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## 10 DEVELOPMENT AND INFRASTRUCTURE

### 10.1 PROPOSED PLANNING SCHEME AMENDMENT C154 - 15-35 EAST STREET KILMORE

**Author:** Sean Greer - Coordinator Strategic Planning

**File No:** PL/05/284

**Attachments:** 1. Amendment C154 - Documentation

#### 1. Purpose

- 1.1 This report recommends that Council request authorisation from the Minister for Planning to prepare an Amendment to the *Mitchell Planning Scheme*, generally in accordance with Attachment 1. Subject to authorisation, the Amendment will be placed on public exhibition in accordance with the legislative requirements.

#### 2. Background

- 2.1 Council has received a request from Ethos Urban, on behalf of Kilmore Racing Club, to rezone the land at 15-35 East Street, Kilmore and the south adjoining parcel (identified as Reserve 1 on LP114048).
- 2.2 The proposed rezoning seeks to rezone the land from the Public Use Zone – Schedule 6 (PUZ6 – Local Government) to General Residential Zone – Schedule 1 (GRZ1 – Mitchell Residential Areas). It is also proposed to apply the Development Plan Overlay - Schedule 10 (DPO10 – Kilmore Strategic Development Sites).
- 2.3 The Kilmore Racing Club has outlined the subject site is surplus to its ongoing operations and requirements. The Club has adequate area for all current and future activities within the primary land title encompassing the racecourse itself on the eastern side of East Street.

#### 3. Key Matters

- 3.1 The site is currently zoned Public Use Zone 6 (PUZ6 – Local Government). The site is privately owned and the current application of the PUZ is inconsistent with the “*Ministerial Direction – The Form and Content of Planning Schemes*” which specifies that land within a PUZ must be publicly owned.
- 3.2 Should the Planning Scheme Amendment process be undertaken, the application of the DPO10 onto the site will mean a Development Plan application needs to be approved to Council’s satisfaction prior to planning approvals being granted for future development.
- 3.3 The Kilmore Structure Plan (KSP) includes Action A48 which specifically relates to the site: “*Rezone land owned by Kilmore Racecourse currently*”

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PROPOSED PLANNING SCHEME AMENDMENT C154 - 15-35 EAST STREET KILMORE (CONT.)

*zoned PUZ to support its development as part of the Kilmore Racecourse complex” (p.85).*

- 3.4 Action A48 is supportive of a commercial or other ancillary use (i.e. accommodation or conference centre) to support the Kilmore Racecourse activities on both sides of East Street. The site is not large, at just over 2 hectares in area and has an existing residential interface to the north and west. Although the proposed GRZ1 can still facilitate the above land uses, it will be subject to further planning approvals through the Development Plan and subdivision approval processes.

### **Recommendation**

**THAT** Council:

1. Seeks Ministerial Authorisation in accordance with Section 8(A) of the *Planning and Environment Act 1987* for the preparation of Planning Scheme Amendment C154, generally in accordance with the draft documentation at Attachment 1 to this report.
2. Subject to Ministerial Authorisation, Council officers prepare and exhibit a Planning Scheme Amendment in accordance with the requirements of the *Planning and Environment Act 1987*.

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PROPOSED PLANNING SCHEME AMENDMENT C154 - 15-35 EAST STREET KILMORE (CONT.)

#### **4. Financial, Resource and Asset Management Implications**

- 4.1 As this is a proponent-led Planning Scheme Amendment, the applicant will bear the costs associated with its processing such as fees and costs associated with public exhibition or an Independent Planning Panel, and minimise the financial implications for Council.

#### **5. Consultation**

- 5.1 The rezoning request was forwarded to the Environment Protection Agency for initial comment. No concern was raised by this agency at the time of writing.
- 5.2 If Ministerial Authorisation is received for the preparation of a proposed Planning Scheme Amendment, public exhibition would be required in accordance with the provisions of Section 19 of the *Planning and Environment Act 1987*.
- 5.3 Public exhibition will include sending notices to the owners/occupiers for surrounding land, advertising within the North Central Review and both Council and the Department of Environment, Land, Water and Planning's website. Subject to Covid-19 restrictions at the time, hard copies of the Amendment will be made available for public inspection during opening hours at the Kilmore Library and the Wallan Planning and Building Office. Hard copies of the Amendment can also be available upon request should people have difficulty accessing the information online. Following completion of the exhibition period, a report will be provided to Council which outlines the exhibition process and any submissions received.

#### **6. Sustainability Implications (Social and Environmental)**

- 6.1 The proposed Planning Scheme Amendment would enable future residential infill development within the established residential area. It will provide land for housing in an area with existing services and good access to the Kilmore Town Centre and the open space network.
- 6.2 The protection of existing vegetation on the subject site is a matter that will need to be considered by any future Development Plan application, subject to the rezoning of the subject site.

#### **7. Policy and Legislative Implications**

- 7.1 The proposed rezoning is consistent with the relevant directions of *Plan Melbourne 2017-2050* and the *Hume Regional Growth Plan*, which are State Government policies that identify Kilmore as a peri-urban town that can accommodate significant population growth.
- 7.2 The implications of how this proposed Amendment has considered the directions within the Kilmore Structure Plan are considered in the Discussion section below. The intended outcome of the proposal is that the

## PROPOSED PLANNING SCHEME AMENDMENT C154 - 15-35 EAST STREET KILMORE (CONT.)

subject site be considered within Precinct 1A – Established Areas to reflect similar land use and development patterns on the western side of East Street, as opposed to the current designation of being linked with the racecourse activities.

## 8. Alignment to Council Plan

8.1 Proposed Planning Scheme Amendment C154 is consistent with the relevant objectives of the *Council Plan 2017-2021*, including the following:

Strategic Objective:	Responsible Planning
	To demand best practice outcomes when planning for future growth.
Relevant Key Strategies:	Plan for growth and change through best practice design of services, infrastructure, open space and recreation facilities.
	Plan for a diversity of housing and households

## 9. Conflict of Interest

9.1 No officers involved in the preparation of this report have any direct or indirect interest in this matter.

## 10. Risk Implications

Risk	Risk Ranking	Proposed Treatments	Within Existing Resources?
Perception of proper process not being adhered to.	Low	The rezoning is intended to be processed through the conventional Planning Scheme Amendment process to ensure transparency and procedural fairness.	Yes
Community expectations not managed or obtained.	Low	The proposed rezoning will entail a formal exhibition period and notices will be distributed to ensure there is an opportunity for wide community engagement. Any matters that cannot be resolved will likely proceed to an Independent Planning	Yes

## PROPOSED PLANNING SCHEME AMENDMENT C154 - 15-35 EAST STREET KILMORE (CONT.)

Risk	Risk Ranking	Proposed Treatments	Within Existing Resources?
		Panel hearing for consideration.	
The nature of unknown submissions from other agencies/stakeholders that may alter Council's position on a specific matter.	Low	Attempt to resolve as many issues prior to an Independent Planning Panel hearing.	Yes – there may be a need to engage specialists depending on the nature of issues raised.

## 11. Discussion

### Subject site

11.1 The subject site comprises three (3) lots formally referred to as Lot 1 on TP002368D, Lot 1 on TP002403E and Reserve 1 on LP114048. The titles do not include any restrictive covenants and the title plans do not include any easements.

11.2 Each of the lots are privately owned by the Kilmore Racing Club. The southern lot (currently referred to as Reserve 1 on LP114048) and has had the following ownership history based on documents provided to Council:

- 1975 (specific date unknown) – property is subdivided and in private ownership not associated with the Kilmore Racing Club.
- 23 September 1983 – the property is transferred from the private owners to the former Kilmore Shire Council and a new title was issued.
- 3 October 1984 – Kilmore Shire Council transferred the property to the Kilmore Racecourse and Recreation Reserve Trustees.
- 2 December 2004 – Kilmore Racecourse and Recreation Reserve Trustees transferred to Kilmore Racing Incorporated.
- 2018 (specific date unknown) – Kilmore Racing Incorporated joined with Kilmore Harness Racing Club Inc and Kilmore Turf Club Inc to form the Kilmore Racing Club.

11.3 The site is approximately 560 metres east of the Sydney Street retail precinct. It has direct interfaces to residentially zoned land to the north, south and west. The Kilmore Racecourse is located opposite the site on the eastern side of East Street. The Kilmore Equine Clinic also directly abuts the site to the west and is located at 16 George Street.

11.4 The site is triangular in shape, with direct interface to both East Street and Gipps Street (eastern and northern boundaries respectively). It is

## PROPOSED PLANNING SCHEME AMENDMENT C154 - 15-35 EAST STREET KILMORE (CONT.)

approximately 21,500m<sup>2</sup> in size and is relatively flat with a slight fall to the north.

- 11.5 The land has historically been vacant and is not used of for any prevailing purpose. There is no footpath or kerb constructed to the southern side of Gipps Street and there is an open drain constructed within the road reserve along the northern boundary of the site.
- 11.6 There are trees located adjacent to the site's eastern boundary. The trees include a group of six (6) small, low value trees and two (2) mature higher value trees. The site does not include any other significant vegetation. There are two (2) existing informal gravel crossovers to Gipps Street and one (1) to East Street.
- 11.7 The site is not affected by any overlays. The land is not identified as being an area of cultural heritage sensitivity or within a designated bushfire prone area.



Figure 1 – Subject site location

### Surrounding area

- 11.8 The surrounding area is primarily zoned General Residential Zone – Schedule 1 (GRZ1 – Mitchell Residential Areas). The surrounding residential uses reflect the purpose of the GRZ1. A limited number of lots

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PROPOSED PLANNING SCHEME AMENDMENT C154 - 15-35 EAST STREET KILMORE (CONT.)

adjacent to the subject site also include ancillary facilities associated with the keeping of horses and the Kilmore Equine Clinic. This cluster of properties directly relates to the immediate proximity of the Kilmore Racecourse.

- 11.9 The existing zones applied to the land north of the Kilmore Racecourse include the Farming Zone, Low Density Residential Zone and Rural Living Zone. These zones are better suited to accommodate the equine associated activities given they are more likely to provide land of larger size than the subject site.

Kilmore Structure Plan

- 11.10 As mentioned earlier in the report, the KSP envisaged a commercial or ancillary use to the Kilmore Racecourse occurring on this site to support the equine precinct and activate both sides of East Street. A potential rezoning to Special Use Zone (SUZ – Schedule 3 Kilmore Racetrack) was envisaged at the time of preparing the KSP which was supported by the Kilmore Racing Club.
- 11.11 Since the KSP was implemented in 2016, the Kilmore Racing Club have considered their future operations and have deemed that the separation of the land west of East Street makes it unsuitable for the Club's future needs. The Club's operations are to be based entirely on the east side and all future developments/improvements of facilities will be focused on the core facility. The nature of events hosted at the venue has also changed overtime with race events able to be tracked online and while the restaurant is popular with visitors on event days, the demand for overnight accommodation from visitors is minimal.
- 11.12 The subject site is not required to be within the SUZ to achieve the intended outcome within the KSP. The GRZ1 can still achieve such outcomes with accommodation, convenience shop, food and drink premises as well as place of assembly (function centre) all being permissible land uses in the GRZ, subject to a planning permit. There are no safeguards that can be put in place to achieve these land uses as ultimately the viability of such operations is market based.
- 11.13 Additionally, a number of equine training-based activities associated with the racecourse are now largely located to the north of the racecourse. Objective LE4 of the KSP seeks "*to maintain and strengthen Kilmore's equine industry as an important employment generator*" (p.84). Figure 43 of the KSP recognises that the growth of the equine precinct will likely be to the north.

## PROPOSED PLANNING SCHEME AMENDMENT C154 - 15-35 EAST STREET KILMORE (CONT.)

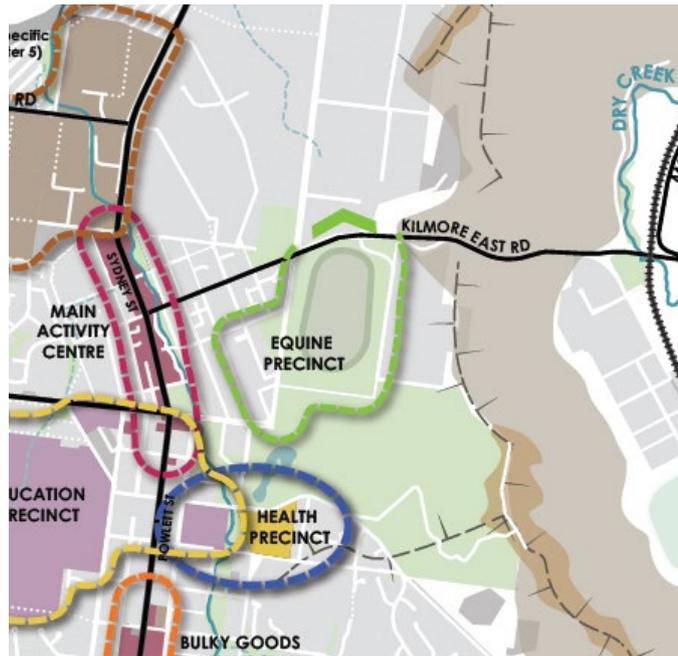


Figure 2 – Excerpt of Figure 43 from Kilmore Stucutre Plan showing growth of Equine Precinct to the north.

- 11.14 The private ownership of the site, its scale and location closely reflect the characteristics of Strategic Infill Development Sites within Precinct 1 identified by the KSP (p. 36-37). Sites similar to the subject site will play an important role in the delivery of diverse future housing outcomes in Kilmore given the close proximity to existing services and facilities.
- 11.15 In this context the site is deemed surplus to the requirements by the Kilmore Racing Club and a commercial use or other use ancillary to the Racecourse activities is unlikely to be pursued by the Kilmore Racing Club. Therefore, should such uses not be pursued, then the GRZ becomes the most appropriate zone given the immediate residential interfaces and the site's location.

#### Application of the Development Plan Overlay

- 11.16 The application of DPO10 to Strategic Infill Development Sites is supported by the KSP. The DPO10 is a planning tool capable of facilitating the orderly future development of the site in a manner that reflects the referred character set out for Precinct 1A in the KSP (p.108-110).
- 11.17 The DPO10 will require the preparation of a Development Plan, to Council's satisfaction, for the site including written and plan-based responses to the Design and Development Objectives contained within Section 4.5.2 of the KSP (p.120). Additional application requirements include (but are not limited to) responding to site features such as existing vegetation, interface with surrounding uses and a local street level concept plan. The DPO10 requirements will influence the design of built form outcomes on the site and inform the assessment of future planning approvals.

## PROPOSED PLANNING SCHEME AMENDMENT C154 - 15-35 EAST STREET KILMORE (CONT.)

Kilmore Neighbourhood Safe Place

11.18 In 2016, the designation of the Kilmore Neighbourhood Safe Place (NSP) was agreed on by Council and the Kilmore Racing Club. A formal Deed of Consent was signed for the purpose of an NSP on non-Council owned land.

11.19 The deed sets out that the NSP is defined as the following land:

- Certificate of Title Vol 1989 Fol 650, at Crown Allotment 13M1 Parish of Glenburnie,
- Specifically, the premises of the J Kelly Pavilion (betting area) and carpark on the Land, as shown in Figure 3.



Figure 3 – Excerpt from Deed of Consent for Non Council-Owned Land – Kilmore Racecourse and Recreation Reserve J Kelly Pavilion and Carpark.

11.20 The proposed rezoning of the subject site will not impact on the operation of the NSP at the Kilmore Racecourse.

Kilmore Infrastructure Framework and Contributions

11.21 The Kilmore Infrastructure Framework (KIF) is a reference document to the *Mitchell Planning Scheme* that provides a strategic basis for seeking contributions for planned infrastructure within Kilmore.

## PROPOSED PLANNING SCHEME AMENDMENT C154 - 15-35 EAST STREET KILMORE (CONT.)

11.22 This enables the opportunity for collection of contributions and / or works in-kind for delivery of developer funded infrastructure. Prior to any future development commencing, an agreement in accordance with section 173 of the *Planning and Environment Act 1987* will be entered into between Council and the developer. This will relate to (but may not be exclusive to) the delivery or apportionment of contributions toward the following infrastructure projects identified in the KIF (Section 5.5, 5.6 and 5.7):

Project number	Project description	Delivery responsibility	Category
CF03c	Kilmore Library Upgrade (infill)	Council	Community
CF06b	Indoor Multipurpose Facility	Council/ Developers	Community
OS01a	Clancy Reserve Upgrade	Council	Active Rec and Open Space
OS02c	Kilmore Leisure Centre Expansion	Council	Active Rec and Open Space
SH02b	Construction of missing path links within existing Kilmore Creek corridor (P1) (Infill)	Council	Active Rec and Open Space
SH03b	Construction of missing path links within other open space (P1) (Infill)	Council	Active Rec and Open Space
SH04b	Construction of missing path links within existing road reserves (P1) (Infill)	Council	Active Rec and Open Space
DRO1	Drainage associated with Precinct 1A	Council	Utilities and Drainage

*Planning and Environment Act 1987*

## **MITCHELL PLANNING SCHEME**

### **AMENDMENT C154**

#### **EXPLANATORY REPORT**

##### **Who is the planning authority?**

This amendment has been prepared by the Mitchell Shire Council which is the planning authority for this amendment.

The Amendment has been made at the request of Ethos Urban on behalf of the Kilmore Racing Club.

##### **Land affected by the amendment**

The Amendment applies to the land known as 15-35 East Street, Kilmore (formally referred to as Lot 1 on TP002368D and Lot 1 on TP002403E) and the south adjoining parcel (formally referred to as Reserve 1 on LP114048).

A mapping reference table is attached at Attachment 1 to this Explanatory Report.]

##### **What the amendment does**

The Amendment corrects a zone map anomaly and will rezone the land at 15-35 East Street, Kilmore and the south adjoining land (Reserve 1 on LP114048) from the Public Use Zone – Schedule 6 (PUZ6) to General Residential Zone – Schedule 1 (GRZ1) and apply the Development Plan Overlay – Schedule 10 (DPO10).

Specifically, the Amendment proposes to:

- Amend Planning Scheme Map No 16 to rezone 15-35 East Street, Kilmore and Reserve 1 on LP114048 to the General Residential Zone – Schedule 1 (GRZ1) and amend Planning Scheme Map No 16DPO.

##### **Strategic assessment of the amendment**

##### **Why is the amendment required?**

The Amendment proposes to correct a zone anomaly for land that is currently within the Public Use Zone Schedule 6 (PUZ6 – Local Government) despite being privately owned.

The land is located in an existing residential area opposite the Kilmore Racing Club and west of East Street. It is vacant and is not used for any predominant purpose. The surrounding underlying zone is considered to be the General Residential Zone – Schedule 1 (GRZ1).

The rezoning of the land to GRZ1 will reflect its private ownership and to ensure that the future land use is complementary to the existing use of the adjoining land. The rezoning of this site is identified within the *Kilmore Structure Plan 2016 (Action A47)*, however, the proposed zoning differs from the outcome envisaged by the Structure Plan as the Kilmore Racing Club have deemed the land to be surplus to their requirements.

The application of DPO10 will facilitate the orderly future development of the site in line with the surrounding area's existing residential character and results in the site being treated as a strategic infill development site.

##### **How does the amendment implement the objectives of planning in Victoria?**

The objectives of planning in Victoria, contained in Section 4(1) of the *Planning and Environment Act 1987*, include:

- (a) To provide for the fair, orderly, economic and sustainable use and development of land;

(c) To secure a pleasant, efficient and safe working, living and recreational environmental for all Victorians and visitors to Victoria;

(g) To balance the present and future interest of all Victorians.

The Amendment will implement and will enable residential use of the land which represents an efficient and orderly planning outcome.

**How does the amendment address any environmental, social and economic effects?**

The Amendment will not result in any adverse environmental, social or economic effects as it is considered to be minor in nature. The application of the DPO10 will ensure that existing environmental features on the site will be considered in future approvals prior to any development commencing.

**Does the amendment address relevant bushfire risk?**

The subject site is not nominated as a site of significant bushfire risk as it is not affected by the Bushfire Management Overlay or located in a Bushfire Prone Area while also being within the settlement boundaries as identified by the *Kilmore Structure Plan 2016*. The views of the Country Fire Authority will be obtained during formal exhibition of this amendment.

**Does the amendment comply with the requirements of any Minister's Direction applicable to the amendment?**

Ministerial Direction – The Form and Content of the Planning Scheme

The amendment is consistent with the Ministerial Direction on the Form and Content of Planning Schemes under section 7(5) of the Act by rezoning private owned land out of a public land zone.

Ministerial Direction 1 – Potentially Contaminated Land

The amendment is consistent with the Ministerial Direction relating to land contamination risk. An environmental assessment has been carried out on the site confirming there is no contamination present and the land is suitable for residential use.

Ministerial Direction No. 11 – Strategic Assessment of Amendments

The Amendment meets the requirements of Ministerial Direction No 11 Strategic Assessment of Amendments.

Ministerial Direction No. 91 – Using the Residential Zones

The proposed application of the GRZ1 is consistent with role and application set out in Ministerial Direction No 91.

**How does the amendment support or implement the Planning Policy Framework and any adopted State policy?**

The Amendment proposes to rezone land that is currently inappropriately zoned and under-utilised. The rezoning of the site will correct the anomaly and allow orderly future development of the site in a manner that reflects the preferred character set out in the *Kilmore Structure Plan* and the growth expectations of the *Hume Regional Growth Plan* and *Plan Melbourne 2017-2050*.

**How does the amendment support or implement the Local Planning Policy Framework, and specifically the Municipal Strategic Statement?**

The application of the GRZ1 is consistent with the direction provided by the LPPF for the established areas of Kilmore. It will provide land for housing within the existing township boundary and in an area with good access to existing services and facilities.

The application of the DPO10 is consistent with the identification and treatment of strategic infill development sites by the *Kilmore Structure Plan 2016* and Clause 21.07.

**Does the amendment make proper use of the Victoria Planning Provisions?**

By correcting the identified zoning anomalies in the planning scheme, the Amendment makes proper use of the Victorian Planning Provisions.

**How does the amendment address the views of any relevant agency?**

The Amendment will be referred to all relevant agencies as part of the exhibition process and comments will be included as necessary.

**Does the amendment address relevant requirements of the Transport Integration Act 2010?**

The Amendment is unlikely to have a significant impact on the transport network and further assessment under the *Transport Integration Act 2010* is not required.

**Resource and administrative costs**

**• What impact will the new planning provisions have on the resource and administrative costs of the responsible authority?**

The Amendment is not expected to have a significant impact on the resource and administrative costs of the responsible authority.

**Where you may inspect this amendment**

The Amendment is available for public inspection, free of charge, during office hours at the following places:

- Wallan Planning and Building Services, 4A and 4B, 61 High Street, Wallan
- Kilmore Customer Service Centre and Library, 12 Sydney Street, Kilmore

The Amendment can also be inspected free of charge at the Mitchell Shire Council website at [www.mitchellshire.vic.gov.au](http://www.mitchellshire.vic.gov.au).

The Amendment can also be inspected free of charge at the Department of Environment, Land, Water and Planning website at [www.planning.vic.gov.au/public-inspection](http://www.planning.vic.gov.au/public-inspection).

**Submissions**

Any person who may be affected by the Amendment may make a submission to the planning authority. Submissions about the Amendment must be received by close of business by **TBC**.

A submission must be sent to:

Mitchell Shire Council  
Submission to Planning Scheme Amendment C154  
113 High Street BROADFORD VIC 3658

Or via email: [mitchell@mitchellshire.vic.gov.au](mailto:mitchell@mitchellshire.vic.gov.au)

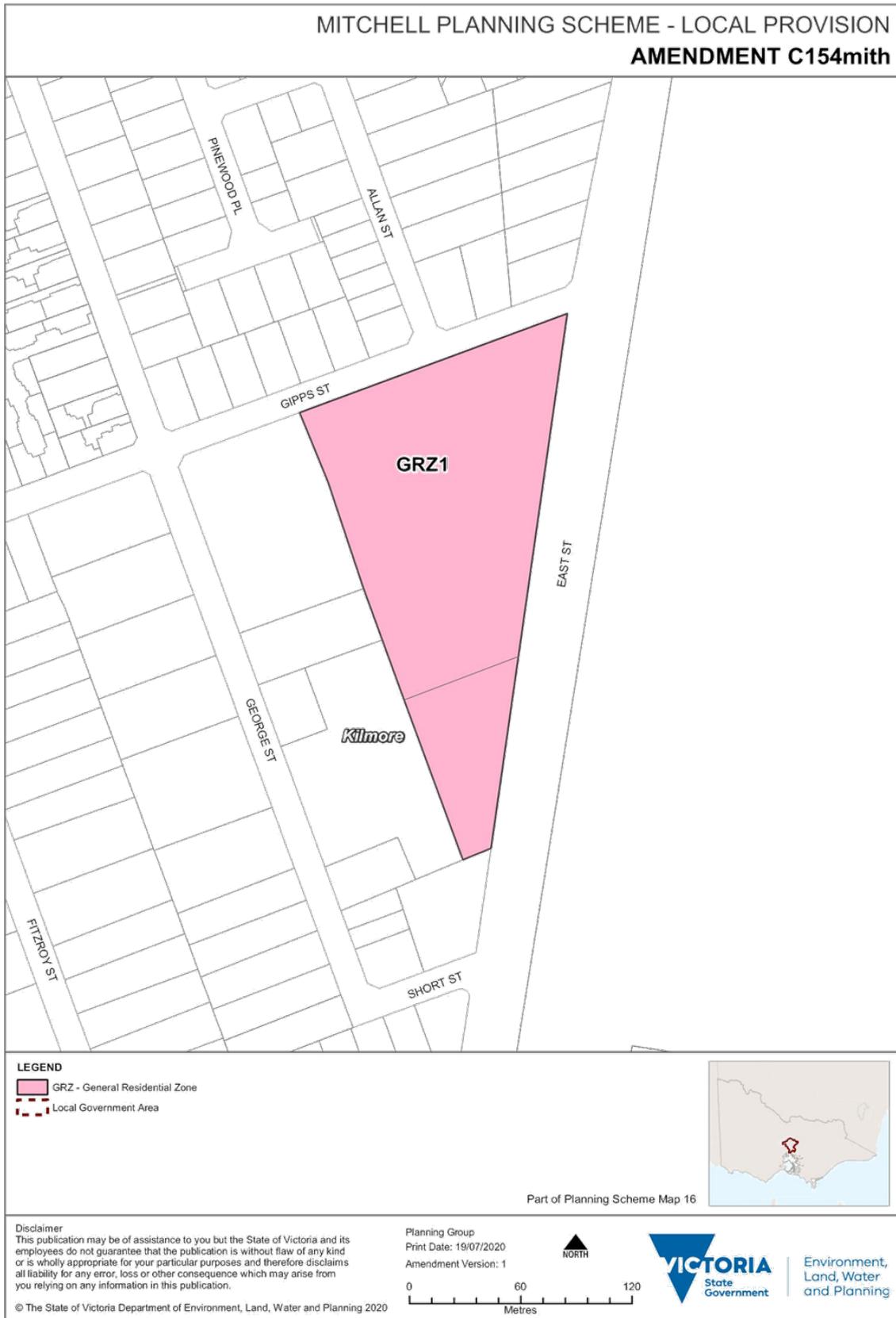
**Panel hearing dates**

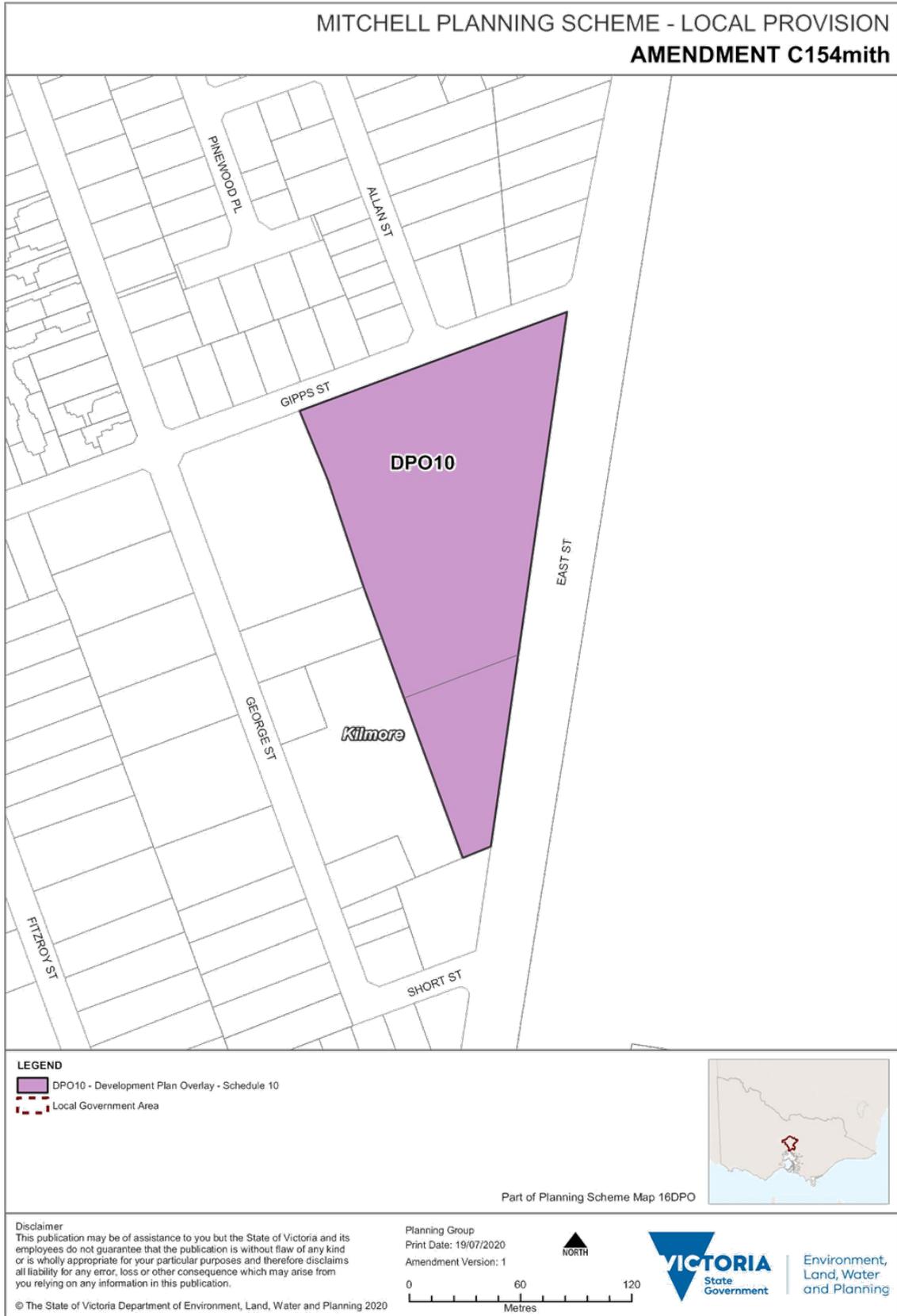
In accordance with clause 4(2) of Ministerial Direction No.15 the following panel hearing dates have been set for this amendment:

- directions hearing: [insert directions hearing date]
- panel hearing: [insert panel hearing date]

**ATTACHMENT 1 - Mapping reference table**

<b>Location</b>	<b>Land /Area Affected</b>	<b>Mapping Reference</b>
Kilmore	15-35 East Street, Kilmore Reserve 1 on LP114048	Mitchell C154 001znMap 16 Exhibition





*Planning and Environment Act 1987*

**MITCHELL PLANNING SCHEME**

**AMENDMENT C154**

**INSTRUCTION SHEET**

The planning authority for this amendment is the Mitchell Shire Council.

The Mitchell Planning Scheme is amended as follows:

**Planning Scheme Maps**

The Planning Scheme Maps are amended by a total of 2 attached map sheets.

***Zoning Maps***

Amend Planning Scheme Map No. 16 in the manner shown on the attached map marked "Mitchell Planning Scheme, Amendment C154".

***Overlay Maps***

Amend Planning Scheme Map No. 16DPO in the manner show on the attached map marked "Mitchell Planning Scheme, Amendment C154".

## 10.2 KILMORE CREEK PRECINCT LANDSCAPE MASTER PLAN

**Author:** Sean Greer - Coordinator Strategic Planning

**File No:** PL/13/082

**Attachments:**

1. *Final Kilmore Creek Landscape Master Plan - Under Separate Cover*
2. *Kilmore Creek Landscape Master Plan - Consultation Summary Report*

### 1. Purpose

1.1 This report seeks the endorsement of the Kilmore Creek Precinct Landscape Master Plan (Master Plan). The Master Plan highlights the importance of the Kilmore Creek precinct for the town and provides a vision to guide future landscape improvements and land management practices to improve the Creek's natural environment and activation.

### 2. Background

2.1 The draft Master Plan was placed on exhibition from 6 September until 7 October 2019. Where appropriate, the feedback has been used to inform the finalisation of the Master Plan.

2.2 At its Ordinary Council Meeting on 17 February 2020, Council resolved to defer the consideration of the final Master Plan to enable further consultation with community groups, specifically the Taungurung Land and Waters Council (TLaWC) and the Kilmore Miniature Railway Group.

### 3. Key Matters

3.1 The Master Plan identifies three (3) priority projects for implementation which were voted on during exhibition. The three (3) priority projects are Kilmore Town Centre Creek Revegetation (between Bourke and Clarke Streets), Kilmore Creek Trail (Rutledge Street to Tootle Street) and White Street Upgrade and Forecourt (in front of the Kilmore Leisure Centre).

3.2 The inclusion of any extension to the Kilmore Miniature Railway line has raised concerns to the TLaWC. Following discussions and the TLaWC entering into a Land Use and Activities Agreement (discussed in more detail later in this report), it is clear that a mutually acceptable outcome for the TLaWC and the Kilmore Miniature Railway Group is not possible. Consequently, the Master Plan shows no extension of the Kilmore Miniature Railway line but includes support for refurbishment/upgrade of the existing facilities.

