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Sent: Thursday, 17 February 2022 2:09 PM
To: TPC Enquiry; Newman, Luke
Cc: Moloney, Ben (StateGrowth); Potter, Mia (StateGrowth)
Subject: New Bridgewater Bridge - Submission on Initial Assessment Report
Attachments: New Bridgewater Bridge - Submission on Initial Assessment Report.pdf;
Attachment A - New Bridgewater Bridge Project Vibration Risk Assessment.PDF;
Attachment B - New Bridgewater Bridge Assessment of Potential for Impacts on
the Heritage Values of Adjacent Local Historic Heritage Places.PDF; Attachment E -
New Bridgewater Bridge Landscape and Visual Analysis of the New Bridgewater
Bridge - Addendum.PDF

Good Afternoon,

The Proponent for the New Bridgewater Bridge Project submits the attached representation, including attachments A, B, C, D and E, in respect to the Initial Assessment Report for the New Bridgewater Bridge Major Project as currently under public exhibition.

It would be appreciated if the Tasmanian Planning Commission could please confirm the receipt of this email.

If you have any queries on the attached documents, please do not hesitate to contact Mia Potter, Manager Approvals, New Bridgewater Bridge at mia.potter@stategrowth.tas.gov.au or on (03) 6166 4860.

Kind Regards,

New Bridgewater Bridge Project
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Ms Anne Cunningham
Chair, Development Assessment Panel
New Bridgewater Bridge Major Project
Tasmanian Planning Commission
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New Bridgewater Bridge Major Project – Representation on Initial Assessment Report

Dear Ms Cunningham,

Thank you for the Development Assessment Panel's invitation to make a representation on the Initial Assessment Report (IAR) for the New Bridgewater Bridge Major Project (the Project). Please find below the response from the Proponent for consideration by the Development Assessment Panel. I note that the Department of State Growth does not have any separate or additional response to provide outside of this representation.

The Proponent appreciates and acknowledges the effort that has been put into preparing the IAR including the 'conditions and restrictions' that may form part of a permit. The approval of this Major Project is an important step towards the development of the New Bridgewater Bridge, which will provide improved connectivity, efficiency, and safety for users.

The Proponent has undertaken a detailed review of the IAR, and our comments are included in this letter and the attachments as follows:

- Table 1 – Comments on Initial Assessment
- Table 1 – Suggested amendments to the 'conditions and restrictions' – general
- Table 3 – Suggested amendments to the 'conditions and restrictions' – Environmental Protection Agency
- Attachment A – Vibration Risk Assessment
- Attachment B – Assessment of potential for impacts on the heritage values of adjacent Local Historic Heritage Places
- Attachment C – Justification for the necessary demolition of 37 Black Snake Road
- Attachment D – Consolidated submission requirements
- Attachment E – Addendum to the Landscape and Visual Analysis

Broadly, the conditions proposed, and the outcomes they seek, are largely accepted by the Proponent as reasonable and achievable. However, it is noted that there are several conditions and restrictions proposed, that, if they were to remain unchanged, would have very significant detrimental impacts on the Project and would prevent it from delivering outcomes that most benefit the people of Tasmania.

It is noted that the Proponent has previously submitted advice regarding the need for flexibility and optionality to be accommodated in the Major Projects Process and to allow for innovative approaches for meeting objectives, including in its submissions on the draft assessment criteria.

The Proponent is pleased to see that a performance-based approach to regulation has been adopted in a number of the proposed conditions. However, there are a number of highly prescriptive conditions which present significant concerns.

The retention of such conditions, unchanged, could have significant ramifications regarding total construction timeframes, the use of planned construction techniques, project outcomes, the feasibility of the Project and the cost of the Project to the State and the people of Tasmania.

It is also noted that several conditions appear to 'overlap' with one another, particularly regarding requirements for management plans. To ensure that conditions can be regulated in an efficient manner, it is suggested that for both the benefit of the relevant regulators and the Proponent, that such conditions are appropriately consolidated.

Key items raised within our review are detailed below.

- **Provision of 'Design' Plans**

- a. The Proponent notes that a 'final design' is required to be submitted to the relevant decision maker (Condition 4). There are also other instances where a 'final design' is referenced throughout the conditions.
- b. While the Proponent notes the intent of these conditions are to allow the review and approval of the design by relevant decision makers, as this project is a 'design and construct' project there will not be a consolidated set of design plans available for the full extent of the project works prior to the 'commencement of construction' or 'commencement of works'. It is noted that both terms are used within the drafted permit conditions.
- c. Design work will be undertaken in stages. For example, design effort will take 12 months from commencement of the contract, however construction activity will commence within 6 months. This is the nature of a 'design and construct' project and is a key aspect of meeting the stated timeframes for the project and thus realising the benefit of this significant network improvement project sooner and minimising the impact of construction on both local residents and road users.
- d. Because of this, there cannot be a set of 'final design plans' submitted for the whole project prior to commencement of any construction works without resulting in very significant delays (upwards of 6 months). Alternative wording is proposed to identify the requirement to provide 'design plans' or, where appropriate 'relevant design plans' but not the 'final design'. Design plans would consist of General Arrangement design plans sufficient to confirm compliance with the Permit Conditions.
- e. It is also requested that permit include an expanded 'Staging Report' condition that replaces draft condition 6.
- f. The Staging Report would include general details of work and other activities to be carried out in each stage and the general timing of when construction of each stage will commence.
- g. If staged operation is proposed, the Staging Report would set out how the operation of the whole of the project will be staged, including general details of activities to be carried out in each stage and the general timing of when operation of each stage will commence.

- h. The staging report would specify the relevant conditions of approval that apply to each stage and how compliance with those conditions will be achieved across and between each of the stages of the project.
- **Provision of 'Management Plans'**
 - a. Management plans are required for a range of reasons and are stated as conditions in both Panel and regulator sections of the conditions.
 - b. It is noted that there is overlap in the requirement for these plans, and in some cases, there will be multiple 'relevant decision makers' and 'regulators' for these plans.
 - c. It is suggested that a review of the requirements for plans be completed prior to the issue of final conditions to consolidate these requirements as much as possible, to improve the efficiency of project regulation for both the relevant regulators and the proponent.
 - d. A table has been provided that provides the Proponents view on this (Attachment D).
- **Definitions**
 - a. The Proponent notes that some terms or concepts are used throughout the document that would warrant a definition and consistent use to avoid misinterpretation. Examples are included below with further detail included in both Tables 1 and 2.
 - i. **No increase in flood risk** – the general intent of this statement is understood but it requires further clarity as to its objectives. For example, a project could result in a localised or temporary increase in risk but also a broad scale and long term decrease in risk, and it is unclear whether this would be acceptable. It is also noted that the existing bridge currently impedes river flow and the proposed bridge will create no greater resistance to river flow than currently exists. It is proposed that no increase in flood risk is deemed to be achieved if modelled flood levels (height) for the design are within 25mm of existing flood levels for equivalent flood events including for 1% AEP in 2090.
 - ii. **Construction commencement** – the concept of construction commencement or works commencement is used throughout the document and often at times where timeframes are stipulated or hold points associated. For example, management plans are required to be completed before 'commencement of construction'. Given the nature and scale of this project, aligning submissions with a broad term such as 'commencement of construction' is not feasible for the reasons outlined earlier. In this case it is suggested the condition should be completed prior to commencement of the activity associated with that management plan (e.g. water-based works should not commence until; the Estuarine Water Quality Management Plan is complete).
 - iii. **Project Land** – in some cases conditions are linked to the Project Land that should be linked to another defined area (e.g., Condition S2 - *Stormwater discharged from The Project Land to water must be visibly free of oil and grease and stormwater discharged from the State Stormwater Strategy*). This term is inappropriate because the Proponent does not have 'ownership' or control of all the land within the Project Land and not all of this land will be

impacted or used for construction. It would not be possible for this condition to be met as it is currently written.

- b. The following are our proposed definitions to be adopted within the Conditions.
 - i. **Commencement of Construction** – the point at which the Proponent commences any activity on the Project Land under this Permit in a continuous program of construction excluding the following Low Impact Works:
 - I. **Low Impact Works** – topographical or feature survey work including installation of controls and markers, dilapidation surveys, underground service location including potholing, geotechnical investigations including drilling, coring, test pitting and hand testing, collection of samples for analysis including of contaminated materials, installation of monitoring stations, installation of mitigation measures for sediment and erosion control, installation of temporary fencing, establishment of temporary facilities to support construction (e.g. site offices and laydown areas), establishment of exclusion zones for protected areas, property demolition completed in line with normal environmental controls, archaeological investigations, geoheritage investigations, maintenance of existing facilities under the control of the Proponent.
 - ii. **Relevant construction** – Construction activities, other than Low Impact Works, that are directly associated with, and may cause an impact against, a particular topic (for example the relevant works for noise emissions may be vibratory piling). Defined to separate the provision of information (e.g. management plans) into discreet packages that are provided only upon being relevant information.
 - iii. **Design plans** – General arrangement plans, of sufficient detail to confirm compliance with Permit Conditions.
 - iv. **Significant Emitting Activities** – Either significant construction plant activity or significant or substantial relocation of existing traffic pathways in Bridgewater.
- **Operational Conditions versus Construction Conditions**
 - a. Whether conditions apply to Operation or Construction should be clearly indicated for each condition.
 - b. It is noted that several of the Conditions in ‘EPA Schedule 2: Conditions’ appear to have wording very similar to standard EPA conditions (for Level 2 activities), which are more commonly applied to operational project phases of projects such as quarries and factories but in this instance are being applied to the construction phase. It does not appear that such conditions have been appropriately tailored to reflect the different requirements of the construction phase of a project, or for an infrastructure project that forms part of an existing and operational transport network. For example, the conditions around noise emission limits (e.g. N3) are worded in a similar fashion to standard operational requirements. These are almost impossible to achieve as a *limit* for construction activity. The MPIS presented these noise levels as *management levels* as opposed to *limits* for this reason (refer Section 5.1.2.2.1 of the MPIS).
 - c. It is also noted that road construction projects require flexible working hours as they compete with the existing demands of the operational transport network. In order to reduce impacts on traffic congestion during peak travel periods during weekdays, it is imperative that road construction projects involve work on

weekends and in evenings. This is standard practice in Tasmania and regularly observable throughout the Greater Hobart area. The current draft conditions present far stricter working hours requirements than those found on other road projects, such as Sorell Bypass DA 2020/292 where Sorell Council included the following condition:

“12. Subject to condition 13, all civil and construction work must be undertaken within the following hours:

- a. 7.00. a.m. to 6.00. p.m. from Monday to Friday;*
- b. 8.00. a.m. to 6.00 p.m. on Saturdays; and*
- c. 10 a.m. to 6.00 p.m. on Sundays or public holidays.”*

- d. As written, some of these conditions will be impractical, or in some cases, unachievable. These are outlined in detail in Tables 1, 2 and 3 and in some instances, suggested alternative condition wording is proposed.

- **37 Black Snake Road Demolition**

- a. Conditions 5(b)(ii) and 27 preventing works and demolition of buildings at 37 Black Snake Road (CT 156256/20) are of significant concern. The requirement for demolition of buildings at 37 Black Snake Road to facilitate the southern interchange works associated with the replacement Bridgewater Bridge has long been acknowledged in Glenorchy’s planning schemes and through DSG’s acquisition of the land in 2014.
- b. The Glenorchy Local Provisions Schedule of the Tasmanian Planning Scheme includes a Site-Specific Qualification GLE-C6.1 that permits the demolition of the farm outbuildings if required as part of the replacement of the Bridgewater Bridge and associated works. Further evidence demonstrating that the removal of these buildings and the house is unavoidable is provided in the comments in Table 1 below.
- c. A clear justification for the need for demolition is included in **Attachment C** to this letter.

- **Road Construction Projects and Relevant Authority**

- a. We note that several conditions do not reflect the usual processes undertaken in Tasmania for road construction projects. While it is understood that this project is larger in scale and may attract more interest and thus protections, the extent of these conditions will make undertaking this project far more difficult. The result of which will be additional cost to the tax-payer and additional time during construction without any additional benefits being afforded.
- b. Further, some of the drafted conditions do not appear to reflect or recognise the existing powers, obligations and rights of the Minister of Infrastructure that arise under the *Roads and Jetties Act 1935*. It is understood that the Panel cannot impose conditions that interfere with the Minister’s powers. Therefore, conditions must be read subject to any powers of the road authority under relevant legislation.
- c. The Proponent considers that traffic management plans and road safety design audits should be approved and regulated by the road authority, not the Panel or the Tasmanian Planning Commission.
- d. The project relates to a section of an active operational road network. It is not feasible or reasonable for one section of the state road network to be regulated by a separate party, as this will prevent real time adjustments to the operation of the

road network and may create significant congestion and transport efficiency issues for both the Greater Hobart area and the Midland Highway.

- e. As a general comment, the Proponent has prepared a table of all required 'submissions' within **Attachment D** to this letter with comments regarding the proposed relevant authority.

Thank you for the opportunity to provide a representation regarding the IAR. The Proponent values your consideration of this response and trusts that it will assist the Panel and regulators' review of the project.

The project welcomes any queries from the Commission or the Panel in order to clarify the above matters and would be glad to meet and discuss further. If you wish to discuss our response, please contact Mia Potter, Manager Approvals, New Bridgewater Bridge Project at Mia.Potter@stategrowth.tas.gov.au or on 03 6166 4860.

Yours Sincerely,



Ben Moloney
Project Director, New Bridgewater Bridge Project, Department of State Growth

17 February 2022

Table 2 - Comments on the initial assessment

| Comment | | Proponent Response | |
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| 4.1 | Policy and strategic Context | <p>The Panel considers that the MPIS has provided an assessment of how the use and development is consistent with the objectives of the Act, is not in contravention with a State Policy, and is not inconsistent with relevant local strategy.</p> <p>The Panel considers that the MPIS has broadly provided an assessment of how the use and development is not inconsistent with the regional strategy, noting that some regional policies have not been addressed, or are only partially addressed.</p> | <p>It is submitted that the MPIS addresses the relevant regional policies to the extent necessary to demonstrate that the Project is not inconsistent with the Southern Tasmania Regional Land Use Strategy and that the Panel can be satisfied that Assessment Criteria 4.1.1 and the requirements of Section 60ZZM(4) for the granting of a major project permit are met.</p> |
| | | <p>The Panel further notes that the MPIS incorrectly address policy outcome 2.4.1 of the State Coastal Policy 1996 (Coastal Policy) by indicating it does not apply.</p> | |
| | | <p>The Panel considers that the MPIS provides an assessment of how the use and development encourages walking and cycling.</p> <p>The panel notes:</p> <ul style="list-style-type: none"> - there is no clear forecast of demand for walking and cycling, or whether considering the demand, the demand will encourage or discourage walking and cycling to anticipated destinations such as schools, commercial areas and commuting; - there is no discussion of the impacts on the Bridgewater community of the removal of the pedestrian overpass of the Midland Highway; - the December 2021 TIA provides limited clarity in relation to public transport, beyond noting travel time reliability will improve, but bus stops will need to be relocated; - only one existing MetroTas bus stop is identified as being retained; and | <p>At the northern end of the existing bridge, the connectivity of the existing pedestrian overpass will be replaced with an alternative pathway. The existing pedestrian overpass is at the northern approach to the Midland Highway–Boyer Road– Gunn Street roundabout. The overpass provides pedestrian connectivity between Boyer Road and Gunn Street and provides a pedestrian connection between the residential area of Bridgewater and the commercial and food services district across the highway, including the Tavern and McDonalds.</p> <p>The existing pedestrian overpass will be removed and replaced with a footpath beneath the New Bridgewater Bridge, on Gunn Street. This pedestrian path will provide the same connectivity.</p> <p>Coupled with the proposed new landscaped open space areas as shown on the landscaping plans accompanying the MPIS it is considered that the proposal will result in a significantly improved amenity for pedestrians and cyclists than existing.</p> |

| Comment | | Proponent Response |
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| | <ul style="list-style-type: none"> - it is unclear what provision is made for pick up / drop off of public buses and coach services. | <p>The future provision and location of bus stops within the Project Land will be determined through consultation with the Department of State Growth's Passenger Transport team through their relevant processes.</p> <p>Specialised pick up / drop off facilities for public buses and coach services are not within the scope of this Project. However, the Project will result in balance public land being available following the Project that may be suitable for such uses. These initiatives would be separate to the scope of this Project and are currently being discussed with Brighton Council</p> <p>The Proponent submits that the proposal as set out in the MPIS satisfies Assessment Criteria 4.2.1, 4.2.2 and 4.2.3 and that the proposed permit conditions will ensure that transport related aspects of the proposal will be appropriately resolved as part of the final design.</p> |
| | <p>The Panel considers that the MPIS, December 2021 TIA and Road Safety Audit Report details how the use and development minimises any adverse effects on the safety and efficiency of the road and rail network and uses dependent upon it.</p> <p>The Panel notes:</p> <ul style="list-style-type: none"> - there is limited detail as to how all existing accesses will safely function, for example access to the properties, including the Derwent Tavern, on Old Main Road to the south of Boyer Road; - the MPIS has not identified or discussed the impact of changes to access to and from Rusts Road, Granton, as it appears that only left hand turns will now be feasible to and from Rusts Road; - the Road Safety Audit Report refers to a set of Rev B plans. It is not clear if those plans match the plans provided in Appendix AA as the plans referenced in the Road Safety Audit Report have not been provided and the MPIS plans do not have revision numbers. | <p>Section 4.2.2.4.6 of the MPIS discusses the proposed changed accesses that will be required because of the proposal. It is considered that the project will have limited impact to existing property accesses including the Derwent Tavern on Old Main Rd. There are no significant impacts on this property as there are limited changes to either infrastructure or traffic flows at this location.</p> <p>The proposed access for Rusts Road including a P-turn facility is considered appropriate given that traffic volumes are very low, and the treatment is consistent with treatments on major highways such as Midland Highway.</p> <p>The Road Safety Audit identifies that some minor improvements may be required at the construction stages to overcome the issues identified. It is submitted that these refinements will be appropriately addressed in the design plans and conditions 9 and 10.</p> |

| Comment | | | Proponent Response |
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| | | <p>The Panel considers that the MPIS has identified objectives for the management of traffic during construction and key construction methods to minimise adverse impacts.</p> <p>The Panel notes that further details of the final design and staging is needed to inform management of the road, rail, public transport, pedestrian and cycle network during construction.</p> | <p>The Department of State Growth has existing obligations under section 9C of the <i>Roads and Jetties Act 1935</i> for providing sufficient way for normal traffic during reconstruction.</p> <p>The Proponent submits that these matters will be satisfactorily addressed through provision of a Construction Traffic Management Plan as required by conditions 13 and 14. Further, conditions 11 and 12 require maintenance of safe pedestrian and cyclist access as well as temporary bus stops to minimise disruption to public transport services during construction.</p> |
| 4.3 | Bushfire-prone areas | <p>The Panel considers that the MPIS does not accurately identify the bushfire-prone areas and that the following properties are located in bushfire-prone areas: folios of the Register 156256/18, 156256/19, 156256/20, 156256/16, 9593/4, part of 175957/2 and adjoining portions of Black Snake Road and Brooker Highway ramps.</p> | <p>The Proponent notes that, at the time of preparation of the MPIS, the properties noted were not part of the Interim Planning Scheme overlay as being within a 'bushfire-prone area'.</p> <p>We have re-assessed against this criterion (including these properties) and the outcome of the assessment has not changed.</p> <p>Given no hazardous chemicals of a manifest quantity, or explosives, will be stored during construction or operation, no bushfire management plan or emergency management strategy (hazardous use) is required.</p> |
| 4.4 | Coastal erosion hazard | <p>The Panel considers that the coastal erosion hazard report while discussing the potential for erosion does not set out that the proposed use can achieve and maintain a tolerable risk from coastal erosion.</p> <p>The Panel notes, this may be due to there being low to negligible change in the likelihood of impact from coastal erosion.</p> <p>The Panel notes that coastal erosion hazard report does not:</p> <ul style="list-style-type: none"> - explore or assess the potential risks and consequences from coastal erosion, or - explain how or if the operation of the use can manage or treat risks to a tolerable level. | <p>The assessment report for the coastal erosion hazard demonstrated that the proposed development would have negligible change in the risk at the site of erosion.</p> <p>In addition to the negligible change in risk, the detailed design of the development will need to address design of any new structures including interface with existing features for current and future sea level rise which is an adequate control to managing these elements and any risks.</p> |

