completed a study report and inventory for Yass Township.

3 IMPACT ASSESSMENT AND RECOMMENDATIONS

3.1 Impact assessment

The project has the potential to impact heritage listed items, particularly. Those items listed in Table 2-2. A full Heritage Impact Assessment and Statement of Heritage Impact should be undertaken for the project.

There are no Aboriginal sites within or immediately adjacent to the project study area. Given the project is being undertaken within an already disturbed rail corridor it is unlikely that there are unlisted Aboriginal heritage items in the project corridor.

3.2 Recommendations

1 A Heritage Impact Assessment and Statement of Heritage Impact should be undertaken for the project.

2 A due diligence field survey should be undertaken to confirm that there are no Aboriginal sites within the project corridor.

4 REFERENCES

Archaeological Heritage Surveys (AHS). (2003). East Yass Proposed Residential Subdivision: Aboriginal and European Cultural Heritage Assessment. Report for David Richardson Environmental Planning.

Bowen Heritage Management. (2016). Aboriginal Cultural Heritage Due Diligence Report for Proposed subdivision of Lot 107 & 108 DP754923 located at the end of Irvine Drive Yass NSW. Report prepared for Ruth Condon.

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Thompson, L.J. (2003). Report of the Aboriginal Archaeological Survey of DP623848 Parish of Burra County of Murray. Report for A .Irvine.

Umwelt (2018) Assessment of Edgerton Aboriginal Reserve

White, I and Cann, S. (1986). An Investigation of Aboriginal Settlements and Burial Patterns in the Vicinity of Yass. Report to NPWS Queanbeyan.

Witter, D. (1980). Archaeological Salvage Investigations on the Dalton to Canberra Pipeline. Report to NSW Parks and Wildlife Service.

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APPENDIX 1

STATUTORY AND POLICY CONTEXT[1]

[1] The following information is provided as a guide only. Readers are advised to seek qualified legal advice relative to legislative matters.

National Parks and Wildlife Act 1974 (NSW)

Part 6 of the *National Parks and Wildlife Act 1974* (NPW Act) provides protection for Aboriginal cultural heritage in New South Wales, including Aboriginal objects and declared Aboriginal places.

An **Aboriginal object** is defined as:

> *"[…] any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains."*

An **Aboriginal place** is any area of land in New South Wales declared by the Minister for the Environment to be of special significance to Aboriginal culture.

It is an offence under s.86(4) of the NPW Act to harm (destroy, deface, or damage) or desecrate an Aboriginal object or place. The definition of harm includes moving an Aboriginal object from the land on which it is situated. Where harm cannot be avoided, an Aboriginal heritage impact permit (AHIP) issued by the NSW Department of Planning, Industry and Environment (DPIE) under s.90 of the NPW Act will be required.

An AHIP application must be accompanied by an Aboriginal cultural heritage assessment report (ACHAR), which details the results of an archaeological investigation, assesses the Aboriginal cultural heritage values associated with the area, and identifies any potential harm the proposed activity may cause. Consultation with Aboriginal communities must also be undertaken in relation to the AHIP application and adhere to the consultation process set out in Clause 60 of the National Parks and Wildlife Regulation 2009.

The Aboriginal Heritage Information Management System (AHIMS) was also established to collate information on known Aboriginal objects, sites and places. The AHIMS is a database kept by DPIE which contains information about Aboriginal objects and places in New South Wales, including site records and cultural heritage assessment reports. If an Aboriginal object is found that is not already recorded on the AHIMS database, it is a requirement under s.89A of the Act to notify DPIE of the object's location.

NSW Heritage Act 1977

The *Heritage Act 1977* (Heritage Act) is intended to promote understanding and conservation of the State's heritage and provides for identifying and registering items of State heritage significance. It protects items of environmental heritage which are defined as '*those places, buildings, works, relics, moveable objects, and precincts, of State or local heritage significance*'.