3.3 Endorsing a final Master Plan is important to establish a vision for the Creek corridor and to inform future funding opportunities to deliver the projects identified. While it is not possible or feasible to resolve all matters raised in

## KILMORE CREEK PRECINCT LANDSCAPE MASTER PLAN (CONT.)

submissions at the concept stage, most submissions are supportive of the vision and key principles within the Master Plan.

- 3.4 The project funding Council received from the then Department of Economic Development, Jobs, Transport and Resources (DEDJTR) requires this project to be completed by the end of April 2021.

**Recommendation****THAT** Council:

1. Adopt the Kilmore Creek Landscape Master Plan (circulated separately)
2. Prepares an implementation strategy for the Master Plan to inform future Council budgets and external funding opportunities.

## KILMORE CREEK PRECINCT LANDSCAPE MASTER PLAN (CONT.)

**4. Financial, Resource and Asset Management Implications**

- 4.1 Council obtained grant funding of \$50,000 from the then Department of Economic Development, Jobs, Transport and Resources (DEDJTR) to prepare a landscape master plan for the Kilmore Creek precinct. The Master Plan project has been completed via this grant funding.
- 4.2 The implementation strategy will inform future Council budgets and possible external funding opportunities to deliver key projects within the plan area.

**5. Consultation**

- 5.1 A Consultation Report has been prepared for this project, outlining the steps undertaken to inform the Landscape Master Plan and providing a detailed overview of the submissions and comments received. The consultation report is at Attachment 1.
- 5.2 The draft Master Plan was placed on exhibition from 6 September 2019 until 7 October 2019. Exhibition comprised:
  - Direct notification of relevant referral agencies, community groups (20) and affected landowners (30).
  - An article in the North Central Review (3 September 2019).
  - A project website was formed on Engaging Mitchell, recording 232 site visits and 181 document downloads during the exhibition period. 7 online surveys were completed.
  - Hard copies of the documentation were made available at the Wallan Planning and Building Office and the Kilmore Library.
  - Information sheet.
  - A joint drop-in session with the Hudson Park Master Plan project was held on 19 September 2019 at the Kilmore Library. Approximately 45 people attended the session.
- 5.3 A total of fifteen (15) submissions and seven (7) online surveys were received. Nine (9) of the submissions and all seven (7) online surveys are supportive of the plan, the other six (6) submissions sought changes or were unsupportive. The following key themes emerged from the submissions:
  - *Trail* – Better access to and along the Creek has been the main theme during consultation. Most people are supportive of the principle; however, people have different opinions on width of the trail and the preferred materials.
  - *Weed eradication and rubbish removal* – Many respondents have identified that the Creek needs “a clean-up”. Litter and rubbish from residents, but also non-native weeds or trees overgrowing the Creek should be removed to improve the “quality” of the Creek.
  - *More trees should be planted and they should be native* – there was a lot of support for further tree planting in the Creek Corridor, to provide

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KILMORE CREEK PRECINCT LANDSCAPE MASTER PLAN (CONT.)

shade on hot summer days and improve the natural qualities of the Creek.

## 6. Sustainability Implications (Social and Environmental)

6.1 The Landscape Master Plan proposes to enhance the Kilmore Creek precinct and improve the social and environmental impacts of this open space corridor. When delivered, it will provide an improved natural environment and more opportunities for residents and visitors to use and enjoy the area.

## 7. Policy and Legislative Implications

7.1 The TLaWC entered into a Land Use and Activity Agreement (LUAA) in August 2020 (executed in October 2020) which forms part of the Recognition and Settlement Agreement under the *Traditional Owner Settlement Act 2010*.

7.2 The LUAA applies to all public land (including Crown Land) and future activities/works as shown in the Master Plan will require consultation and agreement from TLaWC prior to commencement. Given a large extent of the Kilmore Creek corridor remains within private land, the LUAA will have influence on Council's ability to deliver future projects.

## 8. Alignment to Council Plan

8.1 The proposed Master Plan is generally consistent with the strategic objective of responsible planning and the following key strategies within the Council Plan 2017-2021:

Strategic Objective: To demand best practice outcomes when planning for future growth.

Key Strategies: 3.1 – Plan for growth and change through best practice design of services, infrastructure, open space and recreation facilities.

3.3: Prioritise environmental and sustainability outcomes in planning decisions.

3.9: Improve the accessibility and connectivity of pedestrian and cycle paths within and between our towns.

3.10: Protect and enhance local ambience, amenity and character.

## 9. Conflict of Interest

9.1 No officers involved in the preparation of this report have any direct or indirect interest in this matter.

## KILMORE CREEK PRECINCT LANDSCAPE MASTER PLAN (CONT.)

**10. Risk Implications**

Risk	Risk Ranking	Proposed Treatments	Within Existing Resources?
Environment – Minor environmental damage restricted to immediate area.	Medium	Where it's proposed to use best practice methods, there is a risk remaining that works in and around the creek will cause minor environmental damage during construction.	Yes.
Financial – effect on operating budget. Likely to impact on budget or funded activities.	Medium	The Master Plan is ambitious, and the actions proposed would need to be delivered over time given current operating budget.	No.
Concerns from submitters that their requests have not been incorporated into the final Master Plan.	Low.	The Master Plan process has been prepared in an open and transparent manner with the proposed outcomes communicated with submitters.	Yes.

**11. Discussion**Taungurung Land and Waters Council (TLaWC) and the Kilmore Miniature Railway Extension

11.1 The TLaWC have stated that the area should be protected from any development that would result in significant ground disturbance, such as the extension of the miniature railway line. The Kilmore Creek corridor and Hudson Park are identified as having areas of extreme sensitivity for cultural heritage. The miniature railway proposal has been removed from the Master Plan based on the concerns raised by the TLaWC and concerns that the miniature railway extension may detract from the key principle of having the Creek corridor accessible for all.

11.2 The Miniature Railway is well-established and forms part of the fabric of the community. Through the consultation process of the Master Plan, the volunteers of the Kilmore Miniature Railway have provided Council with a plan to extend their rail tracks north, into Hudson Park, and south, into Apex Park. The draft Master Plan displayed an extension into Hudson Park which attracted some support and interest through the community consultation but was not identified as a priority project based on community feedback.

## KILMORE CREEK PRECINCT LANDSCAPE MASTER PLAN (CONT.)

- 11.3 The Master Plan is a guiding document for future improvements and land management practices along the Creek corridor. It is not necessary or feasible to resolve all matters at this concept stage when the priority is to establish the vision to inform future funding applications and the capital works program. Opportunities to further explore options when delivering specific projects will arise in time which is the appropriate platform to communicate with interested parties on detailed matters such as location, materials and extent.
- 11.4 The following notation has been included on page 55 of the master plan under the open space system section to reflect the current scenario of any future expansion to the Kilmore Miniature Railway:

*“An expansion to the Kilmore Miniature Railway is not possible at the time of finalising this plan. However, opportunities could arise in time to explore options with the TLaWC that will not detrimentally impact on cultural heritage and environmental values”.*

Priority Projects

- 11.5 The exhibition of the Master Plan sought feedback in relation to key projects and future works that could be undertaken to improve the creek corridor in the short to medium term. Additional actions are also included in the Master Plan which will be implemented over the time. The three (3) priority projects informed by the exhibition process are:

A. Town Centre Creek Revegetation

- The Master Plan identifies weeds (Willow trees) to be removed in the Creek corridor and identified opportunities for revegetation between Clarke Street and Bourke Street. This section has been chosen as it can provide a boost to the existing Town Centre.
- A cost estimate of \$300,000 has been prepared, allowing for the removal of weeds, replanting of full-grown trees and undergrowth and maintenance for the first two years to ensure survival. The Master Plan supports undertaking these works in a partnership approach with the Goulburn Broken Catchment Management Authority, community groups and any other interested stakeholders.

B. Creek Trail

- Constructing a creek trail between Rutledge Street (the start of Sam de Gabriele Reserve) and Tootle Street. The project consists of a 3.0 metre wide concrete trail, 1,200 metres in length, two bridges and two boardwalks, road crossing treatments, wayfinding and interpretive signage, park furniture and lighting.
- This area was chosen as it would address the lack of connectivity along the Creek south of Lumsden Street and would connect to new residential areas in the south of Kilmore, including Natures Run and The Elms Estate.

C. White Street Upgrade & Forecourt

## KILMORE CREEK PRECINCT LANDSCAPE MASTER PLAN (CONT.)

- A re-design for the car park north of the Kilmore Leisure Centre has been prepared to address functional issues. The design aims to create more amenity and allow for more space for the creek trail by widening existing narrow sections. The project can be linked to the realignment of the miniature railway, a cultural heritage interpretation place in cooperation with the TLaWC and the introduction of a wetland to implement best practice Integrated Water Management principles, while also having the ability to deliver this project in isolation. This design is estimated to cost approximately \$1,500,000.



# **Kilmore Creek Landscape Master Plan**

## **Consultation Report**



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## Executive Summary

The purpose of the Kilmore Creek Precinct Landscape Master Plan project is to provide a plan for the future use of the Creek as open space for the community to enjoy and to improve the Creek's natural environment. The need to prepare a Landscape Master Plan was a key action identified within the Kilmore Structure Plan.

The Draft Landscape Masterplan involved a variety of consultation methods and approaches. This enabled Council to acquire a significant range of inputs, suggestions and comments from members of the Kilmore community.

The following key themes emerged during consultation:

- **Trail** – Better access to and along the Creek has been the main theme during consultation. Most people are supportive on the principle; however, people have different opinions on width of the trail and the preferred materials.
- **Weed eradication and rubbish removal** – Many respondents have identified that the Creek needs “a clean-up”. Litter and rubbish from residents, but also non-native weeds or trees overgrowing the Creek should be removed to improve the “quality” of the Creek.
- **More trees should be planted – and they should be native!**



## 1. Introduction

Council prepared the Draft Landscape Master Plan to highlight the importance of the Kilmore Creek. The Draft Plan outlines a vision for the creek to become the primary recreational open space for Kilmore. The Master Plan aims to improve local shared trail connections, guide public outdoor space improvements and manage the environment within land adjoining the creek.

Before the Draft Landscape Master Plan went out for community consultation, the following process has been undertaken to inform the Draft Plan: process involves the following stages:

**May 2019** - Early consultation with Goulburn Broken Catchment Management Authority, Taungurung Land and Waters Council, Kilmore and District Residents and Ratepayers Association, BEAM – Environmental Group, Miniature Railway.

**June 2019** – Site visit with Environmental Groups (BEAM, Mitchell Environment Advisory Committee) and the Kilmore Miniature Railway group.

**August 2019** – Site visit with Council Staff and Taungurung representatives.

The draft Landscape Master Plan consists of three (3) parts: the site Analysis and Assessment, Guiding Principles and General Actions and Recommendations. After that, the Creek is divided into seven (7) sections, each with their own more detailed projects and descriptions.

## 2. Purpose

The purpose of this Consultation Report is to provide a summary of the community feedback received during the community consultation undertaken in September and October 2019. This community feedback was used to help shape the final Landscape Master Plan, helped with selecting the Priority Projects and will inform the future implementation plan following Council endorsement of the Master Plan.

## 3. Community Consultation on the Draft Landscape Master Plan

Consultation involved a variety of consultation methods and approaches. This enabled Council to obtain a significant range of inputs, suggestions and comments from all members of the local community.

### **Consultation Approaches:**

#### *Engaging Mitchell Project website*

A project website (<https://engagingmitchellshire.com/kilmore-creek-masterplan>) was formed for interested stakeholders to be kept informed about the project, consultation and upcoming events. 232 site visits have been recorded and in total 181 documents have been downloaded by 94 of the visitors.

#### *Online Surveys*

The project website also provided the opportunity for interested stakeholders to complete a short survey. This primary research tool was easily accessible, and undertaken to explore the characteristics, behaviours, needs and expectations of the community.



The online surveys were not as popular as the website, only seven (7) people have filled in the survey and two (2) people filled in their submission online.

*Letters to stakeholders and landowners*

Over twenty identified Community Stakeholders and over thirty potentially affected landowners received a letter and information sheet about the project, where they could get more information and how they could engage or submit to the proposed plans.

Most of these people have been in contact with Council, by visiting the drop-in session, putting in a submission or calling up Council staff for further information.

*Drop in Session*

On Thursday, 19 September 2019 a joint drop-in session was organised together with the Hudson Park Master Plan project, providing an opportunity for people to be informed and provide feedback on the Master Plan, and cast a vote on their preferred priority project. Approximately 45 community members visited the drop-in session.

*Submissions*

The Draft Landscape Masterplan has been on public exhibition at the Kilmore Library and the Wallan Planning and Building Office. People who have requested to see the documents, have been invited to put in a submission. 12 submissions have been received during the consultation period and three (3) submissions have been received afterwards, noting that this excludes the online feedback.

**4. Key Findings**

**4.1 Drop-in Session**

At the drop-in session on Thursday 19 September, the Hudson Park Master Plan project recorded 31 names and contact details from Kilmore community members who wished to be kept informed.

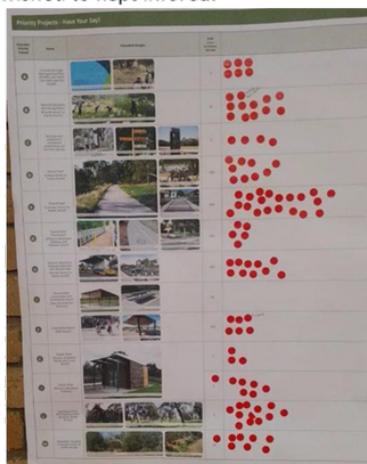
*Priority Projects votes*

Visitors at the drop-in session were invited to cast their vote on the proposed priority projects. With 102 stickers put up on the poster, it's estimated that 34 visitors cast their vote.

The project that clearly received the highest number of votes was project K: a Shared Trail between Lumsden Street and Tootle Street.

Comments were made that the difference between weed eradication, significant tree planting and vegetation planting weren't clear to all participants, or that participants would like to see that happen in other locations than the proposed locations.

The full score of the votes on the poster was:



Potential Priority Project	Name	Number of votes
A	Cultural Heritage Management Plan (CHMP)	6
B	Weed eradication and Revegetation	12
C	Upgrade of wayfinding and identity signage	4
D	Shared Trail (Union Street to Clarke Street)	9
K	Shared Trail (Lumsden Street – Tootle Street)	20
G	Shared Trail (Hudson Park / Leisure Centre)	5



H	Kilmore Miniature Railway extension	10
J	Shared Trail Connection & Community Space (Sam de Gabrielle Reserve)	0
F	Community Space (Mill Street)	6
E	Public Toilet (Corner of Sydney Street and Union Street)	3
I	Public Toilet (Kilmore Leisure Centre and Kilmore Miniature Railway)	7
L	Significant tree planting (Lumsden Street to Tootle Street)	12
M	Vegetation Planting (Lumsden Street to Tootle Street)	8

*Other comments made*

Visitors were invited to leave other ideas or comments as well.

Each comment has been given an indication if it should be included in the Masterplan (✓), needs further discussion (~) or can be disregarded for this project (X):



	Wiki Camps Australia (the app). More features added for Tourists to draw them to Kilmore + Wallan
	Return private land to public ownership between creek + Andrew St. near Union Street.
	Make good use of creek behind shops. Also old quarry area could be beautiful.
	Don't build ultra-modern, reflect more of the heritage of the town when building along the creek.
	Former Quarry at Lamb Street = Kangaroo Grazing Area. Incorporate in plan.
	Quarry – utilise acoustics, music events, theatre, outdoor movies.
	Kilmore East Station Road from Northern Highway. Very Steep Hill & No Trails. Improve. (Noting this is outside of the project study area)
	Safety on trails!
	Trail to be min. 10 meters wide.
	Build trail using recycled materials.
	Construct a trail / steps down from Ryans Road lookout to the Creek.
	More bike trails / shared trails. Tallarook bike trail is great.
	Please remove old tramway tracks from Hudson Park. Very slippery + dangerous.
	Include the Sundial (Banella Style) of the Art Walk in the plan (near the Horse 🐎 Peter Appleton).
	Darebin Creek Trail. Good example of bike trail.
	We need signage to walking tracks from main road to get visitors to stop in town.
	Better Entry sign entering Kilmore.
	Bridge construction continuation of Mitchell Street.
	Keep all the Car Parking in Patrick Street.
CFA	Risk of the Creek being a wedge through which fire can spread.
CFA	Breaks in vegetation. No continuity. Break in each section (20 / 25 m).
CFA	Clearing Project to be undertaken close to Willowmavin Road.
CFA	Fires have high impact on residents. Clean up the area (incl. Apex Park)



Linear Australian Native Plants Garden. (Tootle Street ➊ Wandong Road Rail corridor)
Help with revegetation (106 Northern Highway). Reasonable sized plants ➊ little ones won't survive dry seasons.
Call the project Kilmore Creek Parklands.
Weeds, wildlife, rubbish, public furniture.
Mill Street: used to be really well used. Bad design and bad votes on the design.
Create opportunities for community groups to be involved.

### 4.2 Submissions

Each submission has been documented and considered before finalising the Landscape Master Plan process. The submissions are summarised in table below and an indication has been provided as to whether or not to incorporate it into this Landscape Master Plan.

#	Submitter	Summary	Officer Response	Status
1.	Goulburn Valley Water	Sewer network augmentation works. Environmental Offsets project, downstream of the township of Kilmore. Stormwater management weed control and native revegetation are supported.	No action required for the Landscape Master Plan.	Resolved.
2.	Community Member 1 Northern Highway	Plant more trees. Anything native. Look into the water quality. Get in touch with the industrial landowners. Don't build a shared trail at the back of my property.	Supportive of the Landscape Master Plan.	Resolved.
3.	Community Member 2 Willowmavin Road	Supportive and want to discuss a fence along their site.	Supportive of the Landscape Master Plan.	Resolved.
4.	MEAC	Include hydration points (every 500 m). Include walkways under bridges at Union and Rutledge. Phased removal of exotics and replacement with natives. Toilets near Tootle street end. Permeable surfaces for trails. General lack of parking. Environmental and cultural asset maps should be the basis. Engage with adjoining landowners.	In general, supportive of the Landscape Master Plan.  Disagree with the number of hydration points proposed, permeable surfaces for the shared trail and providing more car parking within the Creek corridor.	Partly resolved.
5.	Mitchell Bushwalking Group	Mow the grass, manage and maintain the creek. Bins help against rubbish. We need rubbish clean ups.	Supportive of the Landscape Master Plan.	Resolved.
6.	Community Member 3	Clean up the Creek: eradicate weeds and other useless growth. Look at stormwater pipes feeding into the creek. List all tree types growing and eradicate	Supportive of the Landscape Master Plan.  Disagree with the suggestion that Council	Resolved.



		All "human" rubbish should be removed. Council should fund all this work immediately.	immediately, budgets do not allow for that.	
7.	Community Member 4	Why isn't the full Eastern Tributary (up to Willowmavin Road) included?	<p>The eastern tributary is partly included. The tributary further south is all in private ownership and is part of the Kilmore South-East Growth Precinct (future residential area) that will be subject to future detailed planning. The Landscape Masterplan outlines principles that also apply to this tributary.</p> <p>The available budget and timeframes do not allow for a full design of the full eastern (or western) tributary.</p>	Unresolved.
8.	Community Member 5	Place rubbish bins along the footrail. Clean up the creek (bulrushes)	Supportive of the Landscape Master Plan	Resolved.
9.	DELWP	<p>Take the <i>Native Title Act</i> and <i>Traditional Owners Settlement Act</i> taken into consideration when constructing something.</p> <p>DELWP recommends all Crown land impacted to be transferred to Mitchell Shire for future management. Improved biodiversity outcomes are supported.</p> <p>ES03 applies to much off the land. Address that when undertake projects. DEWLP commends the Shire and the plan.</p>	<p>Supportive of the Landscape Master Plan.</p> <p>Becoming Committee of management provides a big opportunity. However, financial implications (maintenance costs), existing encroachment issues and safety on the land around the Quarry need further investigation.</p>	Resolved.
10.	Kilmore Miniature Railway	<p>Concern over track alignment near edge of Creek.</p> <p>How much space between railway track and proposed Shared trail.</p> <p>Bylands Tramways track should not be removed and should not be incorporated into concrete trail.</p> <p>3-Meter-wide trail will ruin aesthetics of the area.</p> <p>No mention of Miniature Railway extension into Rutledge Street.</p> <p>Pipe planned to be used as a tunnel for</p>	Proposed to not show any extension in the Master Plan. Extension raises concerns on impact of cultural significance and whether it detracts from the priority of having the Kilmore Creek open and accessible for all.	Unresolved.



		<p>miniature railway. No deciduous trees. Welcome a toilet at the Kilmore Leisure Centre. Art walk Paving is supposed to be the turning point. Bridge widening might alter track configuration. Alternative: Use bridge at end of Skehan Place Alternative alignment further south. Fencing was a condition of Mitchell Shire for public safety.</p>		
11.	Community Member 6	<p>Trail should be pedestrian use only. Trail should be gravel only. Not Concrete.</p>	<p>Goal is to provide pedestrian only trails on one side and shared trail on the other. Where it's not possible to double up, we prefer a shared trail as it will allow for a safe connection for all users.</p>	Unresolved.
12.	Community Member 7	<p>Eastern tributary should be more protected! Heavily treed on private property.</p>	<p>See response #7.</p>	Unresolved.
13.	KADDRA	<p>Concrete trail is undesirable. 3 meter wide trail encourage speeding cyclists, skate boarders and blade runners. Council to purchase industrial land north of Clarke Street. Playground South of Leisure Centre. Indigenous vegetation supported. Miniature railway to be extended both north and south. Toilet block near Union Street.</p>	<p>The priority is to construct a shared trail that is usable for everyone, including cyclists and prams.  Council budget does not allow for purchase of land.  Land south of Leisure Centre is good locating for wetland to improve water quality from tributary. Will investigate opportunity to include some play equipment into the design.</p>	Unresolved.
14.	GBCMA	<p>Council's Vision for Kilmore Creek is inspiring and appropriate to the Commuting Hills SES. The guiding principles to protect and enhance ecological values while improving community access and amenity in the urban setting sound great and are endeavours the GBCMA would like to foster.</p>	<p>Supportive of the Landscape Master Plan</p>	Resolved.



15.	TLaWC	TLaWC is of the opinion that the area should be protected from any development that would result in significant ground disturbance. Taungurung would like to try and keep at least the public land areas of the creek untouched, with minimum ground disturbance, to preserve unique heritage left by Taungurung Ancestors.	Remove (significant) ground disturbing activities from the Creek corridor plan.	Resolved.
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The responses from the submissions are not consistent. Nine (9) submissions are supportive, six (6) submissions are unsupportive on the proposed Draft Landscape Masterplan. Opinions differ especially on the material (and width) of the trail and the extension of the Miniature Railway.

#### 4.3 Online Surveys

A short online survey was administered to seek the views and opinions of the local community in Kilmore. A total of seven (7) surveys were completed and these are the results.

1.	Community Member 8	A 2.5km continuous trail which doesn't cross any roads would be great to run an event like parkrun in Kilmore.	Shared Trail from Union to the Leisure Centre. Shared Trail from Leisure Centre to Lumsden Street. Shared trail from Lumsden Street to Tootle Street
2.	Community Member 9	Spotted platypus along the creek near the back of the shops  Plant indigenous plants. Wide trail for pedestrians and cyclists.	Weed Eradication and Revegetation Shared trail from Lumsden Street to Tootle Street
3.	Community Member 10	Proper walking trail along Union St for students to have a safe access to the bus stop, tennis and football club. Kilmore 's creek is barely visible right now, there's not a proper signalised access or trail. It would be great to have a bike/walking trail all along the creek, and/or a picnic area next to it.	Shared trail from Clarke Street to Union Street Shared trail from Union Street to the Leisure Centre
4.	Community Member 11	Gravel trail is better with the character of a creek. Extend miniature Railway South as well.	Consistent wayfinding and identify signage Extend the Kilmore Miniature Railway Public toilet near the Leisure Centre
5.	Community Member 12	Ensure the trail is looped to return so we can run a 5km parkrun.	Shared trail from Union Street to the Leisure Centre



			Extend the Kilmore Miniature Railway Shared trail from Lumsden Street to Tootle Street.
6.	Community Member 13	Fire Safety is a big concern.	Weed Eradication and Revegetation Other (please list)
7.	Community Member 14	The creek looks terrible in places, lacks natural vegetation/ plants & is covered in weeds. The trails arent wheel chair/pram friendly or very accessible for the elderly.	Weed Eradication and Revegetation Extend the Kilmore Miniature Railway Shared trails everywhere!

### 5. Next Steps

Council has finalised the Landscape Master Plan and will incorporate comments made by the community where appropriate. The material and width of the trail should remain as proposed, and the extension of the Miniature Railway is no longer shown on the Master Plan.

In the Council resolution to endorse the Landscape Master Plan, three (3) priority projects will be proposed to be further designed and funded.

Those designs, among with other cost estimates, will inform the Implementation Plan for the Kilmore Creek Masterplan.

**10.3 OLD GOULBURN RIVER BRIDGE - FUTURE DIRECTION**

**Author:** *Tim Partridge - Manager Engineering and Major Projects*

**File No:** *EN/07/052*

**Attachments:**

- 1. Structural Condition Assessment and Costings*
- 2. Options Assessment and Costings*
- 3. Options Cost Comparison*
- 4. Heritage Victoria Statement of Significance*

**1. Purpose**

1.1 To seek Councils endorsement of a revised strategy for the restoration of the heritage listed Old Goulburn River Bridge in Seymour

**2. Background**

2.1 In June 2018 Council allocated \$56,000 in its 2018-2019 Capital Works Program for the preparation of concept designs for the future restoration and development of the bridge structure. This concept work could not be undertaken until critical stabilisation works were carried out and an Engineers assessment of the remaining structure could take place. This allocation has now been used to fund the condition assessment and options assessment detailed in this report.

2.2 At its meeting on 20 May 2019, Council considered a report outlining ongoing efforts to stabilise the Old Goulburn River timber structure, along with a proposed revised strategy for the restoration of the structure with a view to making it available for public access once again.

2.3 At this meeting Council resolved to sequence future works for the restoration and development of the structure in the following manner;

- a) Complete Stage 1 works to stabilise the timber structure.
- b) Engage with the local community for the review of the bridge rehabilitation plan.... and the original refurbishment plan.... and revised refurbishment plan.
- c) In partnership with the community, review, update and finalise detailed design plans and costings for the rehabilitation and refurbishment of the bridge utilising the funding committed in the 2018-2019 Capital Works program.
- d) Obtain a new permit from Heritage Victoria for the proposed works.
- e) Continue to seek external grant funding for the rehabilitation and refurbishment works.

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OLD GOULBURN RIVER BRIDGE - FUTURE DIRECTION (CONT.)

- f) Stage 2 works – Structural rehabilitation of damaged and deteriorated timber elements (timing TBC subject to funding)
  - g) Stage 3 works – Re-use i.e. installation of new pedestrian structure and ancillary works (timing TBC subject to funding)
- 2.4 As per resolution 2.3 a) above, Stage 1 works for the stabilisation of the remaining timber structure were completed in late 2019.
- 2.5 In June 2020 Council allocated a further \$100,000 in its 2020-2021 Capital Works Program for the preparation of detailed designs for the future restoration and development of the bridge structure. This allocation is now proposed to be used to progress the preferred restoration option (Option A) recommended by this report.
- 2.6 This report also responds to the Notice of Motion passed by Council on 21 September 2020 requesting that officers prepare a report detailing the current condition of the bridge structure and engage with local representatives around design options for the redevelopment of the structure.
- 2.7 Officer reports considered by Council dated 17 December 2018 and 20 May 2019 provide additional background history on this matter.

### **3. Key Matters**

- 3.1 Mitchell Shire Council has a legislated obligation to maintain the Old Goulburn River Bridge to the extent that its conservation is not threatened and to ensure that the structure does not fall into a state of disrepair.
- 3.2 A structural condition assessment (Attachment 1) performed by a structural Engineer was undertaken in May 2020 on the heritage listed structure.
- 3.3 This report identified a substantial amount of the remaining structure has been given a condition assessment rating of poor to very poor. Numerous elements would require replacement while others require some degree of rehabilitation if the structure was to be brought back into service, with much of the work needing to be undertaken from the river by barge adding significant costs.
- 3.4 In addition to the bridge condition assessment, four (4) primary bridge redevelopment options have been explored, each of these options providing very different outcomes for the future enjoyment of the bridge. A fifth option is primarily aimed at maintaining the status quo. i.e. it does not involve any restoration or reuse of the structure.
- 3.5 The extent to which the existing timber piers need to be structurally restored will depend on the option that is chosen by Council. The restoration works

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**OLD GOULBURN RIVER BRIDGE - FUTURE DIRECTION (CONT.)**

will also assist Council in meeting its statutory obligations under the Heritage Act to maintain and preserve the heritage listed structure.

- 3.6 In accordance with the Council resolution 2.3 b) and c) above, over the past 8 months officers have worked with local community members exploring a number of options prior to proposing the recommendations in this report.
- 3.7 The key themes established from these discussions were that a full restoration of the bridge was preferred as was a desire to ensure access was re-established to ensure pedestrian travel from one side of the riverbank to the other. No vehicular traffic was intended or desired for the bridge by any parties.
- 3.8 In consideration of the community views and the estimated costs, Option A is considered to be the most appropriate option for Council to pursue for the future refurbishment and re-development of the Old Goulburn River Bridge.
- 3.9 Attachment 2 contains an Engineers appraisal of Options A, B & C, while options B.1, C.1, D & E have been developed by officers using data and cost estimates contained in the attached Engineers report.

**Recommendation****THAT** Council:

1. Adopts Option A as the preferred strategy for the restoration and re-development of the Old Goulburn River Bridge for future public access;
2. Finalise detailed designs for Option A;
3. Apply to Heritage Victoria for a Heritage Conservation Permit to undertake works;
4. Receive a future report once detailed designs are completed outlining the costs associated with the Option A refurbishment and redevelopment strategy (including Whole of Life asset costs) and outlining a funding strategy for the future realisation of the works.

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OLD GOULBURN RIVER BRIDGE - FUTURE DIRECTION (CONT.)

#### **4. Financial, Resource and Asset Management Implications**

- 4.1 Costs to achieve the objectives of the Option A restoration and development strategy are detailed in Attachment 3. These costs are estimated to be **\$4.3M**.
- 4.2 Upon completion of the detailed designs for Option A, it is recommended that Council initiate a strategy to secure external funds from the State and Federal Governments to fund this project.
- 4.3 The 'Friends of the Bridge' group, a local community group dedicated to the future restoration of the heritage listed bridge, have some funds collected donations through for the restoration of the bridge. The group have indicated that these funds are only available for a restoration strategy that involves bring the bridge back into service for use by the public. These funds may be used for the bridge construction phase of Option A and could be used effectively to secure external funds from other levels of Government however discussions around accessing these funds have not been held at the time of this report.
- 4.4 Prior to making a future commitment towards the rehabilitation and refurbishment of this timber heritage structure (Stage 2 and 3 works), it is the officer's recommendation that a detailed Whole of Life cost analysis be undertaken and that a detailed business case be prepared to assess the merits of a full refurbishment of the bridge including its role in the wider off-road trail network.

#### **5. Consultation**

- 5.1 In the preparation of this report, officers met with members of the 'Friends of Bridge' group on two occasions to discuss their vision for the future of the bridge and to help with the development of the options outlined in this report.
- 5.2 The members of this group indicated their support for Option A, however they noted that their desired outcome for the future of the bridge is to see a full restoration of the bridge back to its original specification. i.e. Option D.

#### **6. Sustainability Implications (Social and Environmental)**

- 6.1 No sustainability implications associated with the contents of this report.

#### **7. Policy and Legislative Implications**

- 7.1 The Heritage Act 2017 places obligations on all owners of a State-significant property / place (including local councils) to maintain it to the extent that its conservation is not threatened, and to ensure that it does not fall into a state of disrepair. Recent legislation changes now mean the State Government has stronger powers to enforce repairs if it is deemed that future preservation is under threat.

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OLD GOULBURN RIVER BRIDGE - FUTURE DIRECTION (CONT.)

- 7.2 Council, as owner of the Heritage Structure has obligations under the Heritage Act 2017;
- Sect. 152, The owner of a registered place or registered object must not allow that place or object to fall into disrepair.
  - Sect. 153, The owner of a registered place or registered object must not fail to maintain that place or object to the extent that its conservation is threatened.
- 7.3 Council also has obligations under the *Planning and Environment Act 1987* which include a role in the identification, protection and management of heritage places. Council should be setting an example for heritage sites under its management / ownership as a benchmark for heritage properties / places in private ownership.
- 7.4 The Statement of Significance for the Old Goulburn River Bridge is shown in Attachment 4 of this report.
- 7.5 Options A & D are the only options that are likely to ensure full compliance with Council's legislated obligations under the *Heritage Act 2017*.

## 8. Alignment to Council Plan

- 8.1 This report and its subject matter has high alignment with the following Council Plan strategic objectives;
- 3.4: Review heritage values and support the community in protecting and enhancing local natural and built heritage.
  - 3.10: Protect and enhance local ambience, amenity and character.
  - 5.5: Support the development and enhancement of local tourist attractions.

## 9. Conflict of Interest

- 9.1 No officers involved in the preparation of this report have any direct or indirect interest in this matter.

## 10. Risk Implications

- 10.1 The structural restoration of the Old Goulburn River is a complex project with the potential for many risks. While the purpose of this report is to establish a definitive way forward for Council to pursue the restoration and future re-use of this structure and in itself does not contain any significant risks, it is important for Council to be aware of the types of risks that will need to be managed as part of any project to undertake physical works on this heritage listed structure. These risks are broadly outlined below.