| Comment | | Proponent Response |
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| 4.5 | <p>Coastal inundation hazard areas</p> <p>The Panel considers that the coastal inundation hazard report while discussing the potential for inundation does not set out that the proposed development can achieve and maintain a tolerable risk from coastal inundation.</p> <p>The Panel notes that the impacts of coastal inundation are identified as being substantially influenced by flooding.</p> <p>The Panel notes the coastal inundation hazard report does not explore or assess the potential risks from coastal inundation, or explain how, or if, the development has been designed to manage or treat those risks to a tolerable level.</p> | <p>The assessment report for the coastal inundation hazard demonstrated that the proposed development would have negligible change in the risk at the site of coastal inundation.</p> <p>In addition to the negligible change in risk, the detailed design of the development will need to address design of any new structures including interface with existing features for current and future sea level rise which is an adequate control to managing these elements and any risks.</p> |
| 4.6 | <p>Dredging and reclamation</p> <p>The Panel considers that the MPIS addresses how reclamation will be undertaken to minimise adverse impacts on natural coastal processes and natural assets but that there is uncertainty as to the extent of reclamation and construction methodology.</p> <p>The Panel notes that:</p> <ul style="list-style-type: none"> - the destruction of riparian vegetation on the land adjoining the reclamations must be inferred from interpreting plans; - there remains doubt about the size and shape of the reclamation. While revised plans showing reclamation have been provided, the figures in Appendix A section 4 and Appendix AA show what would appear to be different sized areas. The commentary in the MPIS sets out that the design of reclamation will be refined; - the MPIS and Appendix BB provide uncertain advice on the construction methodology; and - advice from the Proponent on recommendations for the final design of the reclamation and commitments for further hydrodynamic modelling are not clearly set out in the MPIS. | <p>The Proponent notes that the design of the reclamation would be included in any design plans issued as required under the permit.</p> <p>The extent of the proposed reclamation is indicated within Appendix A of the MPIS as a 'zone of potential reclamation' and is meant to indicate the extent and shape of reclaim proposed. The reclaim shown in Appendix AA of the MPIS is from the contractor's design plans (the Chosen Design). Both are indicative at this point of the project.</p> <p>The details provided regarding construction methodology for the reclamations are again based on a tendered design and are expected to represent the method to be employed, but the final methodology will be detailed within the CEMP.</p> <p>The overall footprint (size) of the reclaim and the extent of impact have been assessed as part of the MPIS in multiple sections (aquatic risk, flooding, hydrodynamics). In each of these sections, commitments have been made to update any assessment/modelling to represent the design, including the proposed reclaim, hence why no specific commitments were made in this section of the MPIS.</p> |

| Comment | | Proponent Response |
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| 4.7 | Electricity entity infrastructure | <p>The Panel considers that the MPIS addresses potential impacts on electricity entity infrastructure.</p> <p>The Panel notes that:</p> <ul style="list-style-type: none"> - the plans in Appendix A do not overlay the permanent works footprint; and - the proximity of development to electricity infrastructure must be inferred by interpreting a variety of plans; and - there are changes to the extent of proposed works between the August 2021 version of the MPIS reviewed by TasNetworks, and the November 2021 version of the MPIS on exhibition. |
| 4.8 | Flood-prone areas | <p>The Panel notes that the MPIS advises that the use or development can achieve and maintain a tolerable risk for the intended life of the development.</p> <p>However, the Panel notes that:</p> <ul style="list-style-type: none"> - it is unclear what checks have been undertaken to confirm runoff depth; - floor levels of impacted properties / structure have not been confirmed; - the modelling does not identify the effects of the major project on time of inundation or flood duration; - the modelled impacts extended to the up-stream boundary of the model, suggesting the model boundary may be inappropriate; - the need for modelling of the final design, and the need to calculate bridge losses using an alternative method such as HECRAS to confirm the head loss seen in the 2Dmodel; - removal of the HI category from the mapping (where HI defines the risk threshold) ignores areas where risk exists; and |

Proponent Response

The Proponent notes the comments regarding electricity infrastructure including the variance in the extent of works from the August to November 2021 versions of the MPIS.

It is noted that no changes to potential impacts are expected because of these changes and that engagement with the electricity entity, once a design is complete, will be the relevant and appropriate time to determine what actions are required by the Proponent to manage the safety, security, and operation of the infrastructure both during construction and operation.

Responses to each of the identified areas are provided, below.

it is unclear what checks have been undertaken to confirm runoff depth

- The River Derwent hydrology was calibrated to gauging stations and the Blacksnake Rivulet hydrology compared to regional values to give confidence to the key input flow rates, but there was no detailed hydraulic calibration to known flood markers due to their absence. This is considered appropriate for a planning level impacts assessment.

floor levels of impacted properties / structure have not been confirmed

- Flood levels and extents have been calculated with potential impacts inferred from LIDAR derived ground levels, but there was no detailed survey of floor levels – something that was not considered as a required level of detail for a planning submission.

the modelling does not identify the effects of the major project on time of inundation nor flood duration

| Comment | | Proponent Response |
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| | <ul style="list-style-type: none"> - the impacts from flood during construction are undefined; and - there is no explicit assessment of risk detailed in the flood hazard report to support the conclusions that a tolerable level of risk can be achieved. | <ul style="list-style-type: none"> - As this is a steady state model, time of inundation could not be calculated. Hydrographs and time of inundation will be determined during detailed design modelling but wasn't seen as necessary at a planning level looking at small impacts and having recommendations to avoid new design areas being inundated. <p><i>the modelled impacts extended to the up-stream boundary of the model, suggesting the model boundary may be inappropriate</i></p> <ul style="list-style-type: none"> - With subcritical flow from the bridge to upstream – the impacts will extend to the upstream boundary. As the changes are small at the boundary and flow rates large, it is not expected this will introduce any significant errors. <p><i>the need for modelling of the final design, and the need to calculate bridge losses using an alternative method such as HECRAS to confirm the head loss seen in the 2D model</i></p> <ul style="list-style-type: none"> - Agreed that further modelling of the design is required, and that alternative approaches to hydraulic calculations would be helpful. This would be undertaken using appropriate software as part of the design process to commence. <p><i>removal of the HI category from the mapping (where HI defines the risk threshold) ignores areas where risk exists</i></p> <ul style="list-style-type: none"> - HI risks were shown for the River Derwent output in Appendix B to Appendix S of the MPIS but were removed from the north side and south side outputs for clarity due to the rain on grid approach being used also as HI is a low risk that is acceptable for small cars and children (in the context of this flood assessment). <p><i>the impacts from flood during construction are undefined</i></p> <ul style="list-style-type: none"> - Working in and on a river comes with inherent risk but the risks are specific to the construction method and are |

| Comment | | Proponent Response |
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| | | <p>manageable. Assessment of flood risks associated with construction and temporary works will be undertaken in further detail once the construction methodology is confirmed and a thorough safety-in-design risk assessment has been made.</p> <p><i>there is no explicit assessment of risk detailed in the flood hazard report to support the conclusions that a tolerable level of risk can be achieved</i></p> <ul style="list-style-type: none"> - The flood risk elements were identified and conclusions reached about what was required to manage those risks to tolerable levels, where tolerate use was defined as acceptable to the community with administrative flood risk controls and detailed in Section 5.5. |
| | <p>The Panel further notes that impacts of flooding on registered heritage places has not been identified in the MPIS response to Tasmanian Heritage Council requirements, in particular:</p> <ul style="list-style-type: none"> - while not discussed in the flood hazard report, there appears to be an increase in the extent of the H5 flood hazard category on Former Black Snake Inn property. Where the H5 category is identified as unsafe for vehicles and people, all buildings vulnerable to structural damage, some less robust building types vulnerable to failure; - it is unclear if there is an increased risk from flood to any matters of cultural heritage significance for the Former Black Snake Inn; and - there is increase in flood extent over the Watch House (1 Lyell Highway, Granton). | <p>The Proponent is not aware of what requirement the Panel is referring to regarding not providing a response to the Tasmanian Heritage Council requirements on flooding. In consultation with Heritage Tasmania, they indicated that they made no such request. Further, there is no requirement in the Assessment Criteria to address flooding specifically for registered heritage places.</p> <p>Nonetheless, regarding the risk, responses to each of the identified areas are provided, below.</p> <p><i>while not discussed in the flood hazard report, there appears to be an increase in the extent of the H5 flood hazard category on Former Black Snake Inn property. Where the H5 category is identified as unsafe for vehicles and people, all buildings vulnerable to structural damage, some less robust building types vulnerable to failure</i></p> <ul style="list-style-type: none"> - The Former Black Snake Inn does have the potential to be impacted subject to the final road design levels and the details for the drainage under the roundabout near the Former Inn. The modelling in the Flood Hazard Report shows some areas increasing and some areas reducing in flood risk, and there is |

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| | | | <p>overall increase in the area of H5 flood hazard area away from buildings.</p> <p><i>it is unclear if there is an increased risk from flood to any matters of cultural heritage significance for the Former Black Snake Inn; and</i></p> <ul style="list-style-type: none"> - In the Flood Hazard Report there is no change in flood hazard classification for the former Inn building, and at the front of the Former Inn there is a small reduction in H6 area. <p><i>there is increase in flood extent over the Watch House (1 Lyell Highway, Granton)</i></p> <ul style="list-style-type: none"> - As the flood risk near this historic building is close to the proposed road works, the final design levels and cross drainage have the potential to impact flood risk for the buildings. The flood modelling undertaken during detailed design should consider the risks to these buildings and any requirements from the Heritage Council for their protection (noting their existing flood risk next to the river). |
| 4.9 | Geoconservation | The Panel considers that the MPIS addresses potential impacts on the geodiversity values of sites of geoconservation significance. The Panel notes that the extent of impact on the sites and how any impacts are minimised must be inferred from reviewing plans and commentary in various appendices. | No comment |
| 4.10.1 | Landslip hazards | The Panel considers that the MPIS addresses whether the use or development can achieve and maintain a tolerable risk for the intended life of the development. | No comment |
| 4.11 | Local historic heritage values | The Proponent has not provided the further information requested in relation to vibration risk assessment for built local heritage places within and adjacent to the study area. | Please refer to Attachment A to this letter for the vibration risk assessment. |
| | | The Panel considers that the assessment criteria have not been fully addressed and that this may be caused by timing of | Refer comments below |

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| | <p>preparing the MPIS reports and timing of the Brighton and Glenorchy local provision schedules becoming effective.</p> <p>The Panel notes the MPIS has not addressed the potential for impacts on the heritage values of:</p> <ul style="list-style-type: none"> - the adjacent Parkview (BRI-C6.1.20); - the adjacent Fairfield, formerly Hayfield (BRI-C6.1.70) - the adjacent Duke of York Hotel (GLE-C6.1.180); and - portions of 37 Blacksnake Road (GLE-C6.1.181) listed under the Glenorchy Local Provisions Schedule. <p>The Panel notes that MPIS has not addressed how impacts to 37 Black Snake Lane might be avoided or mitigated, or provided any evidence that impacts are unavoidable.</p> <p>The Panel also note that the MPIS has only partially addressed whether there will be impact on local historic heritage significance, with potential indirect impacts from vibration proposed to be addressed in a Construction Environmental Management Plan.</p> | <p>It is considered that Parkview, Fairfield and the Duke of York Hotel are all well removed from the proposed development and in this respect are not 'near to or adjoining'. It is submitted that these heritage places do not fall within the definition of adjacent under the Schedule 1 Terms and definitions.</p> <p>Nonetheless, the Proponent has completed an assessment of these additional properties and this is included in Attachment B to this letter.</p> <p>Refer to Attachment C for comments regarding 37 Black Snake Lane and the proposed demolition.</p> |
| 4.12 | <p>Marine infrastructure and safety</p> <p>The Panel considers that the MPIS addresses the impact on movement of vessels, navigation aids and markings, and measures to minimise adverse effects. The Panel notes that:</p> <ul style="list-style-type: none"> - the Proponent caveats the commitment for reinstatement of the Bridgewater boat ramp and adjacent jetty; and - the MPIS does not clearly address potential impacts on the safe operation of the proposed boat ramp and jetty. | <p>The Proponent notes that the 'caveat' referred to by the Panel is to allow for a potentially better outcome than reinstating the boat ramp and jetty at the existing location, noting that the new bridge may make this location less suitable. Alternative opportunities for community use of this land may be identified in future discussion with Brighton Council.</p> <p>It is also recognised that Brighton Council may wish to see the boat ramp reinstated in a different, more suitable location. As stated in the MPIS, we would only pursue a different outcome than reinstatement if this was agreed with Brighton Council and Parks and Wildlife.</p> <p>The potential impacts on the safe operation of a future boat ramp and jetty would be explored at the time of considering this location with Brighton Council and Parks and Wildlife, another reason for ensuring the flexibility in reinstatement is maintained. As mentioned, it may be that the existing location is unsuitable and does not present the best outcome for safe navigation.</p> |

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| 4.13 | Public open space | <p>The Panel considers that the MPIS provides an assessment of where the existing open space network is, how the use and development will maintain and encourage connectivity once completed.</p> <p>The Panel notes that:</p> <ul style="list-style-type: none"> - the functional requirements of the use and development must be inferred from the discussion of impacts and plans provided; - the MPIS provides limited assessment of existing connectivity between areas of public open space; - there is no clear assessment of or commitments on, how connectivity will be maintained during construction, such as connectivity to the playground at Nielsen Esplanade, the pathway behind Braydon Court and Hayton Place, or access from the commercial area of Bridgewater; and - issues of connectivity are also dealt with, in part, in clause 4.2.3 Safety and efficiency of the road, rail and public transport network. <p>The Panel further notes that the ongoing connectivity of the open space network will be effectively addressed under conditions or restrictions associated with clause 4.2.1 Sustainable transport.</p> |
| 4.14 | Siting and scale | <p>The Panel considers that the MPIS provides an assessment of how development is designed and sited to not cause an unreasonable loss of amenity to adjacent properties. The Panel notes that:</p> <ul style="list-style-type: none"> - it is unclear if reported potential for overlooking is based on moving vehicles on the highway and off ramps or from pedestrian and cycle paths; - the reported potential for overlooking appears to be consistent with the August 2021 design with the pedestrian and cycleway located on the eastern side of |

The Proponent considers that at completion the proposal will provide for overall improved pedestrian cyclist connectivity through the area and for the crossing. The Proponent agrees that the detail of this ongoing connectivity will be appropriately managed and ensured by the proposed permit conditions.

The Proponent clarifies that the assessment of the potential for unreasonable loss of amenity from the height and siting of the proposed works in Section 4.14 of the MPIS was on the basis of the potential for overlooking from moving vehicles on the highway and associated interchanges as well as from pedestrian and cycle paths.

The potential for overlooking from passing pedestrian and cycle movements from the bridge and off ramps on the western side of the bridge at Bridgewater are considered minimal given the substantial

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| | | <p>the proposed new Bridgewater Bridge, instead of the November 2021 design in Appendix AA that depicts the pedestrian and cycleway on the western side; and</p> <ul style="list-style-type: none"> - the setback of existing buildings on and adjacent to the project land, and the bulk, height and form, while considered in the solar modelling analysis, are not discussed in the assessment. |
| 4.15 | Visual impact | <p>The Panel considers that the MPIS demonstrates how development, including during construction, minimises adverse impacts on landscape values and visual amenity.</p> <p>The Panel notes that:</p> <ul style="list-style-type: none"> - the methodology used to prepare photomontages is not clear; and - the photomontage depiction of the extent of application and brightness of both the 316 stainless steel, yellow paint finish, and the precast concrete |
| | | <p>buffer to nearby properties on the western side of the highway corridor.</p> <p>Inspiring Place have prepared an addendum to the Landscape and Visual Analysis (Attachment E) that specifically assesses the potential impacts of the siting and scale of the Project on adjoining properties</p> <p>This assessment identifies 4 residences at 6-12 Nielsen Esplanade will be in close proximity of the bridge, subject to a high visual impact and an 'over-powering presence'. The addendum determines that these impacts cannot be avoided due to the constraints dictating the location, form and height of the new bridge including the necessity to economically integrate the new works with the horizontal and vertical road alignment of the existing highway and for the bridge to be engineered in a fit for purpose manner.</p> <p>Having regard to the nature and functional requirements of the project as well as the height necessary for the operation of the use (parts a) and e) of Assessment Criteria 4.14.1 in particular) the project is considered to be designed and sited to not cause an unreasonable loss of amenity to adjacent properties.</p> <p>The Proponent agrees that the proposed landscaping conditions 33 and 34 are appropriate to mitigate the impacts of the proposal to ensure no unreasonable loss of amenity to adjacent properties as required by Assessment Criteria 4.14.1.</p> |
| | | <p>It is considered that the proposed permit conditions will appropriately implement the recommendations of the Landscape Visual Assessment Report provides as Appendix V to the MPIS and ensure that the proposal. including during construction, minimises adverse impacts on landscape values and visual amenity as required by Assessment Criteria 4.15.1.</p> |

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| | | yellow paint finish shown in Appendix AA – Finishes Schedule, is not consistent with the recommendations in Appendix V. | |
| 5.1.1 | Air emissions | The Panel considers that based on the preliminary condition advice, including reasons, provided by the Board of the Environment Protection Authority (EPA), the MPIS addresses the relevant assessment criteria. | No comment – all comments relating to EPA conditions are included in Table 3. |
| 5.1.2 | Noise emissions | | |
| 5.1.3 | Water quality | | |
| 5.1.4 | Stormwater | | |
| 5.1.5 | Hydrogeology | | |
| 5.1.6 | Contaminated land | | |
| 5.1.7 | Light pollution | | |
| 5.2 | TasGas requirements | The Panel considers that based on the preliminary condition advice, provided by Tas Gas, the MPIS addresses the relevant assessment criteria. | No comment |
| 5.3 | TasWater requirements | The Panel considers that based on the preliminary condition advice, provided by TasWater, the MPIS addresses the relevant assessment criteria. | No comment |
| 5.4 | Tasmanian Heritage Council requirements | <p>The Panel considers that the MPIS largely addresses the relevant assessment criteria based on the preliminary condition advice, including advice that the amendments to the MPIS address their information requirements, provided by the Tasmanian Heritage Council (THC).</p> <p>The Panel notes:</p> <ul style="list-style-type: none"> - the extent of the listing for Black Snake Inn remains unclear; and | <p>The Proponent notes that the extent of the listing for the Black Snake Inn is defined by the Central Plan Register.</p> <p>Further, comments made against Clause 4.8 should be noted here with regard to the impact of flooding.</p> |

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| | | - increased impacts of flood on registered places have not been considered in the heritage impact statement. | |
| 5.5.1 | Aquatic and terrestrial flora | The Panel considers that based on the preliminary condition advice, provided by the Department of Natural Resources and Environment Tasmania (DNRET), (formerly Department of Primary Industries, Parks, Water and Environment), the MPIS addresses the relevant assessment criteria. | No comment |
| 5.5.2 | Vegetation communities | | |
| 5.5.3 | Threatened fauna | | |
| 5.5.4 | Aboriginal heritage | | |

Table 3 - Suggested amendments to the ‘conditions and restrictions’ – general

| Condition | | Proponent Comment | Proposed Amendment |
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| Approved and endorsed plans | 1 | Final design plans and management plans, approved or endorsed under a condition of this permit, form part of the permit. | Remove ‘final’. See comment under condition 3 for reasoning and see advice in letter on proposed definition of ‘design plans’. Amend Condition 1 as follows: <i>“Design plans and management plans, approved or endorsed under a condition of this permit, form part of the permit”</i> |
| | 2 | Works must be undertaken in accordance with approved or endorsed final design plans and management plans. | Remove ‘final’. See comment under condition 3 for reasoning and see advice in letter on proposed definition of ‘design plans’. Amend Condition 2 as follows: <i>“Works must be undertaken in accordance with approved or endorsed design plans and management plans.”</i> |
| | 3 | Approved or endorsed final design plans and management plans must not be altered or modified without the written consent of the relevant decision maker, or the relevant regulator responsible for enforcement of a management plan. | The Proponent notes the intent of this condition is reasonable but the way it is written may be more onerous than anticipated and is considered unsuitable for a major project. The nature of a major project such as a large ‘design and construct’ infrastructure project is that there will be changes to the design plans throughout construction. In most cases these changes are not expected to have a material impact on the matters being protected by the permit conditions, so requiring approval for every change is onerous and alternative wording (proposed) will ensure the intent is met but providing the required flexibility for a major project of this nature. Amend Condition 3 as follows: <i>“Approved or endorsed management plans must not be altered or modified if that alteration or modification will have a material impact to the matters protected by this permit without the written consent of the relevant decision maker, or the relevant regulator responsible for enforcement of a management plan. Any design plans that are approved or endorsed throughout construction must not be altered or modified if that alteration or modification will have a material impact to the matters protected by this permit without the written consent of the relevant decision maker, or the relevant regulator.”</i> |
| Final design plans | 4 | Prior to the commencement of works, final design plans prepared by a suitably qualified person, must be provided to the satisfaction of the relevant decision maker. | As per the comment above relating to condition 3, there will not be a set of ‘final design plans’ available prior to the commencement of works under the proposed contract method (a D&C). If the Panel seeks to approve a ‘design’ prior to any work commencing, then a definition of ‘final design plans’ should be established to the effect that these plans will be a set to |