Items that have been identified by the Heritage Council of NSW as being of significance to the State are listed on the State Heritage Register (SHR). In addition, the Heritage Act also requires government instrumentalities (NSW government agencies and State-owned corporations) to establish and maintain a register of their heritage assets, known as a Section 170 Heritage and Conservation Register.

The Act also protects archaeological relics. A 'relic' is defined as:

> *any deposit, artefact, object or material evidence that:*
>
> *(a) relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and*
>
> *(b) is of State or local heritage significance.*

Under Section 139 of the Heritage Act, a person must not disturb or excavate any land that may result in a relic being discovered, exposed, moved, damaged or destroyed; unless the works are carried in accordance with an excavation permit or approval issued by the Heritage Council of NSW.

Excavation permits are issued under Sections 140 and 141 of the Act. For works within the curtilage of an item listed on the SHR, approvals are issued under Sections 60 and 63 of the Act. If the works

are minor in nature and will have minimal impact on the heritage significance of a place, an application may be made for a Section 139(4) exception from the need for an excavation permit, or a Section 57(2) exemption for certain activities carried out on an SHR item which would otherwise require approval under the Heritage Act.

Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act 1999)

The Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act) is the Commonwealth Government's central piece of environmental legislation. The EPBC Act provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places—defined in the EPBC Act as matters of national environmental significance.

The objects of this Act are:

(a) to provide for the protection of the environment, especially those aspects of the environment that are matters of national environmental significance; and

(b) to promote ecologically sustainable development through the conservation and ecologically sustainable use of natural resources; and

(c) to promote the conservation of biodiversity; and

(ca) to provide for the protection and conservation of heritage; and

(d) to promote a co-operative approach to the protection and management of the environment involving governments, the community, land-holders and indigenous peoples; and

(e) to assist in the co-operative implementation of Australia's international environmental responsibilities; and

(f) to recognise the role of indigenous people in the conservation and ecologically sustainable use of Australia's biodiversity; and

(g) to promote the use of indigenous peoples' knowledge of biodiversity with the involvement of, and in co-operation with, the owners of the knowledge. (s3 (1))

The Act establishes three lists The World Heritage List, The National Heritage List and the Commonwealth Heritage List.

The National Heritage List

The National Heritage List is a schedule of places which the Minister for the Environment and Heritage considers to have 'National Heritage Value' based on prescribed 'National Heritage Criteria'. The List may include places outside of Australia if agreed to by the Country concerned. There is a public nomination process and provision for public consultation on nominations. Expert advice regarding nominations is provided to the Minister by the Australian Heritage Council.

A nominated place considered to be at risk can be placed on an emergency list while its heritage value is assessed.

The listing of a place is defined as a 'matter of national environmental significance' under the EPBC Act. As a consequence, the Minister must grant approval prior to the conduct of any proposed actions which will, or are likely to have, a significant impact on the National Heritage values of a listed place.

The Commonwealth Heritage List

The Commonwealth Heritage List is a list of Indigenous, historic and natural heritage places owned or controlled by the Australian Government.

These include places connected to defence, maritime safety, communications, customs and other government activities that also reflect Australia's development as a nation.

The Act places a range of obligations on the Commonwealth Agencies with regard to places included on the Commonwealth Heritage List. These include:

- Development of a heritage strategy applicable to all listed places controlled by the agency;
- Preparation of a management plan for each listed place;
- Conduct of a program to identify Commonwealth Heritage values on lands controlled by the agency and maintaining a register of such values;
- Ensuring that no action is taken which has, will have, or is likely to have an adverse impact on the National Heritage values of a National Heritage Place, or the Commonwealth Heritage values of a Commonwealth Heritage Place, unless there is no feasible or prudent alternative and all reasonable measures to mitigate impact have been taken; and
- Including a covenant in any sale or lease contract for land which includes a Commonwealth Heritage place which stipulates the protection of the Commonwealth Heritage values of that place, unless such an action is found by the agency to be unnecessary, unreasonable or impractical.

The Australian Heritage Council

The Australian Heritage Council provides expert advice to the Minister on heritage issues and nominations for the listing of places on the National Heritage List and the Commonwealth Heritage List. The Council replaces the former Australian Heritage Commission.