## OLD GOULBURN RIVER BRIDGE - FUTURE DIRECTION (CONT.)

Risk	Risk Ranking	Proposed Treatments	Within Existing Resources?
<u>Heritage Compliance</u> Ongoing compliance with legislated obligations	High	<ul style="list-style-type: none"> <li>Prepare a Conservation Management Plan for the structure and any proposed restoration works.</li> </ul>	No. Requires funding allocation
		<ul style="list-style-type: none"> <li>Prepare detailed designs in consultation with Heritage Victoria</li> </ul>	Yes. Using existing budget allocation
		<ul style="list-style-type: none"> <li>Obtain a Heritage Conservation Permit</li> </ul>	No. Requires funding allocation
<u>Financial</u> Cost escalations due to unforeseen construction issues associated with the condition of the remaining structure	High	<ul style="list-style-type: none"> <li>Obtain a third-party assessment of the detailed design and technical specification from a reputable industry expert who has experience with historic timber structures</li> </ul>	Yes. Using existing budget allocation
<u>Financial</u> Despite grant seeking strategy to fund restoration works, a future Council allocation of funds may be required to secure external funds, therefore a future Council contribution towards restoration works cannot be ruled out.	Med	<ul style="list-style-type: none"> <li>Allocate funding in long-term capital works program.</li> </ul>	No.
<u>Reputational</u> Community dissatisfaction with proposed restoration strategy	Low	<ul style="list-style-type: none"> <li>Proposed strategy is consistent with previous restoration strategy. Community already have a general understanding of Councils desired outcome for the bridge</li> </ul>	Yes
<u>Reputational</u>		<ul style="list-style-type: none"> <li>Communicate Councils decision to adopt new strategy.</li> </ul>	Yes

## OLD GOULBURN RIVER BRIDGE - FUTURE DIRECTION (CONT.)

Risk	Risk Ranking	Proposed Treatments	Within Existing Resources?
<p>Community dissatisfaction with lack of project progress</p> <p><u>Environmental</u> Challenging and environmentally sensitive site constraints</p>		<ul style="list-style-type: none"> <li>• Inform community of grant fund seeking activities.</li> <li>• Prepare a site environmental management plan as part of construction phase.</li> </ul>	<p>Part of future construction phase funding</p>

## 11. Discussion

### Structural Condition Assessment

11.1 In May 2020 GMR Engineering Services undertook a structural assessment – ‘*Structural Assessment of Seymour Heritage Bridge over Goulburn River*’ (Attachment 1) of the remaining timber bridge piers. GMR have substantial experience in the assessment and rehabilitation timber pier structures and have considerable experience with the Old Goulburn River bridge having conducted previous conditions on the structure in 2007 and 2015 as well as preparing the original refurbishment plan for the structure in 2010 which formed part of the original Heritage Conservation Permit.

11.2 Section 7.4 of the Structural Assessment report outlines the minimum repair work required for the long-term stabilisation of the remaining existing bridge structure and to satisfy the prerequisites for future reuse as a pedestrian structure.

11.3 The report outlines that the remaining structure is in a structurally stable state due to the cable stabilising system that has been recently installed but is typically deteriorating with its exposure to the river and the weather which will continue to weaken the remaining structure with time.

11.4 The report concludes that the remaining structure in its current condition, whilst stable, is unable to support the pedestrian loadings of a new bridge structure.

### Options Assessment Report

11.5 In November 2020 GMR Engineering Services prepared the *Heritage Bridge Over the Goulburn River, at Seymour OPTION ASSESSMENT*

## OLD GOULBURN RIVER BRIDGE - FUTURE DIRECTION (CONT.)

*REPORT* (Attachment 2). This report explores the restoration and development options for the bridge, as well as an option involving a new standalone bridge structure located immediately downstream of the existing timber structure. This option was explored to enable a comparative assessment to be made between the costs to restore the old structure and the costs to install a completely new structure to achieve a crossing of the Goulburn River.

- 11.6 The options assessment explores the likely costs of these options, Options A, B & C, as well as providing an estimate of costs for the restoration of the existing remaining timber elements. The extent to which restoration works to the existing timber piers varies for each option, but essentially some form of restoration works is required before any reuse of the structure can be contemplated.
- 11.7 The content of the GMR report, including costing were then used and adapted to contemplate a small number of variant Options, those being B.1, C.1, with the primary difference between these options being the extent to which structural restoration works would be carried out on the existing timber piers.
- 11.8 The structural restoration works to all timber piers and abutments is considered to be the minimum package of works required to ensure Council continues to comply with its statutory obligations under the *Heritage Act 2017*, albeit full compliance with this legislation can only be achieved if the bridge is brought back into service.
- 11.9 Option D as outlined in this officer's report has not been included in the GMR report. This option involves the complete restoration of the remaining timber piers so that they could accommodate the larger loads associated with a new bridge superstructure constructed to the original bridge specifications. The total costs for Option D were derived using rates and data from the GMR report.
- 11.10 Option E as outlined in this officer's report was also not included in the GMR report. Option E is a minimalist management option and does not involve any structural restoration works to the bridge structure.
- 11.11 Option A (\$4.3M) comprises;
- a) the full restoration of all remaining timber bridge piers and abutments to ensure their long-term viability from a conservation perspective and load carrying perspective.
  - b) Installation of a new 6m wide, 108m multi-span lightweight bridge structure on top of the restored bridge piers and abutment works to provide connection on either side of the river.
  - c) The new lightweight structure comprises of lightweight bridge trusses (3 trusses per span) supporting a timber decking.

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OLD GOULBURN RIVER BRIDGE - FUTURE DIRECTION (CONT.)

- d) This bridge deck would be located marginally below the 1:100-year flood level on the Goulburn River.

11.12 Option B (\$3.3M) comprises;

- a) the full restoration of all remaining timber bridge piers to ensure their long-term viability from a conservation perspective and load carrying perspective.
- b) Installation of a full width replica of the original timber bridge structure comprising a 7m wide bridge deck over 3 spans (piers 6-8) and abutment works on the Seymour side of the river.
- c) The new structure would function as a viewing platform only and would not provide a pedestrian connection to the Northwood side of the river.
- d) This platform deck would be located marginally below the 1:100-year flood level on the Goulburn River.

11.13 Option B.1 (\$2.1M) comprises;

- a) As per Option B, however no further structural restoration works would be undertaken to piers 1 – 5. The remaining timber piers would be managed and maintained to preserve integrity and arrest any further deterioration to prevent them from falling into disrepair. The long-term viability of the remaining structure from a conservation and structural perspective could not be guaranteed. This component would be an ongoing operational cost to Council. No increase to structural capacity or asset life for remaining timber piers.

11.14 Option C (\$4.9M) comprises;

- a) The construction of a new standalone pedestrian bridge structure located immediately downstream of the existing timber structure providing a pedestrian crossing over the Goulburn River.
- b) The new bridge would be constructed above the 1:100-year flood level.
- c) Ancillary ramps on either side of the river to tie into existing ground levels.
- d) May require Land Use Agreement with Traditional Owners due to occupation of new footprint on Crown Land. No allowance for this outcome has been made in costings.
- e) the full restoration of the entire remaining timber bridge piers (1-8) to ensure their long-term viability from a conservation perspective and load carrying perspective.

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OLD GOULBURN RIVER BRIDGE - FUTURE DIRECTION (CONT.)

- 11.15     Option C.1 \$2.6M comprises:
- a)     As per Option C, however no structural restoration works would be undertaken to the existing timber piers (1-8). The remaining timber piers would be managed and maintained to preserve integrity and arrest any further deterioration to prevent them from falling into disrepair. The long-term viability of the remaining structure from a conservation and structural perspective could not be guaranteed. This component would be an ongoing operational cost to Council. No increase to structural capacity or asset life for remaining timber piers.
- 11.16     Option D (\$9.15M) comprises:
- a)     the full restoration of the entire remaining timber bridge piers to ensure their long-term viability from a conservation perspective and load carrying perspective.
  - b)     Installation of a new 7m wide, 108m multi-span bridge structure on top of the restored bridge piers and abutment works to provide connection on either side of the river.
  - c)     The new structure would be designed to replicate the original specification of the bridge as it was originally constructed in 1892.
  - d)     This bridge deck would be located marginally below the 1:100-year flood level on the Goulburn River as per its original design.
- 11.17     Option E comprises:
- a)     No further capital improvement.
  - b)     The remaining timber piers (piers 1-8) would be managed and maintained to preserve integrity and arrest any further deterioration to prevent them from falling into disrepair. The long-term viability of the remaining structure from a conservation and structural perspective could not be guaranteed. This component would be an ongoing operational cost to Council.
  - c)     No increase to structural capacity or asset life.
- 11.18     A summary of the estimated costs for Options A - E are shown in Table 1 below and a more detailed cost summary is shown in Attachment 3. These costs include estimates for the respective structural restoration works required to achieve each Option.

## OLD GOULBURN RIVER BRIDGE - FUTURE DIRECTION (CONT.)

**Table 1 – Summary of option costs**

<b>Item</b>	<b>Description of works</b>	<b>Estimated Costs</b>
<b>Structural Restoration works</b>	Stabilisation, repair and structural rehabilitation works to timber piers.	\$1.3 - \$2.4M Depending on final option
<b>Option A</b> Pedestrian bridge	Structural restoration of remaining timber piers and installation of a new lightweight pedestrian superstructure (spans and deck).	\$4.3M <sup>#</sup>
<b>Option B &amp; B.1</b> Viewing platform	Structural restoration of piers 6, 7 & 8 and the East abutment and installation of full width replica of the original timber structure over 3 spans.	\$2.1M <sup>#</sup> - \$3.3M <sup>#</sup>
<b>Option C &amp; C.1</b> New standalone bridge	New standalone bridge structure located adjacent to existing structure	\$2.6M <sup>#</sup> - \$4.9M <sup>#</sup>
<b>Option D</b> Full restoration	Structural restoration of remaining timber piers and installation of a new timber superstructure (spans and deck) to the original 1892 design and specification.	\$9.15M <sup>#</sup>
<b>Option E</b> Maintenance and Preservation	Maintenance works to preserve integrity and arrest any further deterioration to prevent from falling into disrepair. No increase to asset life.	Est. \$100k annually

# - includes allowance for structural restorations works.

# MITCHELL SHIRE COUNCIL

## Structural Assessment of Seymour Heritage Bridge over Goulburn River

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**MITCHELL SHIRE COUNCIL**  
**Structural Assessment of Heritage Bridge**  
**over Goulburn River at Seymour.**

## **1 PURPOSE**

This report has been prepared for Mitchell Shire Council to present the findings of an investigation conducted to assess the existing structural condition of a timber bridge. The structure is situated south west of the Seymour township and until 1966 was the main crossing for the Hume Highway over the Goulburn River at Seymour.

Council completed Stage 1 works in early 2020, which consisted on a wire rope, crossheads clamp fixture, and founding anchor blocks solution to stabilise the structure. Following Stage 1 works, Council now wishes to complete a detailed review of the stabilised structure to consider future options for the next stage (Stage 2 works).

The subsequent sections in the report discuss the findings of a detail condition assessment on the structure completed on the 19/05/2020. The report also aims to make a comparison between a 31/03/15 bridge inspection.

## **2 BACKGROUND**

### **2.1 Brief Overview**

The bridge is almost 110m long and about 7m wide, having 9 spans over 8 timber pile piers and timber abutments. The recent Stage 1 works to the structure facilitated the safe removal of the previous all timber and steel superstructure and deck. It also enabled the safe removal of the former steel bridge railing and posts along each side that were also removed in the Stage 1 works.

Currently the bridge retains is timber trestle piers, and crossheads which are stabilised by 2 steel cables that are fixed to each crosshead by steel clamps. The steel sire cables are tensioned and anchored to large concrete anchors along the Riverbank. The crossheads are now the highest members of the structure and are about 5m above the summer water level.

The bridge is a significant structure and has been classified by Heritage Victoria of having the category of "Heritage Place". The history of the bridge has been documented in a report prepared by Heritage Victoria, see appendices for a copy of that report. The Heritage Victoria Report (page 4, 4<sup>th</sup> para) explains that the bridge is significant for the following reasons;

*"The Old Goulburn River Bridge, Seymour is of historic, scientific (technological) and aesthetic significance to the State of Victoria."*

That report also explained that the structure was a "well-preserved example of 19th century timber road-bridge construction and is one of four colonial timber bridges constructed on the Goulburn River from 1889 – 1895".

In 1987 the bridge was placed in the care of Council's predecessor, Seymour Shire Council, closed to vehicle traffic and restricted to pedestrian use as part of the shared path network along the Goulburn River in Seymour. The bridge became unsafe and was closed to foot traffic in about 1998. Sections of the timber deck were collapsing under foot and there had been some vandalism including fires which had further impacted the structure. Barriers were erected to prevent access to the deck. In 2007 a structural assessment was undertaken by GMR Engineering Services and a design to stabilise the piers was completed and later carried out in late 2019.

### **2.2 Current Situation**

At present only the timber trestle piers (with crossheads) and abutment remain, together with the Stage 1 work components (Steel wire cable, crosshead fixtures, and mass anchor blocks). The bridge is currently not allowing access over the Goulburn River.

The site remains in the care of Council, who continues to maintain the structure and provide public safety around the site. The Goulburn River waterway in the vicinity of the bridge has also been closed to all vessels.

### 2.3 This Report

Council has appointed GMR to re-assess the structure and prepare a brief report which includes;

- Part A - Substructure Assessment.
- Part B - Inspection Comparison Review.
- Part C - Design Review.
- Part D - Recommendation Summary.

## 3 SITE INSPECTION & LOGGING METHODOLOGY.

GMR has conducted site assessments on numerous occasions to the above bridge first in 12/02/2015 and then in 19/05/2020. The individual piles were assessed and rated under 3 separate categories, viz;

Assessment Category	Assessment Method
1. Age Rating	Visual Assessment
2. Condition Rating (Weathering), ie. degradation & splitting etc.	Visual Assessment
3. Strength Rating.	Impact Testing

### 3.1 Age Rating

Age of each observed pile is classified in 3 ratings as tabulated below;

Age Rating	Description
1	Less than 10 years old.
2	Between 10 years and 50 years old.
3	More than 50 years old.

NOTE; The age rating was not taken into account when determining the overall structural assessment of individual piles. However, it is an indication of the timber species and durability.

### 3.2 Condition Rating

The condition rating is a visual assessment based upon the external appearance of the structural elements considering surface condition, cracking, splits, rot and signs of deterioration. It is a useful comparative process allowing the relative condition of structural elements to be noted within a pier.

This assessment methodology has been developed to record the relative level of deterioration as below;

Condition Rating	Rating	Description	Remarks
1	GOOD	Free of defects with little or no deterioration evident.	Condition of pile being "as good as new".
2	FAIR	Deterioration of minor nature evident, this deterioration is not likely to have a significant impact on the structural integrity of the pile.	Minimal deterioration, no significant loss of structural capacity.
3	POOR	Defects affecting durability. Pile shows signs of advancing deterioration including minor loss of section in cases.	The pile remains serviceable and is readily repairable. Periodic visual monitoring may be required.
4	VERY POOR	Defects that may impact structural integrity readily visible on the piles. Piles show evidence of advanced deterioration or loss of section.	May fail or collapse at some time in the future. Periodic monitoring is required. Corrective action (including splicing / strengthening) is required.
5	UNSAFE	Advanced deterioration evident, high loss of section / structural integrity severely affected.	Likely to collapse at any time or has already collapsed. Immediate remedial action, is required, ie. splicing and or replacement is required.

### 3.3 Strength Rating

A 3.6kg sledgehammer impact or strike (ie. sounding) was used to determine strength rating of the piles. For every pile, sounding was done at least 6 inches above the water level. Each pile was struck a minimum of 2 times at two different locations. Sounding was not done on sapwood, care was taken to avoid striking any remnant sapwood or loose sections of pile. Each hammer strike was directed at a representative section of the exposed structural annulus with an equivalent amount of force, to ensure a correct, representative, comparative and consistent result. The resultant sound is an indication of timber density, integrity and thickness.

The use of "sounding" (also known as acoustic) methods to ascertain the comparative condition of timber sections is a long standing, common and proven process for the non-destructive assessment of timber structures insitu.

The resultant strength rating was recorded based upon the following classification system.

<b>Strength Rating</b>	<b>Rating</b>	<b>Remarks</b>
1	100% strength retained	Condition of pile "as good as new".
2	>75% strength retained	Some minimal loss of strength apparent.
3	Approx. 50% strength remaining.	Significant loss of section and strength. Periodic visual monitoring may be required.
4	Approx. 25% strength remaining	Significant and substantial loss of section and strength. Corrective action required.
5	Unsafe	Has already collapsed or collapse is imminent. Corrective action / replacement required.

### 3.4 Photo Logs & Observations

Photos of individual piles and each pier were recorded and logged. Please see attached our photo log dated 19/05/2020. Our observations are also presented in the attached drawing. We also measured each pile with a set of callipers and noted the external diameter.

A further desktop review of the photo log during our analyses of the on-site observations. Also when preparing the attached drawing summarising our observations. These processes have facilitated the review of the condition ratings for correctness and taken into account when compiling this report.

## 4 DESKTOP ASSESSMENT METHODOLOGY

### 4.1 Condition Rating of Piles

The above condition assessment considers the structural capacity of the individual piles. The piles act together within the piers, to provide structural support for the bridge.

### 4.2 Combined Condition Ratings - Piers

This structural assessment considers the integrity of the piers as individual structural units. That assessment of the piers considers and is contingent upon the composite action of the various elements in aggregate. The condition ratings of the individual piles and associated structural components within each pier have been taken into account to consider the capability of the whole unit. This assessment considers the bearing capacity of the piers, ie. their ability to support vertical loads.

Observations note the condition of the bracing and crossheads which are required to distribute loads across the piles, resist debris impact and maintain the stability of the pier.

### 4.3 Approximate percentage of original strength remaining

The percentage original strength remaining is calculated using linear rating methods based on interpolation considering a rating of 1 having 100% structural capacity (or near to) of a new pile section compared to a failed pile with a rating of 5 having 0% of structural capacity available.

### 4.4 Structural Analysis

Each member of the bridge has received structural condition rating out of 5, and has been analysed to the requirements of AS 1720.1. The pile components have been grouped and assessed to form a pier set, which allows for a determination of the overall pier rating and the percentage of strength remaining. This capacity is then compared with the expected loads as per the provisions of AS 5100.7.

From our previous experience, we have established that the timber piles in fresh water are most impacted at water level interface, ie. the wetting and drying zone. The pile section below the lowest top water level and also the in ground pile section is usually less impacted and has little if any loss of capacity. Hence our calculations assume that the pile sections about 1m below water surface or ground level are often in a good condition. The inground section and the original parameters of the preserved in ground pile section for design friction resistance and bearing capacity are also preserved and retained.

In summary, the piers are now structural stable, however the remaining timber members are continuing to deteriorate with time and exposure to the elements (mainly the Goulburn river and the weather).

## 5 EXISTING SITUATION

Briefly, the bridge is currently in poor, but stable condition, and has not been accessible to the public since 1998.

The recent works to stabilise the piers have allowed for the safe removal of the superstructure above the crossheads. It is apparent however, that the timber piles, crossheads, cross bracing, walers, and majority of the bolted connections have deteriorated since the last 2015 inspection.

The following paragraphs summarise the condition of the various elements based upon our observations from a boat for the piers in the waterway and on foot for the piers and abutments that were accessible on the embankments.

Please also see attached our site photo log and drawing which records our various observations, as summarised below;

### 5.1 Western Abutment

The exposed elements of the west abutment are in an advanced state of deterioration. The cross heads have failed and have been previously temporarily repaired with blocks and props. The exposed sections of piles are also badly degraded and there are no sound portions readily accessible for testing. Much of the timber sheeting on the abutment and wingwalls has collapsed and fill is spilling through.

This abutment is deemed to have completely failed and is not readily recoverable. We note that both the 2007 and 2015 previous assessments deemed this structure to be no longer economically recoverable. Also the restoration of the original abutments was identified as a significant cost and not considered necessary with the reduced bridge deck width.

The overall condition rating for western abutment is 5, which is unsafe condition.

### 5.2 Pier No.1

This pier only has 5 x load bearing, vertical timber piles and is founded in the embankment and not in the water. The piles are relatively short, being about 3 to 4m above the ground. The pier is cross braced (laterally) with a sawn timber section each side of the pier. There were previously 13no. steel stringers linking pier no.1 to the west abutment, all of them have now been removed from the structure.

The pier was assessed on both a visual and sounding inspection at ground level. Pile 5 and 4 were found to be both hollow when viewed from above and also sounded with the sledgehammer. Both piles are showing signs of dry rot and previous termite infestation. Pile 3 also showed evidence of some dry rot.

Previously the whole pier structure could sway slightly when pushed/pulled, however the new crosshead fixture has stabilised the pier which is in a firm and upright position.

The prop which was previously attached to Pile 5 on the downstream side of the pier has collapsed since the 2015 inspection. The cross heads visually appear to be intact and sound although upon sounding they have sections of rot and deteriorating.

The overall condition rating for pier No 1 is 3.9, which is poor to very poor condition.

### 5.3 Pier No.2

This is a typical of the piers within the waterway (ie. no.2 to no.7), ie. having 5 x load bearing, vertical timber piles and a bracing pile each side. The top of this pier is about 6.5m above the water. The 5 x piles are laterally braced with sawn timber. The side braces attached to each side of the pier are unsawn sections and are highly weathered. The bracing piles have been heavily notched and also badly weathered.

We noted that the piles beneath the structure and between the downstream/upstream piles tended to be less weathered having been protected from the weather and debris collision.

The bracing piles (ie. pile no.1 and 7) are in poor condition, being badly cracked and degraded particularly above the water line and around the connection to the leaning prop braces which are attached to the piles.

Previously the loosely connected sawn timber walers, are now missing and are likely to have failed into the river. The walers need to be replaced and properly attached to the piles.

The internal load bearing piles (ie. pile no's 2 to 5) have deteriorated at water level and upon sounding with the sledgehammer sounded hollow.

The previous broken off half of the crosshead has been replaced (upstream half) and spliced into the existing crosshead timber under the stage 1 works completed in 2019. This crosshead, upon inspection is now firmly in-place and positioned correctly above the original timber piles.

The overall condition rating for pier No. 2 is 3.9, which is poor to very poor condition.

#### 5.4 Pier No.3

Pier No. 3 is also missing half of the sawn timber walers, with the upstream half of the walers loosely attached and badly deteriorated to the piles 1-4. All of the cross bracing ends and fixings at water level are deteriorated, particularly the ends near the bolted connections. The piles are in variable condition at water level upon visual inspection, and piles 1, 6 and 7 sounded partially hollow and are in very poor condition. There was also evidence of dry rot in the cross heads, which was noted in the previous inspection report in 2015.

The overall condition rating for pier No. 3 is 3.9, which is poor to very poor condition.

#### 5.5 Pier No.4

Similar condition to pier 3, however the piles are in a more advanced state of deterioration with piles 1, 4, 6 and 7 recorded as being in very poor condition. Many of the piles have significant loss of section and large holes at water level. There are no walers left on this pier. And again there are signs of dry rot in the cross heads which were previously identified in the 2015 inspection report.

The overall condition rating for pier No. 4 is 4, which is very poor condition.

#### 5.6 Pier No.5

The piles in this structure are more robust than pier 4 with only pile No. 1 being in very poor condition. Again no walers are present upon inspection of the pier, and accordingly, new walers are suggested to be replaced and properly attached to the piles. The bracing piles and braces are in very poor condition and have deteriorated beyond repair, consideration to their replacement should be noted. The cross heads are in poor condition with some moderate cracking and dry rot identified.

The overall condition rating for pier No. 5 is 3.6, which is poor to very poor condition.

#### 5.7 Pier No.6

Pier No. 6 is in very poor condition, with piles No. 1, 2, 4, 5, 6 and 7 presenting advanced deterioration and partially hollow sounded test results. Of note, pile No. 6 has fire damaged to the centre of the pile (approx. 1.5 from the water level) it is however noted that the remaining pile is likely to be sound below the water line. As previously mentioned the cross head also has fire damaged and is a very poor condition. No walers are present upon inspection of the pier, new walers are suggested to be replaced and properly attached to the piles..

The overall condition rating for pier No. 6 is 4.3, which is very poor condition.

#### 5.8 Pier No.7

Pier No.7 is in better condition to pier No. 6, with the majority of the piles being in poor condition. The walers are very loosely connected to the piles and the bolted connections are almost completely failed. It is therefore considered the walers are providing little to no structural bracing to the pier, and should be reinstated. The crosshead has some moderate cracking between pile 3 and 4, and is in poor condition.

The overall condition rating for pier No. 7 is 3.3, which is poor condition.

#### 5.9 Pier No.8

This pier is on the embankment and clear of the water. It has only 5 piles and the top of the crossheads are about 2.5m above the ground. The piles are well clear of the waterway and not braced or propped.

Stage 1 works have replaced the crossheads, and have denso wrapped and concrete grout filled the piles. The works have completely rehabilitated the pier set, and therefore restored the original structural strength of the pier.

The overall condition rating for pier No. 8 is 1, which is good condition.

#### 5.10 Eastern Abutment

As before, the east abutment wing walls have both collapsed and much of the sheeting has failed allowing the earth fill to spill through the wall around the piles. The remnant pile tops are severely degraded and not readily inspected or testable. The piles may be sound below ground level.

The overall condition rating for eastern abutment is 5, which is unsafe condition.

#### 5.11 Western & Eastern Anchor Blocks

The bolted connections of both anchor blocks (western and eastern sides) of the structure are currently exposed. GMR have concerns that these connections could be easily tampered with, which may have a serious adverse effect to the piers structural stability (due to the wire ropes dependence of an anchor point).

Therefore, more measures to prevent potential tampering or vandalism to the wire rope cable connections should be considered.

## 6 DISCUSSION

### 6.1 Deck & Crossbeams

None of the original steel cross beams and timber deck remains, and therefore have been omitted from the assessment report.

### 6.2 Lateral Stability

The <sup>1</sup> lateral stability has been largely improved due to the recent wire cable, crosshead fixtures, and mass concrete anchors. We suspect however, that this bridge is susceptible to debris impact due to its apparently shallow founding levels keeping pile embedment depths to a minimum. With the presence of rock in the waterway we estimate that the pile embedment's may be as shallow as 1.5 to 2m (or less). Accordingly the bracing piles and props, together with the cross bracing and the walers (the majority of which are missing) are important countermeasures compensating for the reduced lateral stiffness due to the minimal pile embedment. The reinstatement of these elements is important to the stability of the structure.

### 6.3 Longitudinal Stability

Similar to the lateral stability, the <sup>1</sup>longitudinally stability is currently stable due to the wire cable, fixtures on the crossheads, and concrete mass anchors.

Refer to our attached site photo log for details.

### 6.4 Bolted Connections

The existing structure is heavily dependent upon bolted connections. Most of the existing bolts are corroded and the exposed sections of thread are not likely to be readily operable. It is unlikely that many of the existing bolts are readily re-usable without expensive cleaning and restoration of the threads.

### 6.5 Crosshead Deterioration

The crossheads have been rated based on visual observations taken by drone footage and photographic images. This assessment identified various states of defects, for example dry rot, fire damage, timber cracking, failed bolted connections, and timber rotation.

Refer to our attached bridge assessment drawing for further details of each member.

<sup>1</sup> *Lateral stability refers to potential movement either upstream or downstream.  
The Longitudinal stability refers to potential uncontrolled movement along the bridge length, ie. across the breadth of the river.*

### 6.6 Pile Damage

Some of the piles have multiple drill holes in them at water level. Some holes are empty bolt connection points for the walers or bracing. Other holes are from previous condition assessments. These holes have contributed to the deterioration of the piles. Many of the piles are cracked or split. Some cracks are significant, being long, wide and deep. We could clearly see completely through some of the piles. Other cracks are less significant being narrow, shallow and short.

### 6.7 Damaged Pile Tops

Some of the pile tops have been damaged through the recent beam collapses and general timber deterioration.

GMR recommends that all of the pile tops should be made weatherproof with the addition of steel caps, to slow down the declining condition of the member.

## 7 SUMMARY

### 7.1 Part A – Substructure Assessment

The structure has deteriorated since our last structural assessment in 2015, that deterioration is partly due to the continued decay of the various elements and general weathering and increased age of the structural members. The removal of the remaining deck elements has left the substructure more exposed to the weather, that exposure has contributed to the continued deterioration of the substructure.

Recent works to the bridge to remove the superstructure has been successful at both stabilising the piers and mitigating the risk of objects falling from height. However, more measures to prevent tampering or vandalism to the wire rope cable (which is critical to the stability of the structure) and its anchor connections should be considered.

The piles have deteriorated only slightly at water level, however the upper portions are now exposed to the elements are not accessible and are expected to have similarly deteriorated. The bracing of the substructure remains in a similar condition to that observed previously.

In summary, we conclude that the structure is in a structurally stable state, but is typically deteriorating with its exposure to the river and the weather which will continue to weaken the structure with time.

7.2 Part B – Inspection Comparison Review

The following table provides a comparison between the previous structural assessment completed in 2015, against the new assessment findings completed in 2020.

Pier ID. NO.	Old Assessment (31/03/2015)			New Assessment (19/05/2020)		
	Overall Pier Rating	% of Original Pier Strength	Check for Compression & Bending (Pass/Fail)	Overall Pier Rating	% of Original Pier Strength	Check for Compression & Bending (Pass/Fail)
<b>West Abutment (NAB)</b>						
WAB-1	5	0%	FAIL	5	0%	FAIL
WAB-1A			FAIL			FAIL
WAB-1B			FAIL			FAIL
WAB-2			FAIL			FAIL
WAB-3			FAIL			FAIL
WAB-4			FAIL			FAIL
WAB-5	FAIL	FAIL	FAIL			
<b>Pier 1</b>						
P1-1	3.8	30%	PASS	3.9	27%	PASS
P1-2			PASS			PASS
P1-3			PASS			PASS
P1-4			PASS			PASS
P1-5			PASS			PASS
P1-5 Strut			FAIL			FAIL
<b>Pier 2</b>						
P2-1	3.7	32%	FAIL	3.9	28%	FAIL
P2-2			PASS			PASS
P2-3			PASS			PASS
P2-4			PASS			PASS
P2-5			PASS			PASS
P2-6			FAIL			FAIL
P2-7			FAIL			FAIL
<b>Pier 3</b>						
P3-1	3.7	32%	FAIL	3.9	28%	FAIL
P3-2			PASS			PASS
P3-3			PASS			PASS
P3-4			PASS			PASS
P3-5			PASS			PASS
P3-6			PASS			PASS
P3-7			FAIL			FAIL
<b>Pier 4</b>						
P4-1	3.8	30%	FAIL	4	25%	FAIL
P4-2			PASS			PASS
P4-3			FAIL			FAIL
P4-4			FAIL			FAIL
P4-5			PASS			PASS
P4-6			FAIL			FAIL
P4-7			FAIL			FAIL
<b>Pier 5</b>						
P5-1	3.3	42%	FAIL	3.6	36%	FAIL
P5-2			PASS			PASS
P5-3			PASS			PASS
P5-4			FAIL			FAIL
P5-5			PASS			PASS
P5-6			FAIL			FAIL
P5-7			PASS			PASS
<b>Pier 6</b>						
P6-1	4.1	21%	FAIL	4.3	17%	FAIL
P6-2			PASS			PASS
P6-3			PASS			PASS
P6-4			FAIL			FAIL
P6-5			FAIL			FAIL
P6-6			FAIL			FAIL
P6-7			FAIL			FAIL
<b>Pier 7</b>						
P7-1	3.1	48%	PASS	3.3	44%	PASS
P7-2			PASS			PASS
P7-3			PASS			PASS
P7-4			FAIL			FAIL
P7-5			FAIL			FAIL
P7-6			PASS			PASS
P7-7			PASS			PASS
<b>Pier 8</b>						
P8-1	3.7	33%	FAIL	1	100%	PASS
P8-2			FAIL			PASS
P8-3			FAIL			PASS
P8-4			PASS			PASS
P8-5			FAIL			PASS
<b>East Abutment (NAB)</b>						
EAB-1	5	0%	FAIL	5	0%	FAIL
EAB-1A			FAIL			FAIL
EAB-1B			FAIL			FAIL
EAB-2			FAIL			FAIL
EAB-3			FAIL			FAIL
EAB-4			FAIL			FAIL
EAB-5			FAIL			FAIL
EAB-5A			FAIL			FAIL
EAB-5B			FAIL			FAIL

### 7.3 *Part C – Design Review*

The previous refurbishment design was based upon the stabilisation of the piers via steel wire cables anchored into the river bank, in order to remove the un-recoverable superstructure (ie. beams, cross beams, deck and railing). Our review has concluded that the structure is currently in a stable but deteriorating condition.

### 7.4 *Part D – Recommendations Summary*

A summary of the quantity of the recommendations made in this report is as follows;

<i>Member</i>	<i>Needs Strengthening</i>	<i>Needs Repair</i>	<i>Needs Splicing</i>	<i>Needs to be Replaced</i>	<i>No Works Required</i>	<i>Total Number of members</i>
Piles	14	10	12	10	6	52
Cross bracing	0	2	4	0	2	8
Side Bracing	1	8	0	5	2	16
Walers	0	0	0	7	1	8
Crossheads	3	2	0	0	3	8

The above table outlines the minimum repair work required for the long-term stabilisation of the existing bridge structure. Completing these works will also satisfy the prerequisite for future pedestrian re-use and/or loading of the structure.

## 8 CONCLUSION

In consideration of the above we make the following conclusions;

### 8.1 *Structural Assessment Outcome*

#### 8.1.1 Existing Structure is Stable

The bridge is currently in a structurally stable condition due to the wire rope cable, crosshead fixtures and concrete mass anchor block embedded into the river bank.

#### 8.1.2 Further Considerations

To prevent tampering or vandalism of the wire rope cables should be considered. This component is critical of stability of the structure, and under current conditions, little to no tools, could potentially disconnect the wire cable from the anchor point. This would have a severer adverse effect on the structural stability of the remaining bridge.

#### 8.1.3 Future Reuse

The bridge in its current condition, whilst stable, is unable to support pedestrian loading.

The recommendations outlined in Section 7.4 of this report, details the works needed to suffice both the long-term stability and the future pedestrian re-use and/or loading of the structure.