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| | | <p>indicate the extent of the permanent works and will not be the full design.</p> <p>The term 'prior to commencement of construction' should be used consistently throughout (instead of alternatives such as 'prior to commencement of works') to avoid confusion. Amendment to this for each relevant condition is required to reflect that whatever is being submitted does not need to be provided at the very beginning – only prior to the relevant activities commencing. The concept of 'final design plans' (which are used throughout these conditions) suggests that at some point early in the process there will be a consolidated set of design plans available. For a D&C contract, this will not be the case as elements of the design are progressed in parallel with construction – enabling a quicker delivery which is a strength of the contract model.</p> | <p>The definition of 'design plans' should be established as follows:</p> <p><i>'design plans' – general arrangement plans prepared to provide an indication of extent of works, of sufficient detail for the relevant regulator to confirm compliance with the Permit Conditions.</i></p> <p>Amend Condition 4 as follows:</p> <p><i>"Prior to the commencement of relevant construction, design plans prepared by a suitably qualified person, must be provided to the satisfaction of the relevant decision maker."</i></p> | |
| | 5 | <p>The final design plans must:</p> <p>(a) be fully dimensioned and drawn to a scale;</p> <p>(b) be generally in accordance with Sheet No 0002 (dated 11 Nov-21), 0003 (dated 15 Nov-21), 0005 (dated 11 Nov-21), 0006-0008, (dated 11 Nov-21) and 0009 (dated 10 Nov-21) in Appendix AA of the MPIS dated November 2021, prepared by the Department of State Growth, but modified:</p> <p>(i) to not include development or works in folio of the Register 156256/20, 37 Black Snake Road;</p> <p>(ii) to locate development of the road network, including footpaths but excluding vehicle crossings, no closer to the Granton Watch House than the existing footpath; and</p> | <p>For the reasons set out above in relation to Assessment Criteria 4.11 part (b) (i) of Condition 5, preventing works within CT 156256/20 at 37 Black Snake Road cannot be accommodated by the Proponent as it would prevent construction of the southern interchange. The condition should be deleted.</p> <p>In regard to condition 5 (b) (ii) it should be noted that to accommodate this request, a reduction to 2.5m width of the shared path through this area will be required in order to not encroach on the Watchhouse nor the adjacent Pioneer Elm tree. This width is different from that stated within the MPIS.</p> <p>In regard to condition 5 (b) (iii) - the Proponent notes that the New Bridgewater Bridge has been designed at a height to allow for the clearance of future predicted road levels that accommodate for a 1% AEP flood event in 2090. However, roads (not bridges) are generally reconstructed every 20 years (i.e. have a design life is 20 years) so designing a road that is not on a bridge to 2090 standards is considered unnecessary.</p> | <p>"Final design plans" should be amended to 'design plans'.</p> <p>Delete part b) i) of condition 5 of the permit preventing works within the property at 37 Black Snake Road.</p> <p>Delete part b (iii)</p> <p>Amend (k) as follows:</p> <p><i>"(k) include the final location and general arrangements of all structures;"</i></p> |

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| | <p>(iii) So that the height of roads on the south side of the River Derwent, near the intersection of Main Road and Black Snake Road, is higher than a 1% annual exceedance probability from a flood event in 2090;</p> <p>(c) respond to issues identified in previous road safety audit reports;</p> <p>(d) include plans of access provisions for land impacted by the new works;</p> <p>(e) provide reasonable provision for U-turns to accommodate local traffic requirements on roads with turning limitations to or from intersecting roads or properties;</p> <p>(f) provide Disability Discrimination Act 1992 (Cth) compliant paths;</p> <p>(g) provide bus stops in consultation with public transport providers;</p> <p>(h) provide safe pedestrian and cyclist crossing points where paths meet roadways and other paths, and to provide access to bus stops;</p> <p>(i) provide for the creation of a foreshore trail beneath the new bridge at Bridgewater;</p> <p>(j) must include a materials and finishes schedule that sets out the materials and finishes used that have</p> <p>(iv) a colour palette of natural and muted hues; and</p> <p>(v) low reflectivity to avoid glint</p> | <p>It is also noted that this requirement could require raising of existing roads and the extent of this is not clear from the definition. There may be more effective and appropriate ways to mitigate this risk of future flooding that can be considered in lieu of raising road levels at this time and the condition should reflect that such alternatives would be acceptable.</p> <p>In regard to condition 5 (k) - the final location of these structures will be possible under our proposed definition of 'design plans' but the specification for these may change as design progresses after works commence.</p> <p>In regard to reference to 1% AEP in 2090, it is the Proponents assumption that this is in reference to a 1% AEP event plus the impact of climate change expected at 2090. This term should be defined to avoid confusion.</p> | |

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| | | and glare; (k) include the final location and specifications of all structures; (l) show staging of development; and (m) be consistent with the requirements of any other permit condition. | |
| Staging | 6 | The major project may be completed in stages in accordance with the approved or endorsed final design plans and management plans. | <p>Remove 'final'. See comment under condition 3 for reasoning.</p> <p>Amend Condition 6 as follows:</p> <p><i>“The major project may be constructed and operated in stages. Where staged construction or operation is proposed, a Staging Report (for either or both construction and operation as the case requires) must be prepared and submitted to the Relevant Regulator for information. The Staging Report must:</i></p> <p><i>(a) set out how the construction of the whole of the major project will be staged, including general details of work and other activities to be carried out in each stage and the general timing of when construction of each stage will commence;</i></p> <p><i>(b) set out how the operation of the whole of the major project will be staged, including general details of construction and other activities to be carried out in each stage and the general timing of when operation of each stage will commence;</i></p> <p><i>(c) specify the relevant conditions of approval that apply to each stage and how compliance with those conditions will be achieved across and between each of the stages of the major project.</i></p> <p><i>Where staging is proposed, the terms of this Permit that apply or are relevant to the construction to be carried out in a</i></p> |

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| | | | <i>specific stage must be complied with at the relevant time for that stage.”</i> |
| Construction Environmental Management Plan | 7 | <p>Prior to the commencement of construction, a Construction Environmental Management Plan prepared by a suitably qualified person must be provided to the satisfaction of the relevant decision maker.</p> <p>The Proponent notes that there are a number of conditions requiring management plans to be prepared and endorsed throughout the Initial Assessment Report. However different terminology is used and there appears to be overlap/conflict in these plans, including uncertainty on how the CEMP set out in Conditions 7 and 8 relates to the detailed management plans set out in the other conditions.</p> <p>The Proponent suggests that a consolidated condition on Management Plans should be prepared that will address all management requirements for the project.</p> <p><u>Reason:</u> To have multiple plans with slightly different requirements risks the plans effectiveness being compromised and creates additional administrative burden on both the Proponent and the regulator.</p> <p>It is also proposed that management plans should be required prior to <i>relevant</i> construction or demolition activity (or works to be consistent with other conditions), indicating that a management plan is not required until the portion of construction covered by that management plan are to commence – this differentiates between the start of construction versus the start of an individual component of the construction program.</p> | <p>Amend Condition 7 as follows:</p> <p><i>“Prior to the commencement of relevant construction, Management Plans prepared by a suitably qualified person must be provided to the satisfaction of the relevant decision maker and/or relevant regulators.”</i></p> |
| | 8 | <p>The Construction Environmental Management Plan must:</p> <p>(a) Set out how reclamation works will be managed and must include:</p> <p>(i) measures to minimise sediment dispersal during reclamation, outside of reclamation areas, such as, use of geofabric and siltscreens, or timing of works during low or</p> <p>Referring to the comment, above, this section should consolidate all management plans to ensure that a concise set of plans are required. This CEMP overlaps with the EMPs required by the EPA.</p> <p>In regard to condition 8(b) and 8(c) is it suggested that the wording should be altered to focus on outcomes rather than methodology and should require that mitigation measures and</p> | <p>Consolidate requirements with EPA and other relevant regulators.</p> <p>Amend (b) as follows:</p> <p><i>“(b) set out the mitigation measures and management actions for minimising sediment dispersal during installation of temporary piles and bridge piles”</i></p> |

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| | <p>incoming tides;</p> <p>(ii) details of how the Northern reclamation will be removed at the completion of construction of the new bridge;</p> <p>(iii) details of a monitoring program to monitor reclamation for sediment plumes in the River Derwent;</p> <p>(iv) management actions to be undertaken in the event sediment plumes are identified in the River Derwent.</p> <p>(b) set out the methodology for installing temporary piles and bridge piles, that minimises sediment dispersal;</p> <p>(c) set out the methodology for removing temporary piles that minimises sediment dispersal, or where they cannot be removed, cutting off temporary piles at or below the river bed;</p> <p>(d) Set out the management strategies, including monitoring, to be applied to minimise the risk to causeway embankment failure;</p> <p>(e) detail how public access to the playground and informal walking track at Nielson Esplanade will be retained during construction;</p> <p>(f) include construction diagrams and maps that identify areas of the wetlands threatened native vegetation community to be excluded from clearance and conversion;</p> <p>(g) set out that motorised vessels are not be used in water less than</p> | <p>management techniques are set out rather than the methodology itself.</p> <p>In regard to condition 8(c) the Proponent acknowledges and supports the view that pile extraction should be attempted but where not possible they can be cut off at bed level. It is expected that pile extraction will be difficult and the activity could lead to significant sediment disturbance so an alternative approach may be necessary.</p> <p>In regard to condition 8 (g) and (h) - the Proponent notes this was one of many potential mitigation measures considered in the Aquatic Risk Assessment (appendix G to the MPIS), designed to reduce the risk of sediment resuspension. The MPIS provided further discussion on a range of potential mitigation measures and a commitment that all adopted mitigation measures would be detailed in a CEMP for submission to the Regulator for approval. The draft conditions developed by the EPA establish a performance-based approach to managing sediment disturbance which essentially addresses the control of sediment resuspension through the use of performance outcomes rather than specific construction control measures, which we consider to be more appropriate to adopt for this project.</p> <p>Whilst the movement of vessels in shallow waters will be limited where practical, the inclusion of these limits in conditions 8(g) and (h) would be highly restrictive, particularly if the water quality objectives could be met with their use. Further it is noted that, without the ability to occasionally use vessels in shallow waters, safety outcomes may not be achieved for the project including those required under conditions. Due to seasonal and tidal fluctuations, water depths will change on a constant basis (differing hourly throughout the whole year and not on a regular or easy to monitor basis) and regulating this condition would be extremely restrictive and prevent effective programming of works.</p> | <p>Amend (c) as follows:</p> <p><i>“(c) set out the mitigation measures and management actions for minimising sediment dispersal during removal of temporary piles, or, where they cannot be removed, cutting off temporary piles at or below the river bed”</i></p> <p>Remove condition (g) and (h).</p> |

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| | | <p>0.7m in depth; (h) set out that motorised vessels operating in water between 0.7 and 1.2m in depth must have a shallow draft and use short-shaft motors; and (i) show staging of development and works and the timing of giving effect to relevant conditions.</p> | <p>It would not be possible to ascertain whether such a condition was being achieved due to the variable water levels caused by tidal fluctuations, river flow changes, and wind and wave setup in unfavourable weather conditions (i.e. storm surge or low atmospheric pressure).</p> <p>Further it is noted that, without the ability to use vessels in shallow waters, safety outcomes may not be achieved for the project including those required under conditions.</p> <p>The condition requirement to undertake pilot studies for activities that will impact water quality should be able to inform the actual impacts of motorised vessels operating at particular depths and such a prescriptive approach is considered unfeasible.</p> |
| Transport | 9 | <p>The major project (including new or modified local roads, parking, pedestrian and cycle infrastructure) must be designed to meet relevant design, engineering and safety guideline including Austroads Guide to Traffic Management, with new roads joining existing roads in a smooth and continuous fashion, in accordance with advice from the road authority.</p> | <p>No comment</p> <p>Nil</p> |
| | 10 | <p>Independent Road Safety Audits, undertaken in accordance with advice from the road authority, the Austroads Guide to Road Safety, Part 6, 2019, for all stages of the Project development, including pre-opening, must be provided to the satisfaction of the relevant decision maker.</p> | <p>Amend Condition 10 as follows:</p> <p><i>“Independent Road Safety Audits, undertaken in accordance with advice from the Austroads Guide to Road Safety Part 6, 2019, for all states of the Project development, including pre-opening, must be provided to the satisfaction of the road authority.”</i></p> |

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| | 11 | <p>Safe pedestrian and cyclist access must be maintained around work sites during construction. In circumstances where pedestrian and cyclist access is restricted or removed due to construction activities, an alternative route (which complies with the relevant standards) will, in so far as possible, be provided and signposted.</p> | <p>Amend Condition 11 as follows:</p> <p><i>“Safe conditions for pedestrians and bicyclists are to be maintained at all times. Where pre-existing engineered pedestrian and/or bicyclist pathways, including all surface types (asphalt, concrete or gravel) are impacted, alternative routes are to be provided using temporary pathways. All temporary pathways must be of a standard not less than that of pre-existing pathways, including the standard of lighting. All temporary pathways and crossings must be clearly delineated, signed and fenced to prevent easy access to the remainder of the Construction Site.”</i></p> |
| | 12 | <p>Temporary changes to bus stops and routes must be determined in consultation with Metro and other relevant bus operators to minimise disruption to public transport services during the works.</p> | <p>Amend Condition 12 as follows:</p> <p><i>Temporary changes to bus stops and routes must be determined in consultation with relevant public transport operators to maintain safety and minimise disruption to public transport services during the works.</i></p> |
| | 13 | <p>Prior to the commencement of construction, a Construction Traffic Management Plan prepared by a suitably qualified person must be provided to the satisfaction of the relevant decision maker.</p> | <p>Amend Condition 13 as follows:</p> <p><i>“Prior to the commencement of works that will impact traffic, a Construction Traffic Management Strategy prepared by a suitably qualified person, must be provided to the satisfaction of the road authority, and provided to Derwent Valley, Glenorchy and Brighton councils for information.”</i></p> |
| | | <p>The Proponent notes that the intent of this condition is to enable safe access. This will not be always possible and thus an alternative is proposed.</p> <p>Suggested amendment included.</p> | |
| | | <p>Proposed wording change to clarify consultation required with relevant public transport operators</p> | |
| | | <p>Traffic management will change progressively throughout the Project as it goes through various construction stages. Therefore, it is recommended that an overarching Traffic Management Strategy be prepared prior to the commencement of construction, rather than the construction traffic management plan (as multiple construction traffic management plans will be developed throughout construction).</p> <p>The appropriate relevant decision maker for the construction traffic management strategy (and construction traffic management plans) is the road authority which in this case is the Minister for Infrastructure, in accordance with s3 of the Roads and Jetties Act 1935.</p> | |

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| | | It is the Proponent's view that it is not suitable for traffic management to require approval from a party that is not the road authority, and therefore not responsible for the safe and efficient operation of the broader transport network. | |
| 14 | <p>The construction traffic management plan must be prepared in accordance with Australian Standards, AS1742.3:2019 and include:</p> <p>(a) details of how advice of delays to motorists will be communicated;</p> <p>(b) consideration of all property access and road users including vehicles, light and heavy, public transport, pedestrians and cyclists;</p> <p>(c) minimises adverse impact on access for commercial and residential properties;</p> <p>(d) detail the staging of construction outside and within the existing road network;</p> <p>(e) a requirement to maintain at least 1 lane of traffic flow in each direction along the Midland Highway at all times;</p> <p>(f) construction of the majority of the bridge structure whilst maintaining traffic flow on the existing causeway/ bridge infrastructure;</p> <p>(g) transferral of all or part (2 lanes or 4 lanes) of traffic flow onto new bridge structure using temporary detours whilst construction of the northern and southern interchanges are under</p> | <p>In regard to (e) "at all times" is not achievable as occasional short period stoppages will be unavoidable and this condition is inconsistent with existing operations where the lifting of the bridge span temporary stops traffic flow on the Midland Highway in both directions for short periods.</p> <p>In regard to item (g) this is not a reasonable condition as staging does not necessarily mean that the bridge will be completed prior to commencement of the interchanges. The works on the Northern and Southern Interchanges will be undertaken concurrent with the construction of the new bridge and then completed after there is traffic on the new bridge.</p> <p>Further, stipulation of a specific outcome doesn't allow for delays or a change of program in instance of unforeseeable circumstances such as material supply delays, and as drafted it does not offer any additional protection not covered by the other subsections of Condition 14.</p> <p>In regard to item (h) this condition unnecessarily restricts the management of traffic in and around the work site.</p> <p>In regard to item (i), this speed limit will not be appropriate for local roads and the overriding factor for selection of speed limits must be the safety of workers. This should not be stated as worded in the TMP and should be deleted.</p> | <p>Change 'traffic management plan' to 'traffic management strategy'.</p> <p>Amend Condition 14 (e) as follows:</p> <p><i>"a requirement to maintain at least 1 lane of traffic flow in each direction along the Midland Highway at all times, except that traffic may be stopped for the purposes of raising the lifting span on the existing bridge for operational and maintenance purposes, and traffic may be stopped in one or both directions for short periods for the purposes of construction of specific work (including installation of bridge spans, street lighting, gantries and other overhead structures) which cannot safely be constructed without affecting traffic, in which case such periods shall be minimised to the maximum extent permissible."</i></p> <p>Delete Condition 14 (g).</p> <p>Amend part of Condition 14 (h) as follows:</p> <p><i>"...(h) utilising existing road corridors (such as Main Road), new road corridors or Crown land located between existing and new road corridors, as detour routes whilst interchanges are under construction;"</i></p> |

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| | | <p>construction;</p> <p>(h) utilising existing road corridors (such as Main Road) as detour routes whilst interchanges are under construction;</p> <p>(i) where possible a construction speed limit of 60-km/h should be provided to minimise travel delays through or past the construction site; and</p> <p>(j) advanced warning signage placed on the southern approach to the Bowen Bridge on the Brooker Highway (prior to Elwick Road junction) and Midland Highway on the northern approach to the East Derwent Highway roundabout to provide a detour route and reduce traffic flow through the construction site.</p> | Delete Condition 14 (i). | |
| Bushfire-prone areas | 15 | <p>The following must not be stored on the project land during construction or operation:</p> <p>(a) hazardous chemicals of a manifest quantity;</p> <p>(b) explosives in a classified explosives location, or large explosives location under the Explosives Act 2012.</p> | <p>It is noted that the Proponent does not have control of all the land within the Project Land extent. This condition should reflect this by noting that the Proponent may not store materials falling into those categories on the Project Land.</p> <p>The Project Land should be capitalised as it is a defined term.</p> | <p>Amend Condition 15 as follows:</p> <p><i>“The following must not be stored by the Proponent on the Project Land during construction or operation:</i></p> <p><i>(a) hazardous chemicals of a manifest quantity;</i></p> <p><i>(b) explosives in a classified explosives location, or large explosives location under the Explosives Act 2012.”</i></p> |
| Dredging and reclamation | 16 | There is to be no dredging. | <p>This comment should be cross-referenced and consistent with the EPA condition WQ1.</p> <p>Amend to be consistent with EPA condition WQ1.</p> | |
| | 17 | <p>The areas of reclamation must not exceed 5500m² at the southern site, and 2500m² at the northern site, and must be in accordance with the location and dimensions set out in the plan Connectivity to Existing Road</p> | <p>The Proponent notes that the ‘area of reclamation’ referred to is the working area of the reclaimed area (i.e. the platform size). The total underwater footprint of reclaim, allowing for batters, is larger than this (~7,000m²).</p> <p>Given this condition relates to reclaim (and not impacts to the community or species) the Proponent believe the figures used</p> | <p>Amend Condition 17 as follows:</p> <p><i>“The above water area of reclamation must not exceed 5500m² at the southern site, and 2500m² at the northern site, and must be generally in accordance with the location and</i></p> |