The Register of the National Estate

The former register of the National Estate was established under the now repealed *Australian Heritage Commission Act 1975.* The National Estate was defined under this Act as 'those places, being components of the natural environment of Australia or the cultural environment of Australia, that have aesthetic, historical, scientific or social significance or other special value for future generations as well as for the present community'. The list has no statutory standing and is no longer maintained but it remains an historical resource that contains information about places of potential heritage value.

APPENDIX 2

AHIMS SEARCH RESULTS

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Yass Valley Rail Trail
Client Service ID : 768309

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
51-4-0378	Yass PAD 4	GDA	55	673891	6144967	Open site	Valid	Potential Archaeological Deposit (PAD) : 1		103614
	Contact	Recorders	Bowen Heritage Management,Doctor.Alister Bowen					Permits		
51-4-0071	YCE 4	AGD	55	675173	6144526	Open site	Valid	Artefact : 1		98750,98836
	Contact	Recorders	Mr.Lee Thompson					Permits	1847	
51-4-0317	Yoss Pad	GDA	55	677090	6144407	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Darrell Rigby					Permits		
51-4-0312	Yoss 3	GDA	55	677407	6144410	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Darrell Rigby					Permits		
51-4-0005	Kingston, Y4	AGD	55	678800	6142833	Open site	Valid	Artefact : -	Open Camp Site	496
	Contact	Recorders	ASRSYS					Permits	423	
51-4-0265	TP-IF12	GDA	55	670013	6140482	Open site	Valid	Artefact : 1		
	Contact	Recorders	Kayandel Archaeological Services,Mr.Balazs Hansel					Permits		
51-4-0009	Y7, Yass	AGD	55	673366	6145802	Open site	Valid	Artefact : -	Open Camp Site	496
	Contact	Recorders	ASRSYS					Permits		
51-4-0379	Yass PAD 5	GDA	55	673940	6145050	Open site	Valid	Potential Archaeological Deposit (PAD) : 1		103614
	Contact	Recorders	Bowen Heritage Management,Doctor.Alister Bowen					Permits		
51-4-0074	YCE 7	AGD	55	675358	6144663	Open site	Valid	Hearth : 1		98750,98836
	Contact	Recorders	Mr.Lee Thompson					Permits	1847	
51-4-0435	Lot 2 DP 1185025 -Quarry-Artefact Scatter	GDA	55	675658	6140766	Open site	Valid	Artefact : -, Stone Quarry : -		
	Contact	Recorders	Archaeological Risk Assessment Services (ARAS),Mr.Giles (dup ID#12832) Hamm					Permits		
51-4-0001	Ashby	AGD	55	675671	6143972	Open site	Valid	Artefact : -, Burial : -	Burial/s,Open Camp Site	992,1038
	Contact	Recorders	NPWS - Blackheath Office,Miss.Marjorie Sullivan					Permits		
51-4-0067	EY - A1	AGD	55	676045	6140780	Open site	Valid	Artefact : 2		102431
	Contact	Recorders	Archaeological Heritage Surveys					Permits	2931,2932,2975,3473	
51-4-0313	Yoss 4	GDA	55	677214	6144281	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Darrell Rigby					Permits		
51-4-0311	Yoss 2	GDA	55	677382	6144144	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Darrell Rigby					Permits		
51-4-0340	SH1;	GDA	55	677498	6144162	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Darrell Rigby					Permits		
51-4-0305	Cooma Cottage Artefact 1	GDA	55	677806	6140716	Open site	Valid	Artefact : -		
	Contact	Recorders	Mrs.Rebecca Widdows					Permits		

Report generated by AHIMS Web Service on 29/03/2023 for Nicola Hayes for the following area at Lat, Long From : -34.8665, 148.8564 - Lat, Long To : -34.7961, 148.98. Number of Aboriginal sites and Aboriginal objects found is 73

This information is not guaranteed to be free from error omission. Heritage NSW and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