### 9 RECOMMENDATIONS

In consideration of the above we make the following treatment recommendations which outlines the minimum repair work required for both the long-term stabilisation, and the future pedestrian re-use and/or loading of each pier set;

#### 9.1 Pier No. 1

Member	Condition Rating	Needs Strengthening	Needs Repair	Needs Splicing	Needs to be Replaced	No Works Required
P1	4			X		
P2	3		X			
P3	2					X
P4	4			X		
P5	5				X	
Cross Bracing	2					X
Side Bracing	5				X	
Walers	-				X	
Crosshead	2					X

#### 9.2 Pier No. 2

Member	Condition Rating	Needs Strengthening	Needs Repair	Needs Splicing	Needs to be Replaced	No Works Required
P1	5				X	
P2	3	X				
P3	3	X				
P4	4			X		
P5	3	X				
P6	4			X		
P7	5				X	
Cross Bracing	3			X		
Side Bracing	3		X			
Walers	-				X	
Crosshead	3 & 1					X

9.3 Pier No. 3

Member	Condition Rating	Needs Strengthening	Needs Repair	Needs Splicing	Needs to be Replaced	No Works Required
P1	5				X	
P2	3		X			
P3	3		X			
P4	4	X				
P5	3		X			
P6	4	X				
P7	5				X	
Cross Bracing	3			X		
Side Bracing	4 & 5				X	
Walers	-				X	
Crosshead	3		X			

9.4 Pier No. 4

Member	Condition Rating	Needs Strengthening	Needs Repair	Needs Splicing	Needs to be Replaced	No Works Required
P1	5				X	
P2	4	X				
P3	3		X			
P4	4	X				
P5	3		X			
P6	4	X				
P7	5				X	
Cross Bracing	3			X		
Side Bracing	3 & 5		X		X	
Walers	-				X	
Crosshead	4	X				

9.5 Pier No. 5

Member	Condition Rating	Needs Strengthening	Needs Repair	Needs Splicing	Needs to be Replaced	No Works Required
P1	5				X	
P2	4	X				
P3	3	X				
P4	3	X				
P5	3	X				
P6	4	X				
P7	3		X			
Cross Bracing	4			X		
Side Bracing	3 & 5	X	X			
Walers	-				X	
Crosshead	4	X				

9.6 Pier No. 6

Member	Condition Rating	Needs Strengthening	Needs Repair	Needs Splicing	Needs to be Replaced	No Works Required
P1	5				X	
P2	4			X		
P3	3		X			
P4	5				X	
P5	4			X		
P6	4			X		
P7	4			X		
Cross Bracing	3		X			
Side Bracing	3		X			
Walers	-				X	
Crosshead	4	X				

9.7 Pier No. 7

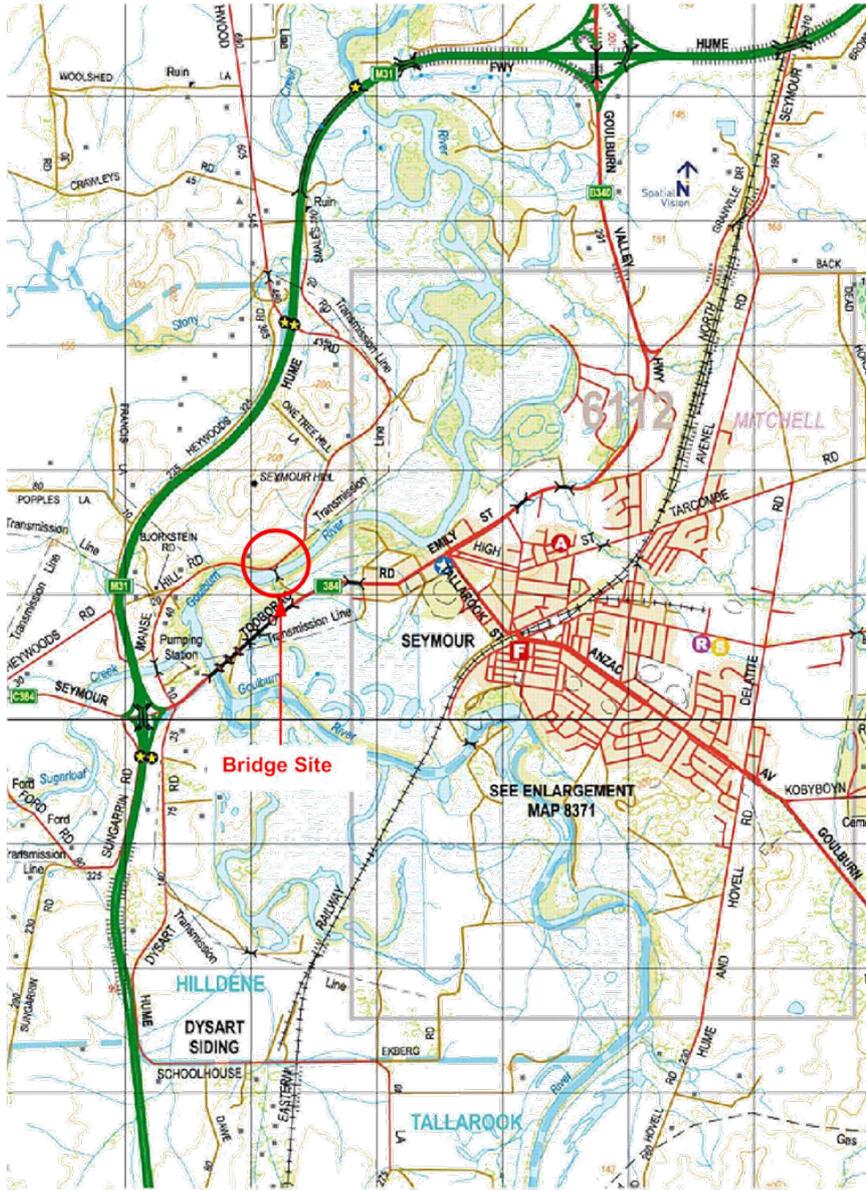
Member	Condition Rating	Needs Strengthening	Needs Repair	Needs Splicing	Needs to be Replaced	No Works Required
P1	3			X		
P2	3	X				
P3	3		X			
P4	3			X		
P5	3			X		
P6	3		X			
P7	3			X		
Cross Bracing	3		X			
Side Bracing	3		X			
Walers	5				X	
Crosshead	3		X			

9.8 Pier No. 8

Member	Condition Rating	Needs Strengthening	Needs Repair	Needs Splicing	Needs to be Replaced	No Works Required
P1	1					X
P2	1					X
P3	1					X
P4	1					X
P5	1					X
Cross Bracing	-					
Side Bracing	-					
Walers	-					
Crosshead	1					X

10 APPENDICES

10.1.1 Locality Plan



Topographic Map image extract from Map No.6112, Spatial Vision.

GMR Engineering Services

Ref GMR07048-09

10.1.2 Bridge Condition Assessment Drawing.

10.1.3 Site Photos (attached)

- Seymour Heritage Bridge Site Photos dated 19/05/20  
253 colour images, on 45 x A3 pages.

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Client; Mitchell Shire Council  
Project; Heritage Bridge over Goulburn River  
Location; Seymour  
Minimum Repair Works - Summary

Produced 4:09 PM, 21-10-20

COST SUMMARY		
ITEM	DESCRIPTION	MINIMUM REPAIR WORKS
1	Preliminaries	\$ 123,500.00
2	Site Preparation	\$ 4,000.00
3	Earthworks / Excavation	\$ 10,000.00
4	Traffic Control & Road Crossings	\$ 6,500.00
5	Heritage Bridge Refurbishment	\$ 1,333,500.00
6	Practical completion inspection	\$ 500.00
7	Maintenance Period	\$ 3,750.00
8	Final Inspection	\$ 500.00
9	Detail Design Development Costs	\$ 51,878.75
10	Project Management Costs	\$ 74,112.50
11	Contingency Provision	\$ 148,225.00
<b>Total Cost (ex GST)</b>		<b>\$ 1,756,466.25</b>
<b>Notes</b>		
1	This estimate is compiled based upon information drawn from the "Cordell Commercial & Industrial Building Cost Guide - Victoria", supplier quotes and from recent tender outcomes.	
2	At the time of writing our current version of "Cordell Commercial & Industrial Building Cost Guide - Victoria" is dated April 2020.	
3	No provision for cost of capital, land purchase, holding or delay costs, contingencies, legal costs or stamp duty or profit unless shown.	
4	All areas taken from dimensions shown on GMR "PRELIMINARY ONLY" drawings, dated 20/10/20	
5	All costs based upon information available at the time of compilation.	
6	All materials, dimensions and costs subject to detail design development and provision of specification for individual treatments for each pile and pier.	
7	All sub consultants costs subject to quotation and confirmation.	
8	GMR Engineering Services does not purport to be Quantity Surveyors.	
9	Any cost estimates prepared by GMR should be considered as a "preliminary advice" only.	
10	We recommend that Quantity Surveyors be engaged should you need accurate or more detailed cost estimates.	
11	Construction cost outcomes can vary considerably and are very much dependant upon the prevailing market conditions at the time of construction.	
12	Construction cost outcomes are also dependant upon the availability of suitable contractors and materials at the time of construction.	
13	The above estimate has been derived from assumptions as stated within the estimate and the following appendices; Appendix 1 - Construction Methodology derived by GMR's Works Methodology dated 03/04/2019. Appendix 2 - Timber Piles Quote Koppers Australia. Appendix 3 - Labour & Construction Equipment Costs derived from Cordell Commercial & Industrial Building Cost Guide - Victoria.	
		Prepared by JMK, 21/10/20
		Updated by SMEK, 21/10/20

GMR07048.9 - Seymour Heritage Bridge - Minimum Repair Estimate V1 (21-10-20); Minimum Repair Works - Summary

GMR Engineering Services  
CONFIDENTIAL

Client; Mitchell Shire Council  
Project; Heritage Bridge over Goulburn River  
Location; Seymour  
Minimum Repair Works -Estimate

Produced 4:09 PM, 21-10-20

Item	Description	Qty	Units	Rate	Cost	Subtotal
<b>1</b>	<b>Preliminaries</b>					
1.1	Site Establishment					
	To establish initial presence on site and prepare for works, ensure all necessary equipment is established on site @ per item, site establishment costs include the provision of a temporary site office and associated equipment, temporary toilet facilities, any safety barricades and equipment's as required, provision of temporary signage as required and other items deemed necessary by the contractor to ensure smooth progress and successful completion of the project.	1	item	\$ 100,000.00	\$ 100,000.00	
1.2	Quality Plan					
1.2.1	Site Safety Plan					
	To prepare and submit necessary documents in response to specification @ per item.	1	item	\$ 1,000.00	\$ 1,000.00	
1.2.2	Construction Management & Site Environmental Management Plan					
	To prepare and submit necessary documents in response to specification @ per item.	1	item	\$ 1,000.00	\$ 1,000.00	
1.2.3	Cultural Heritage Management Plan					
	To prepare and submit necessary documents in response to specification @ per item.	1	item	\$ 15,000.00	\$ 15,000.00	
1.2.4	Quality Control, Inspection & Test Plan					
	To prepare and submit necessary documents in response to specification @ per item.	1	item	\$ 1,500.00	\$ 1,500.00	
1.3	Setout of Works					
	To undertake necessary computations, supply, place and maintain required paint marks, nomenclature, markings etc. as per approved drawings for the duration of the project @ per item.	1	item	\$ 1,000.00	\$ 1,000.00	
1.4	Service Locations (provisional item only)					
	To liaise with relevant authorities and agencies, verify, locate and physically expose (where appropriate) services and implement necessary protective measures @ per item.	1	item	\$ -	\$ -	
1.5	Site Induction Register					
	To induct and maintain a register of all staff, subcontractors and suppliers working on this site inducted on the "Construction Methodology and Site Environmental Management Plan" @ per item.	1	item	\$ 1,000.00	\$ 1,000.00	
1.6	Site Barricades and Signage					
	To maintain in-situ existing site barricade and warning signage erected by the Council throughout the duration of works @ per item.	1	item	\$ 2,000.00	\$ 2,000.00	
1.7	Authority Liaison and Approval					
	To liaise with the relevant authorities (including GBCMA and Heritage Victoria), secure any required permits, including a works in waterway permit and execute these works in continuous liaison with these authorities to their satisfaction @ per item.	1	item	\$ 1,000.00	\$ 1,000.00	
						<b>Preliminaries \$ 123,500.00</b>
<b>2</b>	<b>Site Preparation</b>					
2.1	Removal of Vegetable Materials (Provision near abutments)					
	To grub out, rake, separate and stockpile all grass, scrub and remnant vegetable root materials from the strip of interest, load, cart, pay any fees if required to and dispose off to an approved location within 5km of the site @ per item (nominal provision only).	1	item	\$ 2,000.00	\$ 2,000.00	
2.2	Stripping & Stockpiling of Topsoil (Provisional)					
	To strip to a minimum depth of 100 mm (vary to suit) to be clear of any silt and impurities, collect and stockpile, clean, vegetable and root free top soil from site and store at an approved secure location onsite for later use, and dispose of at an approved location any unusable materials @ per item.	1	item	\$ 2,000.00	\$ 2,000.00	
						<b>Site Preparation \$ 4,000.00</b>
<b>3</b>	<b>Earthworks / Excavation</b>					
	Earthworks including excavation, trimming and compaction to alignment, line and level pay any fees if required to and dispose off to an approved location within 5km of site @per item					
	Earthworks is in addition to subgrade preparation and is an approximation only.	1	item	\$ 10,000.00	\$ 10,000.00	
						<b>Earthworks / Excavation \$ 10,000.00</b>

GMR07048.9 - Seymour Heritage Bridge - Minimum Repair Estimate V1 (21-10-20); Minimum Repair Works -Estimate









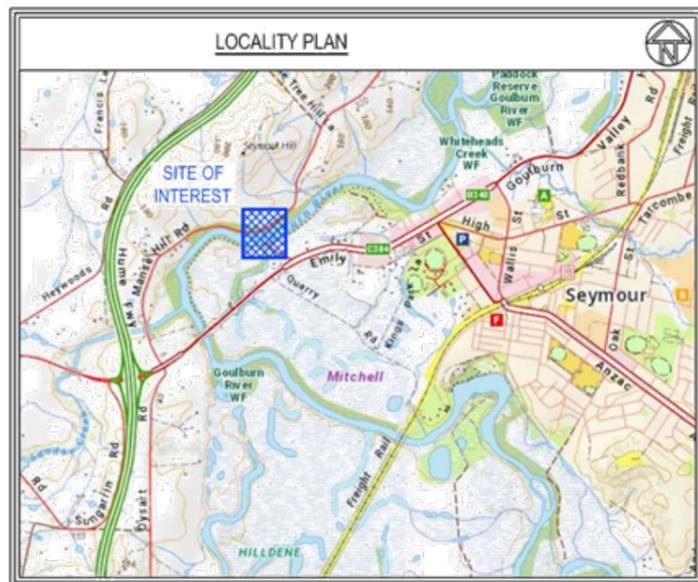
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(NOT FOR CONSTRUCTION)  
16/02/2021

# Mitchell Shire Council

## Seymour Heritage Bridge - Stage 2

### Goulburn River, Seymour.

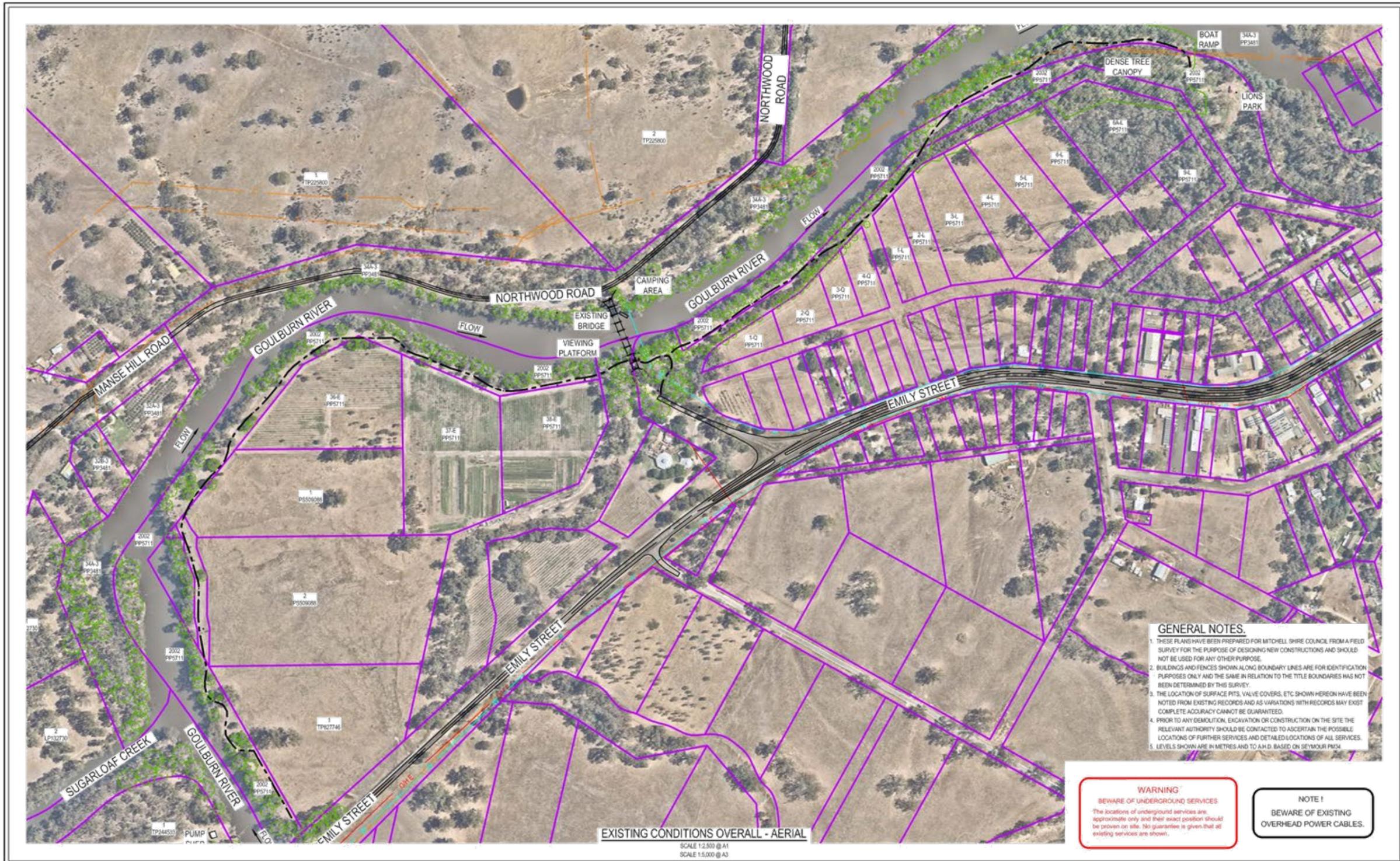


DRAWING SCHEDULE			
	DRAWING NUMBER	DRAWING TITLE	REVISION
	GMR07048-09.01	COVER SHEET	
EXISTING CONDITIONS	GMR07048-09.02	EXISTING CONDITIONS - AERIAL OVERALL	A
	GMR07048-09.03	EXISTING CONDITIONS - OVERALL	A
	GMR07048-09.04	"HERITAGE FEATURE" SITE PLAN	B
OPTION A	GMR07048-09.05	"HERITAGE FEATURE" LAYOUT	B
	GMR07048-09.06	"HERITAGE FEATURE" DETAILS	B
	GMR07048-09.07	"REPLICA" SITE PLAN	A
OPTION B	GMR07048-09.08	"REPLICA" LAYOUT	A
	GMR07048-09.09	NEW STANDALONE FOOTBRIDGE SITE PLAN	A
OPTION C	GMR07048-09.10	NEW STANDALONE FOOTBRIDGE LAYOUT	A
	GMR07048-09.11	ASSESSMENT PLAN	A
VERTICAL CURVE STUDIES	GMR07048-09.12-13	LONG-TERM STABILISATION OF EXISTING STRUCTURE	A

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**WARNING**  
**BEWARE OF UNDERGROUND SERVICES**  
The locations of underground services are approximate only and their exact position should be proven on site. No guarantee is given that all existing services are shown.



**GMR**  
Engineering Services

Phone: (01) 5822 0333  
Fax: (01) 5822 0033  
Website: gwareng.com.au

**LEGEND**

- CENTRELINE OF ROADWAY
- EDGE OF ROADWAY
- INVERT OF TABLEDRAIN
- TOP OF BANK
- TOE OF BANK
- MINOR CONTOUR INTERVAL IS 0.20m
- MAJOR CONTOUR INTERVAL IS 1.0m
- SURVEY TRAVERSE POINT
- TITLE BOUNDARY
- WALKING TRACK
- TELSTRA
- WATERMAIN
- ELECTRICITY

**CONCEPT RELEASE**  
(NOT FOR CONSTRUCTION)  
16/02/2021

REDUCED SCALE



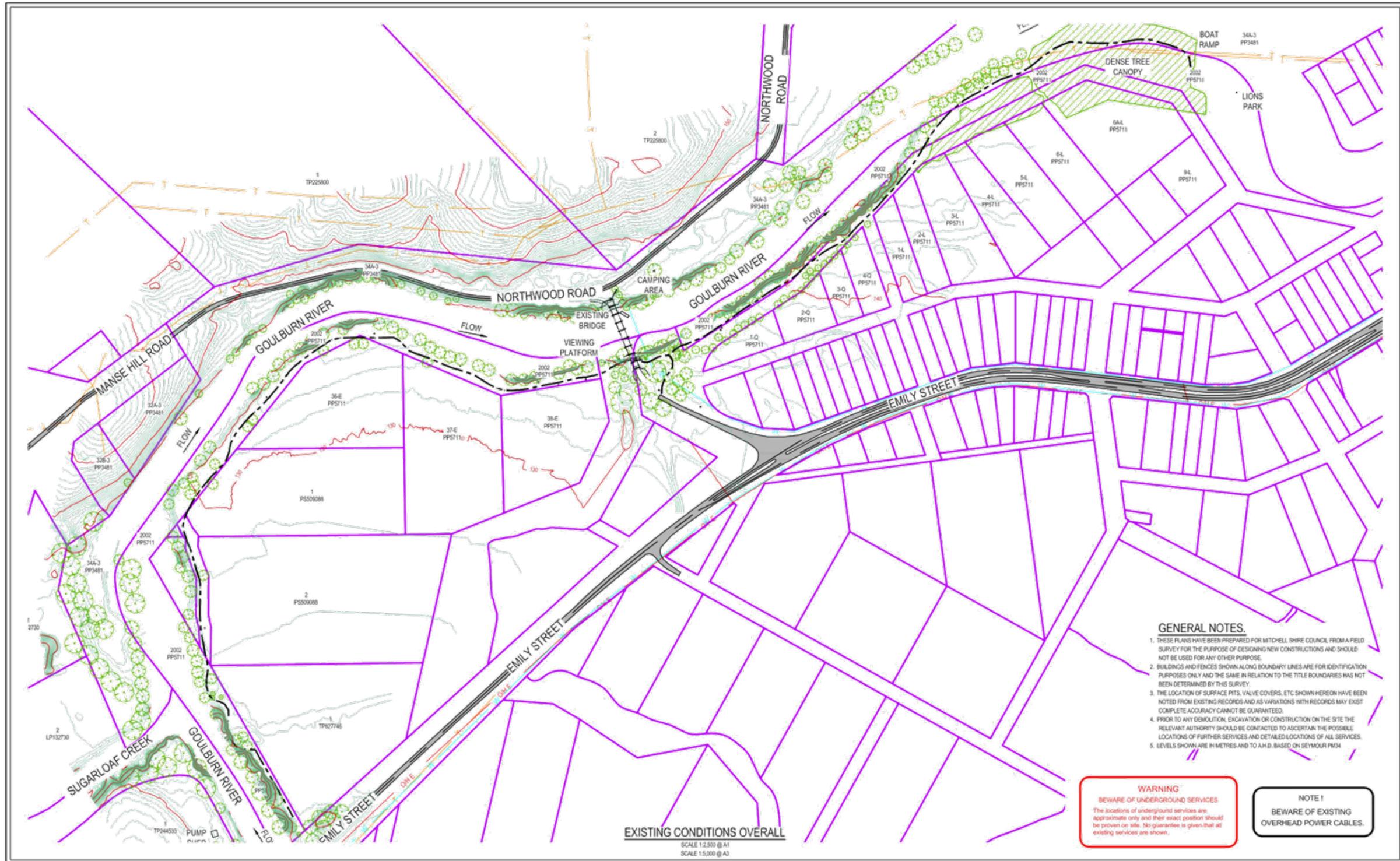
DESIGNED BY: G.Ryan May 2020  
DRAFTED BY: J.Cox May 2020  
VERIFIED BY:

REV	AMENDMENTS	DATE	BY
A	INITIAL DRAFT	22-05-20	JC

0 25 50 100m  
SCALE 1:2,500 @ A1  
SCALE 1:5,000 @ A3

**GMR Engineering Services**  
**Mitchell Shire Council**  
Seymour Heritage Bridge - Stage 2  
Goulburn River, Seymour

Existing Conditions - Aerial Overall  
Drawing No. GMR07048.09.02  
Revision: A Sheet No. 02  
GMR07048.09.02 Existing Conditions.dwg



- GENERAL NOTES.**
1. THESE PLANS HAVE BEEN PREPARED FOR MITCHELL SHIRE COUNCIL FROM A FIELD SURVEY FOR THE PURPOSE OF DESIGNING NEW CONSTRUCTIONS AND SHOULD NOT BE USED FOR ANY OTHER PURPOSE.
  2. BUILDINGS AND FENCES SHOWN ALONG BOUNDARY LINES ARE FOR IDENTIFICATION PURPOSES ONLY AND THE SAME IN RELATION TO THE TITLE BOUNDARIES HAS NOT BEEN DETERMINED BY THIS SURVEY.
  3. THE LOCATION OF SURFACE PITS, VALVE COVERS, ETC SHOWN HEREON HAVE BEEN NOTED FROM EXISTING RECORDS AND AS VARIATIONS WITH RECORDS MAY EXIST COMPLETE ACCURACY CANNOT BE GUARANTEED.
  4. PRIOR TO ANY DEMOLITION, EXCAVATION OR CONSTRUCTION ON THE SITE THE RELEVANT AUTHORITY SHOULD BE CONTACTED TO ASCERTAIN THE POSSIBLE LOCATIONS OF FURTHER SERVICES AND DETAILED LOCATIONS OF ALL SERVICES.
  5. LEVELS SHOWN ARE IN METRES AND TO A.H.D. BASED ON SEYMOUR PM04.

**WARNING**  
BEWARE OF UNDERGROUND SERVICES  
The locations of underground services are approximate only and their exact position should be proven on site. No guarantee is given that all existing services are shown.

**NOTE!**  
BEWARE OF EXISTING OVERHEAD POWER CABLES.

EXISTING CONDITIONS OVERALL  
SCALE 1:2,500 @ A1  
SCALE 1:5,000 @ A3

**GMR**  
Engineering Services

Phone: (03) 5822 0333  
Fax: (03) 5822 0033  
Website: gwareng.com.au

**LEGEND.**

CENTRELINE OF ROADWAY	TELSTRA	WATERMAIN	ELECTRICITY
EDGE OF ROADWAY			
INVERT OF TABLEDRAIN			
TOP OF BANK			
TOE OF BANK			
MINOR CONTOUR INTERVAL IS 0.20m			
MAJOR CONTOUR INTERVAL IS 1.0m			
SURVEY TRAVERSE POINT			
TITLE BOUNDARY			
WALKING TRACK			

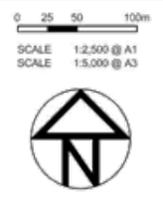
**CONCEPT RELEASE**  
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16/02/2021

REDUCED SCALE



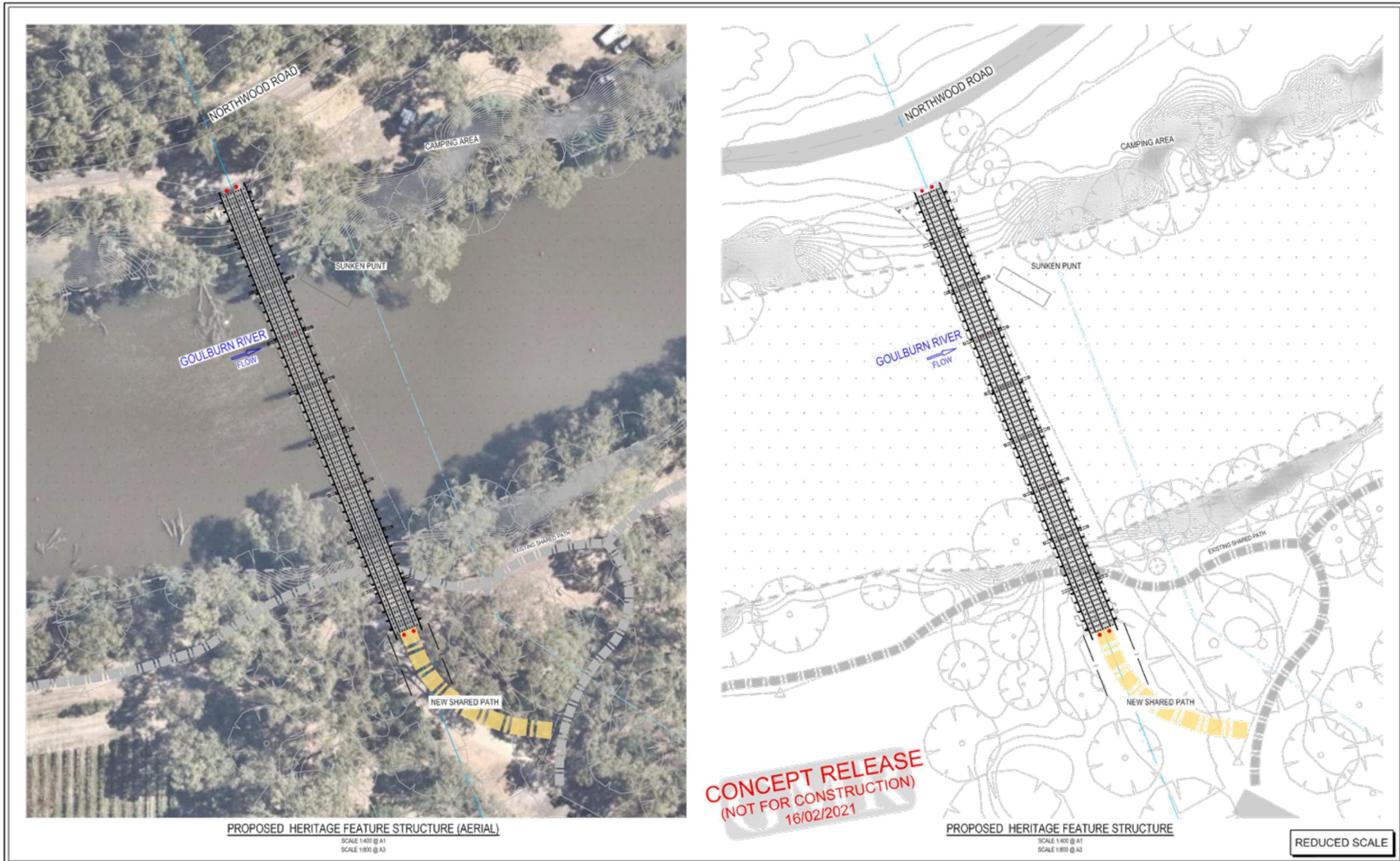
DESIGNED BY: G.Ryan May 2020  
DRAFTED BY: J.Cox May 2020  
VERIFIED BY:

REV	AMENDMENTS	DATE	BY
A	INITIAL DRAFT	22-05-20	JC



**GMR Engineering Services**  
**Mitchell Shire Council**  
Seymour Heritage Bridge - Stage 2  
Goulburn River, Seymour

Existing Conditions Overall  
Drawing No. GMR07048.09.03  
Revision: A Sheet No. 03  
GMR07048.09.02 Existing Conditions.dwg



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 Engineering Services  
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 Website: gwareng.com.au

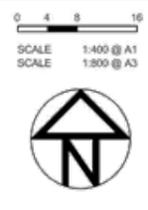
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EXISTING	PROPOSED
CENTRELINE OF BITUMEN	NEW PATH
EDGE OF SEAL	NEW PATH
MINOR CONTOUR INTERVAL IS 0.20m	BOLLARDS
MAJOR CONTOUR INTERVAL IS 1.0m	
TREES	
DEAD TREE	
PERMANENT SURVEY MARK	
SURVEY TRAVERSE POINT	
GATE	
OVERHEAD ELECTRICITY	
UNDERGROUND ELECTRICITY	
LIGHT POLE	
STAY POST	
SLUICE VALVE	
UNDERGROUND WATER MAIN	
FIRE HYDRANT	
FIRE PLUG	
WATER TAP	
OPTIC FIBRE CABLE	
TELSTRA PIT	
TELSTRA CABLE	
SEWER MAIN	
SEWER MAN-HOLE	
SIGN POST	
GAS MAIN	