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| | | Network, Burbury consulting, dated, 11/11/2021. | in the draft condition are appropriate, but the definition of area of reclaim should be refined. Suggested amendment included. |
| | 18 | Each reclamation area is to be armoured with rock or similar erosion protection measures to minimise the risk of predicted 1%AEP erosion events in 2090. | The Proponent recognises the need to provide erosion protection to reclamation areas. However it is noted that this condition is written towards permanent reclaim where there is also temporary reclaim proposed. It would not be necessary to armour with rock to a 2090 1% AEP level for a temporary reclaim. Suggested amendment attached. Amend Condition 18 as follows: "Permanent reclamation areas are to be armoured with rock or similar erosion protection measures to minimise the risk of predicted 1% AEP erosion events in 2090. Temporary reclamation areas are to have erosion protection measures installed commensurate with duration of usage." |
| | 19 | Reclamation must use: (a) clean fill; or (b) solid inert fill material, Category A landfill set out in the Landfill Sustainability Guide 2004 (DPIWE, 2004) that is categorised as level 1 fill material in Bulletin 105, Classification and Management of Contaminated Soil for Disposal; | The Proponent notes the intent of this condition and has no intention to bring any contaminated material on to the site for the purposes of reclamation. However the proposed methodology for reclamation involves 'soil mixing' with cement powder to stabilise the existing materials in the river prior to emplacement of clean fill materials. As the existing sediment in the river is known to contain contaminants it is unclear whether the condition as written would not allow this. Proposed amendment included. Condition 1.3.5 of WMI within the EPA requirements note this construction method to be utilised. Suggested amendment included. Please note that lime would only be used to treat acid sulphate soils (ASS) as needed. Amend Condition 19 as follows: "Any material brought to site for the purpose of reclamation must use: (a) clean fill; or (b) solid inert fill material, Category A landfill set out in the Landfill Sustainability Guide 2004 (DPIWE, 2004) that is categorised as level 1 fill material in Bulletin 105, Classification and Management of Contaminated Soil for Disposal; or (c) cement or lime, for the purposes of reclamation in the southern proposed reclamation area only." |
| Flood Management Plan | 20 | Prior to the commencement of construction, a flood management plan prepared by a suitably qualified person must be provided to the satisfaction of the relevant decision maker. | The Proponent notes that this plan would form part of the overarching management plans to be prepared for the project and thus suggests this condition be consolidated into a broader condition relating to management plans generally. Suggest relocation to a broader condition on management plans. Amend Condition 20 as follows: |

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| | | Further, it is submitted that 'prior to commencement of construction' be rather linked to works that may impact on flood risk. | <i>"Prior to commencement of works that will impact flood risk, a flood management plan prepared by a suitably qualified person must be provided to the satisfaction of the relevant decision maker."</i> | |
| | 21 | <p>The flood management plan must:</p> <p>(a) set out:</p> <p>(i) the flood mitigation or reduction measure to be put in place so that there is no increase in flood risk from development to the Watch House, 1, 2, 4, 5 and 7 Wallace Street, 1 to 5 Riverside Drive, 37 Black Snake Road and the former Black Snake Inn, compared to a 1% annual exceedance probability in 2090 without the new Bridgewater Bridge having been constructed;</p> <p>(ii) how flood risk from temporary works during construction will be managed;</p> <p>(iii) how access to services is maintained;</p> <p>(b) be based on a hydrodynamic model of the final design plans.</p> | <p>The Proponent notes the desire to not increase flood risk. As is demonstrated in the work completed to date, with the removal of the existing bridge the flood levels up stream are expected to be lower than current conditions.</p> <p>However the term 'no increase in flood risk' is a broad term that would not be practicable to achieve, as the change in river hydrodynamics and surrounding hydrology may see localised increase in flood levels, even with an overall predicted reduction of flood levels upstream of the bridge.</p> <p>It is suggested that the wording be amended to reflect that design case modelled flood levels are to be within 25mm of the existing case flood levels for equivalent design flood events including for 1% AEP in 2090.</p> <p>Further, flood risk should be assessed through the use of a suitable hydrologic or hydraulic model, not a hydrodynamic model.</p> | <p>It is suggested that a definition of no increase in flood risk be adopted as follows:</p> <p><i>"No increase in flood risk – no increase in flood risk is deemed to be achieved if modelled flood levels (height) for the design are within 25mm of existing flood levels for equivalent flood events including for 1% AEP in 2090. "</i></p> <p>Change reference of 'hydrodynamic model' to 'hydrologic or hydraulic model'.</p> |
| Geoconservation | 22 | <p>Prior to the commencement of works, a study of the Brooker sub-site of the Granton to New Norfolk Quaternary Stratigraphic Sites prepared by a suitably qualified person that details the geodiversity values of the sub-site must be provided to the satisfaction of the relevant decision maker.</p> | <p>The Proponent suggests a small amendment be made to reflect that this project is a multi-year project and that not all work areas will commence at once.</p> <p>Also 'commencement of construction' is a standard term used throughout and should be used in place of commencement of works'.</p> | <p>Amend Condition 22 as follows:</p> <p><i>"Prior to the commencement of construction at the Brooker sub-site of the Granton to New Norfolk Quaternary Stratigraphic Sites, a study should be prepared by a suitably qualified person that details the geodiversity values of the sub-site must be provided to the satisfaction of the relevant decision maker."</i></p> |

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| | 23 | Within 1 year after the new Bridgewater Bridge being open to traffic, provide an addendum to the study of the Brooker- sub-site of the Granton to New Norfolk Quaternary Stratigraphic Sites prepared by a suitably qualified person that documents the geodiversity values encountered during works and those remaining post construction. | No comment Nil |
| Landslip risk | 24 | For all cuttings identified on drawing numbers 008 and 009 – G.Arrangement-04.dwg: (a) construct catch drains above new cuttings and install drape netting; or (b) apply alternative strategies to the satisfaction of the relevant decision maker to mitigate rock fall; | No comment Nil |
| | 25 | For all new cuttings identified on the eastern side of the River Derwent drawing numbers 002– G.Arrangement-04.dwg: (a) construct catch drains above each cutting; (b) install drape netting; or (c) apply alternative strategies to the satisfaction of the relevant decision maker to mitigate rock fall. | No comment Nil |
| Local heritage | 26 | A vehicle crossing is to be provided into and out of the Granton Watch House property. | No comment Nil |
| | 27 | There is to be no demolition of buildings at 37 Black Snake Road. | For the reasons discussed in relation to Assessment Criteria 4.11, the Proponent cannot accept this condition because demolition of certain buildings at 37 Black Snake Road is Delete Condition 27. |

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| | | necessary and unavoidable for the construction of the southern interchange to meet the required functionality. Accordingly, it is requested that condition 27 be deleted. | |
| | 28 | There is to be no works on the Bridgewater railway station's concrete platform identified as 4.01 on Figure 23: identified sites – Map 13 on page 45 of Appendix L of the MPIS. No comment | Nil |
| Marine safety and infrastructure | 29 | Prior to and during construction works within the River Derwent: (a) install and maintain temporary navigation aids and markers during construction of the New Bridgewater Bridge, in accordance with advice from MAST; and (b) have a vessel available and manned within the project land in the River Derwent to monitor safe navigation of vessels. The Proponent notes that the safe navigation of vessels is an important aspect of this project. However, given the low volume of vessels that utilise the area, having a vessel 'available and manned' is not deemed necessary. The contractor will have a team of marine support staff that can be mobilised during Project Hours to assist if necessary, including for any safety related matter. Proposed amendment included. Further, to maintain access to smaller watercraft, the temporary bridge used to construct the new bridge will be designed and built to achieve 2m clearance from the underside of the beam to the highest astronomical tide. A removable bay will be designed and installed to enable taller watercraft to access upstream on a pre-arranged schedule; however, this is expected to be on non-work days only (e.g. Sunday and Public Holidays). | Amend part of Condition 29 as follows: "... <i>(b) have a vessel available to be deployed within the project land in the River Derwent to assist with the safe navigation of vessels.</i> " |
| | 30 | Prior to the completion of the development install permanent navigation aids and markings for the ongoing safe navigation of vessels, in accordance with advice from MAST. No comment | Nil |
| | 31 | Within 1 year of the New Bridgewater Bridge being open to The Proponent notes the requirement to reinstate the existing boat ramp and jetty differs from the discussions held between | Amend Condition 31 as follows: |

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| | | traffic to reinstate the Bridgewater boat ramp and jetty to an equivalent or better standard than existing. | the Proponent and Brighton Council on the matter. Suggested amendment to wording required to reflect this position from both parties. |
| | | the Proponent and Brighton Council on the matter. Suggested amendment to wording required to reflect this position from both parties. | “Within 1 year of the New Bridgewater Bridge being open to traffic to reinstate the Bridgewater boat ramp and jetty to an equivalent or better standard than existing unless agreed otherwise with Brighton Council or 'relevant decision maker' that alternative location or facility is to be provided in lieu of reinstatement.” |
| Public Open Space | 32 | An open space network is provided substantially in accordance with the future public open space, shown in plan: Existing and Future Public Open Space and Access Paths – Bridgewater (on or near Project Land), dated 1/11/2021 and Existing and Future Public Open Space and Access Paths – Granton (on or near Project Land), dated 1/11/2021 in Appendix A of the MPIS. | No comment |
| Landscape plan | 33 | Prior to the commencement of construction a landscape plan prepared by a suitably qualified person must be provided to the satisfaction of the relevant decision maker. | The Proponent notes that this plan would form part of the suite of management plans to be prepared for the project and thus suggests this condition be consolidated into a broader condition relating to management plans generally. |
| | | Prior to the commencement of construction a landscape plan prepared by a suitably qualified person must be provided to the satisfaction of the relevant decision maker. | Suggest relocation to a broader condition on management plans. Amend Condition 33 as follows: “Prior to the commencement of relevant construction a landscape plan prepared by a suitably qualified person must be provided to the satisfaction of the relevant decision maker.” |
| | 34 | The landscape plan must: (a) Include the vegetation screening shown in: (i) Appendix AA – Landscaping Plan, Southern, Sheet No 1902 adjacent to the former Black Snake Inn; and (ii) Appendix AA – Landscaping Plan, Southern, sheet No 7903 | No comment |
| | | The landscape plan must: (a) Include the vegetation screening shown in: (i) Appendix AA – Landscaping Plan, Southern, Sheet No 1902 adjacent to the former Black Snake Inn; and (ii) Appendix AA – Landscaping Plan, Southern, sheet No 7903 | Nil |

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| | <p>adjacent to Nielson esplanade, Gunn Street, and Hayton Place.</p> <p>(b) include a schedule of the plants to be used;</p> <p>(c) include a schedule to tree, hedge and shrub sizes at planting and maturity;</p> <p>(d) set out the extent of tree protection zones and exclusion zone around existing vegetation to be retained;</p> <p>(e) implement the recommended mitigation measures for treatment of cut rock faces, and landscaping set out in section 4.15.7 of the MPIS, dated November 2021;</p> <p>(f) show any staging and the timing commencement and completion of landscaping.</p> <p>For the purpose of this condition (d) above, tree protection zone means the space surrounding individual trees based on trunk (stem) diameter (DBH), measured at 1.4m up from ground level. The radius of the tree protection zone is calculated by multiplying the tree's DBH by 12. For example, a tree with 0.4m DBH requires a tree protection zone of 4.8m. The method provides a tree protection zone that addresses both tree stability and growth requirements. Tree protection zone distances are measured as a radius from the centre of the trunk at ground level.</p> | | |

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| Lighting Plan | 35 | Prior to the commencement of construction a lighting plan prepared by a suitably qualified person must be provided to the satisfaction of the relevant decision maker. | <p>The Proponent notes it appears the intent of this condition is to relate to operational works only and seeks clarification to this effect.</p> <p>The use of 'lighting design plans' will differentiate this from the lighting plan required by the EPA.</p> | <p>Amend Condition 35 as follows:</p> <p><i>"Prior to the commencement of relevant construction lighting design plans prepared by a suitably qualified person must be provided to the satisfaction of the relevant decision maker."</i></p> |
| | 36 | The lighting plan must: (a) identify if there is any proposed decorative lighting; (b) provide illumination at the minimum required to achieve road safety; (c) set out the location and height of light poles; and (d) minimise the height of lighting. | No comment | Nil |
| Vegetation Communities | 37 | Clearance and conversion of the wetlands threatened native vegetation community listed under the Nature Conservation Act 2002 is to be not more than 2.5ha. | <p>The MPIS noted that the proposed area of wetlands that would require clearance or conversion would be between 2.5 ha and 3.2 ha (with 3.2 ha proposed as the upper limit). These figures were put forward when the design had been yet to be finalised.</p> <p>Based on the chosen design, 3.2ha of wetland clearance and conversion is required to construct the project. The chosen design therefore cannot achieve the proposed condition.</p> <p>Proposed amendment included.</p> | <p>Amend Condition 37 as follows:</p> <p><i>"Clearance and conversion of the wetlands threatened native vegetation community listed under the Nature Conservation Act 2002 is to be not more than 3.2ha."</i></p> |
| Weed Disease and Hygiene Management Plan | 38 | Prior to the commencement of construction, a Weed, Disease and Hygiene Management Plan prepared by a suitably qualified person must be provided to the satisfaction of the relevant decision maker. | The Proponent notes that this plan would form part of the suite of management plans to be prepared for the project and thus suggests this condition be consolidated into a broader condition relating to management plans generally. | <p>Suggest relocation to a broader condition on management plans.</p> <p>Amend Condition 38 as follows:</p> <p><i>"Prior to the commencement of relevant construction, a Weed, Disease and Hygiene Management Plan prepared by a suitably qualified person must be provided to the satisfaction of the relevant decision maker."</i></p> |

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| | 39 | The Weed, Disease and Hygiene Management Plan must be consistent with the Weed and Disease Planning and Hygiene Guidelines - Preventing the spread of weeds and diseases in Tasmania. | No comment Nil |
| Tas Gas | 40 | Tas Gas incurred costs for this major project works for the “New Bridgewater Bridge Major Project” be recoverable (Proponent to nominate). Example of work (not inclusive): Gas mains relocation, Supervision of works (With-in 25 meters) near gas mains and pipelines, Engineering review of blasting limits, etc. | No comment Nil |
| | 41 | The Hobart High Pressure Transmission Pipeline (Northern end of north shore landing affected area). Will need to be protected as per AS 2885 and Tas Gas procedure requirements. Especially in relation to ground and vehicle loading and vibration effects (20mm/sec peak particle velocity). | No comment Nil |
| | 42 | Gas reticulation network (Western and southern edges of north shore landing affected area). Will need to be protected as per AS 4645 and Tas Gas procedure requirements. Especially in relation to asset relocations and protection from excessive ground and vehicle loading and vibration effects. | No comment Nil |

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| TasWater | 43 | <p>The New Bridgewater Bridge must include a service tray equivalent mounting points able to accommodate 3 x 300mm outside diameter pipes and associated air valves, vents and scour points.</p> | <p>The condition cannot interfere with the powers, obligations and rights of the road authority arising under the <i>Roads and Jetties Act 1935</i>.</p> <p>The Proponent should not be required to provide for future TasWater services as a condition of the permit.</p> <p>Any agreements with TasWater in regards to the provision of additional services or works beyond the scope of the Project should be undertaken under an arrangement between TasWater and the Proponent in line with obligations under s12A of the <i>Roads and Jetties Act 1935</i>. It is noted that the Proponent does not take issue with construction of new services, provided that suitable cost contribution and design details can be agreed upon with TasWater. It is also noted that TasWater have requested provision for 3x500mm mains to the Proponent, but the permit condition only discusses 3x300mm mains.</p> | Delete this condition. |
| | 44 | Plans submitted with the application for Engineering Design Approval must show, to the satisfaction of TasWater, all existing, redundant and/or proposed property services and mains. The plans must also show the relocation or protection of existing assets impacted by the proposed bridge. | Conditions 44 to 60 appear to reflect standard conditions imposed by TasWater on private development projects. The Proponent considers that these conditions are inappropriate to be applied to a major public infrastructure project and encourages these conditions to be revisited by regulator. | See comment |
| | 45 | Prior to applying for a Permit to Construct new infrastructure the Proponent must obtain from TasWater Engineering Design Approval for new TasWater infrastructure. The application for Engineering Design Approval | Conditions 44 to 60 appear to reflect standard conditions imposed by TasWater on private development projects. The Proponent considers that these conditions are inappropriate to be applied to a major public infrastructure project and encourages these conditions to be revisited by regulator. | See comment |

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| | <p>must include engineering design plans prepared by a suitably qualified person showing how TasWater's water and sewerage infrastructure will be relocated, to TasWater's satisfaction.</p> | | |
| 46 | <p>Prior to works commencing, a Permit to Construct must be applied for and issued by TasWater. All infrastructure works must be inspected by TasWater and be to TasWater's satisfaction.</p> <p>(a) In addition to any other conditions in this permit, all works must be constructed under the supervision of a suitably qualified person in accordance with TasWater's requirements.</p> <p>(b) Prior to the issue of a Certificate of Water and sewerage Compliance (Building and/or Plumbing) or Certificate of Practical Completion, all additions, extensions, alterations or upgrades to TasWater's water and sewerage infrastructure required to accommodate the development, are to be completed generally as shown on, and in accordance with, the plans approved via the Engineering Design Approval, and are to be constructed at the expense of the Proponent to the satisfaction of</p> | <p>Conditions 44 to 60 appear to reflect standard conditions imposed by TasWater on private development projects. The Proponent considers that these conditions are inappropriate to be applied to a major public infrastructure project and encourages these conditions to be revisited by regulator.</p> | <p>See comment</p> |

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| | TasWater, with live connections performed by TasWater. | | |
| 47 | After testing/disinfection, to TasWater's requirements, of newly created works, the developer must apply to TasWater for connection of these works to existing TasWater infrastructure, at the proponents cost. | Conditions 44 to 60 appear to reflect standard conditions imposed by TasWater on private development projects. The Proponent considers that these conditions are inappropriate to be applied to a major public infrastructure project and encourages these conditions to be revisited by regulator. | See comment |
| 48 | At practical completion of the water and sewerage works and prior to applying to TasWater for a Certificate of Water and Sewerage Compliance (Building and/or Plumbing), the developer must obtain a Certificate of Practical Completion from TasWater for the works that will be transferred to TasWater. To obtain a Certificate of Practical Completion: (a) Written confirmation from the supervising suitably qualified person certifying that the works have been constructed in accordance with the TasWater approved plans and specifications and that the appropriate level of workmanship has been achieved; (b) A request for a joint on-site inspection with TasWater's authorised representative must be made; (c) Security for the twelve (12) month defects liability period to the value of 10% of the works | Conditions 44 to 60 appear to reflect standard conditions imposed by TasWater on private development projects. The Proponent considers that these conditions are inappropriate to be applied to a major public infrastructure project and encourages these conditions to be revisited by regulator. The Proponent notes the terminology used within the TasWater conditions refers to 'developer'. It is suggested that the conditions seek to clarify and consolidate the terms in line with the Major Project Permit. | See comment |

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| | <p>must be lodged with TasWater. This security must be in the form of a bank guarantee;</p> <p>(d) Work As Constructed drawings and documentation must be prepared by a suitably qualified person to TasWater's satisfaction and forwarded to TasWater.</p> | | |
| 49 | <p>After the Certificate of Practical Completion has been issued, a 12 month defects liability period applies to this infrastructure. During this period all defects must be rectified at the developer's cost and to the satisfaction of TasWater. A further 12 month defects liability period may be applied to defects after rectification. TasWater may, at its discretion, undertake rectification of any defects at the developer's cost. Upon completion, of the defects liability period the developer must request TasWater to issue a "Certificate of Final Acceptance". The newly constructed infrastructure will be transferred to TasWater upon issue of this certificate and TasWater will release any security held for the defects liability period.</p> | <p>Conditions 44 to 60 appear to reflect standard conditions imposed by TasWater on private development projects. The Proponent considers that these conditions are inappropriate to be applied to a major public infrastructure project and encourages these conditions to be revisited by regulator.</p> <p>The Proponent notes the terminology used within the TasWater conditions refers to 'developer'. It is suggested that the conditions seek to clarify and consolidate the terms in line with the Major Project Permit.</p> | See comment |
| 50 | <p>The Proponent must take all precautions to protect existing TasWater infrastructure. Any damage caused to existing TasWater infrastructure during</p> | <p>Conditions 44 to 60 appear to reflect standard conditions imposed by TasWater on private development projects. The Proponent considers that these conditions are inappropriate to</p> | See comment |

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| | the construction period must be promptly reported to TasWater and repaired by TasWater at the developer's cost. | be applied to a major public infrastructure project and encourages these conditions to be revisited by regulator. | |
| 51 | Ground levels over the TasWater assets and/or easements must not be altered without the written approval of TasWater. | Conditions 44 to 60 appear to reflect standard conditions imposed by TasWater on private development projects. The Proponent considers that these conditions are inappropriate to be applied to a major public infrastructure project and encourages these conditions to be revisited by regulator. | See comment |
| 52 | A construction management plan must be submitted with the application for TasWater Engineering Design Approval. The construction management plan must detail how the new TasWater infrastructure will be constructed while maintaining current levels of services provided by TasWater to the community. The construction plan must also include a risk assessment and contingency plans covering major risks to TasWater during any works. The construction plan must be to the satisfaction of TasWater prior to TasWater's Engineering Design Approval being issued. | The Proponent notes that this plan would form part of the suite of management plans to be prepared for the project and thus suggests this condition be consolidated into a broader condition relating to management plans generally. | Suggest relocation to a broader condition on management plans or reference to this condition. |
| 53 | The Proponent must apply to TasWater for reimbursement for costs for design and construction of eligible works. To be eligible for reimbursement, costs for which reimbursement is claimed must be determined from a competitive public tender process, with process and reimbursements determined | Conditions 44 to 60 appear to reflect standard conditions imposed by TasWater on private development projects. The Proponent considers that these conditions are inappropriate to be applied to a major public infrastructure project and encourages these conditions to be revisited by regulator. | Provide definition of eligible works and confirm basis of reimbursement for costs for eligible works. Delete requirement for public tender process as this has already been completed. |