Page 1 of 5

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Yass Valley Rail Trail
Client Service ID : 768309

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
51-5-0040	Y19	AGD	55	679722	6140060	Open site	Valid	Artefact : -	Open Camp Site	1335,98836
	Contact	Recorders	Rex Silcox					Permits		
51-4-0255	TP-IF8	GDA	55	672568	6141190	Open site	Valid	Artefact : 1		
	Contact	Recorders	Kayandel Archaeological Services,Mr.Balazs Hansel					Permits		
51-4-0257	TP-IF10	GDA	55	672658	6141461	Open site	Valid	Artefact : 1		
	Contact	Recorders	Kayandel Archaeological Services,Mr.Balazs Hansel					Permits		
51-4-0384	Y3	GDA	55	673604	6144925	Open site	Valid	Artefact : 1		103614
	Contact	Recorders	Bowen Heritage Management,Doctor.Alister Bowen					Permits		
51-4-0020	Yellow Creek Road, Y15	AGD	55	675474	6143614	Open site	Valid	Artefact : -	Open Camp Site	992,98836
	Contact	Recorders	Margrit Koettig					Permits		
51-4-0102	PAD 1 East Yass	AGD	55	676040	6143600	Open site	Valid	Potential Archaeological Deposit (PAD) : 1		102431
	Contact	Recorders	Ms.Trish Saunders					Permits	9,2967,3473	
51-4-0314	Yoss 5	GDA	55	677184	6144244	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Darrell Rigby					Permits		
51-4-0006	Willow Vale, Y5	AGD	55	678046	6143877	Open site	Valid	Artefact : -	Open Camp Site	496
	Contact	Recorders	ASRSYS					Permits		
51-4-0253	TP-IF6	GDA	55	672087	6140149	Open site	Valid	Artefact : 1		
	Contact	Recorders	Kayandel Archaeological Services,Mr.Balazs Hansel					Permits		
51-4-0256	TP-IF9	GDA	55	672622	6141404	Open site	Valid	Artefact : 1		
	Contact	Recorders	Kayandel Archaeological Services,Mr.Balazs Hansel					Permits		
51-4-0273	TP-PAD1	GDA	55	672707	6141385	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	Kayandel Archaeological Services,Mr.Balazs Hansel					Permits		
51-4-0457	PTHP1	GDA	55	673419	6142650	Open site	Valid	Artefact : -		
	Contact	Recorders	Past Traces Pty Ltd,Mr.Nathaniel Cracknell					Permits		
51-4-0019	Yellow Creek Road, Y14	AGD	55	675474	6143614	Open site	Valid	Artefact : -	Open Camp Site	992,98836
	Contact	Recorders	Margrit Koettig					Permits		
51-4-0302	Ashby Grinding Groove	GDA	55	676636	6144576	Open site	Valid	Grinding Groove : -		
	Contact	Recorders	Mrs.Rebecca Widdows					Permits		
51-4-0303	Ashby Artefact 1	GDA	55	676931	6143642	Open site	Valid	Artefact : -		
	Contact	Recorders	Mrs.Rebecca Widdows					Permits		
51-4-0315	Yoss 6	GDA	55	677050	6144507	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Darrell Rigby					Permits		
51-4-0015	Cooma Cottage	AGD	55	678100	6140200	Open site	Valid	Aboriginal Ceremony and Dreaming : -		