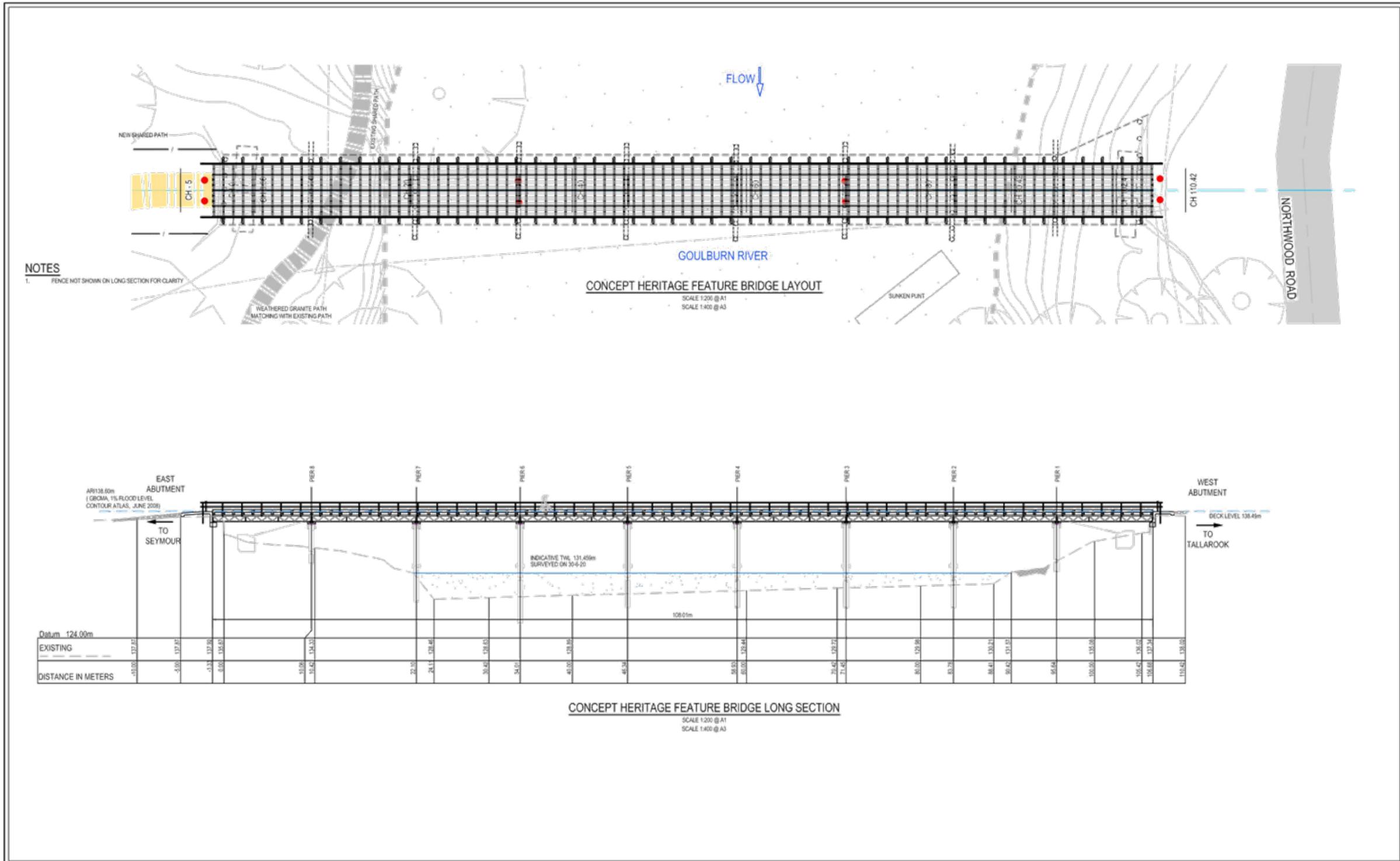


DESIGNED BY: G.Ryan February 2021  
 DRAFTED BY: T.Ainsworth February 2021  
 VERIFIED BY:

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B	AMENDED AS PER CLIENTS REQUEST	10/02/21	TA
A	INITIAL DRAFT	05/02/21	TA



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 Seymour Heritage Bridge - Stage 2  
 Goulburn River, Seymour  
 Option A  
 Heritage Feature Structure Site Plan  
 Drawing No. GMR07048-9.04  
 Revision: B Sheet No. 04  
 GMR07048.09.13 Existing Bridge Concept 2.dwg



**NOTES**  
 1. FENCE NOT SHOWN ON LONG SECTION FOR CLARITY

**CONCEPT HERITAGE FEATURE BRIDGE LAYOUT**  
 SCALE 1:200 @ A1  
 SCALE 1:400 @ A3

**CONCEPT HERITAGE FEATURE BRIDGE LONG SECTION**  
 SCALE 1:200 @ A1  
 SCALE 1:400 @ A3

**GMR**  
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**LEGEND**

**EXISTING**

- CENTRELINE OF BITUMEN
- EDGE OF SEAL
- MINOR CONTOUR INTERVAL IS 0.20m
- MAJOR CONTOUR INTERVAL IS 1.0m
- TREES
- DEAD TREE
- PERMANENT SURVEY MARK
- SURVEY TRAVERSE POINT

**PROPOSED**

- NEW PATH
- NEW PATH
- BOLLARDS

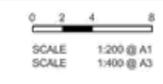
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REDUCED SCALE

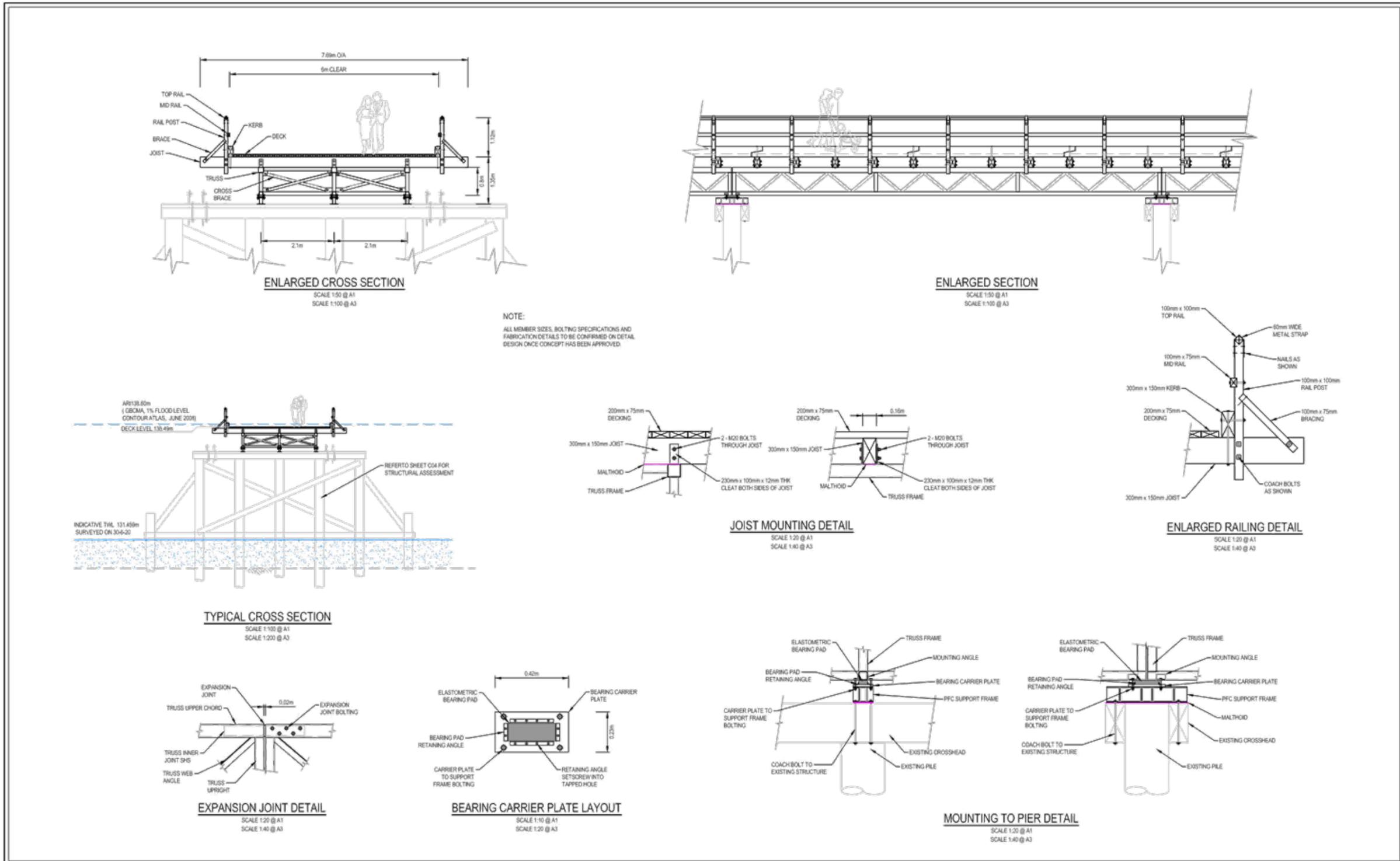


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 Goulburn River, Seymour  
 Option A  
 Heritage Feature Structure Layout  
 Drawing No. GMR07048-9.05  
 Revision: B Sheet No. 05  
 GMR07048.09.13 Existing Bridge Concept 2.dwg



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**LEGEND**

**EXISTING**

- CENTRELINE OF BITUMEN
- EDGE OF SEAL
- MINOR CONTOUR INTERVAL IS 0.20m
- MAJOR CONTOUR INTERVAL IS 1.0m
- TREES
- DEAD TREE
- PERMANENT SURVEY MARK
- SURVEY TRAVERSE POINT

**PROPOSED**

- NEW PATH
- NEW PATH
- BOLLARDS

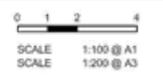
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**Seymour Heritage Bridge - Stage 2**  
Goulburn River, Seymour  
Option A  
Heritage Feature Details  
Drawing No. GMR07048-9.06  
Revision: B Sheet No. 06  
GMR07048.09.13 Existing Bridge Concept 2.dwg A1



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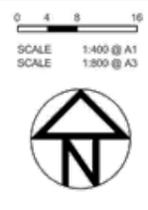
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JUNCTION PIT	MAJOR CONTOUR INTERVAL IS 1.0m	UNDERGROUND ELECTRICITY	TELSTRA PIT
SIDE ENTRY PIT	TREES	LIGHT POLE	TELSTRA CABLE
GRATED TOP ENTRY PIT	DEAD TREE	STAY POLE	SEWER MAIN
KERB AND CHANNEL	PERMANENT SURVEY MARK	SLUCE VALVE	SEWER MAN-HOLE
CENTRELINE OF BITUMEN	SURVEY TRAVERSE POINT	UNDERGROUND WATER MAIN	SIGN POST
EDGE OF SEAL	HOUSE DRAIN CONNECTION	FIRE HYDRANT	GAS MAN
INVERT OF TABLEDRAIN	GATE	FIRE PLUG	FENCELINE
		WATER TAP	LINEMARKING

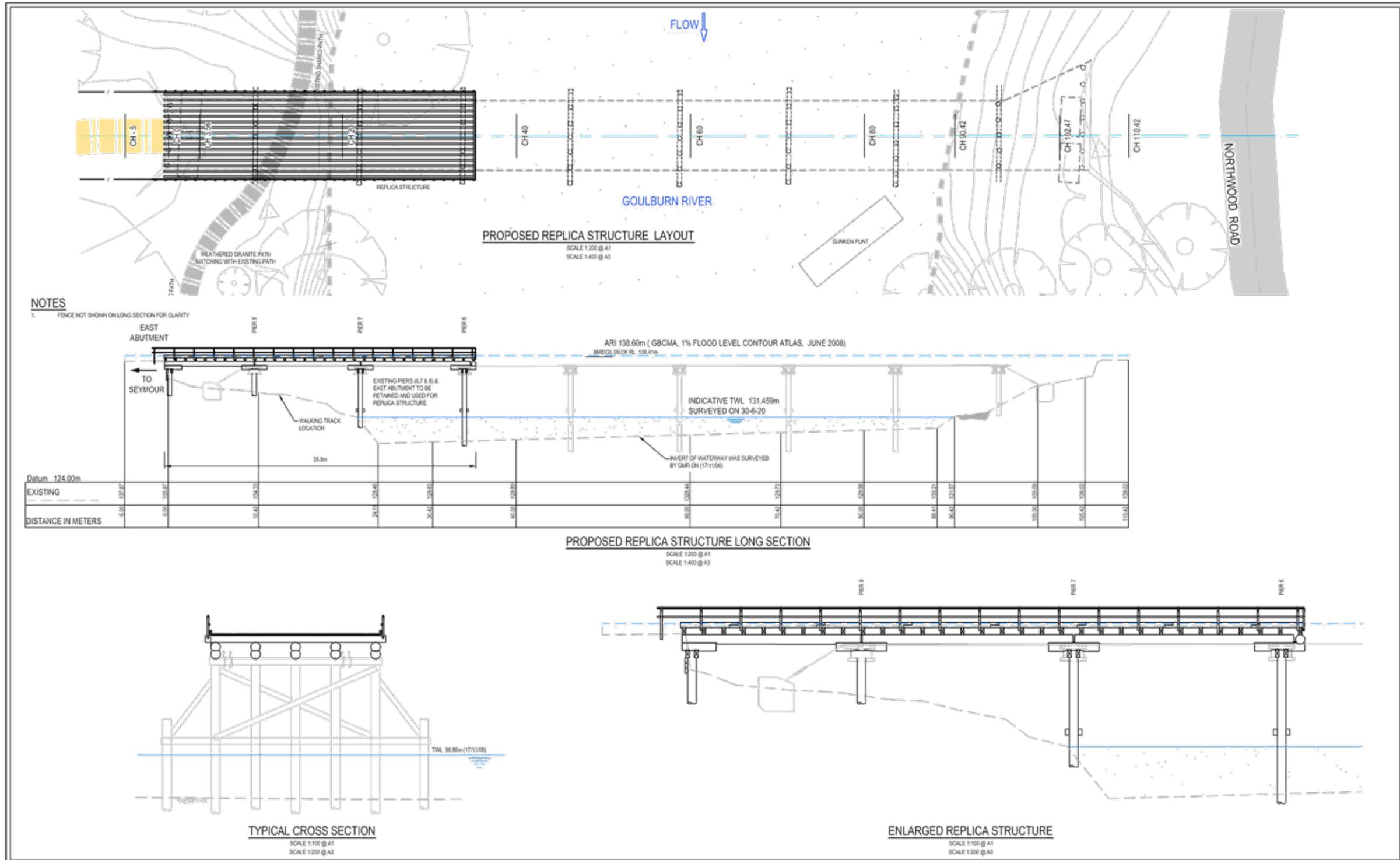


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 Goulburn River, Seymour  
 Option B  
 Partial Reconstruction "Replica" Site Plan  
 Drawing No. GMR07048-9.07  
 Revision: A Sheet No. 07  
 GMR07048.09.05 Replica Structure.dwg



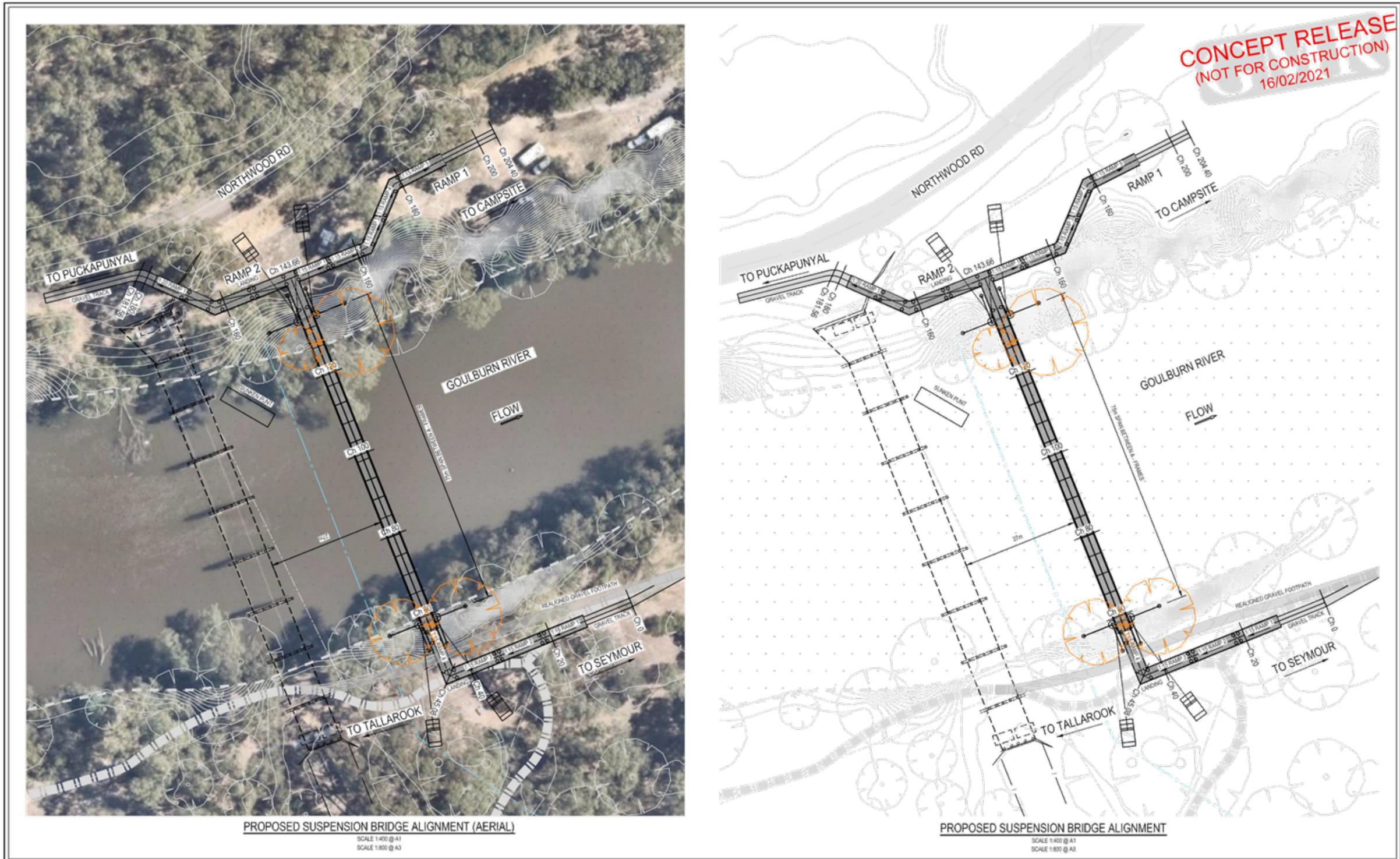
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Goulburn River, Seymour  
Option B  
Partial Reconstruction "Replica" Layout  
Drawing No. GMR07048-9.08  
Revision: A Sheet No. 06  
GMR07048.09.05 Replica Structure.dwg

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**LEGEND**

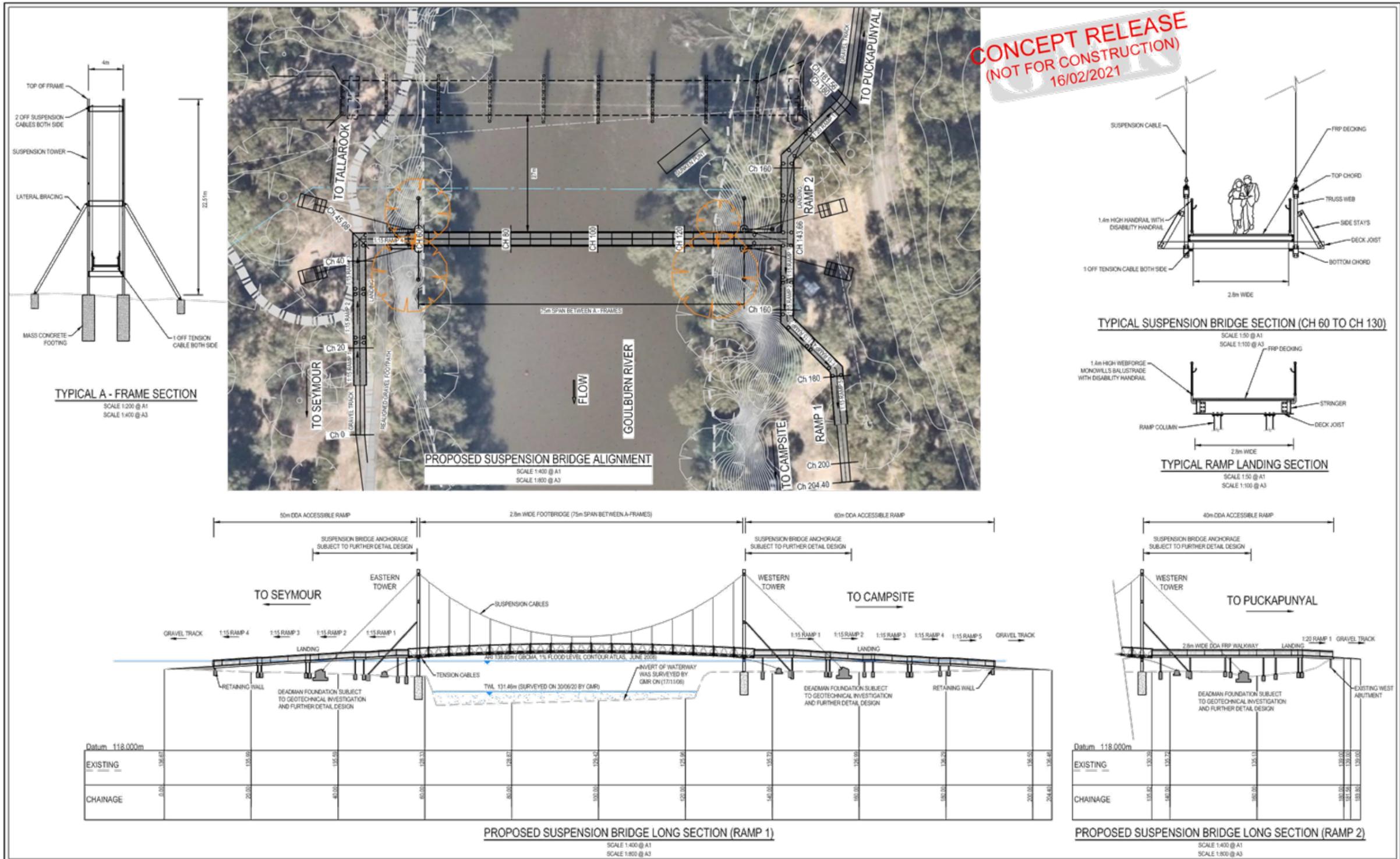
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EDGE OF SEAL	OVERHEAD ELECTRICITY
MINOR CONTOUR INTERVAL IS 0.20m	UNDERGROUND ELECTRICITY
MAJOR CONTOUR INTERVAL IS 1.0m	LIGHT POLE
TREES	STAY POST
DEAD TREE	SLUICE VALVE
PERMANENT SURVEY MARK	UNDERGROUND WATER MAIN
SURVEY TRAVERSE POINT	FIRE HYDRANT
	FIRE PLUG
	WATER TAP
	OPTIC FIBRE CABLE
	TELSTRA PIT
	TELSTRA CABLE
	SEWER MAIN
	SEWER MAN-HOLE
	SIGN POST
	GAS MAIN
	TREES TO BE PRUNED

**MITCHELL**  
**SHIRE COUNCIL**  
**REDUCED SCALE**

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DRAFTED BY	T.Ainsworth	June 2020
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**Mitchell Shire Council**  
**Seymour Heritage Bridge - Stage 2**  
 Goulburn River, Seymour  
 Option C  
 New Standalone Footbridge Site Plan  
 Drawing No. GMR07048-9.09  
 Revision: A  
 Sheet No. 09  
 GMR07048.09.07 Suspension Bridge Structure.dwg



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**LEGEND**

**EXISTING**

- CENTRELINE OF BITUMEN
- EDGE OF SEAL
- MINOR CONTOUR INTERVAL IS 0.20m
- MAJOR CONTOUR INTERVAL IS 1.0m
- TREES
- DEAD TREE
- PERMANENT SURVEY MARK
- SURVEY TRAVERSE POINT

**PROPOSED**

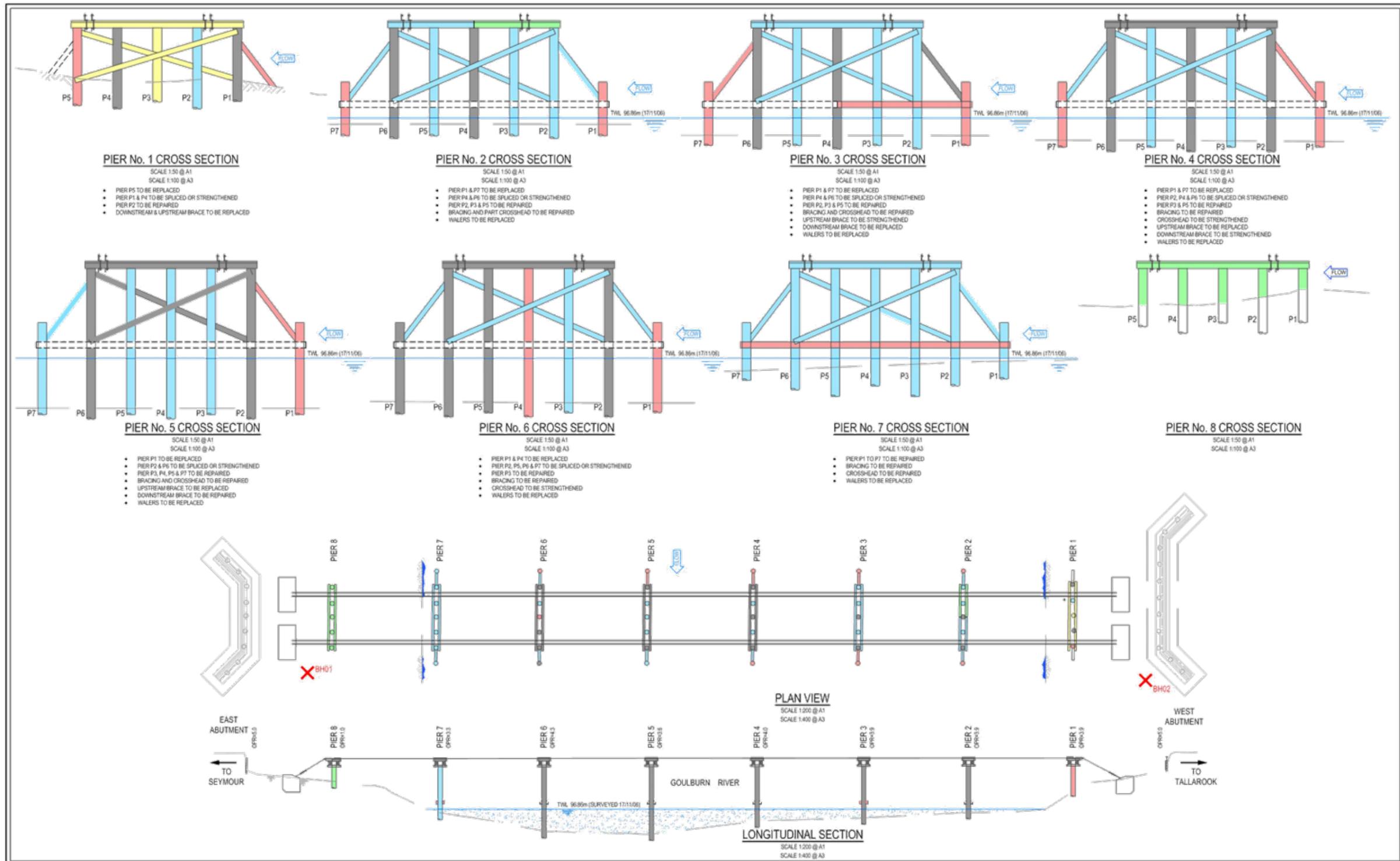
- GATE
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- LIGHT POLE
- STAY POST
- SLUCE VALVE
- UNDERGROUND WATER MAIN
- FIRE HYDRANT
- FIRE PLUG
- WATER TAP
- OPTIC FIBRE CABLE
- TELSTRA PIT
- TELSTRA CABLE
- SEWER MANHOLE
- SEWER MANHOLE
- SIGN POST
- GAS MAIN
- TREES TO BE PRUNED

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DRAFTED BY: T.Ainsworth June 2020  
VERIFIED BY:

**MITCHELL SHIRE COUNCIL**  
REDUCED SCALE

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**Mitchell Shire Council**  
**Seymour Heritage Bridge - Stage 2**  
Goulburn River, Seymour  
Option C  
New Standalone Footbridge Layout  
Drawing No. GMR07048-9.10  
Revision: A Sheet No. 10  
GMR07048-09.07 Suspension Bridge Structure.dwg



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 Website: gmr-eng.com.au

**LEGEND**

GOOD - 1	<span style="background-color: #90EE90; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	SERVICEABLE CONDITION
FAIR - 2	<span style="background-color: #FFFF00; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	SERVICEABLE CONDITION
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VERY POOR - 4	<span style="background-color: #FFA500; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	SPLICING AND/OR STRENGTHENING TO SERVICEABLE CONDITION
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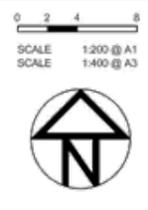
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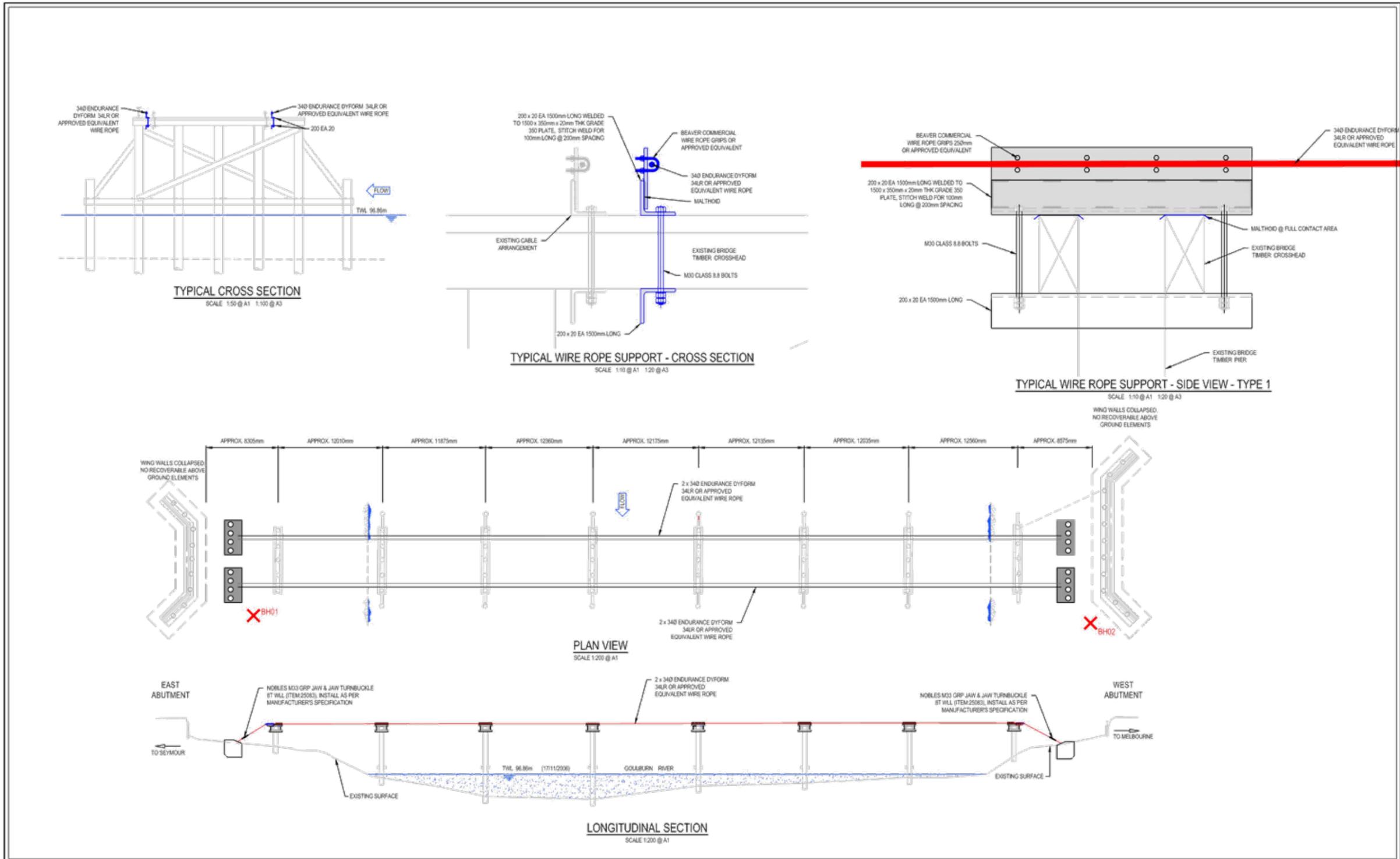
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 Seymour Heritage Bridge - Stage 2  
 Goulburn River, Seymour

Existing Structure Assessment  
 Drawing No. GMR07048.09.11  
 Revision: A Sheet No. 11  
 GMR07048.09.03 Assessment Report.dwg



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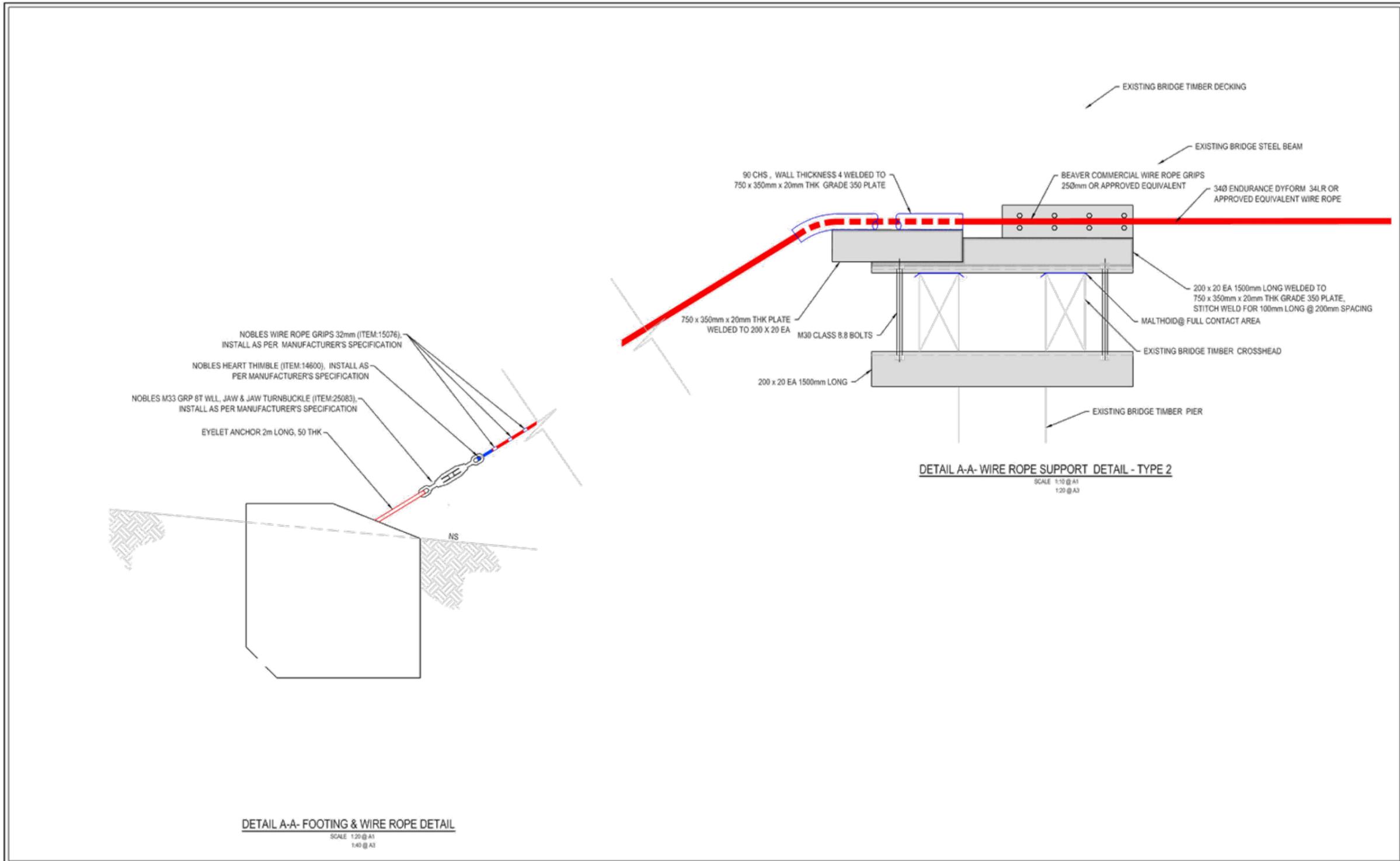


DESIGNED BY: G.Ryan June 2020  
 DRAFTED BY: T.Ainsworth June 2020  
 VERIFIED BY:

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A	INITIAL DRAFT	18-09-20	TA

0 2 4 8  
 SCALE 1:200 @ A1  
 SCALE 1:400 @ A3

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 Seymour Heritage Bridge - Stage 2  
 Goulburn River, Seymour  
 Minimum Repair Works  
 Long-Term Stabilisation of Existing Structure  
 Drawing No. GMR07048.09.12  
 Revision: A Sheet No. 12  
 GMR07048.09.12 Bridge Stability Works.dwg A1



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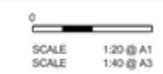
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Seymour Heritage Bridge - Stage 2  
Goulburn River, Seymour  
Minimum Repair Works  
Long-Term Stabilisation of Existing Structure  
Drawing No. GMR07048.09.13  
Revision: A Sheet No. 13  
GMR07048.09.12 Bridge Stability Works.dwg A1



Ref. GMR07048-9



## Heritage Bridge Over the Goulburn River, at Seymour OPTION ASSESSMENT REPORT



VERSION; Draft V6, 18/02/2021

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**Mitchell Shire Council**  
**Heritage Bridge Over the Goulburn River, at Seymour**  
**OPTION ASSESSMENT REPORT - EXECUTIVE SUMMARY**

This option assessment report has been prepared in response to the Mitchell Shire Council's project brief for the development options available to the Seymour Heritage Bridge and the surrounding shared path alongside the Goulburn River, at Seymour VIC 3660.