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| | prior to construction, and to the written approval of TasWater. | | |
| 54 | Prior to the Sealing of any Final Plan of Survey, a Consent to Register a Legal Document must be obtained from TasWater as evidence of compliance with these conditions when application for sealing is made. | Conditions 44 to 60 appear to reflect standard conditions imposed by TasWater on private development projects. The Proponent considers that these conditions are inappropriate to be applied to a major public infrastructure project and encourages these conditions to be revisited by regulator. | See comment |
| 55 | Pipeline easements, to TasWater's satisfaction, must be created over any existing or proposed TasWater infrastructure and be in accordance with TasWater's standard pipeline easement conditions. | Easements are not appropriate for TasWater infrastructure in the public road corridor. Conditions 44 to 60 appear to reflect standard conditions imposed by TasWater on private development projects. The Proponent considers that these conditions are inappropriate to be applied to a major public infrastructure project and encourages these conditions to be revisited by regulator. | Delete this condition |
| 56 | Prior to the issue of a Certificate of Practical Completion from TasWater, the applicant must submit a copy of the completed Transfer for the provision of a Pipeline and Services Easement(s) to cover existing/proposed TasWater infrastructure as required by condition | As above | As above |
| 57 | All costs and expenses related to the transfer of easement(s) to TasWater are to be paid by the proponent. | As above | As above |
| 58 | Prior to the issue of a TasWater Consent to Register a Legal Document, the applicant must submit a .dwg file, prepared by a suitably qualified person to TasWater's satisfaction, showing: - the exact location of the existing water and sewerage | Conditions 44 to 60 appear to reflect standard conditions imposed by TasWater on private development projects. The Proponent considers that these conditions are inappropriate to be applied to a major public infrastructure project and encourages these conditions to be revisited by regulator. | See comment |

| Condition | | Proponent Comment | Proposed Amendment |
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| | infrastructure, - the easement protecting that infrastructure. | | |
| | 59 The Proponent must locate the existing TasWater infrastructure and clearly show it on the .dwg file. Existing TasWater infrastructure may be located by a surveyor and/or a private contractor engaged at the developers cost. | Conditions 44 to 60 appear to reflect standard conditions imposed by TasWater on private development projects. The Proponent considers that these conditions are inappropriate to be applied to a major public infrastructure project and encourages these conditions to be revisited by regulator. | See comment |
| | 60 Prior to the issue of the Certificate for Certifiable Work (Building) and/or (Plumbing) by TasWater the Proponent must make application to TasWater pursuant to section 56W of the Water and Sewerage Industry Act 2008 for its consent in respect of any part of the development which is built within a TasWater easement or over or within two metres of TasWater infrastructure. | Conditions 44 to 60 appear to reflect standard conditions imposed by TasWater on private development projects. The Proponent considers that these conditions are inappropriate to be applied to a major public infrastructure project and encourages these conditions to be revisited by regulator. | See comment |
| Tasmanian Heritage Council | 61 Prior to the commencement of construction, provide documentation demonstrating how the following commitments and additional matters are to be implemented, to the satisfaction of the Director, Heritage Tasmania: | As with other comments, the same amendment to reflect 'relevant' construction is suggested. This avoids the requirement to provide all detail up front before any construction commences, even if construction that impact heritage aspects are to occur much later. | Amend part of condition 61 as follows: <i>"Prior to the commencement of relevant construction, provide documentation demonstrating how the following commitments and additional matters are to be implemented, to the satisfaction of the Director, Heritage Tasmania:"</i> |
| | (a) In relation to the Bridgewater Bridge heritage place: (i) Commitment 47 – The existing causeway and the 1874 and 1893 bridge abutments is to be retained; (ii) Commitment 48 – All excavation and disturbance within | No comment | Nil |

| Condition | | Proponent Comment | Proposed Amendment |
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| | <p>the causeway and Black Snake Inn sites will be monitored by a historical archaeologist in accordance with the Bridgewater Bridge Replacement Archaeological Method Statement prepared by Praxis, November 2021;</p> <p>(iii) Commitment 49 – Protection zones for buildings or structures of heritage significance – The CEMP will include protection zones and vibration management around buildings or structures of heritage significance (for example, the former Black Snake Inn at 650 Main Road, the Watch House at 1 Lyell Highway and historic bridge abutments) to avoid damage to these items during construction;</p> <p>(iv) Commitment 50 – Interpretation for the Bridgewater Bridge crossing will be prepared and located in a publicly accessible location/s in consultation with the Regulator and the three affected councils. The interpretation will include information about the history of the River Derwent crossing, the existing Bridgewater Bridge and the heritage values of the site as illustrated and reflected in Appendix L. All interpretation will be completed and installed within 12 months of the demolition of the existing bridge or as otherwise agreed with the Regulator.</p> | | |

| Condition | | Proponent Comment | Proposed Amendment |
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| | <p>(v) Commitment 51 – Representative samples of the bridge structure will be retained for appropriate re-use and/or interpretation in an appropriate publicly accessible place in the vicinity of the Project Land to the satisfaction of the Regulator.</p> | | |
| | <p>(b) In relation to the former Black Snake Inn and other places on the Tasmanian Heritage Register:</p> <p>(i) Commitment 15 – The former Black Snake Inn building and historic timber outbuilding at 650 Main Road, Granton will be retained;</p> <p>(ii) Commitment 18 – Surface treatments for footpaths and shared paths adjacent to the Watch House and the Black Snake Inn will be specified in consideration of the historic landscape setting of these places;</p> <p>(iii) Commitment 19 If the existing hedge plantings along the Main Road frontage of the Black Snake Inn are removed replacement hedge planting will be included in the landscaping plan;</p> <p>(iv) Commitment 20 – Landscape plantings adjacent to the Black Snake Inn will be selected to be complementary to the historic cultural heritage setting of that place;</p> <p>(v) Commitment 21 – The construction noise and vibration management plan (CNVMP)</p> | <p>Commitment 15 - it is suggested that a change to this wording be made, per the amendment proposed.</p> <p><u>Reason:</u> The condition of this timber outbuilding is poor and it may not be salvageable.</p> <p>Commitment 21 - it is suggested that 37 Black Snake Road be removed from this requirement as it is proposed to be demolished as part of the project. Refer to other comments to support this.</p> | <p>Amend part of Condition 61 as follows:</p> <p><i>"Commitment 15 – The former Black Snake Inn building at 650 Main Road, Granton will be retained as will the historic timber outbuilding (subject to condition);"</i></p> <p>Delete 'and 37 Black Snake Road' from Condition 61 (b) (v) (i).</p> |

| Condition | | Proponent Comment | Proposed Amendment |
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| | <p>prepared by a suitably qualified person must be provided, prior to the commencement of construction, and is to include a vibration risk assessment for the following built heritage places within or adjacent to the Project Land:</p> <ul style="list-style-type: none"> a. the Black Snake Inn complex at 650 Main Road, Granton; b. the Granton Watch House, 1 Lyell Highway; c. the Granton Memorial Hall, Forest Road, Granton; d. the Commandant's Cottage, 4 Forest Road; e. 6 Forest Road, Granton; f. 19 Tarrants Road, Granton; g. St Mary's Anglican Church and Cemetery, 20 Old Main Road, Bridgewater; h. Coronation Hall, 25 Old Main Road, Granton; i. Bridgewater railway station's concrete platform, and 37 Black Snake Road, <p>and apply appropriate criteria to protect structural integrity of places for the approval of the Regulator;</p> <p>(vi) Commitment 26 – Landscaping measures to avoid unreasonable overlooking to 6 Nielsen Esplanade, 8 and 13 Gunn Street, and 4, 6 and 8 Waters Loop on the northern shore at Bridgewater, the Black Snake Inn at 650 Main Road and other properties adjoining the southern interchange at Granton will be</p> | | |

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| | <p>integrated into the final landscaping design in consultation with those property owners to avoid unreasonable overlooking impacts to those properties;</p> <p>(c) Additional matters: (i) Other than where needing to be removed to provide a clear navigation channel, the caissons of the existing Bridgewater Bridge be retained for interpretive purposes; (ii) The lift span of the existing Bridgewater Bridge or other representative section of the bridge be retained and displayed in a public reserve for interpretive purposes; (iii) Information be produced in a range of formats and provided in a public area near the northern abutment of the old Bridgewater Bridge, to assist the public in understanding the history and significance of the place including in particular the welded steel lift-span bridge removed as part of the New Bridgewater Bridge Major Project; (iv) Information be produced in a range of formats and provided in a public area near the southern abutment of the new Bridgewater Bridge, to assist the public in understanding the history and significance of the Black Snake Inn and the causeway as well as nearby heritage places associated with the Bridgewater Bridge (i.e. the watch house, convict quarry</p> | <p>In regard to condition 61 (c) (i) - the Proponent notes the requirement to keep the existing bridge caissons in place except where to provide a clear navigation channel. For the sake of clarity, we wish to confirm the parts of the structure that are considered caissons are reflected in figure 4-1 of The Retention Options Analysis that was Appendix T to the Major Project Impact Statement. There are 4 caisson structures associated with the existing bridge, being the two tower caissons and the southern and northern caissons. All other in-water structures are considered piles (or abutments).</p> <p>In regard to condition 61 (c) (ii) - the Proponent notes that the wording suggested retention of the existing lift span for interpretative purposes. It is suggested that retention of the whole lift span for this purpose is excessive, and it would be better to have a representative section only. Suggested amendment made.</p> <p>In regard to condition 61 (c) (iii) and (iv) - It is suggested that the wording is to prescriptive and that the location and information to be presented for interpretation would be best determined through design and planning to ensure an integrated outcome is achieved. Suggested amendment to wording made.</p> <p>In regard to condition 61 (c) (v) - the Proponent notes the requirement to develop a construction management plan. Noting this is a separate activity to the remaining construction activity, in this case the Proponent suggests that this would be a separate and standalone plan to be prepared.</p> | <p>Amend part of Condition 61 as follows</p> <p><i>"...(ii) A representative section of the existing bridge be retained and displayed in a publicly accessible location for interpretive purposes;"</i></p> <p><i>"...(iii) An Interpretation Plan and Strategy is to be developed and implemented to assist the public in understanding the history and significance of the place including in particular the welded steel lift-span bridge removed as part of the New Bridgewater Bridge Major Project;"</i></p> <p>Delete item (iv).</p> |

| Condition | | Proponent Comment | Proposed Amendment |
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| | | <p>and convict depot);</p> <p>(v) A construction management plan be developed for the Black Snake Inn that ensures the security of the property and protection of its heritage fabric (including archaeology) from unauthorised removal or damage of materials and from incidental damage if the site is used as a laydown area;</p> <p>(vi) The Project Specifications include notification protocols whereby archaeological advice is sought if historical archaeological features or deposits are uncovered during excavation or where doubt exists concerning the historic cultural heritage significance of any materials uncovered during excavations; that provision be made for controlled archaeological excavation to be undertaken when and to a standard consistent with the archaeological advice received; and, that in relation to the Black Snake Inn the Statement of Archaeological Potential (SoAP) and Archaeological Method Statement (AMS) prepared by Praxis Environment be implemented for any works involving impacts to areas identified as having archaeological sensitivity.</p> | |
| Terrestrial Flora and Fauna | 62 | The Proponent (and any employees or subcontractors of a person named in this permit acting on that person's behalf on | <p>It is noted that this condition does not allow sufficient levels of 'take' for seasonal variations in individual plant numbers.</p> <p>Amend Condition 62 as follows:</p> <p><i>"The Proponent (and any employees or subcontractors of a person named in this</i></p> |

| Condition | | Proponent Comment | Proposed Amendment |
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| | <p>their written authority) is authorised to take the following specified terrestrial threatened flora species:</p> <p>(a) <i>Austrostipa bigeniculata</i> (double jointed speargrass) – up to 300 individual plants (100 m), and</p> <p>(b) <i>Vittadineae gracilis</i> (woolly new-holland-daisy) – up to 28 individual plants, from the Bridgewater Bridge direct Project footprint, contained within the Project Land identified in Figure 3.2 of the New Bridgewater Bridge Major Project Impact Statement (November 2021).</p> | <p>As the major project process currently stands, it is understood that if additional individual plants are required to be taken, a significant amendment to the major project permit may be required, which would result in very significant project delays.</p> <p>Therefore, it is suggested that the condition be altered to refer to the approval for the removal of <i>Austrostipa bigeniculata</i> and <i>Vittadineae gracilis</i> within the direct Project footprint.</p> | <p><i>permit acting on that person’s behalf on their written authority) is authorised to take the following specified terrestrial threatened flora species:</i></p> <p><i>(a) Austrostipa bigeniculata (double jointed speargrass) and</i></p> <p><i>(b) Vittadineae gracilis (woolly new-holland-daisy) from the Bridgewater Bridge direct Project footprint, contained within the Project Land identified in Figure 3.2 of the New Bridgewater Bridge Major Project Impact Statement (November 2021).”</i></p> |
| | <p>This action is subject to the following conditions:</p> <p>1. All known terrestrial threatened flora locations in the Project Land outside of, but adjacent to, the direct Project footprint must be taped or fenced off by a suitably qualified person to the extent necessary to prevent incursion by machinery or personnel.</p> <p>2. Vegetation clearance must be kept to the minimum necessary. Mechanical disturbance, dumping of fill, alteration of drainage patterns and soil compaction on sites known or likely to support the specified threatened flora must be avoided where practicable.</p> <p>3. Topsoil from areas known to contain the specified threatened flora must be stockpiled and used</p> | <p>No comment</p> | <p>Nil</p> |

| Condition | | Proponent Comment | Proposed Amendment |
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| | | <p>for rehabilitation on site, where practicable.</p> <p>4. In order to minimise impact on the specified threatened flora, measures to control the introduction, spread and movement of disease and weeds by equipment or by on ground operations must be undertaken in accordance with the Department's (2015) Weed and Disease Planning and Hygiene Guidelines - Preventing the spread of weeds and diseases in Tasmania as relevant.</p> <p>5. A report detailing the numbers of individual plants taken, or the area of the population taken, along with the date and location of the works undertaken that directly impacted the specified threatened flora must be provided in a report to the Department of Natural Resources and Environment Tasmania within 30 days of the completion of the activity authorised under this permit or expiration of the permit, whichever is the sooner.</p> | |
| Aquatic flora | 63 | <p>The Proponent (and any employees or subcontractors of a person named in this permit acting on that person's behalf on their written authority) is authorised to take the following specified aquatic threatened flora: (a) <i>Ruppia megacarpa</i> (largefruit seatassel) – up to 1.5 hectares from the Bridgewater Bridge</p> <p>It is noted that this condition does not allow sufficient levels of 'take' for seasonal variations in individual plant numbers.</p> <p>As the major project process currently stands, it is understood that if additional individual plants are required to be taken, a significant amendment to the major project permit may be required, which would result in very significant project delays.</p> | <p>Amend part of Condition 63 as follows:</p> <p><i>"(a) Ruppia megacarpa (largefruit seatassel) – up to 3.53 ha of Habitat from the Bridgewater Bridge direct Project footprint, contained within the Project Land identified in Figure 3.2 of the New</i></p> |

| Condition | | Proponent Comment | Proposed Amendment |
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| | <p>direct Project footprint, contained within the Project Land identified in Figure 3.2 of the New Bridgewater Bridge Major Project Impact Statement (November 2021).</p> | <p>The estimate of 1.5 ha with respect to <i>Ruppia megacarpa</i> in the MPIS was related to a calculated estimate of the likely coverage of the species within the predicted impact area. This figure was not the entire area of <i>Ruppia</i> habitat within the impact area, but rather a calculation of likely coverage of the species within that area based on estimates of percentage cover, which vary across the site. It appears this estimated area of cover from the MPIS, has been adopted in the draft permit conditions to represent the permitted area of 'take'.</p> <p>On further reflection of the operation of the Major Projects component of LUPAA, as well as the availability of more detailed information relating to the Chosen Design, the Proponent proposes a change to this condition, to adopt the total area of habitat for the species rather than the estimated coverage. Typically, a Permit to Take would be applied for just prior to the planned 'take' activity - this would mean that a survey likely closely pre-ceded this activity and would mean a high degree of confidence in the quantity of the species to be taken. As the Major Project process draws this into the environmental and planning approvals process, the Permit is granted far earlier, and is also based on surveys undertaken earlier than normal. Given the species (<i>Ruppia</i>) is temporally dynamic in its coverage, linking the permit to an area of coverage risks the figure being excessively larger or smaller than the actual cover required to be taken.</p> <p>An alternative proposal is to indicate the entire footprint area of the <i>Ruppia</i> habitat within the area to be impacted, and link the Permit to the area of habitat thus affected. This means that the required amount of <i>Ruppia</i> is permitted to be taken, and allows for the increase or decrease in the actual area of coverage in this area to change over time.</p> <p>It should be noted that the proposed total area of <i>Ruppia</i> habitat to be impacted as outlined in the amendment to the condition below (3.53ha), is based on the total extent of predicted construction phase footprint within areas mapped as</p> | <p><i>Bridgewater Bridge Major Project Impact Statement (November 2021).</i>"</p> <p>"Sedimentation of all known threatened flora locations outside of, but adjacent to, the permitted works area must be managed and kept to a minimum. Where required, barriers such as cofferdams, silt screens and/or silt curtains should be used..."</p> |

| Condition | | Proponent Comment | Proposed Amendment |
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| | | <p><i>Ruppia</i> habitat and hence represents an upper limit of expected impact area within which <i>Ruppia</i> coverage will be less.</p> <p>Proposed Amendment included.</p> | |
| | <p>Subject to the following conditions:</p> <ol style="list-style-type: none"> 1. All known threatened aquatic flora locations in the Project Land outside of, but adjacent to, the direct Project footprint must be clearly marked on construction diagrams and maps by a suitably qualified person in order to prevent incursion by vessels transporting personnel and/or machinery to the construction footprint. 2. Motorised vessels operating in the vicinity of known threatened flora locations outside of, but adjacent to, the permitted works area must not be used in water shallower than 0.7 metres depth. 3. Motorised vessels operating in the vicinity of known threatened flora locations outside of, but adjacent to, the permitted works area operating in water between 0.7 and 1.2 metres depth must have a shallow draft and use short-shaft motors. 4. Sedimentation of all known threatened flora locations outside of, but adjacent to, the permitted works area must be managed and kept to a minimum through the use of barriers such as cofferdams, silt screens and/or | <p>It is note that a new term 'permitted works area' is used within these Conditions but no definition is provided.</p> <p>It is proposed that the 'permitted works area' be defined as the Project Land.</p> <p>It is noted that the reference in Condition 63.2 and 63.3 to vessels not operating in waters shallower than a certain depth was intended only for the purpose of demonstrating mitigations measures to avoid sediment disturbance.</p> <p>For the same reasons outlined in our response to Condition 8, these restrictions (if the definition is not adopted) would overly restrict construction activity.</p> | <p>Define 'permitted works area' as the 'Project Land'.</p> |

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| | | <p>silt curtains. Upon removal of silt barriers, extreme care should be taken to minimise effects associated with dispersal of water and sediment with high metals, high nutrients and low dissolved oxygen. Removed silt screens must be cleaned/washed ashore in an area where runoff to nearby aquatic threatened flora can be managed appropriately.</p> <p>5. A report detailing the numbers of individual plants taken, or the area of the population taken, along with the date and location of the works undertaken that directly impacted the specified threatened species must be provided in a report to the Department of Natural Resources and Environment Tasmania within 30 days of the completion of the activity authorised under this permit or expiration of the permit, whichever is the sooner.</p> | | |
| Terrestrial Fauna | 64 | <p>The Proponent (and any employees or subcontractors of a person named in this permit acting on that person's behalf on their written authority) is authorised to take nests, eggs and nestlings of Protected and Partly Protected bird species listed under Schedules 1 and 8 of the Nature Conservation (Wildlife) Regulations 2021 (the Regulations). These may be taken from the</p> | <p>The Proponent notes the requirement to conduct surveys and clearance activities as close to the waterbird breeding season as possible and reference to August in item 2. Given breeding for some species commences earlier in the year and to allow flexibility for the timing of construction, a narrow window of August for breeding does not appear appropriate and given the intended survey method will commence from May onwards a proposed amendment is included to clarify this point.</p> | <p>Amend part of Condition 64 as follows: "... 2. <i>Surveys and clearance of nests, eggs and nestlings of Protected and Partly Protected bird species located within the Project Land must take place as close to the commencement of the waterbird breeding season as possible.</i>"</p> |