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Page 2 of 5

AHIMS Web Services (AWS)
Extensive search - Site list report

Your Ref/PO Number : Yass Valley Rail Trail
Client Service ID : 768309

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
	Contact	Recorders	R Mackay					Permits		
51-4-0325	YTB-1	GDA	55	671432	6141161	Open site	Valid	Artefact : -		103478
	Contact	Recorders	Ms.Holly Maclean					Permits		
51-4-0254	TP-IF7	GDA	55	672357	6141045	Open site	Valid	Artefact : 1		
	Contact	Recorders	Kayandel Archaeological Services,Mr.Balazs Hansel					Permits		
51-4-0376	Yass PAD 2	GDA	55	673140	6145204	Open site	Valid	Potential Archaeological Deposit (PAD) : 1		103614
	Contact	Recorders	Bowen Heritage Management,Doctor.Alister Bowen					Permits		
51-4-0385	Y4	GDA	55	673458	6144585	Open site	Valid	Artefact : 1		103614
	Contact	Recorders	Bowen Heritage Management,Doctor.Alister Bowen					Permits		
51-4-0073	YCE 6	AGD	55	675281	6144628	Open site	Valid	Artefact : 1		98750,98836
	Contact	Recorders	Mr.Lee Thompson					Permits	1847	
51-4-0007	Willow Vale, Y6	AGD	55	677498	6143899	Open site	Valid	Artefact : -	Open Camp Site	496
	Contact	Recorders	ASRSYS					Permits		
51-4-0304	Ashby Artefact 2	GDA	55	678479	6140225	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mrs.Rebecca Widdows					Permits		
51-4-0375	Yass PAD 1	GDA	55	673172	6145121	Open site	Valid	Potential Archaeological Deposit (PAD) : 1		103614
	Contact	Recorders	Bowen Heritage Management,Doctor.Alister Bowen					Permits		
51-4-0382	Yass PAD 8	GDA	55	673542	6144636	Open site	Valid	Potential Archaeological Deposit (PAD) : 1		103614
	Contact	Recorders	Bowen Heritage Management,Doctor.Alister Bowen					Permits		
51-4-0070	YCE 3	AGD	55	675392	6144647	Open site	Valid	Modified Tree (Carved or Scarred) : 1		98750,98836
	Contact	Recorders	Mr.Lee Thompson					Permits	1847,1849	
51-4-0069	YCE 2	AGD	55	675414	6144614	Open site	Valid	Modified Tree (Carved or Scarred) : 1		98750,98836
	Contact	Recorders	Mr.Lee Thompson					Permits	1847,1849	
51-4-0316	Yoss 7	GDA	55	677044	6144393	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Darrell Rigby					Permits		
51-4-0310	Yoss 1	GDA	55	677383	6144162	Open site	Valid	Artefact : -		
	Contact	Recorders	Mr.Darrell Rigby					Permits		

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Page 3 of 5

AHIMS Web Services (AWS)
Extensive search - Site list report

Your Ref/PO Number : Yass Valley Rail Trail
Client Service ID : 768309

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
51-4-0306	Cooma Cottage Scar Tree 3	GDA	55	678284	6140501	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Mrs.Rebecca Widdows					Permits		
51-4-0392	Yass River-OS1	GDA	55	672044	6142469	Open site	Partially Destroyed	Artefact : -, Potential Archaeological Deposit (PAD) : -		104314,104315,104405
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,OzArk Environmental an					Permits	4619	
51-4-0377	Yass PAD 3	GDA	55	673110	6145261	Open site	Valid	Potential Archaeological Deposit (PAD) : 1		103614
	Contact	Recorders	Bowen Heritage Management,Doctor.Alister Bowen					Permits		
51-4-0237	TP-IF13	GDA	55	669830	6140317	Open site	Valid	Artefact : -		102370
	Contact	Recorders	Kayandel Archaeological Services,Mr.Balazs Hansel					Permits		
51-4-0052	YSS1	AGD	55	673750	6140600	Open site	Valid	Artefact : 4		97582,98836
	Contact	Recorders	Mr.Kelvin Officer					Permits		
51-4-0083	Yellow Creek Road YCE 8	AGD	55	675150	6144685	Open site	Valid	Artefact : 1		
	Contact Searle	Recorders	Mr.Lee Thompson					Permits		
51-4-0084	Yellow Creek Road YCE 9	AGD	55	675204	6144722	Open site	Valid	Artefact : 1		
	Contact Searle	Recorders	Mr.Lee Thompson					Permits		
51-4-0023	Yellow Creek Road, Y18	AGD	55	675474	6143614	Open site	Valid	Artefact : -	Open Camp Site	992,98836
	Contact	Recorders	Margrit Koettig					Permits		
51-4-0022	Yellow Creek Road, Y17	AGD	55	675474	6143614	Open site	Valid	Artefact : -	Open Camp Site	992
	Contact	Recorders	Margrit Koettig					Permits		
51-1-0043	Riverside Camp	AGD	55	675650	6143600	Open site	Valid	Hearth : -, Habitation Structure : -	Mound (Oven)	98836
	Contact	Recorders	Philip Boot					Permits		
51-1-0044	Oak Hill Camp	AGD	55	675700	6144200	Open site	Valid	Hearth : -, Habitation Structure : -	Mound (Oven)	98836
	Contact	Recorders	Philip Boot					Permits		
51-4-0232	Yass SU15/L1	GDA	55	676519	6144462	Open site	Valid	Artefact : 1		101437
	Contact	Recorders	Doctor.Julie Dibden					Permits	3414	
51-4-0011	Y13, Yass	AGD	55	677800	6140850	Open site	Valid	Artefact : -	Open Camp Site	842
	Contact	Recorders	Rex Silcox					Permits		
51-4-0004	Kingston, Y3	AGD	55	679459	6142632	Open site	Valid	Artefact : -	Open Camp Site	496
	Contact	Recorders	ASRSYS					Permits		
51-4-0240	TP-AS1	GDA	55	672713	6140529	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : -		102370