### A/ OPTIONS OVERVIEW & COSTS SUMMARY

Options investigated are briefly described as:

**Option A** Heritage Feature Footbridge

**Option B** Partial Reconstruction of bridge to original "replica" bridge specifications

**Option C** New Standalone Footbridge Structure

The following cost estimates include a contingency provision of 10%:

<i>Option Description</i>	<i>Engineers Estimate (ex' GST)</i>
<b>Option A - Heritage Feature Footbridge</b>	<b>\$1,140,222.16</b>
<b>Option B - Partial Reconstruction of bridge to original "replica" bridge specifications</b>	<b>\$491,059.85</b>
<b>Option C - New Standalone Footbridge Structure</b>	<b>\$1,459,298.42</b>

To enable any of the above options works are required which is described as "Minimum Repair Works - Long-Term Stabilisation & Future Re-use of the Structure", these works are explained in the below sections of this report.

### B/ COMMENTARY

In consideration of the above we briefly summarise the report findings as follows;

- Formal Approval  
The formal approval of any of the above options will require formal input from and liaison with;
  - Heritage Victoria,
  - GBCMA Works on a Waterway Approval,
  - a vegetation impact assessment, and a Cultural Heritage Management Plan (CHMP) is required.
- Replica Structure  
The replica structure utilises the existing viewing platform, where an interpretive information can be provided to explain the heritage and context of the original structure.
- Alternate Structure  
The preferred new structure is a suspension bridge-based solution, and should be situated adjacent to the existing bridge, restoring previous linkages, and activating the community's connection with the Goulburn River.  
A new structure would be expected to have a service life of 50 to 100 years.
- Utilisation of Heritage Bridge  
The existing Heritage Bridge is well situated to continue to serve the community.  
The utilisation and refurbishment of the existing structure will require further stabilisation and strengthening of the substructure.  
The incorporation of a lightweight truss superstructure solution is recommended.  
A successful refurbishment of the existing timber piles and piers is expected to result in an extended effective service life of about 20 to 25 years for the substructure.

*Prepared by JMK, 19/8/20*  
*Reviewed by GMR, 19/8/20*  
*Updated by JMK, 20/10/20*  
*Final by JMK, 23/11/20*  
*Updated by JMK, 16/02/21*  
*Updated by JMK, 18/02/21*

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**Mitchell Shire Council**  
**Heritage Bridge Over the Goulburn River, at Seymour**  
**OPTION ASSESSMENT REPORT**

## 1 INTRODUCTION

This report has been prepared in response to the Mitchell Shire Council's brief for the Stage 2 investigation for a series of options identified for the rehabilitation and utilisation of the Heritage bridge over the Goulburn River, at Seymour.

### 1.1 Report Objective

The intended purpose and objective of this report, is to undertake a preliminary review of the options identified by Council, identify any constraints, develop an engineering solution, then provide an overview of each option and identify the likely costs for the rehabilitation and utilisation of this Heritage listed Bridge over the Goulburn River at Seymour.

### 1.2 Previous Reports

Some of the information presented in this report draws upon observations and information from previous reports prepared by GMR Engineering Services (GMR). Some of that information dates back to 2007, collected more than 13 x years ago. Much of that earlier data is readily comparable with our subsequent and current observations.

Briefly that work is summarised as follows. In 2007 a structural assessment was undertaken by GMR Engineering Services. Further assessments were undertaken in 2009, 2010, 2013 and 2015.

## 2 BACKGROUND

### 2.1 Recent Works

The recent stabilisation works were undertaken to make the waterway and riverbank safe. The bridge had been previously closed off at each end to discourage access to the deck. Prior to completion of these works, the structure was in an advanced state of deterioration, with various elements of the structure at risk of collapse causing a hazard to boat operators and canoeists using the waterway and pedestrians or anglers walking along the riverbanks.

Completion of that work also enabled the safe removal of the remaining cross beams, bridge beams, steel bridge railing and posts along each side. Some of which had previously been partly removed in the Stage 1 of these works. There is no risk of collapse, also the bridge now has no superstructure, as a result it is no longer accessible and cannot facilitate passage over the Goulburn River.

From our review of our previous work, and in consideration of our recent work we note that we now have access to more than 8,100 images, including our previous work at this site. Also, a further 330 images for our recent assessment of the various shared path alignment options.

### 2.2 Existing Structure

The bridge is almost 110m long and about 7m wide, consisting of 9 spans, supported upon 8 timber (driven) pile piers and abutments. The recent works involved the installation of 2 x longitudinal wire rope restraints which pass over and are attached to the cross heads of the timber piers. The wire rope secures the piers and provides both longitudinal and lateral support.

The superstructure has now been removed. Only the bridge substructure remains. The piers are self-supporting; however, they remain in a deteriorated condition. The earthen abutments are supported by driven timber piles which are in an advanced state of deterioration.

The 2 x wire ropes are parallel to each other and continuous from one side of the river to the other. They are attached to each crosshead via wire rope clamps. The wire ropes cables are each, individually tensioned and anchored to large concrete anchors set into the riverbank in front of the abutments on each side of the river. The crossheads are now the highest members of the structure and are approximately 6m above the summer water level.

### 2.3 Management

The site remains in the care of the Mitchell Shire Council, who continues to maintain the structure and provide public safety around the site. The Goulburn River waterway in the vicinity of the bridge has also been closed to all vessels.

Prior to the completion of the recent stabilisation works, Council had a series of temporary fences around the site perimeter to prevent unauthorised access to the structure. The fences are now no longer required.

### 2.4 Existing Nearby Shared Paths

The existing shared path within the investigation area includes:

- The shared path linkage between Lions Park along and adjacent to the southern riverbank until the eastern abutment of the Emily Street Bridge, approximately 2,276m in length, and
- A small section of shared path at the south-western side of Goulburn Park, approximately 144m in length.

The existing shared path is typically 2.5m wide, the surface material is a sealed pavement with a 7mm stone which is mostly free draining. The shared path is used by pedestrians, cyclists and allows access to light vehicles for maintenance purposes.

### 2.5 Heritage Status

The bridge is a significant structure and has been classified by Heritage Victoria having the category of "Heritage Place". The history of the bridge has been documented in a report prepared by Heritage Victoria, see appendices for a copy of that report, Victorian Heritage Register Extract – ref. PROV H0092, HERMES ID 6157 (August 2005). We note that the Heritage Victoria report (page 4, 4<sup>th</sup> para) explains that the bridge is significant for the following reasons;

*"The Old Goulburn River Bridge, Seymour is of historic, scientific (technological) and aesthetic significance to the State of Victoria."*

The report also explains that the structure is a "well-preserved example of 19th century timber road-bridge construction and is one of four colonial timber bridges constructed on the Goulburn River from 1889 – 1895".

### 2.6 Previous Approvals

GMR prepared a submission on behalf of Mitchell Shire Council which resulted in a heritage permit being issued by Heritage Victoria dated 19/10/10, ref. P16026, for the following purposes;

*"Conservation works to the bridge and works to provide a pedestrian and bicycle crossing as described in drawings GMR07048.5.E04, GMR07048.5.P01, GMR07048.5.P02, GMR07048.5.P03, GMR07048.5.P04 as endorsed by the Executive Director and forming part of this permit."*

Please see appendices for a copy of that permit. GMR also secured a works on waterway approval from the Goulburn Broken catchment Management Authority (GBCMA).

### 2.7 Planning Scheme Review

We note the following from our brief review of the Mitchell Planning Scheme.

#### 2.7.1 Planning Zones

The applicable Planning Zones in this vicinity include:

- Public conservation and resource zone (PCRZ),
- Schedule to the public conservation and resource zone (PCRZ),
- Urban floodway zone (UFZ), and

#### 2.7.2 Planning Overlays

The likely Planning Overlays that the land is subject to include:

- Bushfire management overlay (BMO),
- Environmental significance overlay (ESO), schedule 3 (ESO3),
- Floodway overlay (FO), schedule (FO),
- Heritage overlay (HO), schedule (HO152), (HO154), and (HO156)

Other Planning Overlays applicable in this vicinity include:

- Design and development overlay (DDO),
- Development plan overlay (DPO),

- Environmental audit overlay (EAO),
- Erosion management overlay (EMO),
- Land subject to inundation overlay (LSIO),
- Road closure overlay (RXO),
- Specific controls overlay (SCO), and
- Vegetation protection overlay (VPO).

### 2.7.3 Areas of Cultural Aboriginal Cultural Heritage Sensitivity

The area of interest is situated on land subject to "area of cultural heritage sensitivity". 'Areas of cultural heritage sensitivity' are defined under the Aboriginal Heritage Regulations 2018, and include registered Aboriginal cultural heritage places and landform types that are generally regarded as more likely to contain Aboriginal cultural heritage.

Under the Aboriginal Heritage Regulations 2018, 'areas of cultural heritage sensitivity' are one part of a two part trigger which require a 'cultural heritage management plan' (CHMP) be prepared where a listed 'high impact activity' is proposed. It is therefore recommended that a CHMP be considered as part of the planning approval and detailed design development for the project.

### 2.7.4 Seymour Structure Plan

We understand that the "Seymour 3660 Structure Plan" was formally adopted by Council at its meeting 21/5/18. We have reviewed the structure plan and appendices and note the following elements which relate directly to the Heritage Bridge.

The "Old Goulburn River Bridge" is referenced throughout the Structure Plan. The plan also includes images of the bridge (page 12) and notes its location on the plan (figure 5 Structure Plan, figure 7 Character & Identity, figure 17 Walking and Cycling). Additionally, we note that the "Old Goulburn Bridge" was identified as "a key settlement heritage place" on page 26.

There is also a notation on figure 17 Walking and Cycling which say, "investigate opportunities to restore the old Goulburn River Bridge and connect to a wider future trail network."

We note that same plan also describes an extension of the existing shared path from Emily Street along the Goulburn River through to Goulburn Park and beyond. On page 70 and 71 of the plans, we note that the Strategies and Actions include the following relevant items;

- S7.13 *Investigate opportunities to restore the Old Goulburn River Bridge and connect this to a wider trail network.*
- S7.19 *Investigate the opportunity to provide a pedestrian / cycle path between Seymour and Puckapunyal.*

## 2.8 Heritage Register

As above, the bridge is a significant structure, has been classified by Heritage Victoria, having the category of "Heritage Place" and remains on the Heritage Register. The history of the bridge has been documented in a report prepared by Heritage Victoria, see appendices for a copy of that report. Construction of the original bridge took place between 1891 and 1895.

Up until 1966 the bridge was the main crossing for the former Hume Highway over the Goulburn River at Seymour. The structure was strengthened during the 1940's for heavy traffic associated with the war effort and the nearby Puckapunyal army camp. In 1987 the bridge was placed in the care of Council's predecessor, Seymour Shire Council, closed to vehicle traffic and restricted to pedestrian use as part of the shared path network along the Goulburn River in Seymour.

The bridge became unsafe and was closed to foot traffic in about 1998. Sections of the timber deck were collapsing under foot and there had been some vandalism including fires which had further impacted the structure. Barriers were erected to prevent access to the deck. There are some constraints applicable as regards the refurbishment options available to Council; please see below extract from the Heritage Victoria Register (see appendices) report under the heading "Permit Policy" (para' 1, page 5).

*It is the purpose of the permit exemptions to enable routine maintenance and repairs which do not damage the significant fabric of the place, or diminish its cultural significance.  
Few alterations could be made to the bridge without compromising appreciation of the bridge's design.  
Old Goulburn River Bridge is significant for the method of its construction and its grey box timber piles.  
Any proposed works that would replace or alter the fabric of the structure, or adversely affect any understanding of it should be avoided.  
A permit will be required for any substantial alterations.*

We note that this report also goes on to explain that there are numerous grounds upon which exemptions may be sought. See attached for further information.

Prior to the construction of the heritage bridge, the river crossing was facilitated by a punt. We note that the hull of that vessel remains onsite, submerged, on the downstream side of the bridge on the west side of the river. Much of the punt remains intact and is readily visible from the riverbank.

### **2.9 Utility Services**

For the purposes of a "dial before you dig" (DBYD) inquiry the area of interest was divided into 2 x specific areas as follows;

- Downstream of the heritage bridge site, and
- Upstream of the heritage bridge site to Emily Street.

From that DBYD inquiry we identified service assets in that vicinity managed by the following service providers and authorities.

- APA Group Networks, Thomastown
  - natural gas distributor.
- AusNet Electricity Services Pty Ltd
  - electricity distributor.
- Goulburn Valley Water
  - urban water and sewer services provider.
- Telstra VICTAS
  - telecommunications.
- NBN Co, VicTas
  - telecommunications.

Briefly, we have not identified any existing services infrastructure which obstruct the proposed works and require relocation. Nor have we identified any services which need to be extended to facilitate these works.

### **2.10 Other Relevant Authorities**

We note that the following relevant authorities have an interest in any development work likely to take place as a result of the various options considered in this investigation.

- Goulburn Broken Catchment Authority (GBCMA)
  - manager of waterways, catchments and biodiversity.
- Goulburn Murray Water (GMW)
  - rural water corporation, manages water usage, licenses etc.
- VicRoads
  - manages declared roads and bridges.
- Taungurung Land & Waters Council Aboriginal Corporation
  - considers cultural heritage issues, a Registered Aboriginal Party (RAP).
- Heritage Victoria
  - considers applications and issues permits for works on heritage sites.
- Department of Environment, Land, Water and Planning (DELWP)
  - public land manager.

### **2.11 Land Tenure**

The preparation of this report did not include any verification of land tenure. All property boundaries and land tenure depicted in this report and the attached drawings are indicative only and subject to verification by others. No title searches nor property boundary re-establishment has been undertaken as part of this work.

This report only considers shared path alignments which utilise existing crown reserves, ie. waterway reserves and road reserves. The options considered do not include any provision for nor any proposals which require land acquisition. We acknowledge that there may be authorised crown land occupancies, ie. crown leases or similar, which may be impacted by the proposed shared path alignment options.

### 3 REVIEW OF OPTIONS

#### 3.1 Options Review Approach

Our consideration of the various development options includes consideration of the following;

- a) Environment  
Preserve an important "Heritage Place".  
Minimise vegetation impact.  
Minimise ground disturbance, ie. less earthworks, reduced likelihood of cultural heritage impacts.
- b) Engineering  
Minimum longitudinal grade, ie. preferably less than 3%.  
Allow up to 10% grade for short distances.  
Maximise separation of shared paths from vehicles.  
Avoid road crossings where practicable.
- c) Infrastructure  
Utilise public land, crown reserves, avoid private property.  
Minimise the number of new structures required.  
Consider long term maintenance and depreciation effects.
- d) Amenity  
Optimise utilisation of visual amenity.  
Facilitate broad community use and utilisation for recreation.  
Provide a facility that will attract visitors to the region.
- e) Public Safety  
Comply with relevant Australian Standards.  
Facilitate shared use by cyclists and pedestrians.  
Eliminate potential safety hazards.

#### 3.2 Shared Path Assumptions

##### 3.2.1 Existing Shared Paths

We note that all of the existing shared paths in the vicinity of this site have sealed pavements, ie. spray seals with 7mm aggregate. The existing paths are in generally good condition and well used. Some improvements are required as regards surface drainage, tree root incursions, uneven and loose surfaces. They vary in width from about 1.5 to 2.5m wide. The existing paths are used predominantly by pedestrians, ie. mainly walkers and joggers, and occasional bicycle use.

There are some small timber structures including an elevated walkway and viewing platform immediately upstream of the Heritage Bridge site. The main path between Lions Park and the Emily Street Bridge is considered to be of an even grade and readily accessible to wheelchairs and mobility scooters.

##### 3.2.2 Accessibility

The new shared paths will be DDA accessible, ie. accessible to wheelchairs. The relevant Australian Standard being "AS 1428 Design for Access & Mobility, Part 1: General Requirements for Access - New Building Work". That standard sets minimum standards for ramp slopes and widths etc.

	<b>Width</b>	<b>Min' Gradient</b>	<b>Max' Gradient</b>	<b>Max' Distance b/n landings</b>	<b>Kerb Required</b>	<b>Handrail Required</b>	<b>Landing Required</b>
<b>Walkway</b>	1000mm	1:20	No max specified	15m (for 1:20) 25m (for 1:33)	Not if ground abutting is level	Not if ground abutting is level	Not where grade is less than 1:33
<b>Ramp</b>	1000mm	1:14	1:20	9m (for 1:14) 15m (for 1:20)	Yes	Both sides	Yes
<b>Step ramp</b>	1000mm	1:10	1:10	1900mm	Yes	Both side, or if not, then high kerb	Yes

##### 3.2.3 Facilities

Our cost estimates makes a general allowance of \$50,000 for public lighting and/or illumination. We note that there is some limited lighting and an existing public toilet at Lions Park. Our estimate makes no provision or any additional public amenities, ie. benches, toilet facilities, public shelters, or barbecue facilities etc.

### 3.3 Options Overview

Three main design options were considered and investigated for the Seymour site in response to the Mitchell Shire Council's project brief. This report considers the following options:

- **Option A**      **Heritage Feature Footbridge**
- **Option B**      **Partial Reconstruction of bridge to original "replica" bridge specifications**
- **Option C**      **New Standalone Footbridge Structure**

Repair works are required to the existing structure prior to the start of any of the three design options noted above. These repair works are summarised in Section 7.4 of the structural assessment report, and in the design drawing set.

### 3.4 Minimum Repair Works - Long-Term Stabilisation & Future Re-use of the Existing Structure

#### 3.4.1 Recent Stabilisation Work

The necessary long-term stabilisation of existing Heritage Bridge is thoroughly considered in previous reports prepared by. The recently completed works included the removal of the heavy steel bridge beams and the stabilising of the substructure with wire rope as described earlier. See appendices for a copy of the drawings depicting the recently completed works.

The steel beams previously supplied longitudinal bracing for the structure. However, once the deck and crossbeams were removed the beams became unstable and were at risk of collapse, particularly if the structure was impacted by a boat or debris. The wire rope is effectively a compensatory arrangement, providing longitudinal restraint in place of the heavy steel beams.

That recent stabilisation work also included the replacement of some crossheads and the splicing of selected piles (east side of the river). The crossheads had decayed and deemed to be of insufficient structural capacity to provide adequate support for the pier from the wire rope. Once replaced, the new crossheads provided solid anchorage to secure the wire rope.

The completed work has been successful, securing the piers in place and providing longitudinal support are now adequately supported to withstand debris impact and prevent collapse.

#### 3.4.2 Further Strengthening Work

We have completed a condition assessment of the remaining substructure to identify further strengthening works to ensure the structure has sufficient lateral stability and structural capacity to be either "self-supporting" or alternatively to support a "footbridge or replica superstructure".

The piers require further strengthening work to restore the substructure to a standard where it will adequately support a new footbridge. That work is briefly summarised as below;

- Strengthening of selected piles.
- Splicing some piles.
- Wrapping of piles.
- Restoration of cross bracing.

Please refer to the design drawing set in the Appendix of this report.

#### 3.4.3 Option Cost

GMR have prepared a construction estimate for the Minimum Repair Works of the Existing Structure as described above. Please see appendices for a summary of that estimate.

The estimate for the Minimum Repair Works of the Existing Structure is **\$1,756,466.25 (ex' GST)**.

The estimates all include a 10% contingency provision which GMR advises is appropriate for a concept design phase estimate.

### 3.5 Option A - Heritage Feature Footbridge

#### 3.5.1 Structural Capacity

The existing timber substructure consists of series of timber piers supported on 5 x driven timber piles, with a single propping pile each side. This structure previously supported a series of steel beams over a 12m span, which in turn supported significant road traffic loads. At the time of the bridge being closed road bridges were required to support a T44 standard design traffic load.

The various timber elements have all deteriorated with the passage of time. Our recent condition assessment confirmed that the piers now have a significantly reduced load carrying capability, ie. the sound piles averaging about 20 to 25% of their original capability. However, we also acknowledge that some piles have actually failed and no effective load carrying capacity.

#### 3.5.2 Substructure

The future utilisation of the remaining structure for use as a footbridge and shared path has a considerably reduced design traffic load. The other consideration for structural stability of the substructure is the potential for debris impacts during flood events. Our previous review concluded that for stability we need to have at least 3 of the 5 x piles need to sound.

It is generally accepted that timber piles are most vulnerable to decay at (and above) water level where they are subject to constant wetting and drying. That part of the pile which remains below water level or embedded into the supporting ground is generally sound and not impacted by decay. Accordingly, the preferred methodology for the restoration of the timber substructure includes pile splicing (ie. replacing the decayed elements with sound timber), strengthening (ie. addition of steel stiffeners) and wrapping (ie. the addition of a protective sheath filled with grout). Our condition assessment has identified the piles considered most at risk which either need to be spliced, strengthened and or wrapped.

#### 3.5.3 Superstructure

As above, the recently removed heavy steel beams were designed to support significant heavier loads, ie. two lanes of moving heavy vehicles. The loads associated with a footbridge are significantly lighter. We recommend that if Council decides to proceed with the utilisation of the Heritage Bridge as footbridge that should be undertaken without using the heavy steel beams which were recently removed from the structure. The heavy beams can be readily replaced with a much lighter, steel fabricated truss which will be easier to construct and install.

The steel fabricated trusses can be prefabricated offsite and then transported to the site in segments. The truss segments can then be assembled onsite and progressively lifted in place or alternatively winched across the top of the existing piers over rollers.

The recently installed wire rope supports have been placed along the outer edge of the crossheads on the piers to enable them to remain insitu and facilitate the construction on the footbridge in the clear space between them. Please see attached engineering drawings for details.

#### 3.5.4 Why Consider a Heritage Feature Structure?

The heritage feature footbridge incorporates a lightweight steel truss substructure supported by the refurbished existing timber bridge piers together with an all-timber decking and bridge rail superstructure. This arrangement has been designed to span the entire Goulburn River which shall provide a pedestrian crossing with a 6m wide path.

The footbridge deck concept has been created to provide the user with a heritage aesthetic feel whilst providing a modern engineering low-cost solution to span the river.

#### 3.5.5 Option Cost

GMR have prepared a construction estimate for the Heritage Feature Footbridge Structure as described above. Please see appendices for a summary of that estimate.

The total engineer's estimate for the Trussed Footbridge Structure is **\$1,140,222.16 (ex' GST)**.

The estimates all include a 10% contingency provision which GMR advises is appropriate for a concept design phase estimate.

### 3.6 Option B - Partial Reconstruction "Replica" Bridge

#### 3.6.1 Why Consider a Replica Structure?

GMR's recent experience with the refurbishment of Kirwan's Bridge over the Goulburn River, north of Nagambie has some parallels with the Heritage Bridge at Seymour. That bridge like Seymour is also a heritage structure, requiring the approval of Heritage Victoria before any works can take place. However, its circumstances differ slightly due to its remaining in use as an active road bridge.

Kirwan's Bridge is also a timber bridge, constructed at about the same time as the Seymour Bridge. However, it is significantly longer, ie. being about 310m long and has 55 x spans. The degraded timber substructure has reduced the load carrying capability of the structure. The Strathbogie Shire Council has had difficulty maintaining the structure.

It has also suffered the long-term effects of wear, tear and decay. As a result of the escalating maintenance costs, Council decided to investigate the replacement of the original bridge with a more durable concrete structure in 2011. GMR prepared a design and made submissions to Heritage Victoria (HV) for that work to proceed. The subsequent approval from HV included a requirement for a "replica structure" adjacent to the new bridge and a "viewing platform" with interpretative signage to inform visitors of its significance.

Despite securing the necessary approvals, a lack of funding caused the Strathbogie Shire to decide not to proceed with the replacement or replica structure. Council opted to proceed with pile strengthening and splicing work instead. That work was completed in 2018. For that reason, we anticipate that HV in the event of being asked to approve the replacement of the original structure or alternatively consider a substantial modification of that structure, will require the development of a "replica structure".

From our recent discussions with Council, we understand that any replica structure should be based upon the original timber beam and corbel design, not the modified heavy steel beam structure, ie. strengthened during the 2<sup>nd</sup> world war. Also, that they prefer a full width structure.

#### 3.6.2 Replica Structure Overview

Heritage Victoria acknowledges that the continued repair and refurbishment of structures can ultimately result in there being very little of the original structure remaining insitu. They acknowledge that through regular maintenance and care, that like grandfather's axe which has had 4 new handles and 2 new heads, but it is still grandfather's axe.

Similarly, we anticipate that HV will readily acknowledge that the entire, original timber structure cannot be preserved insitu forever. Also, that they will accept that a representative structure in the same context, using like materials and the original construction methodology of the original structure is a more practicable alternative. That replica need not be the entire structure, but a representative portion which where possible may also include some original components.

To achieve this, we propose that the replica structure utilise and retain the existing stabilised structure and to develop a heritage reproduction of the original timber beam and corbel bridge. We have positioned the replica to be accessible to the eastern abutment and will extend out over pier No's. 6, 7 and 8 to showcase the replica bridge.

The replica structure needs to be readily visible to the public and include interpretive signage providing historic background information relative to the site and the original structure. Council have asked for the replica be 'accessible', GMR has incorporated this into the design. To facilitate that visibility the replica needs to be seen from the existing adjacent structure, on the east side, upstream of the bridge.

#### 3.6.3 Option Cost

GMR have prepared a construction estimate for the Replica Structure as described above. Please see appendices for a summary of that estimate.

The total engineer's estimate for the Replica Structure is **\$491,059.85 (ex' GST)**.

The estimates all include a 10% contingency provision which GMR advises is appropriate for a concept phase estimate.

### 3.7 Option C - New Standalone Footbridge Structure

#### 3.7.1 Why Consider a Replacement Structure?

Any refurbishment and utilisation of the existing structure will be contingent upon the successful strengthening of the substructure. The deck and superstructure had deteriorated to a point where it was no longer repairable. The steel beams were removed because they were no longer secure and at risk of collapse. Only the substructure remains. We note from our recent condition assessment that the driven timber pile piers have continued to deteriorate.

The timber piles are now more than 130 years old and have a significantly reduced load carrying capability. Several of the piles now need to be replaced, strengthened or spliced. A successful refurbishment of the existing timber piles and piers is expected to result in an extended effective service life of about 20 to 25 years for the substructure. The continued deterioration of the original timber piles is inevitable and unavoidable, ie. requiring ongoing monitoring and further maintenance.

A new structure would be expected to have a service life of at least 50 and possibly 100 years.

#### 3.7.2 Preferred Alternative Structure Type

The existing bridge is a multi-span beam or girder bridge, supported on driven pile piers, a common solution for that era, utilising the available resources within that area at that time. The deployment of this type of structure was limited by the load carrying capabilities and span of the beams, hence the short spans and need for multiple spans and piers.

With modern developments in technology, we now have a wider range of construction options available, allowing increased spans and greater range of construction materials.

Bridge designs which minimise incursions into the waterway are generally favoured over structures which require disturbance of the waterways. The placement of piers and structure within the waterway need to be designed to withstand debris impacts during flooding. Suspension bridges and cable stay bridges facilitate longer spans and thereby avoid waterway intrusions.

A suspension bridge where the supporting structures are placed outside the waterway requires a relatively large footprint at the abutments to facilitate the installation of anchor blocks. Our consideration of an alternate crossing site therefore needs to ensure that sufficient space is required each side of the waterway.

#### 3.7.3 Suspension Bridge Design

Long span suspension bridges are susceptible due to instability as a result of movement. To mitigate this problem, we propose to deploy a semi-rigid or stiffened superstructure. That superstructure will consist of a prefabricated, 3 x dimensional truss. The truss will be preassembled on site, in segments and then lifted in place and attached to the main cables. Additional sway control measures may need to be considered.

The main cables will be supported on propped A frames, placed each side of the waterway. The A frames will be propped in both planes, ie. laterally and longitudinally. The A frames will remain exposed to debris impact; however, the likelihood of this occurring reduces if they are placed higher up the bank, ie. where flood waters are shallower and less likely to have large debris elements which may impact the structure.

#### 3.7.4 Access Ramps

The deck of the proposed suspension bridge needs to be set above ARI 100 level to avoid damage from any debris impact during flood events. To facilitate DDA access to bridge significant access ramps will be required on each of the bridge approaches.

#### 3.7.5 Option Cost

GMR have prepared a construction estimate for the New Standalone Structure as described above. Please see appendices for a summary of that estimate.

The total of that engineer's estimate is **\$1,459,298.42 (ex' GST)**.

The estimates all include a 10% contingency provision which GMR advises is appropriate for a concept design phase estimate.

### **3.8 Structural Options 3D Images**

To facilitate public discussion and consultation GMR has prepared a series of images depicting the following structural options. Please refer to the appendices to review the images.

- Photoshop Imagery
  - based upon a 3D Revit based design over digital imagery, using Photoshop software.
- Revit Imagery
  - 3D models developed with Revit software.
  - depicting the replica structure and suspension bridge.

## 4 SUMMARY

### 4.1 Options Overview & Cost Summary

Options investigated are briefly described as:

#### Minimum Repair Works - Long-Term Stabilisation & Future Re-use of the Existing Structure

Provides additional stabilisation works to strengthen the existing substructure sufficiently to provide lateral stability, to be self-supporting, have capacity to withstand debris impact and is the prerequisite to support a lightweight truss footbridge or replica structure (Options A or B).

#### Option A Heritage Feature Footbridge

Provides a lightweight, steel fabricated truss superstructure and a 6m wide "heritage feature" full length river crossing shared path, supported upon the stabilised existing timber substructure.

#### Option B Partial Reconstruction of bridge to original "replica" bridge specifications

Provides a replica of the original timber beam and corbel bridge, supported upon the stabilised existing timber substructure.

#### Option C New Standalone Footbridge Structure

Provides an entirely new footbridge structure, a 2.5m wide suspension bridge complete with access ramps, alongside the existing heritage bridge structure.

The following cost estimates include a contingency provision of 10%:

Option Description	Engineers Estimate (ex' GST)
Minimum Repair Works - Long-Term Stabilisation & Future Re-use of the Existing Structure	\$1,756,466.25
Option A - Heritage Feature Footbridge	\$1,140,222.16
Option B - Partial Reconstruction of bridge to original "replica" bridge specifications	\$491,059.85
Option C - New Standalone Footbridge Structure	\$1,459,298.42

### 4.2 Commentary

In consideration of the above we briefly summarise the report findings as follows;

- Formal Approval**  
 The formal approval of any of the above options will require formal input from and liaison with;
  - Heritage Victoria,
  - GBCMA Works on a Waterway Approval,
  - a vegetation impact assessment, and a Cultural Heritage Management Plan (CHMP) is required.
- Replica Structure**  
 The replica structure utilises the existing viewing platform, where an interpretive information can be provided to explain the heritage and context of the original structure.
- Alternate Structure**  
 The preferred new structure is a suspension bridge-based solution, and should be situated adjacent to the existing bridge, restoring previous linkages, and activating the community's connection with the Goulburn River.  
 A new structure would be expected to have a service life of 50 to 100 years.
- Utilisation of Heritage Bridge**  
 The existing Heritage Bridge is well situated to continue to serve the community.  
 The utilisation and refurbishment of the existing structure will require further stabilisation and strengthening of the substructure.  
 The incorporation of a lightweight truss superstructure solution is recommended.  
 A successful refurbishment of the existing timber piles and piers is expected to result in an extended effective service life of about 20 to 25 years for the substructure.