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| | Bridgewater Bridge direct Project footprint, contained within the Project Land in Figure 3.2 of the New Bridgewater Bridge Major Project Impact Statement (November 2021). | | |
| | <p>This action is subject to the following conditions:</p> <p>1. This permit does not permit the taking of, or impacts to; nests, eggs and nestlings of birds listed as Specially Protected under Schedule 5 of the Regulations. If any nests identified as belonging to birds listed under Schedule 5 of the Regulations are identified as occurring within the construction footprint of the bridge and will be impacted directly by the construction, works must cease immediately and further advice sought from the regulator.</p> <p>2. Surveys and clearance of nests, eggs and nestlings of Protected and Partly Protected bird species located within the Project Land must take place as close to the commencement of the waterbird breeding season as possible (August).</p> <p>3. Nests and associated nesting habitat from the bird species authorised in this permit, located within the Project Land, must be removed and/or destroyed. Any eggs found within nests must be removed from the nests and destroyed. Any nestlings must be</p> | No comment | Nil |

| Condition | | Proponent Comment | Proposed Amendment | |
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| | | <p>removed from the nests and humanely destroyed.</p> <p>4. All known locations of bird nests outside of, but adjacent to, the works area must be taped or fenced off by a suitably qualified person to the extent necessary to prevent incursion by machinery or personnel.</p> <p>5. A report detailing the details of individual nests taken, along with the date and location of the works undertaken that directly impacted the specified fauna must be provided in a report to the Department of Natural Resources and Environment Tasmania within 30 days of the completion of the activity authorised under this permit or expiration of the permit, whichever is the sooner.</p> | | |
| Aboriginal heritage | 65 | <p>The Proponent (and any employees or subcontractors of a person named in this permit acting on that person's behalf on their written authority) is authorised to 'interfere with' the identified Aboriginal relics AH 11190 and AH 13833 while carrying out the approved works as outlined in the MPIS. These sites are contained within the Project Land identified in Figure 3.2 of the New Bridgewater Bridge Major Project Impact Statement (November 2021).</p> <p>'Interfere with' is defined by the AH Act as meaning to destroy,</p> | No comment | Nil |

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| | | damage, deface, conceal, remove or otherwise interfere with. | |
| | 66 | Works is not to occur within 2m of site AH13880. | No comment Nil |
| | 67 | Prior to the commencement of construction works, highly visible and durable barricading must be placed around site AH13880 with a 2m radial buffer. | As with other comments, the same amendment to reflect 'relevant' construction is suggested. This avoids the requirement to provide all detail up front before any construction commences, even if construction that impacts heritage aspects are to occur much later. Amend Condition 67 as follows: <i>“Prior to the commencement of relevant construction, highly visible and durable barricading must be placed around site AH13880 with a 2m radial buffer.”</i> |
| | 68 | The location of the site AH13880 must be noted on the construction environmental management plan. | No comment Nil |

Table 3 - Suggested amendments to the ‘conditions and restrictions’ – Environmental Protection Agency

| Condition | | Proponent Comment | Proposed Amendment | |
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| Access to and awareness of conditions and associated documents | G1 | <p>A copy of these conditions and any associated documents referred to in these conditions must be held in a location that is known to and accessible to the person responsible for the Project. The person responsible for the activity must ensure that all persons who are responsible for undertaking work on The Project Land, including contractors and sub-contractors, are familiar with these conditions to the extent relevant to their work.</p> | <p>The use of the term Project Land in this context is too broad. The Proponent does not have any control of activities undertaken in the Project Land.</p> <p>A property that falls within the Project Land may be subject to work undertaken completely separate to the works being undertaken under this permit.</p> <p>The appropriate term would be to link to the works under this permit.</p> <p>Suggested amendment included.</p> | <p>Amend Condition G1 as follows:</p> <p><i>“A copy of these conditions and any associated documents referred to in these conditions must be held in a location that is known to and accessible to the person responsible for the Project. The person responsible for the activity must ensure that all persons who are responsible for undertaking work in association with this Permit, including contractors and sub-contractors, are familiar with these conditions to the extent relevant to their work.”</i></p> |
| Incident response | G2 | <p>If an incident causing or threatening environmental nuisance, serious environmental harm or material environmental harm from pollution occurs in the course of the Project, then the person responsible for the Project must immediately take all reasonable and practicable action to minimise any adverse environmental effects from the incident.</p> | <p>It is not clear if an incident refers to only unforeseen or unanticipated events as not otherwise approved by the permit. This should be clarified, as the permit will be allowing matters that may cause environmental nuisance (such as construction noise).</p> | <p>Amend condition G2 as follows:</p> <p><i>“If an unforeseen incident, not otherwise permitted by this approval, causing or threatening environmental nuisance, serious environmental harm or material environmental harm from pollution occurs in the course of the Project, then the person responsible for the Project must immediately take all reasonable and practicable action to minimise any adverse environmental effects from the incident.”</i></p> |
| No changes without approval | G3 | <p>1. The following changes, if they may cause or increase the emission of a pollutant which may cause material or serious environmental harm or environmental nuisance, must only take place in relation to the construction and demolition phases of the Project if such changes have been approved in writing by the EPA Board, or by the Director:</p> <p>1.1. a change to a process used in the course of carrying out the Project; or</p> <p>1.2. the construction, installation, alteration or removal of any structure or equipment used in the course of carrying out the Project; or</p> | <p>The proponent notes that this is a standard condition that would normally be associated with the operational phase of a project.</p> <p>In the case of construction, the ability to flexibly respond to changing conditions and to deploy the most effective and efficient solutions on site are key factors in being able to operate a safe site that minimises the impacts of the works.</p> <p>While it is expected that some changes may require approval, the way this condition is</p> | <p>Amend Condition G3 as follows:</p> <p><i>“1. The following changes, from that already approved under this permit or any of its conditions, if they may cause or increase the emission of a pollutant which may cause material or serious environmental harm or environmental nuisance, must only take place in relation to the construction and demolition phases of the Project if such changes have been approved in writing by the EPA Board, or</i></p> |

| Condition | | Proponent Comment | Proposed Amendment |
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| | | <p>I.3. a change in the quantity or characteristics of materials used in the course of carrying out the Project.</p> <p>written is onerous and will significantly constrain construction activity leading to a negative outcome for the project.</p> <p>Suggested amendment proposed.</p> | <p>by the Director:</p> <p><i>1.1. a change to a process used in the course of carrying out the Project; or</i></p> <p><i>1.2. the construction, installation, alteration or removal of any structure or equipment used in the course of carrying out the Project; or</i></p> <p><i>1.3. a change in the quantity or characteristics of materials used in the course of carrying out the Project."</i></p> |
| Change of responsibility | G4 | <p>If the person responsible for the construction and demolition phases of the Project intends to cease to be responsible, that person must notify the Director in writing of the full particulars of any person succeeding him or her as the person responsible before such cessation.</p> <p>No comment</p> | Nil |
| Notification prior to commencement | G5 | <p>The Director must be notified in writing of the commencement of construction, demolition stages and operation stages of the Project, at least 14 days before each stage commences.</p> <p>No comment</p> | Nil |
| Complaints register | G6 | <p>I. A public complaints register must be maintained for the duration of the construction and demolition phases of the Project. The public complaints register must, as a minimum, record the following detail in relation to each complaint received in which it is alleged that environmental nuisance and/or harm has been caused by the Project:</p> <p>I.1. the date and time at which the complaint was received;</p> <p>I.2. contact details for the complainant (where provided);</p> <p>I.3. the subject matter of the complaint;</p> <p>I.4. any investigations undertaken with regard to the complaint; and</p> <p>I.5. the manner in which the complaint was resolved, including any mitigation measures implemented.</p> <p>No comment</p> | Nil |

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| | | 2. Complaint records must be maintained for a period of at least three (3) years. | No comment Nil | |
| Environmental Management Plans | G7 | <p>A minimum of two months prior to planned commencement of the construction phase of the Project, or by a date otherwise specified in writing by the Director, Environmental Management Plans (EMPs) must be submitted to the Director for approval, addressing all proposed construction works for the Project. This requirement will be deemed to be satisfied only when the Director indicates in writing that the submitted documents adequately address the requirements of these conditions (as relevant) to his or her satisfaction. Construction cannot commence until the Director has approved all EMPs applicable to the commencing works.</p> | <p>The proponent notes the requirement to submit EMPs at least 2 months prior to planned commencement of construction/demolition. The intent is to complete and submit these plans as soon as practicable after issue of a permit.</p> <p>However the Proponent is concerned that the review period for these plans, if it were two months, would be too long and would delay the start of the project.</p> <p>Additionally, the proposed condition requires the that a single plan be submitted prior to the entire construction phase of the project that addresses all proposed construction works for the Project, not only those that are soon to be commencing. As previously noted, this may create unnecessary delays for the Project.</p> <p>Suggested amendment provided</p> | <p>Amend Condition G7 as follows:</p> <p><i>“A minimum of one month prior to the planned commencement of construction, or by a date otherwise specified in writing by the Director, relevant Environmental Management Plans (EMPs) must be submitted to the Director for approval, addressing all proposed upcoming construction works. This requirement will be deemed to be satisfied only when the Director indicates in writing that the submitted documents adequately address the requirements of these conditions (as relevant) to his or her satisfaction. Construction cannot commence until the Director has approved all EMPs applicable to the commencing works.”</i></p> |
| | | <p>2. A minimum of two months prior to planned commencement of the demolition phase of the Project, or by a date otherwise specified in writing by the Director, Environmental Management Plan (EMPs) must be submitted to the Director for approval, addressing all proposed demolition works. This requirement will be deemed to be satisfied only when the Director indicates in writing that the submitted documents adequately address the requirements of these conditions (as relevant) to his or her satisfaction. Demolition cannot commence until the Director has approved all EMPs applicable to the commencing works.</p> | <p>Clarification to define the EMPs and link to the later permit condition proposed.</p> <p>It is assumed that the ‘demolition phase’ referred to by the condition refers to the demolition of the existing bridge, however, clarity is sought on this matter.</p> <p>Suggested amendment provided to timeframes and wording based on reasoning as above.</p> | <p>Amend Condition G7.2 as follows:</p> <p><i>“2. A minimum of one month prior to planned commencement of the existing bridge demolition phase of the Project, or by a date otherwise specified in writing by the Director, Environmental Management Plans (EMPs) as listed in Condition G7.4 must be submitted to the Director for approval, addressing all proposed demolition works. This requirement will be deemed to be satisfied only when the Director indicates in writing that the submitted documents adequately address the requirements</i></p> |

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| | | | of these conditions (as relevant) to his or her satisfaction. Demolition cannot commence until the Director has approved all EMPs applicable to the commencing works.” |
| | 3. The EMPs must be prepared in accordance with these conditions and any reasonable guidelines provided by the Director, and otherwise consistent with the MPIS, with the purpose of preventing environmental nuisance and/or harm. | No comment | Nil |
| | 4. Unless otherwise approved in writing by the Director, without limitation, the following EMPs must be provided for the construction phase of the Project and, as relevant, for the demolition phase of the Project: 4.1. an Air Quality Management Plan, addressing both dust and emissions; 4.2. a Noise and Vibration Management Plan, including consideration of underwater noise management; 4.3. an Estuarine Water Quality Monitoring Plan; 4.4. an Estuarine Water Quality Management Plan; 4.5. a Contingency Management Plan for construction in the Derwent; 4.6. a Stormwater Management Plan; 4.7. an Environmentally Hazardous Materials Management Plan; 4.8. a Waste Materials Management Plan; 4.9. a Lighting Plan; and 4.10. a Decommissioning and Rehabilitation Plan. | As per the comment in Table 2 to Condition 8, management plans are required throughout these conditions. The most comprehensive listing is within this condition and it is suggested that all plans should be consolidated into this condition. | Nil |
| | 5. The EMPs must include the following: 5.1. staging of proposed works, including consideration of management changes as works progress; 5.2. best practice environmental management (BPEM) measures; 5.3. processes for adaptive management and incident response; | No comment | Nil |

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| | | 5.4. an implementation timetable for key aspects of the plans; and 5.5. a reporting program to regularly advise the Director of the results of the plans. | |
| | | 6. The person responsible must implement and act in accordance with the approved EMPs. | No comment Nil |
| | | 7. In the event that the Director, by notice in writing to the person responsible, either approves a minor variation to the approved EMPs or approves new plans in substitution for the EMPs originally approved, the person responsible must implement and act in accordance with the varied EMPs or the EMPs, as the case may be. | No comment Nil |
| Management of air emissions during construction and demolition | A1 | 1. Construction and demolition phases for the Project must be managed using BPEM measures to minimise air emissions and dust to avoid environmental nuisance and/or harm, in accordance with the Air Quality Management Plan required under these conditions. | No comment Nil |
| | | 2. Without limitation, unless otherwise approved in writing by the Director, the Air Quality Management Plan(s) required under these conditions must include: 2.1. Measures to minimise dust generation; 2.2. Measures to minimise emissions from vehicles, heavy machinery and generators, including passing traffic; and 2.3. Monitoring plans for dust and emissions, in accordance with the requirements of these conditions. | With regard to condition A1, 2.2, we note the requirement to minimise emissions from vehicles includes passing traffic. The Proponent believes that this condition is unreasonable and unachievable as it will have no reasonable way to minimise emissions from passing traffic. Remove ",including passing traffic" from item 2.2. |
| Air Quality and Meteorological Monitoring | A2 | 1. Monitoring Station 1.1. An ambient air quality and meteorological monitoring station must be established at a suitable location in a residential area in close proximity to the Project, approved by the Director. 1.2. The location of the station must be: | The Proponent has previously queried the reasoning for the monitoring of vehicle emissions for a replacement project for an existing infrastructure asset. The Project will not increase traffic demand that the Proponent maintains the view that that such Replace 'the construction phase' with 'significant emitting activities' in 13.1 and 13.2 and include the definition of 'significant emitting activities' as proposed. |

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| | <p>I.2.1. chosen in accord with guidance provided in AS/NZS 3580.1.1:2016; and</p> <p>I.2.2. approved in writing by the Director.</p> <p>I.3. The air quality monitoring and meteorological station must be operational and measure the ambient concentrations of the nominated pollutants listed in Table 1 and the meteorological parameters detailed in this condition for:</p> <p>I.3.1. 12 months prior to the commencement of the construction phase or otherwise as long as is practicable, with a minimum of 6 months;</p> <p>I.3.2. six (6) months at commencement of the construction phase of the Project and six (6) months at the end of the construction phase;</p> <p>I.3.3. throughout construction works undertaken on land in Bridgewater; and</p> <p>I.3.4. at least 12 months starting at the commencement of the operational phase of the Project.</p> | <p>conditions are onerous, especially in light of air emission modelling showing that the existing vehicle air emissions will reduce over time.</p> <p>While the program of monitoring required by the draft conditions may be appropriate for a new underground freeway project that requires the discharge of vehicle air emissions via exhausts located in residential or other sensitive areas, it is not appropriate for this project which is replacing of an existing bridge within an existing highway environment. Traffic growth has been relatively consistent at an average of 2.3 per cent per annum, based on volumes between 1982 and 2019. Average annual growth is not expected to change significantly as a result of replacing the Bridgewater Bridge. Replacing the Bridgewater Bridge will improve the efficiency of traffic movements but is not expected generate significant new traffic. The primary influence on vehicle air emissions over time will be the transition to more low emission and electric vehicles resulting in reduced overall vehicle air emissions. The project will have little or no bearing on this outcome. Therefore, the program of monitoring required by the draft conditions will result in the expensive production of information that has no relevance to the project being assessed and may result in delays of up to 12 months.</p> <p>It is noted that early exploration into the procurement of an air monitoring program as required by this draft condition has indicated that calibration must be undertaken over the summer months. Due to materials shortages in Australia, the timeframe to procure the</p> | <p>Remove Condition 1.3.3.</p> |

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| | <p>set-up of a monitoring station on site that meet's the EPA's requirements for vehicle emissions monitoring is 10 weeks. Therefore, commencing pre-construction monitoring prior to next summer may not be achievable.</p> <p>The Proponent maintains that such conditions are inappropriate and should be deleted.</p> <p>Nonetheless, the Proponent has specific comments on the proposed conditions in the instance that they are retained in some form.</p> <p>A specific issue the Proponent wishes to be addressed is the 12 months of monitoring (with a minimum of 6 months) prior to construction phase commencement.</p> <p>It is noted that even in the event that calibration was achievable outside of summer, this length of monitoring would delay the project, if a strict definition of 'construction phase commencement' is taken.</p> <p>As such, the Proponent proposes that the term 'construction phase commencement' is replaced with 'significant emitting activities', to reflect a similar intent as follows:</p> <ul style="list-style-type: none"> - The intent of monitoring prior to construction phase is to establish a baseline over a period of time. As such, the activities on site should be as close to normal as possible. - As such, it is proposed low impact activities can be undertaken on site without impacting the baseline monitoring. - Allowing such activities will enable the Proponent to commence critical | |

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| | | <p>activities while allowing for the longest possible baseline capture period.</p> <p>It is proposed that 'significant emitting activities' be defined as commencing when either significant construction plant activity (estimated to commence in November 2022) or significant or substantial relocation of existing traffic pathways (estimated to commence in December 2022) commence in Bridgewater.</p> <p>It is also noted that the extent of monitoring proposed includes 'throughout construction works undertaken on land in Bridgewater'. This condition will effectively see monitoring being required to be undertaken throughout the entire construction period.</p> <p>The purpose of proposing discreet periods of monitoring is to capture data at key points in the construction period to demonstrate the veracity of modelling undertaken, not to be a continuous monitoring programme. The cost of undertaking monitoring throughout the entire construction period is a significant cost to the state.</p> | |
| | <p>2. Air Quality Monitoring</p> <p>2.1. Unless otherwise approved in writing by the Director, the ambient air quality monitoring of the nominated air pollutants must be conducted using reference level continuous monitoring instrumentation that meets the requirements of the Australian Standards Methods for Pollutant Monitoring set out in Schedule 3 of the Ambient Air Quality NEPM.</p> <p>2.2. Unless otherwise approved in writing by the Director, monitoring must be undertaken in accordance with the requirements set out in Table</p> | No comment | Nil |

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| | <p>1 as follows: the ambient concentration of the pollutant listed in Column 1 must be measured at the sampling frequency listed in Column 2 over the averaging time listed in Column 3 using the measurement technique listed in Column 5 and the reference method listed in Column 6.</p> | | |
| | <p>3. Meteorological Monitoring 3.1. Unless otherwise approved in writing by the Director, the meteorological station co-located and operating simultaneously with the ambient air monitoring instrumentation must operate in accordance with the requirements of AS/NZS 3580.14:2014 and measure the following meteorological parameters: 3.1.1. temperature at the height of 2 m and 10 m; 3.1.2. relative humidity at the height of 2 m and 10 m; 3.1.3. vector averaged wind speed direction at the height of 2 m and 10 m; 3.1.4. rainfall; 3.1.5. barometric pressure; and 3.1.6. solar radiation. 3.2. All meteorological parameters specified in this condition, with the exception of rainfall, together with the computed standard deviation of wind direction (sigma theta), must be reported as 5 minute and 1 hour averaged values.</p> | No comment | Nil |
| | <p>4. Reporting of Air Quality and Meteorological Monitoring 4.1. Real-time access to the air monitoring and meteorological measurements collected at the monitoring station must be made available to the Director. 4.2. Unless otherwise approved in writing by the Director, the measured ambient concentrations of the air pollutants listed in Table 1 and the measured meteorological parameters specified in this condition must be reported quarterly to the</p> | No comment | Nil |

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| | | <p>Director and submitted no later than 30 days after the end of the quarterly reporting period.</p> | |
| | | <p>5. Exceedance of Australian Air Quality Standards 5.1. In the event that measured ambient concentrations of the air pollutants listed in Column 1 of Table 1 exceed any of the corresponding Australian air quality standards specified in Column 4 of the table, the Director must be notified of the exceedance within 48 hours. 5.2. The exceedance notification must include the following information: 5.3. The name of the pollutant, the time of the exceedance and the ambient concentration of the pollutant at that time; 5.4. The nature of the activities being conducted by the Proponent at the time of the exceedance; 5.5. The meteorological conditions prevailing in the vicinity of the monitoring station at the time of the exceedance; 5.6. An assessment of the potential for the exceedance to cause environmental nuisance and/or harm; 5.7. Measures applied to minimise the occurrence of further exceedances; and 5.8. Any other relevant information.</p> | <p>No comment</p> |
| Validation of Air Dispersion Model | A3 | <p>1. Unless otherwise approved in writing by the Director, within three (3) months after completion of the pre-construction monitoring period, a report must be submitted to the Director assessing the validity of the air dispersion model used to predict the impact of traffic related pollutants from operation of the Project on sensitive receptors near the Project Land.</p> | <p>The use of the term Project Land in this context is too broad. The Proponent does not have any control of activities undertaken in the Project Land.</p> <p>A property that falls within the Project Land may be impacted by work undertaken completely separate to the works being undertaken under this permit.</p> <p>The appropriate term would be to link sensitive receptors in the vicinity of the works under this permit.</p> |
| | | | <p>Amend part of Condition A3, as follows:</p> <p><i>“1. Unless otherwise approved in writing by the Director, within three (3) months after completion of the pre-construction monitoring period, a report must be submitted to the Director assessing the validity of the air dispersion model used to predict the impact of traffic related pollutants from operation of the Project on sensitive receptors in the vicinity of the works undertaken under this permit.”</i></p> |