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Page 4 of 5

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Yass Valley Rail Trail
Client Service ID : 768309

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
	Contact	Recorders	Kayandel Archaeological Services,Mr.Balazs Hansel					Permits		
51-4-0258	TP-IF11	GDA	55	672901	6141286	Open site	Valid	Artefact : 1		
	Contact	Recorders	Kayandel Archaeological Services,Mr.Balazs Hansel					Permits		
51-4-0381	Yass PAD 7	GDA	55	673685	6144663	Open site	Valid	Potential Archaeological Deposit (PAD) : 1		103614
	Contact	Recorders	Bowen Heritage Management,Doctor.Alister Bowen					Permits		
51-4-0072	YCE 5	AGD	55	675186	6144530	Open site	Valid	Artefact : 1		98750,98836
	Contact	Recorders	Mr.Lee Thompson					Permits	1847	
51-4-0068	YCE 1	AGD	55	675488	6144599	Open site	Valid	Modified Tree (Carved or Scarred) : 1		98750,98836
	Contact	Recorders	Mr.Lee Thompson					Permits	1847,1849	
51-4-0021	Yellow Creek Road, Y16	AGD	55	675474	6143614	Open site	Valid	Artefact : -	Open Camp Site	992,98836
	Contact	Recorders	Margrit Koettig					Permits		
51-4-0046	Edgerton Reserve Cemetery (Duplicate of Site 51-4-0001)	GDA	55	675900	6145000	Open site	Deleted	Burial : -	Burial/s	992,1038
	Contact	Recorders	Ms.Adrienne Howe-Piening					Permits		
51-4-0233	Yass SU17/L1	GDA	55	676580	6143805	Open site	Valid	Artefact : 2		101437
	Contact	Recorders	Doctor.Julie Dibden					Permits	3414	
51-4-0012	Y12, Yass Bypass	AGD	55	678050	6141300	Open site	Valid	Artefact : -	Open Camp Site	842
	Contact	Recorders	Rex Silcox					Permits		
51-4-0013	Y11, Yass Bypass Route	AGD	55	678650	6143950	Open site	Valid	Artefact : -	Open Camp Site	842
	Contact	Recorders	Rex Silcox					Permits		
51-4-0016	BY1, Bowning-Yass	AGD	55	671750	6147600	Open site	Valid	Artefact : -	Open Camp Site	894,1081
	Contact	Recorders	Margrit Koettig					Permits		
50-5-0027	Booroo Ponds 1;	AGD	55	672230	6142270	Open site	Valid	Artefact : -	Open Camp Site	98836
	Contact	Recorders	Mr.Peter Kuskie					Permits		
51-4-0383	Y2	GDA	55	673349	6145057	Open site	Valid	Artefact : 1		103614
	Contact	Recorders	Bowen Heritage Management,Doctor.Alister Bowen					Permits		