## 5 RECOMMENDATION

That council provide GMR Engineering Services their selection criteria breakdown for the development so that a selection and recommendation of a preferred option can be considered.

## 6 ACKNOWLEDGEMENTS & REFERENCES

The preparation of this design report includes reference to a number of documents including Council's project brief, bridge design standards and guidelines, walking trail design guidelines, topographic mapping, aerial imagery, the planning scheme, various items of correspondence, conversations etc.

We have attempted to acknowledge the source or origin of that material throughout this document. We would like to acknowledge the input and information received from Council staff and officers.

This report refers to the following guidelines, Manuals, standards, and technical references (but is not limited to) throughout:

- Mitchell Shire Council Project Brief (2020).
- AustRoads Guide to Bridge Technology.
- Infrastructure Design Manual.
- VicRoads Traffic Engineering Manual Volume 1 & 2.
- VicRoads Code of Practise & Bridge Technology Notes.
- Mitchell Planning Scheme.
- Seymour 3660 Structure Plan.
- AS 5100 Bridge Design Code.

*Prepared by JMK, 19/8/20  
Reviewed by GMR, 19/8/20  
Updated by JMK, 20/10/20  
Final by JMK, 23/11/20  
Updated by JMK, 16/02/21  
Updated by JMK, 18/02/21*

## **7 APPENDICES**

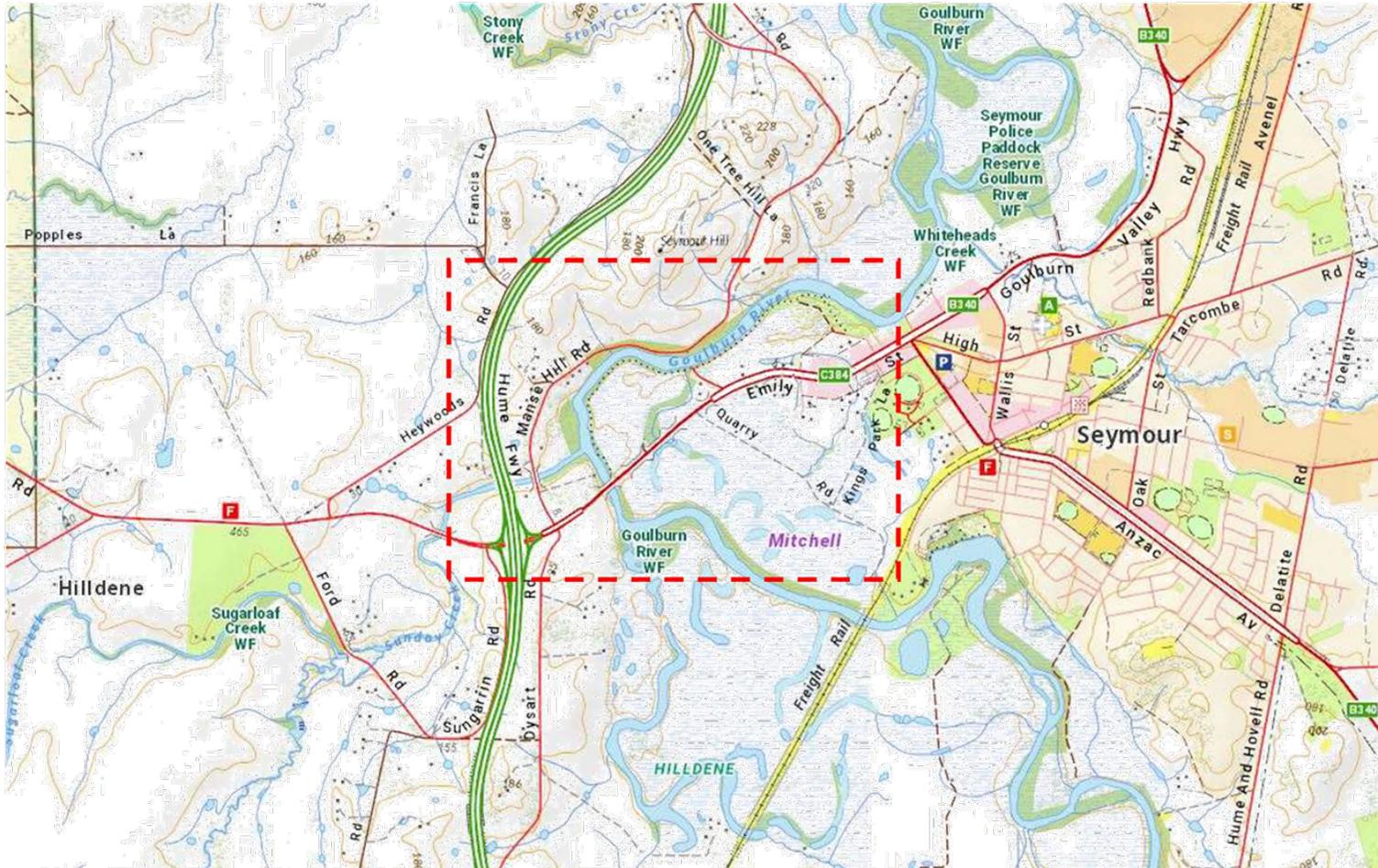
### **7.1 Locality Map & Aerial Image**

- Locality Map – Area of Interest (Topographic)
- Locality Map – Enlargement (Topographic)
- Locality Map - Aerial Imagery

GMR Engineering Services  
Mitchell Shire Council – Seymour Heritage Bridge – Stage 2  
Option Assessment Report

Ref. GMR07048-9

### LOCALITY MAP – Area of Interest

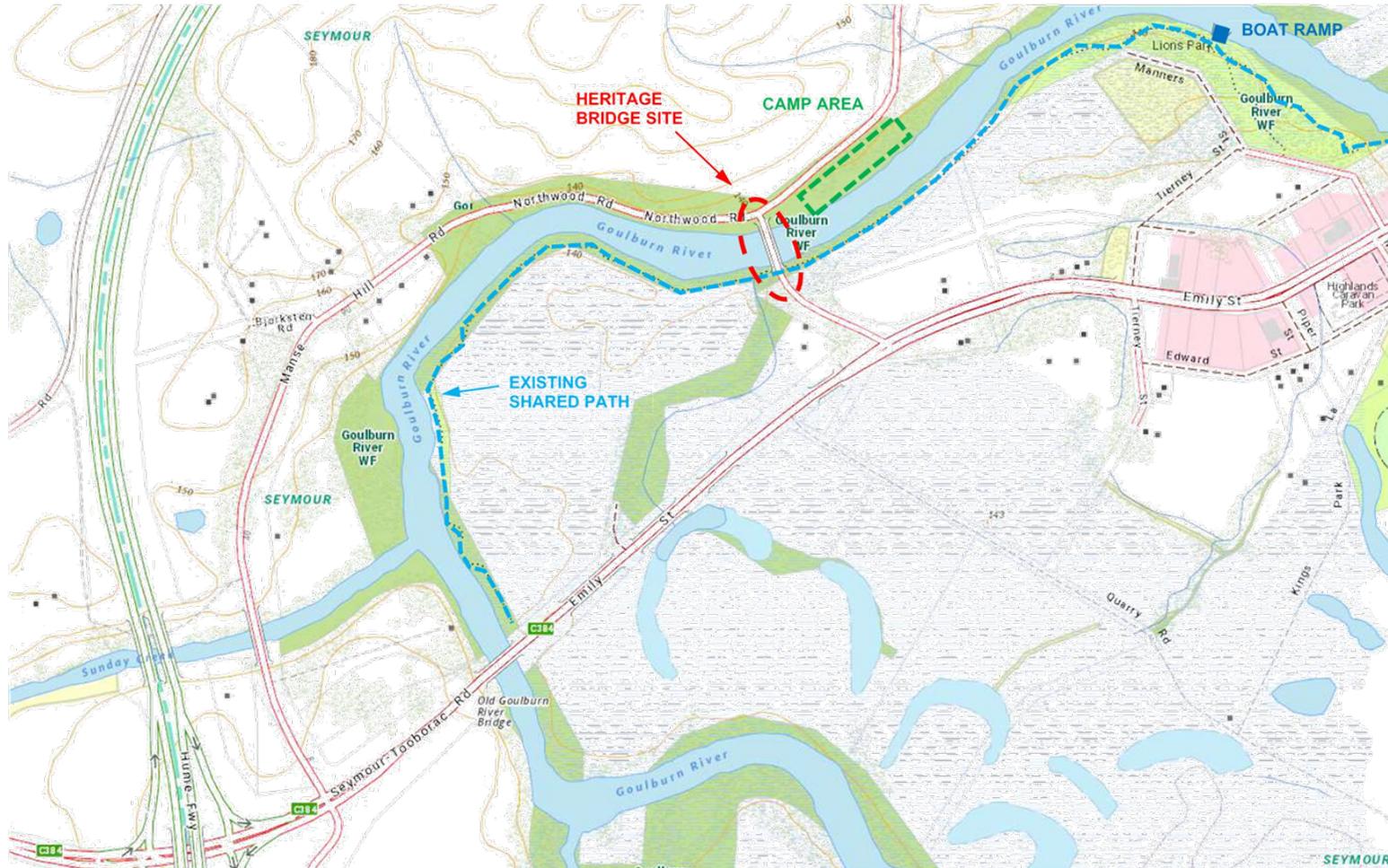


Topographic Image extract from <https://www.emergency.vic.gov.au/respond/>.

GMR Engineering Services  
Mitchell Shire Council – Seymour Heritage Bridge – Stage 2  
Option Assessment Report

Ref. GMR07048-9

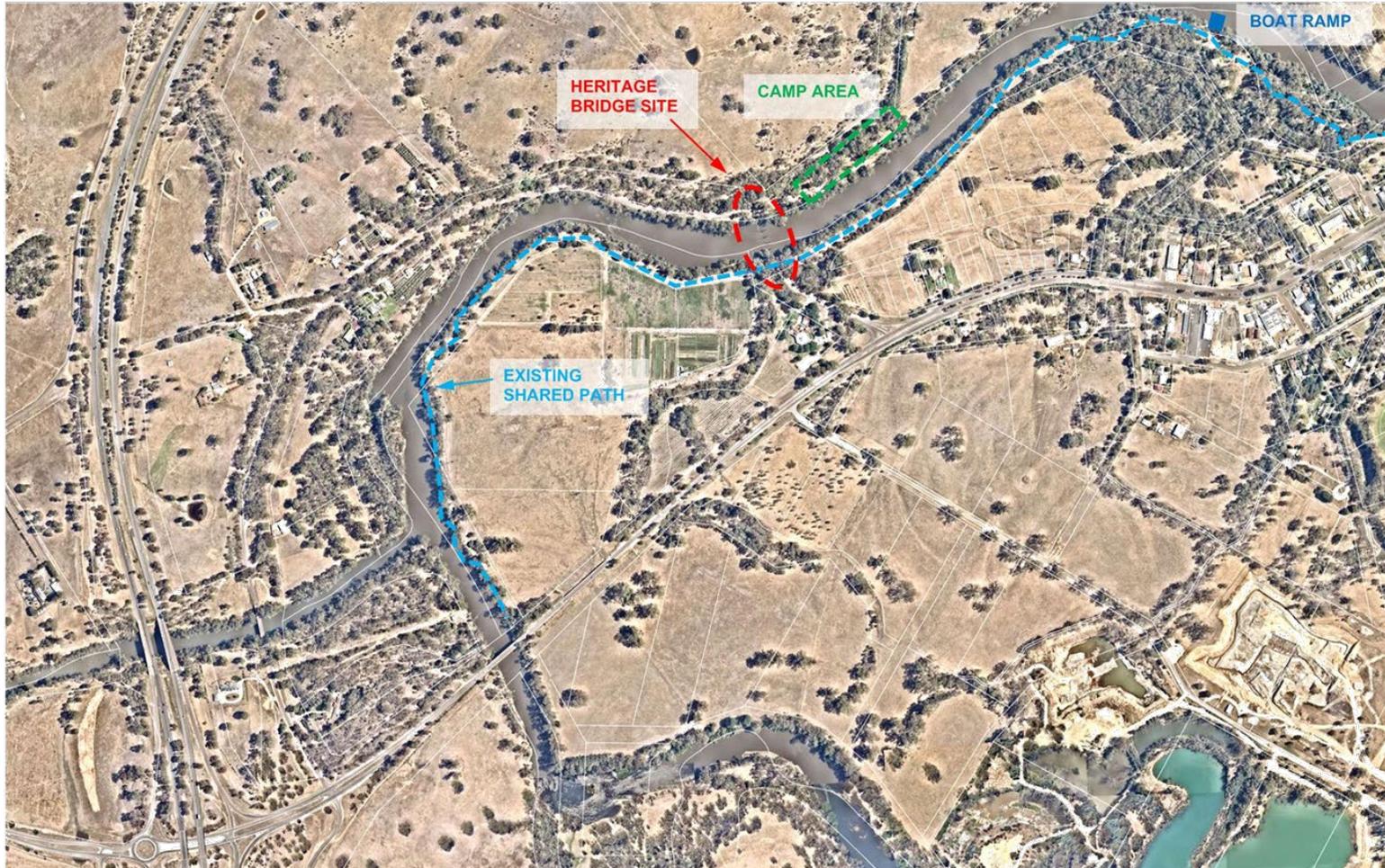
### LOCALITY MAP – Enlargement



Topographic Image extract from <https://www.emergency.vic.gov.au/respond/>.

P:\Work\2007\GMR07048-09 Seymour Heritage Bridge - Stage 2\Documents\Option Assessment Report\Seymour Heritage Bridge - Option Assessment Report V6 (18-02-21).docx

**LOCALITY MAP – Aerial Imagery**



Aerial Image extract from [www.nearmap.com](http://www.nearmap.com), dated 25/1/20.

P:\Work\2007\GMR07048-09 Seymour Heritage Bridge - Stage 2\Documents\Option Assessment Report\Seymour Heritage Bridge - Option Assessment Report V6 (18-02-21).docx

## **7.2 Heritage Victoria Report**

- Victorian Heritage Register Extract  
– ref. PROV H0092, HERMES ID 6157 (updated March 2006)

GMR Engineering Services  
Mitchell Shire Council – Seymour Heritage Bridge – Stage 2  
Option Assessment Report

Ref. GMR07048-9

***7.3 Heritage Permit P16026, dated 19/10/10.***

## 7.4 GMR Engineering Drawing Schedule

DRAWING SCHEDULE			
	DRAWING NUMBER	DRAWING TITLE	REVISION
	GMR07048-09.01	COVER SHEET	
EXISTING CONDITIONS	GMR07048-09.02	EXISTING CONDITIONS - AERIAL OVERALL	A
	GMR07048-09.03	EXISTING CONDITIONS - OVERALL	A
OPTION A	GMR07048-09.04	"HERITAGE FEATURE" SITE PLAN	B
	GMR07048-09.05	"HERITAGE FEATURE" LAYOUT	B
	GMR07048-09.05	"HERITAGE FEATURE" DETAILS	B
OPTION B	GMR07048-09.07	"REPLICA" SITE PLAN	A
	GMR07048-09.08	"REPLICA" LAYOUT	A
OPTION C	GMR07048-09.09	NEW STANDALONE FOOTBRIDGE SITE PLAN	A
	GMR07048-09.10	NEW STANDALONE FOOTBRIDGE LAYOUT	A
MINIMUM REPAIR WORKS	GMR07048-09.11	ASSESSMENT PLAN	A
	GMR07048-09.12-13	LONG-TERM STABILISATION OF EXISTING STRUCTURE	A

GMR Engineering Services  
Mitchell Shire Council – Seymour Heritage Bridge – Stage 2  
Option Assessment Report

Ref. GMR07048-9

### **7.5 GMR Engineers Estimate**

GMR Engineering Services  
Mitchell Shire Council – Seymour Heritage Bridge – Stage 2  
Option Assessment Report

Ref. GMR07048-9

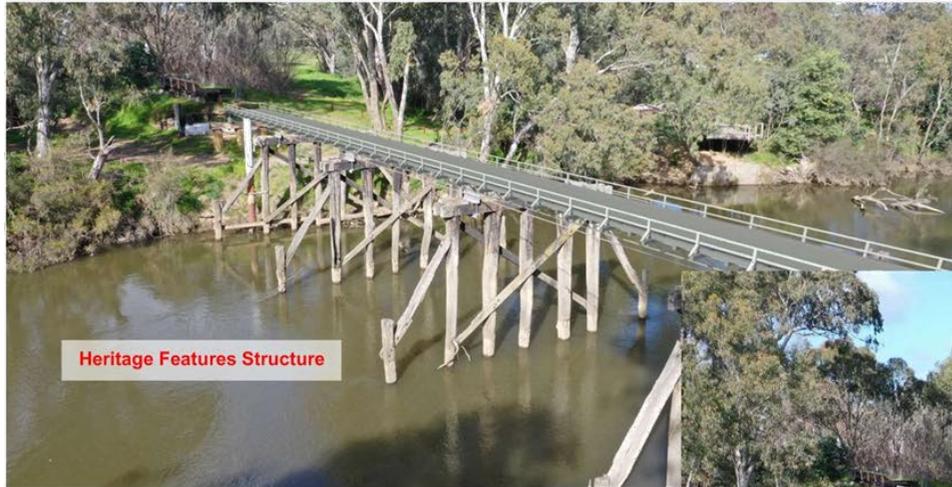
**7.6 GMR Bridge Condition Assessment Report**

GMR Engineering Services  
Mitchell Shire Council – Seymour Heritage Bridge – Stage 2  
Option Assessment Report

Ref. GMR07048-9

***7.7 GMR Existing Conditions Site Photo Log***

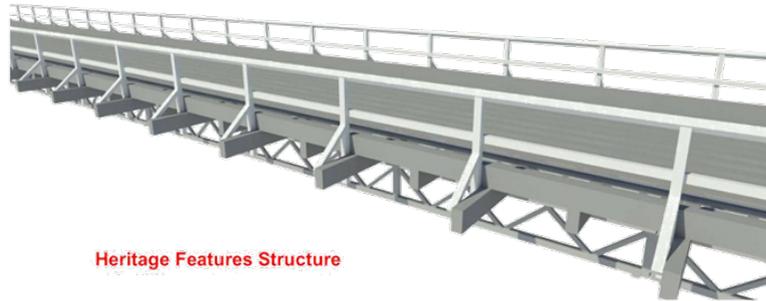
7.8 3D Images Depicting Structural Options – Photoshop & Revit Images  
Photoshop Images



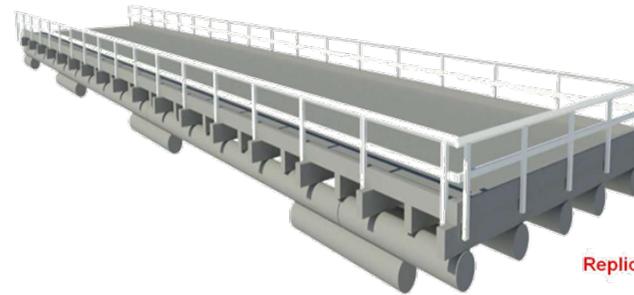
Photoshop Image - Continued



Revit Images



Heritage Features Structure



Replica Structure 1



Suspension Bridge

GMR Engineering Services  
CONFIDENTIAL

Client; Mitchell Shire Council  
Project; Heritage Bridge over Goulburn River  
Location; Seymour  
Costing summary

Produced 12:12 PM, 18/02/2021

COST SUMMARY			
Project Options Comparison	OPTION A - HeritageFeature Footbridge	OPTION B - Partial Reconstruction Replica Bridge	OPTION C - New Standalone Footbridge Structure
1 Preliminaries	\$ 62,950.00	\$ 45,200.00	\$ 64,700.00
2 Site Preparation	\$ 3,000.00	\$ 3,000.00	\$ 30,000.00
3 Earthworks / Excavation	\$ 10,000.00	\$ 7,500.00	\$ 30,000.00
4 Subgrade Preparation and Granitic Sand Path	\$ 5,500.00	\$ 2,500.00	\$ -
5 Traffic Control & Road Crossings	\$ 9,000.00	\$ 6,500.00	\$ 42,000.00
6 Trussed Footbridge	\$ 802,910.00	\$ -	\$ -
7 Replica Structure	\$ -	\$ 290,245.20	\$ -
8 New Standalone FootBridge	\$ -	\$ -	\$ 976,005.00
9 Landscaping and Reinstatement	\$ 5,000.00	\$ 2,500.00	\$ 20,000.00
10 Public Lighting	\$ 50,000.00	\$ 50,000.00	\$ 50,000.00
11 Practical completion inspection	\$ 1,000.00	\$ 750.00	\$ 1,000.00
12 Maintenance Period	\$ 5,000.00	\$ 2,500.00	\$ 8,000.00
13 Final Inspection	\$ 1,000.00	\$ 750.00	\$ 1,000.00
14 Detail Design Development Costs	\$ 33,437.60	\$ 14,400.58	\$ 42,794.68
15 Project Management Cost	\$ 47,768.00	\$ 20,572.26	\$ 61,135.25
16 Contingency	\$ 103,656.56	\$ 44,641.80	\$ 132,663.49
<b>Total Cost (ex GST)</b>	<b>\$ 1,140,222.16</b>	<b>\$ 491,059.85</b>	<b>\$ 1,459,298.42</b>
<b>Notes</b>			
1	This estimate is compiled based upon information drawn from the "Cordell Commercial & Industrial Building Cost Guide - Victoria", supplier quotes and from recent tender outcomes.		
2	At the time of writing our current version of "Cordell Commercial & Industrial Building Cost Guide - Victoria" is dated October 2020.		
3	No provision for cost of capital, land purchase, holding or delay costs, contingencies, legal costs or stamp duty or profit unless shown.		
4	All areas taken from dimensions shown on GMR "PRELIMINARY ONLY" drawings, dated 16/02/21.		
5	All costs based upon information available at the time of compilation.		
6	All materials, dimensions and costs subject to detail design development and provision of specification for individual treatments for each pile and pier.		
7	All sub consultants costs subject to quotation and confirmation.		
8	GMR Engineering Services does not purport to be Quantity Surveyors.		
9	Any cost estimates prepared by GMR should be considered as a preliminary advice only.		
10	We recommend that Quantity Surveyors be engaged should you need accurate or more detailed cost estimates.		
11	Construction cost outcomes can vary considerably and are very much dependant upon the prevailing market conditions at the time of construction.		
12	Construction cost outcomes are also dependant upon the availability of suitable contractors and materials at the time of construction.		
13	The above estimate has been derived from assumptions as stated within the estimate and the following appendices Appendix 1 - Construction Methodology derived by GMR's Works Methodology dated 03/04/2019. Appendix 2 - Timber Piles Quote Koppers Australia. Appendix 3 - Labour & Construction Equipment Costs derived from Cordell Commercial & Industrial Building Cost Guide - Victoria.		
			Prepared by J MK 21/10/20
			Updated by SMEK 22/10/20
			Updated by J MK 23/11/20
			Updated by J MK 16/02/21
			Updated by J MK 18/02/21

Seymour Heritage Bridge - Options Estimate V5 (18-02-21); Costing summary

GMR Engineering Services  
CONFIDENTIALClient: Mitchell Shire Council  
Project: Heritage Bridge over Goulburn River  
Location: Seymour  
Option A - Heritage Footbridge

Produced 12:12 PM, 18/02/2021

Item	Description	Qty	Units	Rate	Cost	Subtotal
<b>1</b>	<b>Preliminaries</b>					
1.1	<b>Site Establishment</b>					
	To establish initial presence on site and prepare for works, ensure all necessary equipment is established on site per item, site establishment costs include the provision of a temporary site office and associated equipment, temporary toilet facilities, any safety barricades and equipment's as required, provision of temporary signage as required and other items deemed necessary by the contractor to ensure smooth progress and successful completion of the project.	1	item	\$ 10,000.00	\$ 10,000.00	
1.2	<b>Quality Plan</b>					
1.2.1	<b>Traffic Management Plan</b>					
	To prepare and submit necessary documents in response to specification per item.	1	item	\$ 1,800.00	\$ 1,800.00	
1.2.2	<b>Site Safety Plan</b>					
	To prepare and submit necessary documents in response to specification per item.	1	item	\$ 1,800.00	\$ 1,800.00	
1.2.3	<b>Construction Management &amp; Site Environmental Management Plan</b>					
	To prepare and submit necessary documents in response to specification per item.	1	item	\$ 1,800.00	\$ 1,800.00	
1.2.4	<b>Cultural Heritage Management Plan</b>					
	To prepare and submit necessary documents in response to specification per item.	1	item	\$ 30,000.00	\$ 30,000.00	
1.2.5	<b>Quality Control, Inspection &amp; Test Plan</b>					
	To prepare and submit necessary documents in response to specification per item.	1	item	\$ 1,800.00	\$ 1,800.00	
1.3	<b>Setout of Works</b>					
	To undertake necessary computations, supply, place and maintain required paint marks, nomenclature, markings etc. as per approved drawings for the duration of the project per item.	1	item	\$ 12,500.00	\$ 12,500.00	
1.4	<b>Service Locations (provisional item only)</b>					
	To liaise with relevant authorities and agencies, verify, locate and physically expose (where appropriate) services and implement necessary protective measures per item.	0	item	\$ -	\$ -	
1.5	<b>Site Induction Register</b>					
	To induct and maintain a register of all staff, subcontractors and suppliers working on this site inducted on the "Construction Methodology and Site Environmental Management Plan" per item.	1	item	\$ 250.00	\$ 250.00	
1.6	<b>Site Barricades and Signage</b>					
	To maintain in-situ existing site barricade and warning signage erected by the Council throughout the duration of works per item.	1	item	\$ 1,500.00	\$ 1,500.00	
1.7	<b>Authority Liaison and Approval</b>					
	To liaise with the relevant authorities (including GBCMA and Heritage Victoria), secure any required permits, including a works in waterway permit and execute these works in continuous liaison with these authorities to their satisfaction per item.	1	item	\$ 1,500.00	\$ 1,500.00	
						<b>Preliminaries \$ 62,950.00</b>
<b>2</b>	<b>Site Preparation</b>					
2.1	<b>Stripping &amp; Stockpiling of Topsoil (Provisional)</b>					
	To strip to a minimum depth of 100 mm (vary to suit) to be clear of any silt and impurities, collect and stockpile, clean, vegetable and root free top soil from site and store at an approved secure location onsite for later use, and dispose of at an approved location any unusable materials per item.	1	item	\$ 3,000.00	\$ 3,000.00	
						<b>Site Preparation \$ 3,000.00</b>
<b>3</b>	<b>Earthworks / Excavation</b>					
3.1	Earthworks including excavation, trimming and compaction to alignment, line and level pay any fees if required to and dispose off to an approved location within 5km of the site per item.					
	- Earthworks is an approximation only.	1	item	\$ 10,000.00	\$ 10,000.00	
						<b>Earthworks / Excavation \$ 10,000.00</b>
<b>4</b>	<b>Subgrade Preparation and Granitic Sand Path</b>					
4.1	To prepare subgrade, backfill subsidence's, break out wombat burroughs, cart, spread, trim to profile and compact with approved fill material where required.					
<b>Trail</b>	<b>50m x 2.5m wide</b>	125	m <sup>2</sup>	\$ 5.00	\$ 625.00	
4.2	<b>Granitic Sand Pavement</b>					
	To supply, cart, place, spread and consolidate in place approved granitic sand to 150mm depth 2.5m wide path.					
<b>Trail</b>	<b>50m x 2.5m wide</b>	125	m <sup>2</sup>	\$ 15.00	\$ 1,875.00	
4.3	<b>Fence</b>					
	To supply, install fence as per drawing per lin.m	150	lin.m	\$ 20.00	\$ 3,000.00	
						<b>Subgrade Preparation and Granitic Sand Path \$ 5,500.00</b>

Seymour Heritage Bridge - Options Estimate V5 (18-02-21); Option A - Heritage Footbridge

GMR Engineering Services  
CONFIDENTIAL

Client: Mitchell Shire Council  
Project: Heritage Bridge over Goulburn River  
Location: Seymour  
Option A - Heritage Footbridge

Produced 12:12 PM, 18/02/2021

Item	Description	Qty	Units	Rate	Cost	Subtotal
<b>5 Traffic Control &amp; Road Crossings</b>						
5.1	<u>Construction Phase Traffic Control</u> For the duration of the works supply the following site management traffic control devices and systems as may be required to protect the works and the public including all bridgeworks.	1	item	\$ 5,000.00	\$ 5,000.00	
5.2	<u>General Signage</u> The proposed sign is a 2 piece sign on a single post. The signs will include a 600 x 400mm information sign (white on brown) on top based upon the G10 sign with the route name and bicycle symbol, also a separate distance marker below, being a white on green sign based on the G11 sign 250 x 450mm. Nominal provision only	4	no.	\$ 500.00	\$ 2,000.00	
5.3	<u>Traffic &amp; Information Signs</u> Supply and install information and regulatory signs as specified in detail design documents per no.	2	no.	\$ 1,000.00	\$ 2,000.00	
<b>Traffic Control &amp; Road Crossings</b>						<b>\$ 9,000.00</b>
<b>6 Trussed Footbridge</b>						
6.2	<u>Steel Truss Work</u> To supply, fabricate, place & construct bridge structure consisting of bored piers, abutments, trusses, bearer, joists, FRP decking, handrails & balustrade. Includes all craneage, welding, fixings, bolts and sundries.					
6.2.1	Fabricate & place trusses per tonne. King Post construction method is proposed using wire ropes & winches to move the individual truss segments into position	30	t	\$ 8,000.00	\$ 240,000.00	
6.2.2	<u>Truss members</u>	27	t	\$ 7,500.00	\$ 202,500.00	
6.2.3	<u>Cross bracing members</u>	2.5	t	\$ 7,500.00	\$ 18,750.00	
6.2.4	<u>Galvanising</u>	30	t	\$ 1,500.00	\$ 45,000.00	
6.3	<u>Timber Structure</u> To supply, deliver & install timber Durability Class 1 or 2 bridge components, including all connections, plates, bolts, fixtures and fittings as required by the drawings per lin.m					
6.3.1	<u>400 x 200 x 8000mm length timber joists</u>	780	m	\$ 120.00	\$ 93,600.00	
6.3.2	<u>300 x 150mm timber kerb</u>	220	m	\$ 70.00	\$ 15,400.00	
6.3.3	<u>200 x 100mm timber decking boards</u>	3,100	m	\$ 50.00	\$ 155,000.00	
6.3.4	<u>100 x 100mm timber Guardrail posts 1.6m long</u>	160	m	\$ 40.00	\$ 6,400.00	
6.3.5	<u>100 x 100mm timber Guardrail post brace 0.6m long</u>	60	m	\$ 45.00	\$ 2,700.00	
6.3.6	<u>100 x 75mm timber Guardrail - midrail</u>	220	m	\$ 38.00	\$ 8,360.00	
6.3.7	<u>100 x 100mm timber Guardrail - top rail</u>	220	m	\$ 40.00	\$ 8,800.00	
6.4	<u>Deck Bollards</u> To supply, deliver and install bollards to Bridge Deck as per drawings per number.	8	no.	\$ 800.00	\$ 6,400.00	
<b>Trussed Footbridge</b>						<b>\$ 802,910.00</b>
<b>7 Replica Structure</b>						
<b>Replica Structure</b>						<b>\$ -</b>
<b>8 New Standalone FootBridge</b>						
<b>New Standalone FootBridge</b>						<b>\$ -</b>
<b>9 Landscaping and Reinstatement</b>						
9.1	<u>Reinstatement of disturbed / damaged areas</u> To make good and reinstate disturbed / damaged areas after completion of works per item (provisional item)	1	item	\$ 5,000.00	\$ 5,000.00	
<b>Landscaping and Reinstatement</b>						<b>\$ 5,000.00</b>
<b>10 Public Lighting</b>						
	Allowance for public lighting along paths, at road crossings or at bridges has been included (nominal allowance)	1	item	\$ 50,000.00	\$ 50,000.00	
<b>Public Lighting</b>						<b>\$ 50,000.00</b>
<b>11 Practical completion inspection</b>						
11.1	To conduct a practical completion inspection in conjunction with the Superintendent and document any defects or omissions and rectify the defects to the satisfaction of the superintendent per item.	1	item	\$ 1,000.00	\$ 1,000.00	
<b>Practical completion inspection</b>						<b>\$ 1,000.00</b>
<b>12 Maintenance Period</b>						
12.1	<u>Duration of works</u> To maintain the site for the duration of the works, to ensure serviceability through out the works i.e. to make good any storm damage and including any routine maintenance etc. per item.			no cost to Council.		
12.2	<u>Practical completion</u> To clean up the site on completion, remove plant and equipment and any surplus materials etc.			no cost to Council.		