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| | | Suggested amendment included. | | |
| | | 2. The report must include a comparison of all ambient pollutant concentrations measured at the monitoring station with those predicted by the air dispersion model. This will require the model to be re-run using the meteorological data collected from the station during the pre-construction monitoring period. | No comment Nil | |
| Construction Dust Deposition Monitoring and Reporting | A4 | 1. Unless otherwise approved in writing by the Director, during the entire construction phase of the Project, a number of dust deposition gauges must be in place and maintained at several locations in residential areas in the near vicinity of The Project Land, the number and location of which are to be approved by the Director. Monthly samples must be collected from each location and analysed in accordance with the requirements of AS/AZS 3580.10.1:2016, Methods for sampling and analysis of ambient air - Deposited matter – Gravimetric method. | The use of the term Project Land in this context is too broad. The appropriate term would be to link sensitive receptors in the vicinity of the works under this permit. Suggested amendment included. | Amend part of Condition A4, as follows: <i>“1. Unless otherwise approved in writing by the Director, during the entire construction phase of the Project, a number of dust deposition gauges must be in place and maintained at several locations in residential areas in the near vicinity of works undertaken under this permit, the number and location of which are to be approved by the Director. Monthly samples must be collected from each location and analysed in accordance with the requirements of AS/AZS 3580.10.1:2016, Methods for sampling and analysis of ambient air - Deposited matter – Gravimetric method.”</i> |
| | | 2. Monthly deposition measurements must be adjusted to account for background deposition rate. For each sampling month, the background is defined as the minimum of the dust loadings recorded at all of the deposition gauge sites during that month. For each deposition gauge measurement, the following information should be recorded: 2.1. location; 2.2. month/year; 2.3. total insoluble solids (mg); 2.4. total insoluble solids above background | No comment | Nil |

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| | | (g/m2/month); and 2.5. deposited dust (g/m2/month). | |
| | | 3. The person responsible for the activity must investigate each exceedance of the dust deposition trigger levels specified in Column 2 of Table 2 as soon as it is reasonably possible to do so after becoming aware of the event. The investigation must determine the likely cause(s) of the exceedance and identify and implement any reasonable remedial actions required to prevent it from recurring. A record must be kept of these actions for a minimum of three (3) years. | No comment Nil |
| | | 4. The level of dust fallout must not exceed the annual compliance limits specified in Column 3 of Table 2. Any such exceedance must be reported to the Director within 24 hours of the results being obtained. | No comment Nil |
| | | 5. Dust deposition gauges must not be relocated unless approved by the Director in writing prior to the proposed relocation. | No comment Nil |
| Real-time Construction Dust Monitoring | A5 | 1. Without limitation, unless otherwise approved in writing by the Director, the Air Quality Management Plan required under these conditions must include provisions for real-time construction dust monitoring, to be implemented and operational for the entire construction phase of the Project, and include the following: 1.1. identification and description of suitable instruments for the continuous monitoring of ambient dust concentrations at several sites located near the boundary of The Project Land; 1.2. description of simple weather stations which must be equipped with continuous monitoring anemometers co-located with the dust monitors and installed at a height of at least 2.5 m; 1.3. identification and description of a system to transmit and display near real-time continuous data | No comment Nil |

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| | | <p>from the dust monitoring instruments and data from the co-located meteorological monitoring stations, to the assigned person(s) identified in the plan;</p> <p>1.4. description of the criteria used to identify the likely occurrence of dust events at any of the continuous dust monitoring sites in near real-time; 54</p> <p>1.5. description of the response process to occur when dust events are identified at any of the sites; and</p> <p>1.6. a table containing all of the major commitments made in the plan.</p> | | |
| | | 2. Continuous dust monitors cannot be relocated unless approved by the Director in writing prior to the proposed relocation. | No comment Nil | |
| Decommissioning and Rehabilitation Plan | DI | <p>1. Without limitation, unless otherwise approved in writing by the Director, the Decommissioning and Rehabilitation Plan(s) (DRP) required under these conditions must include the following (as relevant):</p> <p>1.1. nomination of key stages of works at which the DRP will need to be implemented;</p> <p>1.2. consideration of potential for contaminated material or controlled waste to be present after completion of works, and any associated remediation required (including consideration of groundwater);</p> <p>1.3. removal of all equipment, structures and waste materials unless they are considered by the Director to be beneficial to a future use of The Project Land;</p> <p>1.4. grading and levelling/recontouring and revegetating (or other approved method of soil stabilisation) of the surface of the disturbed area;</p> <p>1.5. management of drainage on The Project Land so as to reduce erosion and prevent release of a pollutant from The Project Land;</p> <p>1.6. maintenance of the rehabilitated area for a</p> | <p>Clause 1.3 should be amended to reflect that not all structures within the project land should be removed. Firstly because new structures are proposed as part of this work and only temporary structures should be removed.</p> <p>Secondly, because not all equipment, structures and waste materials on the Project Land are generated by the proponent.</p> | <p>Amend part of Condition DI as follows:</p> <p><i>“1.3. removal of all equipment used during the works, temporary structures created for the purpose of undertaking the works and waste materials generated through the works unless they are considered by the Director to be beneficial to a future use of The Project Land;”</i></p> |

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| | | <p>period of not less than three years from the date of cessation of works;</p> <p>1.7. specific management and monitoring measures for the area between the Old Watch House and the foreshore; and</p> <p>1.8. any other detail requested in writing by the Director.</p> | |
| | | 2. If requested by the Director, stage-specific DRPs must be provided to the Director, prior to implementation. | Nil |
| Underwater noise management | FFI | <p>1. Unless otherwise approved in writing by the Director, to minimise noise impact of construction of the Project on sensitive aquatic fauna species;</p> <p>1.1. a soft start procedure must be implemented for piling works, commencing at low energy levels with slow build-up to allow fauna to vacate the area;</p> <p>1.2. once a piling method for the construction of the Project is finalised, a stop-work zone area must be calculated based on anticipated sound pressure and exposure levels, in accordance with the Underwater Piling Noise Guidelines; and</p> <p>1.3. during piling works, a suitable qualified or trained marine fauna observer must be deployed at piling locations, to instigate a stop work order in the event that marine mammals are observed within the pre-determined stop-work zone.</p> | Nil |
| | | 2. The provisions of this condition must be incorporated into the Noise and Vibration Management Plan for the construction phase of the Project as approved in writing by the Director. | Nil |
| Groundwater encountered during construction | GW I | Unless otherwise approved in writing by the Director, where removal of groundwater is necessitated during construction work for the Project, the groundwater must be collected and managed to the extent necessary to avoid the release of pollutants into waterways. | Nil |

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| Storage and handling of environmentally hazardous materials | H1 | <p>1. Unless otherwise approved in writing by the Director, environmentally hazardous materials held on The Project Land must be:</p> <p>1.1. stored within impervious bunded areas, spill trays or other containment systems; and</p> <p>1.2. managed to prevent unauthorised discharge, emission or deposition of pollutants:</p> <p>1.2.1. to soils within the boundary of The Project Land in a manner that is likely to cause serious or material environmental harm;</p> <p>1.3. to groundwater;</p> <p>1.4. to waterways; or</p> <p>1.5. beyond the boundary of The Project Land.</p> | <p>This condition should be amended to only refer to hazardous materials held by the Proponent on the Project Land, as others will be passing through the Project Land (trucks on public roads etc.) and the Proponent has no control over their activity.</p> <p>Suggested amendment included.</p> | <p>Amend Condition H1 as follows:</p> <p><i>“1. Unless otherwise approved in writing by the Director, environmentally hazardous materials held by the Proponent on The Project Land must be:</i></p> <p><i>1.1. stored within impervious bunded areas, spill trays or other containment systems; and</i></p> <p><i>1.2. managed to prevent unauthorised discharge, emission or deposition of pollutants:</i></p> <p><i>1.2.1. to soils within the boundary of The Project Land in a manner that is likely to cause serious or material environmental harm;</i></p> <p><i>1.3. to groundwater;</i></p> <p><i>1.4. to waterways; or</i></p> <p><i>1.5. beyond the boundary of The Project Land.”</i></p> |
| Handling of environmentally hazardous materials - mobile | H2 | <p>1. Where mobile containment of environmentally hazardous materials is utilised for fuelling or servicing of mobile or fixed plant on The Project Land, all reasonable measures must be implemented to prevent unauthorised discharge, emission or deposition of pollutants:</p> <p>1.1. to soils within the boundary of The Project Land in a manner that is likely to cause serious or material environmental harm;</p> <p>1.2. to groundwater;</p> <p>1.3. to waterways; or</p> <p>1.4. beyond the boundary of The Project Land.</p> | <p>Amendment proposed to ensure that this constraint only applies to activities undertaken by the Proponent.</p> | <p>Amend part of Condition H2 as follows</p> <p><i>“1. Where mobile containment of environmentally hazardous materials is utilised for fuelling or servicing of mobile or fixed plant on The Project Land by the Proponent, all reasonable measures must be implemented to prevent unauthorised discharge, emission or deposition of pollutants:</i></p> <p><i>1.1. to soils within the boundary of The Project Land in a manner that is likely to cause serious or material environmental harm;</i></p> <p><i>1.2. to groundwater;</i></p> <p><i>1.3. to waterways; or</i></p> |

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| | | | <i>1.4. beyond the boundary of The Project Land.”</i> |
| | | 2. Reasonable measures may include spill kits, spill trays/bunds or absorbent pads, and automatic cut-offs on any pumping equipment. | Nil |
| Spill kits | H3 | Spill kits appropriate for the types and volumes of materials handled on The Project Land must be kept in appropriate locations to assist with the containment of spilt environmentally hazardous materials. | Nil |
| Artificial lighting design and use | L1 | 1. Lighting for construction, demolition, and operational phases of the Project, must be selected and used on the basis of achieving the minimal artificial lighting required to meet design and safety requirements and standards, while minimising adverse impact on sensitive receptors, with consideration of the light pollution analysis and relevant management measures recommended in the MPIS. | Nil |
| | | 2. Without limitation, unless otherwise approved in writing by the Director, the Lighting Plan(s) required under these conditions must specify principles and parameters for selection and use of lighting during the construction and demolition phases of the Project, in accordance with the MPIS. | Nil |
| Light surveys and audits | L2 | 1. Unless otherwise approved in writing by the Director, light surveys and audits of the Project must be undertaken as follows, consistent with the relevant survey measures recommended in the MPIS, and the analysed results submitted to the Director within 30 days of completion of each survey and audit: 1.1. Pre and post construction light surveys, in accordance with the method used in the baseline light survey as presented in the MPIS, to assess the impact of the project on sky glow and sky quality; | Nil |

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| | | <p>1.2. A post construction light survey, in accordance with the method used in the baseline light survey as presented in the MPIS, to assess the impact of the project in regard to obtrusive light on sensitive receptors;</p> <p>1.3. Audits must be undertaken both during construction and after commissioning to ensure all commitments regarding light management have been met;</p> <p>1.4. Audits must be undertaken by personnel experienced in environmental auditing and in consultation with an appropriately qualified biologist or ecologist; and</p> <p>1.5. The audit analysis must include:</p> <p>1.6. any identified additional risks; and</p> <p>1.7. adaptive management measures to be undertaken if additional risks are identified, or it is discovered that risks have not been assessed correctly.</p> | |
| Samples and measurements for monitoring purposes | MI | <p>1. Any sample or measurement required under these conditions must be taken and processed in accordance with the following:</p> <p>1.1. sampling and measuring must be undertaken by a person with training, experience, and knowledge of the appropriate procedure;</p> <p>1.2. the integrity of samples must be maintained prior to delivery to a testing facility;</p> <p>1.3. sample analysis must be conducted by a testing facility accredited by the National Association of Testing Authorities (NATA), or a testing facility approved in writing by the Director, for the specified test;</p> <p>1.4. details of methods employed in taking samples and measurements and results of sample analysis, and measurements must be retained for at least three (3) years after the date of collection; and</p> <p>1.5. sampling and measurement equipment must be maintained and operated in accordance with manufacturer's specifications and records of</p> | <p>No comment</p> <p>Nil</p> |

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| | | maintenance must be retained for at least three (3) years. | | |
| Management of noise emissions and vibration during construction | NI | <p>1. Unless otherwise approved in writing by the Director, the Project must be managed using such measures as are necessary to prevent noise emissions and vibration from causing environmental nuisance and/or harm, in accordance with the Noise and Vibration Management Plan required under these conditions.</p> | <p>The proponent notes that the use of the word 'prevent' is strong, and unlikely to be able to be complied with for a construction project.</p> <p>Suggested amendment included.</p> <p>Additionally, it should be explicitly stated in regard to the application of all these conditions to construction, operation or both.</p> | <p>Amend part of Condition NI.1 as follows:</p> <p><i>"1. Unless otherwise approved in writing by the Director, the Project must be managed using such measures as are necessary to minimise, as far as is reasonably practicable, noise emissions and vibration from causing environmental nuisance and/or harm, in accordance with the Noise and Vibration Management Plan required under these conditions."</i></p> |
| | | <p>2. Without limitation, unless otherwise approved in writing by the Director, the Noise and Vibration Management Plan(s) required under these conditions must include the following:</p> <p>2.1. Proposed staging of works;</p> <p>2.2. A list of equipment and activities associated with each stage of work area;</p> <p>2.3. Sound power levels, duration and hours of operation for each activity that is likely to cause noise and vibration impacts at noise and/or vibration sensitive receptors;</p> <p>2.4. Identification of noise and vibration sensitive receptors that may be affected by construction and demolition activities;</p> <p>2.5. Identification of any buildings or structure of heritage significance that may be affected by vibration generated by construction and demolition works;</p> <p>2.6. Determination of appropriate noise and vibration limits for each sensitive receptor;</p> <p>2.7. Prediction of noise levels at sensitive receptors during works;</p> <p>2.8. Identification of activities likely to cause noise and vibration nuisance at sensitive receptors;</p> <p>2.9. Identify locations near noise and vibration</p> | <p>Regarding item 2.6, the proponent proposes the use of noise management levels, not noise emission limits, as set out in the MPIS and accordance with standard practice for construction projects (as different to operational phase noise management).</p> <p>Additionally, given N3.1 states the criteria this condition should merely state these management level for sensitive receptors generally.</p> <p>Suggested amendment included.</p> | <p>Amend part of Condition NI.2 as follows:</p> <p>"... 2.6. Determination of appropriate noise and vibration management levels for sensitive receptors; ..."</p> |

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| | | <p>sensitive receptors where regular construction noise and vibration monitoring will be required;</p> <p>2.10. Mitigation measures planned to be deployed and able to be deployed where noise and vibration levels are expected to exceed noise project specific criteria.</p> <p>2.11. Where there is insufficient knowledge available to predict noise and vibration impact with a reasonable level of confidence, trial monitoring and assessment must be undertaken, covering discrete periods of work to allow measurements.</p> <p>2.12. A detailed community engagement plan including procedures for notification of noise and vibration generating activities.</p> <p>2.13. Mitigation measures to manage impact on sensitive aquatic fauna species.</p> <p>2.14. Provision of regular noise and vibration monitoring at sensitive receptors.</p> | | |
| | | 3. Monitoring reports must be provided to the Director for review every 3 (three) months. | No comment Nil | |
| Hours of construction | N2 | <p>1. Unless otherwise approved in writing by the Director, noise and vibration generating activities associated with the construction/demolition of the Project must not be undertaken outside the standard hours listed below:</p> <p>1.1. 0700 hours to 1800 hours on weekdays;</p> <p>1.2. 0800 to 1300 hours on Saturdays;</p> <p>1.3. on Sundays and public holidays that are observed State-wide (Easter Tuesday excepted).</p> | <p>The Proponent notes the standard hours listed are not in line with those proposed within the MPIS.</p> <p>The hours proposed within the MPIS differed from those typically permitted as, again, those restricted hours typically apply to operational approvals.</p> <p>It is expected that construction activity will occur over a longer period and with a finite duration. The restriction of construction hours will prolong the duration of the impact on sensitive receptors and will impact on the ability to manage traffic congestion by forcing works to occur during the peak travel times.</p> <p>Further, the restriction of operation on a Saturday will significantly hamper the contractor in attracting a workforce, with</p> | <p>Amend Condition N2.1 as follows:</p> <p><i>“1. Unless otherwise approved in writing by the Director, noise and vibration generating activities associated with the construction/demolition of the Project must not be undertaken outside the standard hours listed below:</i></p> <p><i>1.1. 0600 hours to 1800 hours on weekdays;</i></p> <p><i>1.2. 0700 to 1800 hours on Saturdays;</i></p> <p><i>1.3. 0800 to 1800 hours on Sundays; and</i></p> <p><i>1.4. 1000 to 1800 hours on public holidays that are observed State-wide (Easter Tuesday excepted), except where the works are required to respond to an emergency or to make the site safe.”</i></p> |

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| | | <p>Saturday being an attractive working day – this will have a negative impact on the local workforce.</p> <p>Finally, the primary activity proposed for out-of-hours works are reverse circulation drilling and potentially segment erection. Both these activities are long-term activities that cannot be completed in one day. Once commenced, they cannot be safely stopped without potential impacts to safety and quality.</p> <p>It is proposed that the hours outlined within the MPIS should be adopted for the construction phase to ensure the Proponent can complete the works in as short a timeframe as possible.</p> <p>A further addition should be made that excludes works required for emergency reasons.</p> <p>Additionally, the current wording presents far stricter working hours requirements than those found on other road projects, such as Sorell Bypass DA 2020/292.</p> <p>Typically, working hours are not imposed on road and infrastructure projects, instead requiring a management plan to be developed (refer PDPLANPMTD-2021/017782 for the Tasman Highway Upgrades).</p> | |
| | <p>2. Where approval is sought for noise and vibration generating activities to be conducted outside the standard hours listed above, a site-specific noise and vibration impact report including assessment of activities that have potential to cause nuisance at sensitive receptors must be submitted to the Director for approval. Appropriate mitigation measures must be investigated and implemented to</p> | <p>The noise levels discussed within the MPIS were intended to be noise management levels not emission limits.</p> <p>This is in accordance with the NSW Construction Noise Guidelines which use noise management levels, rather than finite noise limits as a more appropriate approach</p> | <p>Amend part of Condition N2.2 as follows:</p> <p><i>"...Appropriate mitigation measures must be investigated and implemented to achieve the noise and vibration management levels specified in the following section, as far as is reasonably practicable."</i></p> |

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| | | <p>achieve the noise and vibration limits specified in the following section.</p> | |
| | | <p>3. Impulsive noise sources such as the use of power saws, grinding metal, concrete or masonry, drilling, vibratory rolling, jack hammering, impact piling or any other similar activities that have potential to cause sleep disturbance must be not used during the night-time (2200 hours to 0700 hours) period.</p> | <p>The Proponent notes the intent of the condition to exclude concrete or masonry drilling, however, an additional comma means that any drilling would be excluded which would make the proposed methodology for the project unachievable, as it relies on periods of 24hr reverse circulation drilling. Proposed amendment included.</p> <p>Rather than excluding these activities outright, it is proposed that a similar arrangement be put in place such that if the Proponent can demonstrate compliance with noise management levels, these activities could proceed outside of standard hours.</p> <p>Proposed amendment included.</p> |
| Noise emission limits | N3 | <p>I. Unless otherwise approved in writing by the Director, noise emissions from construction and demolition for the Project when measured at any noise sensitive receptors and expressed as the equivalent continuous A-weighted sound pressure level must not exceed:</p> <p>I.1. Rating background level (RBL) + 10 dB for standard hours</p> <p>I.2. Rating background level (RBL) + 5 dB for non-standard hours</p> | <p>Amend Condition N3.1 as follows:</p> <p>"1. Unless otherwise approved in writing by the Director, the proponent must implement management actions where noise emissions from construction and demolition for the Project, when measured at any noise sensitive receptors and expressed as the equivalent continuous A-weighted sound pressure level, exceed the following noise management levels:</p> <p>I.1. Rating background level (RBL) + 10 dB for standard hours</p> |