** Site Status
Valid - The site has been recorded and accepted onto the system as valid
Destroyed - The site has been completely impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There is nothing left of the site on the ground but proponents should proceed with caution.
Partially Destroyed - The site has been only partially impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There might be parts or sections of the original site still present on the ground
Not a site - The site has been originally entered and accepted onto AHIMS as a valid site but after further investigations it was decided it is NOT an aboriginal site. Impact of this type of site does not require permit but Heritage NSW should be notified

Report generated by AHIMS Web Service on 29/03/2023 for Nicola Hayes for the following area at Lat, Long From : -34.8665, 148.8564 - Lat, Long To : -34.7961, 148.98. Number of Aboriginal sites and Aboriginal objects found is 73

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Page 5 of 5

The experience **you deserve**

Appendix C – Civil Construction Cost Estimate

Preliminary Construction Cost Estimate

Project: Yass Rail Trail
(Based on Concept Design Drawings)

DATE: 30/05/2023
JOB No.: BE230076

SUMMARY SHEET

ITEM	SECTION & DESCRIPTION	UNIT	QTY	RATE	AMOUNT	SUB-TOTAL
1.	**PRELIMINARIES (CONSTRUCTION ONLY):**				**$270,000**	
2.	**BULK EARTHWORKS:**				**$430,000**	
3.	**CIVIL WORKS:**				**$2,652,250**	
4.	**BRIDGE WORKS:**				**$4,210,000**	
5.	**OTHER ITEMS:**				**$2,087,450**	
	SUB-TOTAL				**$9,649,700**	
6.	**CONTINGENCY (15%)**				**$1,447,455**	
	TOTAL ESTIMATED CONSTRUCTION COST:				**$11,097,155**	

Notes:

1. This Opinion of Cost is based on Current Concept Drawings by Burchills Engineering Solutions.
2. This Preliminary Cost Estimate is based on current works and is subject to detailed design. No detailed design has been undertaken at the time of this estimate.
3. Quantity allowances shown are approximate only and are subject to detailed modelling, design and approvals.
4. No allowance has been made for lighting requirements.
5. No earthworks modelling has been undertaken and quantities have been assumed. No import or export of material has been allowed for in the estimate unless noted otherwise.
6. No consideration for temporary construction access or reinstatement of existing infrastructure.
7. No allowance has been made for service relocations along the Rail Trail alignment. Preliminary review of existing services has been complete, however detailed survey and design are required to confirm if any relocations are required.
8. A provisional sum has been provided for the Dutton Street reconfiguration works which could vary considerably based on the preferred option. No allowance has been made for modifying existing road intersections.
9. No allowance for treatment of contamination materials.

DISCLAIMER
Please note that a design concept plan produced by Burchills Engineering Solutions has been produced to provide an indication of the possible design outcome based on a preliminary appraisal of the facts and constraints relating to the project, but without the benefit of detailed technical assessment or detailed survey.
The approval process which involves preparation of technical reports, responding to the Council information requests and information requests from State and Federal referral agencies and finally receipt of a decision notice from Council will involve many changes to the proposal to take account of a range of constraints and requirements of a range of legislation, guidelines and town planning outcomes.
The information thus so given is for preliminary purposes only and shall not be relied upon as a definitive statement of the costs or feasibility of the project.