Seymour Heritage Bridge - Options Estimate V5 (18-02-21); Option A - Heritage Footbridge

GMR Engineering Services  
CONFIDENTIAL

Client; Mitchell Shire Council  
Project; Heritage Bridge over Goulburn River  
Location; Seymour  
Option A - Heritage Footbridge

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Item	Description	Qty	Units	Rate	Cost	Subtotal
12.3	<b>As Constructed Drawings</b>					
	To submit to the council for construction drawings further to practical completion and after addressing any identified defects per item.	1	item	\$ 5,000.00	\$ 5,000.00	
12.4	<b>Maintenance period</b>					
	To maintain the site for the duration of the defects liability period, i.e. to clean out sediment traps etc., make good any storm damage, accidental or otherwise as may be provided for under the insurance cover provided.			no cost to Council.		
						<b>Maintenance Period \$ 5,000.00</b>
13	<b>Final Inspection</b>					
13.1	To conduct a final inspection at the end of the maintenance period and rectify any defects per item	1	item	\$ 1,000.00	\$ 1,000.00	
						<b>Final Inspection \$ 1,000.00</b>
						<b>Sub Total \$ 955,360.00</b>
14	<b>Detail Design Development Costs</b>					
	Nominal allowance 3.5% of estimated cost of works		3.5%	\$ 955,360.00	\$ 33,437.60	
						<b>Detail Design Development Costs \$ 33,437.60</b>
15	<b>Project Management Costs</b>					
	Nominal allowance 5% of estimated cost of works		5.0%	\$ 955,360.00	\$ 47,768.00	
	<i>Project Management Costs include review and approval of the shop drawings, review and approval of the construction management plan and the safe work method statements by the contractor, continuous liaison with the contractor and Council and weekly on site inspections additional inspections of the hold points including inspection of the welding quality, fabrication, etc. complete.</i>					
						<b>Project Management Costs \$ 47,768.00</b>
						<b>Sub Total \$ 1,036,565.60</b>
16	<b>Contingency</b>					
	Provision 10% of total cost		10%	\$ 1,036,565.60	\$ 103,656.56	
						<b>Contingency \$ 103,656.56</b>
						<b>OVERALL SUBTOTAL (ex. GST) \$ 1,140,222.16</b>

Seymour Heritage Bridge - Options Estimate V5 (18-02-21); Option A - Heritage Footbridge

GMR Engineering Services  
CONFIDENTIAL

Client; Mitchell Shire Council  
Project; Heritage Bridge over Goulburn River  
Location; Seymour  
Option B Replica Structure

Produced 12:12 PM, 18/02/2021

Item	Description	Qty	Units	Rate	Cost	Subtotal
<b>1</b>	<b>Preliminaries</b>					
<b>1.1</b>	<b>Site Establishment</b>					
	To establish initial presence on site and prepare for works, ensure all necessary equipment is established on site per item, site establishment costs include the provision of a temporary site office and associated equipment, temporary toilet facilities, any safety barricades and equipment's as required, provision of temporary signage as required and other items deemed necessary by the contractor to ensure smooth progress and successful completion of the project.	1	item	\$ 10,000.00	\$ 10,000.00	
<b>1.2</b>	<b>Quality Plan</b>					
<b>1.2.1</b>	<b>Traffic Management Plan</b>					
	To prepare and submit necessary documents in response to specification per item.	1	item	\$ 1,800.00	\$ 1,800.00	
<b>1.2.2</b>	<b>Site Safety Plan</b>					
	To prepare and submit necessary documents in response to specification per item.	1	item	\$ 1,800.00	\$ 1,800.00	
<b>1.2.3</b>	<b>Construction Management &amp; Site Environmental Management Plan</b>					
	To prepare and submit necessary documents in response to specification per item.	1	item	\$ 1,800.00	\$ 1,800.00	
<b>1.2.4</b>	<b>Cultural Heritage Management Plan</b>					
	To prepare and submit necessary documents in response to specification per item.	1	item	\$ 20,000.00	\$ 20,000.00	
<b>1.2.5</b>	<b>Quality Control, Inspection &amp; Test Plan</b>					
	To prepare and submit necessary documents in response to specification per item.	1	item	\$ 1,800.00	\$ 1,800.00	
<b>1.3</b>	<b>Setout of Works</b>					
	To undertake necessary computations, supply, place and maintain required paint marks, nomenclature, markings etc. as per approved drawings for the duration of the project per item.	1	item	\$ 8,000.00	\$ 8,000.00	
<b>1.4</b>	<b>Service Locations (provisional item only)</b>					
	To liaise with relevant authorities and agencies, verify, locate and physically expose (where appropriate) services and implement necessary protective measures per item.	0		\$ -	\$ -	
<b>1.5</b>	<b>Site Induction Register</b>					
	To induct and maintain a register of all staff, subcontractors and suppliers working on this site inducted on the "Construction Methodology and Site Environmental Management Plan" per item.		item	\$ 250.00	\$ -	
<b>1.6</b>	<b>Site Barricades and Signage</b>					
	To maintain in-situ existing site barricade and warning signage erected by the Council throughout the duration of works per item.		item	\$ 1,000.00	\$ -	
<b>1.7</b>	<b>Authority Liaison and Approval</b>					
	To liaise with the relevant authorities (including GBCMA and Heritage Victoria), secure any required permits, including a works in waterway permit and execute these works in continuous liaison with these authorities to their satisfaction per item.		item	\$ 1,500.00	\$ -	
				\$ -		
						<b>Preliminaries \$ 45,200.00</b>
<b>2</b>	<b>Site Preparation</b>					
<b>2.1</b>	<b>Stripping &amp; Stockpiling of Topsoil (Provisional)</b>					
	To strip to a minimum depth of 100 mm (vary to suit) to be clear of any silt and impurities, collect and stockpile, clean, vegetable and root free top soil from site and store at an approved secure location onsite for later use, and dispose of at an approved location any unusable materials per item.	1	item	\$ 3,000.00	\$ 3,000.00	
						<b>Site Preparation \$ 3,000.00</b>
<b>3</b>	<b>Earthworks / Excavation</b>					
<b>3.1</b>	<b>Earthworks including excavation, trimming and compaction to alignment, line and level pay any fees if required to and dispose off to an approved location within 5km of the site per item.</b>					
	- Earthworks is in addition to Subgrade Preparation and is an approximation only.	1	item	\$ 7,500.00	\$ 7,500.00	
						<b>Earthworks / Excavation \$ 7,500.00</b>
<b>4</b>	<b>Subgrade Preparation and Granitic Sand Path</b>					
<b>4.1</b>	<b>To prepare subgrade, backfill subsidence's, break out wombat burroughs, cart, spread, trim to profile and compact with approved fill material where required.</b>					
<b>Trail</b>	<b>30m x 2.5m wide</b>	75	m <sup>2</sup>	\$ 5.00	\$ 375.00	
<b>4.2</b>	<b>Granitic Sand Pavement</b>					
	To supply, cart, place, spread and consolidate in place approved granitic sand to 150mm depth 2.5m wide path.					
<b>Trail</b>	<b>30m x 2.5m wide</b>	75	m <sup>2</sup>	\$ 15.00	\$ 1,125.00	

Seymour Heritage Bridge - Options Estimate V5 (18-02-21); Option B Replica Structure

GMR Engineering Services  
CONFIDENTIAL

Client; Mitchell Shire Council  
Project; Heritage Bridge over Goulburn River  
Location; Seymour  
Option B Replica Structure

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Item	Description	Qty	Units	Rate	Cost	Subtotal
4.3	Fence					
	To supply, install fence as per drawing	50	m	\$ 20.00	\$ 1,000.00	
						<b>Subgrade Preparation and Granitic Sand Path \$ 2,500.00</b>
<b>5</b>	<b>Traffic Control &amp; Road Crossings</b>					
5.1	Construction Phase Traffic Control					
	For the duration of the works supply the following site management traffic control devices and systems as may be required to protect the works and the public including all bridgeworks.	1	item	\$ 2,500.00	\$ 2,500.00	
5.2	General Signage (route marker)					
	The proposed sign is a 2 piece sign on a single post. The signs will include a 600 x 400mm information sign (white on brown) on top based upon the G10 sign with the route name and bicycle symbol, also a separate distance marker below, being a white on green sign based on the G11 sign 250 x 450mm.					
	Nominal provision only	4	no.	\$ 500.00	\$ 2,000.00	
5.3	Traffic & Information Signs					
	Supply and install information and regulatory signs as specified in detail design documents	2	no.	\$ 1,000.00	\$ 2,000.00	
						<b>Traffic Control &amp; Road Crossings \$ 6,500.00</b>
<b>6</b>	<b>Trussed Footbridge</b>					
						<b>Trussed Footbridge \$ -</b>
<b>7</b>	<b>Replica Structure</b>					
	To supply & place timber structure, timber deck and guardrail					
7.1	Timber Structure					
	To supply, deliver & install timber Durability Class 1 bridge components, including all connections, plates, bolts, fixtures and fittings as required by the drawings					
7.1.1	500mm diameter timber corbels at 3m lengths.	60	m	\$ 500.00	\$ 30,000.00	
7.1.2	500mm diameter timber stringers (beams) at 12.5m lengths.	200	m	\$ 500.00	\$ 99,750.00	
7.1.3	400 x 200 x 10.5m length timber joists	336	m	\$ 120.00	\$ 40,320.00	
7.1.4	300 x 150mm timber kerb	72	m	\$ 70.00	\$ 5,026.00	
7.1.5	200 x 100mm timber decking boards	1,651	m	\$ 50.00	\$ 82,570.00	
7.1.6	100 x 100mm timber Guardrail posts 1.6m long	70	m	\$ 40.00	\$ 2,816.00	
7.1.8	100 x 75mm timber Guardrail - midrail	74	m	\$ 38.00	\$ 2,827.20	
7.1.9	100 x 100mm timber Guardrail - top rail	74	m	\$ 40.00	\$ 2,976.00	
7.2	Crane Hire					
	Hire of 100t crane for 2 days ( 430/hr), including mobilisation fee, 100/hr spotter and 100/hr Dogman per day	4	no.	\$ 5,990.00	\$ 23,960.00	
						<b>Replica Structure \$ 290,245.20</b>
<b>8</b>	<b>New Standalone footbridge</b>					
						<b>New Standalone footbridge \$ -</b>
<b>9</b>	<b>Landscaping and Reinstatement</b>					
9.1	Reinstatement of disturbed / damaged areas					
	To make good and reinstate disturbed / damaged areas after completion of works	1	item	\$ 2,500.00	\$ 2,500.00	
						<b>Landscaping and Reinstatement \$ 2,500.00</b>
<b>10</b>	<b>Public Lighting</b>					
	Allowance for public lighting along paths, at road crossings or at bridges has been included (nominal allowance)	1	item	\$ 50,000.00	\$ 50,000.00	
						<b>Public Lighting \$ 50,000.00</b>
<b>11</b>	<b>Practical completion inspection</b>					
11.1	To conduct a practical completion inspection in conjunction with the Superintendent and document any defects or omissions and rectify the defects to the satisfaction of the superintendent	1	item	\$ 750.00	\$ 750.00	
						<b>Practical completion inspection \$ 750.00</b>
<b>12</b>	<b>Maintenance Period</b>					
12.1	Duration of works					
	To maintain the site for the duration of the works, to ensure serviceability through out the works i.e., to make good any storm damage and including any routine maintenance etc.					no cost to Council.
12.2	Practical completion					
	To clean up the site on completion, remove plant and equipment and any surplus materials etc.					no cost to Council.
12.3	As Constructed Drawings					
	To submit to the council for construction drawings further to practical completion and after addressing any identified defects	1	item	\$ 2,500.00	\$ 2,500.00	

Seymour Heritage Bridge - Options Estimate V5 (18-02-21); Option B Replica Structure

GMR Engineering Services  
CONFIDENTIAL

Client; Mitchell Shire Council  
Project; Heritage Bridge over Goulburn River  
Location; Seymour  
Option B Replica Structure

Produced 12:12 PM, 18/02/2021

Item	Description	Qty	Units	Rate	Cost	Subtotal
12.4	Maintenance period To maintain the site for the duration of the defects liability period. i.e., to clean out sediment traps etc., make good any storm damage, accidental or otherwise as may be provided for under the insurance cover provided.				no cost to Council.	
						Maintenance Period \$ 2,500.00
13	<b>Final Inspection</b>					
13.1	To conduct a final inspection at the end of the maintenance period and rectify any defects per item	1	item	\$ 750.00	\$ 750.00	
						Final Inspection \$ 750.00
						Sub Total \$ 411,445.20
14	<b>Detail Design Development Costs</b>					
	Nominal allowance 3.5% of estimated cost of works		3.5%	\$ 411,445.20	\$ 14,400.58	
						Detail Design Development Costs \$ 14,400.58
15	<b>Project Management Costs</b>					
	Nominal allowance 5% of estimated cost of works		5.0%	\$ 411,445.20	\$ 20,572.26	
	<i>Project Management Costs include review and approval of the shop drawings, review and approval of the construction management plan and the safe work method statements by the contractor, continuous liaison with the contractor and Council and weekly on site inspections additional inspections of the hold points including inspection of the welding quality, fabrication, etc. complete.</i>					
						Project Management Costs \$ 20,572.26
						Sub Total \$ 446,418.04
16	<b>Contingency</b>					
	Provision 10% of total cost		10%	item	\$ 446,418.04	\$ 44,641.80
						Contingency \$ 44,641.80
						<b>OVERALL SUBTOTAL (ex. GST) \$ 491,059.85</b>

Seymour Heritage Bridge - Options Estimate V5 (18-02-21); Option B Replica Structure

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Client; Mitchell Shire Council  
Project; Heritage Bridge over Goulburn River  
Location; Seymour  
Option C Stanalone FootBridge

Produced 12:12 PM, 18/02/2021

Item	Description	Qty	Units	Rate	Cost	Subtotal
<b>1</b>	<b>Preliminaries</b>					
1.1	<b>Site Establishment</b>					
	To establish initial presence on site and prepare for works, ensure all necessary equipment is established on site per item, site establishment costs include the provision of a temporary site office and associated equipment, temporary toilet facilities, any safety barricades and equipment's as required, provision of temporary signage as required and other items deemed necessary by the contractor to ensure smooth progress and successful completion of the project.	1	item	\$ 10,000.00	\$ 10,000.00	
1.2	<b>Quality Plan</b>					
1.2.1	<b>Traffic Management Plan</b>					
	To prepare and submit necessary documents in response to specification per item.	1	item	\$ 1,800.00	\$ 1,800.00	
1.2.2	<b>Site Safety Plan</b>					
	To prepare and submit necessary documents in response to specification per item.	1	item	\$ 1,800.00	\$ 1,800.00	
1.2.3	<b>Construction Management &amp; Site Environmental Management Plan</b>					
	To prepare and submit necessary documents in response to specification per item.	1	item	\$ 1,800.00	\$ 1,800.00	
1.2.4	<b>Cultural Heritage Management Plan</b>					
	To prepare and submit necessary documents in response to specification per item.	1	item	\$ 30,000.00	\$ 30,000.00	
1.2.5	<b>Quality Control, Inspection &amp; Test Plan</b>					
	To prepare and submit necessary documents in response to specification per item.	1	item	\$ 1,800.00	\$ 1,800.00	
1.3	<b>Setout of Works</b>					
	To undertake necessary computations, supply, place and maintain required paint marks, nomenclature, markings etc. as per approved drawings for the duration of the project per item.	1	item	\$ 15,000.00	\$ 15,000.00	
1.4	<b>Service Locations (provisional item only)</b>					
	To liaise with relevant authorities and agencies, verify, locate and physically expose (where appropriate) services and implement necessary protective measures per item.	0		\$ -	\$ -	
1.5	<b>Site Induction Register</b>					
	To induct and maintain a register of all staff, subcontractors and suppliers working on this site inducted on the "Construction Methodology and Site Environmental Management Plan" per item.		item	\$ 250.00	\$ -	
1.6	<b>Site Barricades and Signage</b>					
	To maintain in-situ existing site barricade and warning signage erected by the Council throughout the duration of works per item.	1	item	\$ 2,500.00	\$ 2,500.00	
1.7	<b>Authority Liaison and Approval</b>					
	To liaise with the relevant authorities (including GBCMA and Heritage Victoria), secure any required permits, including a works in waterway permit and execute these works in continuous liaison with these authorities to their satisfaction per item.		item	\$ 1,500.00	\$ -	
						<b>Preliminaries \$ 64,700.00</b>
<b>2</b>	<b>Site Preparation</b>					
2.1	<b>Stripping &amp; Stockpiling of Topsoil (Provisional)</b>					
	To strip to a minimum depth of 100 mm (vary to suit) to be clear of any silt and impurities, collect and stockpile, clean, vegetable and root free top soil from site and store at an approved secure location onsite for later use, and dispose of at an approved location any unusable materials per item.	1	item	\$ 30,000.00	\$ 30,000.00	
						<b>Site Preparation \$ 30,000.00</b>
<b>3</b>	<b>Earthworks / Excavation</b>					
3.1	Earthworks including excavation, trimming and compaction to alignment, line and level pay any fees if required to and dispose off to an approved location within 5km of the site per item.					
	- Earthworks is in addition to Subgrade Preparation and is an approximation only.	1	item	\$ 30,000.00	\$ 30,000.00	
						<b>Earthworks / Excavation \$ 30,000.00</b>
<b>4</b>	<b>Subgrade Preparation and Granitic Sand Path</b>					
						<b>Subgrade Preparation and Granitic Sand Path \$ -</b>
<b>5</b>	<b>Traffic Control &amp; Road Crossings</b>					
5.1	<b>Construction Phase Traffic Control</b>					
	For the duration of the works supply the following site management traffic control devices and systems as may be required to protect the works and the public per item, including all bridgeworks.	1	item	\$ 30,000.00	\$ 30,000.00	

Seymour Heritage Bridge - Options Estimate V5 (18-02-21); Option C Stanalone FootBridge

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Item	Description	Qty	Units	Rate	Cost	Subtotal
5.2	<u>General Signage (route marker)</u> The proposed sign is a 2 piece sign on a single post. The signs will include a 600 x 400mm information sign (white on brown) on top based upon the G10 sign with the route name and bicycle symbol, also a separate distance marker below, being a white on green sign based on the G11 sign 250 x 450mm.					
	Nominal provision only	8	no.	\$ 500.00	\$ 4,000.00	
5.3	<u>Traffic &amp; Information Signs</u> Supply and install information and regulatory signs as specified in detail design documents per no.	8	no.	\$ 1,000.00	\$ 8,000.00	
						<b>\$ 42,000.00</b>
<b>6</b>	<b>Trussed Footbridge</b>					
						<b>\$ -</b>
<b>7</b>	<b>Replica Structure</b>					
						<b>\$ -</b>
<b>8</b>	<b>New Standalone Footbridge</b>					
8.1	<u>Suspension Bridge Structure</u> To manufacture, supply, deliver on site and install steel components, including base plates, connection plates, bolts, DPC, fixtures and fittings as required as per drawings per tonne.					
8.1.1	<u>PFC Joists as required per tonne.</u>	0.077	t	\$ 10,000.00	\$ 770.00	
8.1.2	<u>PFC Stringer as required per tonne.</u>	1.8	t	\$ 10,000.00	\$ 18,000.00	
8.1.3	<u>SHS top and bottom chord per tonne.</u>	4.2	t	\$ 10,000.00	\$ 42,000.00	
8.1.4	<u>SHS webs as required per tonne.</u>	3.6	t	\$ 10,000.00	\$ 36,000.00	
8.1.5	<u>CHS Struts as required per tonne.</u>	4	t	\$ 10,000.00	\$ 40,000.00	
8.1.6	<u>UB A Frame Abutments as required per tonne.</u>	9	t	\$ 10,000.00	\$ 90,000.00	
8.2	<u>Ramp Structure</u> To manufacture, supply, deliver on site and install steel components, including base plates, connection plates, bolts, DPC, fixtures and fittings as required as per drawings per tonne.					
8.2.1	<u>PFC Stringer as required per tonne.</u>	3.4	t	\$ 10,000.00	\$ 34,000.00	
8.2.2	<u>PFC Joist as required per tonne.</u>	10	t	\$ 10,000.00	\$ 100,000.00	
8.2.3	<u>PFC Nogging as required per tonne.</u>	1.3	t	\$ 10,000.00	\$ 13,000.00	
8.2.4	<u>UC Columns as required per tonne.</u>	4	t	\$ 10,000.00	\$ 40,000.00	
8.3	<u>Galvanising</u> To provide galvanising to manufactured steel frame work and other steel members prior to erection as per drawings per tonne	41.4	t	\$ 5,000.00	\$ 206,885.00	
8.4	<u>Suspension Cable</u> To supply, deliver on site and install galvanised wire rope suspension cables, including all necessary swage sockets, riggings screws, wire rope clamps etc per m.	460	lin.m	\$ 150.00	\$ 69,000.00	
8.5	<u>Tension Cables</u> To supply, deliver on site and install galvanised wire rope tension cables, including all necessary swage sockets, riggings screws, wire rope clamps etc per m.	170	lin.m	\$ 150.00	\$ 25,500.00	
8.6	<u>Suspension Hanger Cables</u> To supply, deliver on site and install galvanised wire rope suspension hanger cables, including all necessary swage sockets, riggings screws, wire rope clamps etc per m.	211	lin.m	\$ 150.00	\$ 31,650.00	
8.7	<u>Blockwork Retaining Wall</u> To supply and install all necessary materials to construct a blockwork retaining wall, including concrete footing, sufficient sub soil drainage and backfill per lin.m.	1.5	lin.m	\$ 600.00	\$ 900.00	
8.8	<u>Steel Fabricated Balustrade</u> To supply and install steel fabricated balustrade for ramp and suspension bridge, including a DDA Safety Rail per lin.m.	150	lin.m	\$ 950.00	\$ 142,500.00	
8.9	<u>FRP Panel Mesh Decking</u> To supply and install FRP Panel Mesh decking for ramp and suspension bridge per m <sup>2</sup> .	600	m <sup>2</sup>	\$ 120.00	\$ 72,000.00	
8.10	<u>T.G.S.I.s</u> To supply and install Tactile Ground Surface Indicators to AS1428 requirements, as specified in the drawings per item.	23	item	\$ 600.00	\$ 13,800.00	
						<b>\$ 976,005.00</b>
<b>9</b>	<b>Landscaping and Reinstatement</b>					
9.1	<u>Reinstatement of disturbed / damaged areas</u> To make good and reinstate disturbed / damaged areas after completion of works per item (provisional item)	1	item	\$ 20,000.00	\$ 20,000.00	
						<b>\$ 20,000.00</b>

Seymour Heritage Bridge - Options Estimate V5 (18-02-21); Option C Stalalone FootBridge

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Item	Description	Qty	Units	Rate	Cost	Subtotal
<b>10</b>	<b>Public Lighting</b>					
	Allowance for public lighting along paths, at road crossings or at bridges has been included (nominal allowance)	1	item	\$ 50,000.00	\$ 50,000.00	
						<b>Public Lighting \$ 50,000.00</b>
<b>11</b>	<b>Practical completion inspection</b>					
11.1	To conduct a practical completion inspection in conjunction with the Superintendent and document any defects or omissions and rectify the defects to the satisfaction of the superintendent per item.	1	item	\$ 1,000.00	\$ 1,000.00	
						<b>Practical completion inspection \$ 1,000.00</b>
<b>12</b>	<b>Maintenance Period</b>					
12.1	<u>Duration of works</u> To maintain the site for the duration of the works, to ensure serviceability through out the works i.e., to make good any storm damage and including any routine maintenance etc. per item.			no cost to Council.		
12.2	<u>Practical completion</u> To clean up the site on completion, remove plant and equipment and any surplus materials etc.			no cost to Council.		
12.3	<u>As Constructed Drawings</u> To submit to the council for construction drawings further to practical completion and after addressing any identified defects per item.	1	item	\$ 8,000.00	\$ 8,000.00	
12.4	<u>Maintenance period</u> To maintain the site for the duration of the defects liability period, i.e., to clean out sediment traps etc., make good any storm damage, accidental or otherwise as may be provided for under the insurance cover provided.			no cost to Council.		
						<b>Maintenance Period \$ 8,000.00</b>
<b>13</b>	<b>Final Inspection</b>					
13.1	To conduct a final inspection at the end of the maintenance period and rectify any defects per item	1	item	\$ 1,000.00	\$ 1,000.00	
						<b>Final Inspection \$ 1,000.00</b>
						<b>Sub Total \$ 1,222,705.00</b>
<b>14</b>	<b>Detail Design Development Costs</b>					
	Nominal allowance 3.5% of estimated cost of works		3.5%	\$ 1,222,705.00	\$ 42,794.68	
						<b>Detail Design Development Costs \$ 42,794.68</b>
<b>15</b>	<b>Project Management Costs</b>					
	Nominal allowance 5% of estimated cost of works		5.0%	\$ 1,222,705.00	\$ 61,135.25	
	<i>Project Management Costs include review and approval of the shop drawings, review and approval of the construction management plan and the safe work method statements by the contractor, continuous liaison with the contractor and Council and weekly on site inspections additional inspections of the hold points including inspection of the welding quality, fabrication, etc. complete.</i>					
						<b>Project Management Costs \$ 61,135.25</b>
						<b>Sub Total \$ 1,326,634.93</b>
<b>16</b>	<b>Contingency</b>					
	Provision 10% of total cost		10%	\$ 1,326,634.93	\$ 132,663.49	
						<b>Contingency \$ 132,663.49</b>
						<b>OVERALL SUBTOTAL (ex. GST) \$ 1,459,298.42</b>

Seymour Heritage Bridge - Options Estimate V5 (18-02-21); Option C Stanalone FootBridge

Bridge Restoration Options Cost Analysis

		Structural restoration of remaining timber piers			Option A	Option B	Option B.1	Option C	Option C.1	Option D	Option E
		Structural restoration of remaining bridge piers for Option A, B & C	Structural restoration of remaining bridge piers for Option D	Structural restoration of remaining bridge piers for Option B.1	New pedestrian bridge on restored piers	Three (3) span viewing platform to original bridge specification and structural restoration of remaining bridge piers	Three (3) span viewing platform to original bridge specification. No further structural restoration of remaining bridge piers	New standalone suspension bridge and structural restoration of all remaining bridge piers	New standalone suspension bridge No further structural restoration of remaining bridge piers	Full restoration to whole bridge to original specification	Future maintenance of existing bridge piers only. No further structural restoration of remaining bridge piers
A	Engineers construction estimate for pier restoration works	\$1,750,000	\$3,500,000	\$700,000							
B	Engineers construction estimate based on concept options				\$1,140,000	\$491,000	\$491,000	\$1,460,000	\$1,460,000	\$2,270,000	
	Detailed design and Miscellaneous Approvals	\$50,000	\$100,000	\$40,000	\$50,000	\$50,000	\$50,000	\$100,000	\$100,000	\$100,000	
	Conservation Management Plan	\$30,000	\$30,000	\$30,000					\$30,000		\$30,000
	Cultural Heritage Management Plan	\$50,000	\$50,000	\$50,000				\$50,000	\$100,000		
	Heritage Conservation Permit	\$50,000	\$50,000	\$50,000				\$50,000			
	Structural Engineers supervision	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000		\$50,000	
	Project Management (6-10%)	\$115,800	\$223,800	\$52,200	\$71,400	\$32,460	\$32,460	\$96,600	\$104,400	\$142,200	
C	<b>Sub Total</b>	<b>\$2,065,800</b>	<b>\$3,973,800</b>	<b>\$942,200</b>	<b>\$1,281,400</b>	<b>\$593,460</b>	<b>\$593,460</b>	<b>\$1,726,600</b>	<b>\$1,844,400</b>	<b>\$2,562,200</b>	<b>\$30,000</b>
	Project contingency (20%)	\$413,160									
	Project contingency (40%)		\$1,589,520	\$376,880	\$512,560	\$237,384	\$237,384	\$690,640	\$737,760	\$1,024,880	
D	<b>TOTAL ESTIMATE OF PROBABLE PROJECT COSTS</b>	<b>\$2,478,960</b>	<b>\$5,563,320</b>	<b>\$1,319,080</b>	<b>\$4,272,920</b>	<b>\$3,309,804</b>	<b>\$2,149,924</b>	<b>\$4,896,200</b>	<b>\$2,582,160</b>	<b>\$9,150,400</b>	<b>\$30,000</b>
	Annual maintenance costs (est.)										\$100,000
	Annual maintenance and renewal for Capital Improvements (3%)	\$52,500	\$105,000	\$21,000	\$139,200	\$119,730	\$56,730	\$148,800	\$43,800	\$278,100	
	30-Year Whole of Life Cost	\$4,053,960	\$8,713,320	\$1,949,080	\$8,448,920	\$6,901,704	\$3,851,824	\$9,360,200	\$3,896,160	\$17,493,400	\$3,030,000
	Satisfies Councils obligations under the <i>Heritage Act 2017</i> ?	Partially	Partially	Partially	Yes	Partially	No	Partially	No	Yes	No
	Creates crossing of Goulburn River?	No	No	No	Yes	No	No	Yes	Yes	Yes	No



**Victorian Heritage Register**

**Victorian Heritage Register (VHR) Number :** H0092

**Name:** OLD GOULBURN RIVER BRIDGE

**Location:** OLD HUME HIGHWAY SEYMOUR, MITCHELL SHIRE

**Local Government Area:** Mitchell Shire

**Category:** Heritage Place

**Heritage Overlay Number:** HO152

**Level of Significance:** Registered



**Extent:**General: The landscape setting and original trees including River Red Gums (*Eucalyptus camaldulensis*)<sup>1</sup>. The bridge structure marked B1 including its abutments on Diagram 00092 held by the Executive Director being part of the land described as government land (Old Hume Highway at Seymour), Mitchell Shire.

2. Land 20 meters on all sides of the bridge and its abutments marked L1 on Diagram 00092 held by the Executive Director

**HERMES ID:** 6157

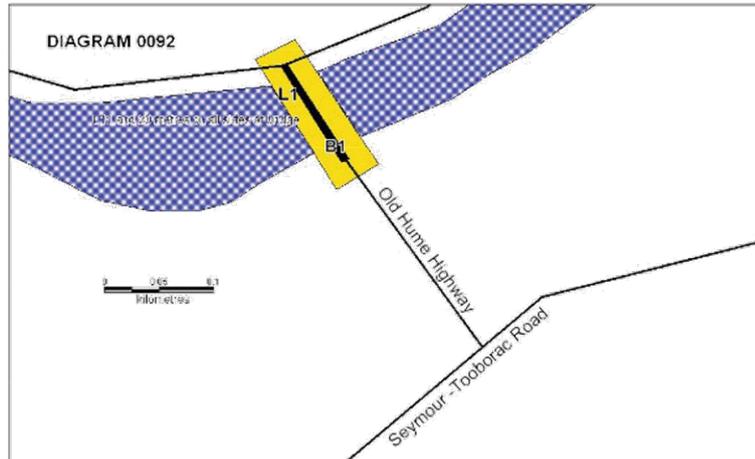
**HERITAGE REGISTER NUMBER:** H0092

**NAME:** OLD GOULBURN RIVER BRIDGE

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Victorian Heritage Register



HERMES ID: 6157  
HERITAGE REGISTER NUMBER: H0092  
NAME: OLD GOULBURN RIVER BRIDGE

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## Victorian Heritage Register

### Statement of Significance

#### What is significant?

The Old Goulburn River Bridge is a composite timber trestle and metal road bridge on the Old Hume Highway at Seymour. The bridge has 7-pile timber piers and nine spans with a maximum span length of 12 meters. The longitudinally-timbered timber deck is 105 meters in length supported by timber cross beams on 24-inch rolled steel joists.

The bridge spans the crossing place of the Goulburn River on the historic Sydney Road, in use since a Victorian Government punt began operating at the site in 1853. The first timber bridge was constructed in 1862, replaced in 1892 by a new timber bridge constructed by J.B. Farquharson and designed by Shire Engineer, Mr. Renou. The bridge was unusual for the use of grey box piers and was the last big-river timber bridge built prior to the economic depression of 1893 after which special State funding for big river bridge projects was withdrawn. When opened in 1892 it was regarded as a superior and extravagantly-expensive structure.

In 1933 the bridge was the first of the main road bridges to be reconstructed under the Country Road Boards' redevelopment of the interstate route, renamed the Hume Highway in 1926. A steel joist and timber superstructure was added to the 1892 grey box substructure. This composite bridge served until Hume Highway was diverted in 1966. The bridge was closed to vehicular traffic in 1987 and incorporated into a recreation reserve and walking track. Fire has since damaged the deck and the bridge is now closed to all traffic. The remainder of the bridge is in a sound and largely intact, although there is uncertainty about the underwater structure.

#### How is it significant?

The Old Goulburn River Bridge, Seymour is of historic, scientific (technological) and aesthetic significance to the State of Victoria.

#### Why is it significant?

The Old Goulburn River Bridge is of historic significance for its association with one of Victoria's most important river crossings from 1853 until the diverting of the Hume Highway in 1966.

The Old Goulburn River Bridge is of historical significance in representing two major phases of road bridge construction in Victoria, being the last of the extravagant large timber road bridges of the 19th century and the oldest and most authentic surviving example of a large composite highway bridge of the new motor-vehicle pattern introduced by the Country Roads Board during the Great Depression era.

The Old Goulburn River Bridge has scientific (technical) significance as a rare, well-preserved example of 19th century timber road-bridge construction and is one of four colonial timber bridges constructed on the Goulburn River from 1889- 1895. The other are Kirwans Bridge (1890, H1886), Chinamans Bridge (1891, H1449) and Mitchellstown Bridge (1895). The design of each varies but all were 'over-built' and collectively they represent a final brief flowering of traditional European pattern-book road bridge construction. However the use of grey box in the substructure of the Old Goulburn River Bridge reflects a significant local innovation in the use of Australian timbers. The strength and durability of the grey box enabled retention of the original substructure in the CRB's reconstruction of the bridge in 1933. The Old Goulburn River Bridge is also significant for its association with J.B. Farquharson who constructed Chinamans Bridge (H1449) and several lift-span and timber truss bridges over the Murray River.

The Old Goulburn River Bridge has scientific (technical) significance as a now rare example of the CRB highway bridges that were built to a far greater strength than other bridges. The use of rolled steel joists and replacement of the traditional transversely planked timber deck with a longitudinally planked deck supported on crossbeams represented the new CRB standard bridge design.

The Old Goulburn River Bridge is of aesthetic significance for its elegant timber structure and native bush setting on the fast-flowing and broad Goulburn River. Several large river Red Gums alongside the approaches to the bridge provide a picturesque context for the bridge.

HERMES ID: 6157

HERITAGE REGISTER NUMBER: H0092

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NAME: OLD GOULBURN RIVER BRIDGE

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