BURCHILLS ENGINEERING SOLUTIONS

Preliminary Construction Cost Estimate

Project: Yass Rail Trail
(Based on Concept Design Drawings)

DATE: 30/05/2023
JOB No.: BE230076

ITEM	SECTION & DESCRIPTION	UNIT	QTY	RATE	AMOUNT	SUB-TOTAL
1.	**PRELIMINARIES (CONSTRUCTION ONLY):**					
	(a) Site establishment, including erosion control and miscellanous.	Item	1	$120,000	$120,000	
	(b) Survey setout	Item	1	$90,000	$90,000	
	(c) Provision for as cons and all QA documentation	Item	1	$60,000	$60,000	
						$270,00
2.	**BULK EARTHWORKS:**					
	(a) Topsoil Stripping & Respread (Nominal 100mm depth).	m^3	1,775	$20	$35,500	
	(b) Site clearing and grubbing	m^2	17,750	$15	$266,250	
	(c) Cut to Fill Bulk Earthworks	m^3	1,775	$30	$53,250	
	(d) Embankmbent Repairs (approx. CH1360)	m^3	300	$50	$15,000	
	(e) Allowance for Level 1 certification.	Item	1	$60,000	$60,000	
						$430,00
3.	**CIVIL WORKS:**					
	(a) Removal and disposal of existing rail tracks	m	4,500	$25	$112,500	
	(b) Trimming and compaction of subgrade for new pathway	m^2	12,900	$5	$64,500	
	(c) Removal of unsuitable material and replace with CBR15 material (prov)	m^3	113	$140	$15,750	
	(d) Removal of existing concrete path	m^2	420	$55	$23,100	
	(e) Construction of concrete shared path	m^2	2,250	$175	$393,750	
	(f) Construction of AC sealed shared path	m^2	10,650	$125	$1,331,250	
	(g) Construction of unsealed pathway	m^2		$45		
	(h) Road Crossing treatments:					
	i Timber bollard	Item	50	$600	$30,000	
	ii Removable steel bollard / chicane rails	Item	20	$1,200	$24,000	
	iii Concrete kerb ramps	Item	12	$1,200	$14,400	
	iv Blister Islands	Item	2	$5,000	$10,000	
	v Supply and install 1.2m high pedestrian fence	m	30	$200	$6,000	
	(i) Additional costs for Dutton Street section					
	i Kerb	Item	50	$600	$30,000	
	ii Intersection treatments	Item	2	$25,000	$50,000	
	iii Allowance for roadworks (reprofiling)	Item	1	$200,000	$200,000	
	(j) Allowance for local footpath connections	Item	3	$10,000	$30,000	
	(k) Allowance for signage, linemarking and furniture	Item	1	$60,000	$60,000	
	(l) Reinstatement works (prov):					
	i Turf and topsoil	m^2	8,600	$20	$172,000	
	ii Hydromulch	m^2	2,500	$6	$15,000	
	iii Placed rock with geofabric underlay	m^2	1,000	$70	$70,000	
						$2,652,25

BURCHILLS ENGINEERING SOLUTIONS

Preliminary Construction Cost Estimate

Project: Yass Rail Trail
(Based on Concept Design Drawings)

DATE: 30/05/2023
JOB No.: BE230076

ITEM	SECTION & DESCRIPTION	UNIT	QTY	RATE	AMOUNT	SUB-TOTAL
4.	**BRIDGE WORKS:**					
	(a) Remediation of existing bridge					
	i Remove and replace timber sections	Item	1	$2,300,000	$2,300,000	
	ii Remediate steel truss	Item	1	$1,200,000	$1,200,000	
	iii Remediate brick piers	Item	1	$120,000	$120,000	
	iv Install new deck and balastrades	Item	1	$350,000	$350,000	
	v New concrete abutments	Item	2	$120,000	$240,000	
						$4,210,000
5.	**OTHER ITEMS:**					
	(a) Embellishment at trail heads and along rail trail	Item	1	$345,000	$345,000	
	(b) Allowance for additional landscaping works	Item	1	$115,000	$115,000	
	(c) Detailed Investigations, Design and approvals	%	7%	$7,562,250	$529,358	
	(d) Council Project Management allowance	%	10%	$7,562,250	$756,225	
	(e) Provision for Traffic Management	%	3%	$7,562,250	$226,868	
	(f) Provisional Allowance for Service Relocations	Item	1	$115,000	$115,000	
						$2,087,450
	TOTAL ESTIMATED CONSTRUCTION COST: (GST Exclusive)					**$9,649,700**

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