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| <p>2. Additionally, noise emissions from construction and demolition for the Project when measured outside a habitable room of any noise sensitive receptor must not exceed L_{Amax} 60 dB(A).</p> | <p>To set the 60dB_A limit applicable at all times of day is unachievable for a construction project.</p> <p>For context, the following table is provided from the <i>Tasmanian Traffic Noise Management Guidelines October 2015</i>:</p> <p>Table 1: Examples of familiar noise levels</p> <table border="1" data-bbox="1037 613 1451 964"> <thead> <tr> <th>dB(A)</th> <th>Example</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>The faintest sound that we can hear</td> </tr> <tr> <td>30</td> <td>A quiet library or a quiet location in the country</td> </tr> <tr> <td>45</td> <td>Typical office space</td> </tr> <tr> <td>50</td> <td>Noisy birds</td> </tr> <tr> <td>60</td> <td>Noisy office, busy street</td> </tr> <tr> <td>70</td> <td>Noise from a passing car</td> </tr> <tr> <td>80</td> <td>Loud music played at home, vacuum cleaner</td> </tr> <tr> <td>90</td> <td>Noise from a passing truck</td> </tr> <tr> <td>100</td> <td>Noise from a rock band</td> </tr> <tr> <td>110</td> <td>Taxiing aeroplane, jack hammer</td> </tr> <tr> <td>120</td> <td>Pain threshold</td> </tr> </tbody> </table> <p>It is also noted that in accordance with the <i>Tasmanian Traffic Noise Management Guidelines October 2015</i>, the Department will not consider noise mitigation for operational traffic if the noise level is less than LA10(18 hour) 63 dB(A). Construction projects, by their nature, exceed operational traffic noise levels and this is accepted by the community.</p> <p>The Proponent notes that the EPA Noise Policy refers to 65 dBA and in that context the limit relates to sleep disturbance at night.</p> <p>It is suggested this criteria be removed or at least be clarified to indicate that the limit</p> | dB(A) | Example | 0 | The faintest sound that we can hear | 30 | A quiet library or a quiet location in the country | 45 | Typical office space | 50 | Noisy birds | 60 | Noisy office, busy street | 70 | Noise from a passing car | 80 | Loud music played at home, vacuum cleaner | 90 | Noise from a passing truck | 100 | Noise from a rock band | 110 | Taxiing aeroplane, jack hammer | 120 | Pain threshold | <p>1.2. Rating background level (RBL) + 5 dB for non-standard hours”</p> <p>Delete this condition.</p> <p>Construction noise will be mitigated and managed in accordance with the approved Noise and Vibration Management Plan as detailed in Condition NI.</p> |
| dB(A) | Example | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | The faintest sound that we can hear | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | A quiet library or a quiet location in the country | | | | | | | | | | | | | | | | | | | | | | | | | |
| 45 | Typical office space | | | | | | | | | | | | | | | | | | | | | | | | | |
| 50 | Noisy birds | | | | | | | | | | | | | | | | | | | | | | | | | |
| 60 | Noisy office, busy street | | | | | | | | | | | | | | | | | | | | | | | | | |
| 70 | Noise from a passing car | | | | | | | | | | | | | | | | | | | | | | | | | |
| 80 | Loud music played at home, vacuum cleaner | | | | | | | | | | | | | | | | | | | | | | | | | |
| 90 | Noise from a passing truck | | | | | | | | | | | | | | | | | | | | | | | | | |
| 100 | Noise from a rock band | | | | | | | | | | | | | | | | | | | | | | | | | |
| 110 | Taxiing aeroplane, jack hammer | | | | | | | | | | | | | | | | | | | | | | | | | |
| 120 | Pain threshold | | | | | | | | | | | | | | | | | | | | | | | | | |

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| | | relates to sleep disturbance at night-time during construction. | |
| | | 3. The time interval over which noise levels are averaged must be 10 minutes or an alternative time interval specified by the Director. | Nil |
| | | 4. For tonal noise, 5 dB adjustment factor must be added to the measured noise levels when level of 1/3 octave band exceeds the level of the adjacent bands on both sides by: 4.1. 5 dB or more if the centre frequency of the band containing the tone is above 400 Hz; 4.2. 8 dB or more if the centre frequency of the band containing the tone is 160 Hz to 400 Hz inclusive; 4.3. 15 dB or more if the centre frequency of the band containing the tone is below 160 Hz. | Amend Condition N3.4 as follows: <i>“4. For tonal noise, using A weighted decibels, a 5 dB adjustment factor must be added to the measured noise levels when level of 1/3 octave band exceeds the level of the adjacent bands on both sides by: 4.1. 5 dB or more if the centre frequency of the band containing the tone is above 400 Hz; 4.2. 8 dB or more if the centre frequency of the band containing the tone is 160 Hz to 400 Hz inclusive; 4.3. 15 dB or more if the centre frequency of the band containing the tone is below 160 Hz.”</i> |
| | | 5. Measured noise levels must be adjusted for impulsiveness, modulation and low frequency in accordance with the Tasmanian Noise Measurement Procedure Manual. | Nil |
| Ground vibration limits | N4 | 1. Unless otherwise approved in writing by the Director, ground vibration from the activity when measured at any sensitive receptors and expressed as peak particle velocity (PPV) must not exceed: 1.1. 1 mm/s PPV as human comfort vibration limit; and 1.2. Limits as specified in German Standard DIN 4150-3:1999 to protect vulnerability of ground-related services and structures to vibration generated by construction/demolition activities. | Amend Condition N4.1 as follows: <i>“1. Unless otherwise approved in writing by the Director, the Proponent must implement management actions where ground vibration from the activity, when measured at any sensitive receptors and expressed as peak particle velocity (PPV), exceed the following vibration management levels: 1.1. 1 mm/s PPV as human comfort vibration limit; and</i> |

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| | | | <i>1.2. Limits as specified in German Standard DIN 4150-3:1999 to protect vulnerability of ground-related services and structures to vibration generated by construction/demolition activities.”</i> |
| | | 2. Unless otherwise approved in writing by the Director, blasting is not permitted. | Nil |
| Noise and vibration monitoring method | N5 | 1. Noise and vibration monitoring for the Project must be undertaken in accordance with: 1.1. these conditions; and 1.2. a method approved in writing by the Director, as may be amended from time to time with written approval of the Director. | Nil |
| | | 2. Measurements and data recorded during the survey must include: 2.1. operational status of noise and vibration producing equipment; 2.2. subjective descriptions of the sound at each location; 2.3. details of meteorological conditions relevant to the propagation of noise; 2.4. the equivalent continuous (Leq) and Lmax, L1, L10, L50, L90 and L99 A-weighted sound pressure levels measured over a period of 10 minutes or an alternative time interval approved by the Director; 2.5. one-third octave spectra noise data over suitably representative periods of not less than 1 minute, where required; and 2.6. Measurements of peak particle velocity (PPV) at a vibration sensitive building or structure. The monitoring locations will be solid and rigid to best represent the vibration entering the structure or building under investigation; 2.7. Where attended vibration monitoring is not feasible, an unattended monitoring system is to be installed with a system to warn the operators (via | <p>The Proponent notes that this clause appears to apply to attended measurements, but unattended logging will likely form the basis of noise/vibration logging in which case item 2.2 is very difficult to comply with.</p> <p>Suggested amendment included.</p> |

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| | | flashing light etc.) where there is potential to cause any cosmetic damage to buildings and structures. | |
| | | 3. The survey report must include the following: 3.1. the results and interpretation of the measurements required by these conditions; 3.2. a map showing the locations of construction/demolition activities, measurement locations, and noise/vibration sensitive receptors clearly marked on the map; 3.3. any other information that will assist with interpreting the results and whether the activity is in compliance with these conditions; and 3.4. recommendations of appropriate mitigation measures to manage any noise or vibration problems identified by the survey. | Nil |
| | | 4. All methods of noise measurements must be in accordance with the Tasmanian Noise Measurement Procedure Manual. | Nil |
| Operational traffic noise review | N6 | 1. Prior to commencement of the construction phase of the Project, or by a date otherwise specified in writing by the Director, an updated operational traffic noise impact assessment report incorporating the final design options must be submitted to the Director for approval. This requirement will be deemed to be satisfied only when the Director indicates in writing that the submitted document adequately addresses the requirements of this condition to his or her satisfaction. | Nil |
| | | 2. After commencement of the operational phase of the Project, a noise monitoring report must be submitted to the Director comparing operational noise levels of the existing Bridge as reported in the MPIS and the operational phase of the Project. | Nil |
| Stormwater Management Plan | S1 | 1. Without limitation, unless otherwise approved in writing by the Director, the Stormwater | Suggested amendment to provide clarity as to the standard specification section referenced. Amend Condition S1.1 as follows: |

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| | | Management Plan(s) required under these conditions must be consistent with the Standard Specification for Road Projects, Part B. | “1. Without limitation, unless otherwise approved in writing by the Director, the Stormwater Management Plan(s) required under these conditions must be consistent with the <i>Department of State Growth Specification – Section 176- , Part B – Water Quality.</i> ” |
| | | <p>2. The plan must provide details of the following:</p> <p>2.1. Measures to prevent surface runoff from entering the area used or disturbed during construction activities sufficient for a 1 in 20 year rain event;</p> <p>2.2. Measures to retain sediment on The Project Land sufficient to comply with stormwater discharge quality limits imposed by these conditions;</p> <p>2.3. Procedures for maintenance of installed controls;</p> <p>2.4. Procedures for rehabilitation of areas disturbed during construction; and</p> <p>2.5. Details of final road stormwater controls and maintenance requirements to ensure stormwater discharged from The Project Land to water is treated to a level which complies with treatment criteria specified by the State Stormwater Strategy;</p> | <p>Not all of the project land will be under the control of the Proponent or its contractor. As such, compliance with these criteria may not be possible – that is to say that not all stormwater discharged from the Project Land is the responsibility of the Proponent.</p> <p>Instead, the condition should relate to the area of works under its control. This may require the definition of an alternative term, such as ‘works area’.</p> <p>It should be stated if this is a requirement of construction phase, operational phase or both.</p> <p>It is assumed this is a condition for construction only, with the exception of item 2.5.</p> |
| Stormwater Discharge Quality | S2 | 1. The concentration of suspended solids in stormwater discharged from The Project Land to water must be less than 30mg/L, except where the discharged stormwater is not visibly more turbid than the receiving environment, in which case no suspended solids concentration limits apply. | <p>Amend part of Condition S2 as follows:</p> <p>“1. <i>During construction, the concentration of suspended solids in stormwater discharged from the Works Area to water must be less than 30mg/L, except where the discharged stormwater is not visibly more turbid than the receiving environment, in which case no suspended solids concentration limits apply.</i>”</p> |
| | | 2. Stormwater discharged from The Project Land to water must be visibly free of oil and grease. | <p>Not all of the project land will be under the control of the Proponent or its contractor.</p> <p>Amend Condition S2.2 as follows:</p> |

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| | | <p>As such, compliance with this criterion may not be possible – that is to say that not all stormwater discharged from the Project Land is the responsibility of the Proponent.</p> <p>Instead, the condition should relate to the area of works under its control. This may require the definition of an alternative term, such as ‘works area’.</p> <p>Further, as with all these criteria, it should be stated if this is a requirement of the construction phase, operational phase or both.</p> | <p>“2. Stormwater discharged from the Works Area to water must be visibly free of oil and grease.”</p> | |
| Waste Materials Management Plan | WM I | <p>1. Without limitation, unless otherwise approved in writing by the Director, the Waste Materials Management Plan(s) required under these conditions must include:</p> <p>1.1. Consideration of the waste management hierarchy;</p> <p>1.2. Any proposed or potential reuse of material;</p> <p>1.3. Measures for detecting, testing, classification and management of the following in accordance with IB 105 and the ASS Guidelines, and with measures recommended in the MPIS:</p> <p>1.3.1. PASS and sediment from the River Derwent contaminated with metals, PAH and nutrients;</p> <p>1.3.2. PASS soils and sediments from potential ASS areas as identified in the MPIS;</p> <p>1.3.3. AASS soils as identified in the MPIS;</p> <p>1.3.4. Contaminated soils as identified in the MPIS;</p> <p>1.3.5. Solid wastes mixed into the soils within the embankment on the northern end of the existing Bridgewater Bridge;</p> <p>1.3.6. Excavated soils and sediments from potentially contaminated areas;</p> <p>1.3.7. Unanticipated controlled and general waste.</p> <p>1.4. Measures for managing potential dust, odours and spills, and for containment of leachate from contaminated material;</p> | <p>No comment</p> | <p>Nil</p> |

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| | | 1.5. Disposal and/or reuse of controlled waste and other waste materials. | | |
| Dredging not permitted | WQ 1 | Unless otherwise approved in writing by the Director, no dredging is permitted to be undertaken for the Project. | No comment. | |
| Estuarine Water Quality Monitoring Plan | WQ 2 | <p>1. Without limitation, unless otherwise approved in writing by the Director, the Estuarine Water Quality Monitoring Plan(s) required under these conditions must include details of the following:</p> <p>1.1. Monitoring site locations including:</p> <p>1.1.1. Far field monitoring site(s) outside the area of influence of the activity;</p> <p>1.1.2. Intermediate monitoring sites within 700m toward the mouth of the estuary and 500m away from the mouth of the estuary of areas likely to be disturbed by construction activities; and</p> <p>1.1.3. The maximum distance from areas of disturbance near-field, in situ field monitoring is to be conducted.</p> <p>1.2. Parameters, methods, and frequencies of monitoring at each identified location including:</p> <p>1.2.1. A far field monitoring program to assess large scale changes that may impact water quality at the site;</p> <p>1.2.2. An intermediate site monitoring program for the analysis of potential pollutants and physical parameters of concern to assess operational performance against identified water quality guideline values; and</p> <p>1.2.3. A near field and telemetered intermediate site monitoring program to inform management actions required to mitigate potential water quality impacts, in accordance with the approved Estuarine Water Quality Management Plan(s) required by these conditions.</p> <p>1.3. A reporting program to advise the Director of monitoring results including:</p> <p>1.3.1. Ongoing monitoring of far field and</p> | <p>The terminology of this condition may be confusing and so the Proponent proposes that terms like “upstream” and “downstream” should be used instead of “away from the mouth of the estuary” and “toward the mouth of the estuary”. Proposed amendment included.</p> <p>Other amendments are proposed to simplify the wording of the conditions while keeping the same intent.</p> | <p>Amend part of Condition WQ2.1 as follows:</p> <p>“... 1.1.2 Intermediate monitoring sites within 700 m downstream of the construction area and 300 m west of the northern end of the causeway (upstream). 1.1.3. The maximum distance from areas of disturbance near-field, where in situ field monitoring is to be conducted. ...”</p> <p>“... 1.3 A reporting program to advise the Director of monitoring results, including interpretation of the results in terms of construction actions, natural events, or other occurrences which may have caused any exceedances of the water quality trigger levels, as determined in the approved Estuarine Water Quality Management Plan(s). ...”</p> |

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| | | intermediate field monitoring sites; and 1.3.2. Any other monitoring as a result of construction actions, natural events or other occurrences which have caused or have the potential to cause exceedances of management action triggers, determined in accordance with the approved Estuarine Water Quality Management Plan(s) required by these conditions. | |
| | | 2. The Plan(s) must be reviewed and amended as necessary in response to the water quality impact studies required under these conditions within one month of the completion of each water quality impact study. Where amended, the amended Plan(s) must be resubmitted to the Director for approval. | Reference to the water quality impact studies is confusing when they have not yet been introduced. This may be helped by capitalisation: "Water Quality Impact Studies". Amend Condition WQ2.2 as follows: "2. The Plan(s) must be reviewed and amended as necessary in response to the Water Quality Impact Studies required under these conditions within one month of the completion of each water quality impact study. Where amended, the amended Plan(s) must be resubmitted to the Director for approval." |
| Estuarine Water Quality Management Plan | WQ 3 | 1. Without limitation, the Estuarine Water Quality Management Plan(s) required under these conditions must include details of the following: 1.1. Relevant community values within the area of potential estuarine water quality impact as a result of construction and demolition works; 1.2. Water quality guidelines values for the protection of identified community values; 1.3. Water quality trigger levels and adaptive management actions for key water quality indicators at near-field and intermediate monitoring sites; 1.4. Responsible persons for implementation of each management action; 1.5. A table containing all major commitments made in the plan; and 1.6. A reporting program to advise the Director of plan implementation and outcomes. | Consistent with Condition WQ2, the inclusion of 'unless otherwise approved in writing by the Director' will provide flexibility for the management plan to be prepared consistent with the regulators expectations at the time. Capitalising "Community Values" would help to inform the reader that this is a term specifically defined elsewhere in the document. Proposed amendments included. Amend part of Condition WQ3.1 as follows: "1. Without limitation, unless otherwise approved in writing by the Director, the Estuarine Water Quality Management Plan(s) required under these conditions must include details of the following:.." Amend part of Condition WQ3.1 as follows: "... 1.1. Relevant Community Values within the area of potential estuarine water quality impact as a result of construction and demolition works; 1.2. Water quality guideline values for the protection of identified Community Values; ..." |

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| | | 2. The Plan(s) must be reviewed and amended as necessary in response to the water quality impact studies required under these conditions within one month of the completion of each water quality impact study. Where amended, the Plan(s) must be resubmitted to the Director for approval. | No comment Nil |
| Background water quality and management trigger levels | WQ 4 | 1. A management trigger level specified by the Estuarine Water Quality Management Plan required by these conditions does not apply where background levels of the associated indicator are above the trigger level when measured during the same monitoring event. | Proposed amendment to clarify the condition. Amend Condition WQ4.1 as follows: "1. Where a management trigger level specified by the Estuarine Water Quality Management Plan is below background level, that trigger level does not apply when measured during the same monitoring event." |
| | | 2. In this case, associated management actions must be taken where the indicator is also above the background level. | Proposed amendment to clarify the condition. Amend Condition WQ4.2 as follows: "2. In the above case, associated management actions must instead be taken where the indicator is above the background level." |
| Water quality impact studies | WQ 5 | 1. Unless otherwise approved in writing by the Director, within 14 days of commencement of any construction and demolition activities for the Project which are likely to release sediment into the water column, estuarine water quality impact studies of those activities must be undertaken. | The intent of this condition is understood by the Proponent however the wording could be construed as being applicable at every point works start. Taking this to the extreme, this could be construed as requiring water quality impact studies for each days' work. A suggested amendment is included to clarify this. Additionally, given that these are studies are specific to this project, the Proponent suggests that the words in the phrase should be capitalised: Water Quality Impact Studies. Amend Condition WQ5.1 as follows: <i>"1. Unless otherwise approved in writing by the Director, within 14 days of initial commencement of any construction and demolition activities for the Project which are likely to release sediment into the water column, estuarine Water Quality Impact Studies of those activities must be undertaken."</i> |
| | | 2. Types of construction activities to which this condition applies include: 2.1. the movement of vessels to and from landing facilities; 2.2. sediment disturbance as a result of land | No comment Nil |

| Condition | | Proponent Comment | Proposed Amendment |
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| | <p>reclamation activities;</p> <p>2.3. the installation of temporary piles for the construction of working platforms;</p> <p>2.4. the installation of piles associated within construction of the first pier to be constructed for the Project within estuarine waters;</p> <p>2.5. the use of floating plant where the potential exists for sediment disturbance through placement, anchorage, vibration or settling of plant on the sediment; and</p> <p>2.6. other activities which have the potential to disturb sediment to the extent that water quality impacts may occur at intermediate monitoring sites;</p> | | |
| | <p>3. The Director must be notified of the commencement of each study.</p> | No comment | Nil |
| | <p>4. Each impact study must include the following:</p> <p>4.1. an estimation of sediment mass flux released to the water column over the course of the construction activity;</p> <p>4.2. an evaluation of water quality impacts within the vicinity of the construction activity via measurements which may include field measurements, laboratory analyses, photography and video footage;</p> <p>4.3. an evaluation of current direction to refine selection of assessment locations;</p> <p>4.4. an evaluation of water quality impacts at intermediate monitoring sites relative to the location where disturbance has or is occurring during the construction phase for the Project;</p> <p>4.5. where the potential exists for water quality impacts at intermediate monitoring sites, an assessment of pollutant variation and secondary impacts, such as dissolved oxygen depletion, in the vicinity of the construction activity relative to the variations of water quality indicators at the intermediate monitoring sites;</p> <p>4.6. recommendations as appropriate for</p> | <p>More directly relevant than the rate of sediment disturbance (and more reliable to quantify) is the rate of release (and decay) of metals, nutrients, and suspended sediment from the construction activities. Directly measuring these parameters along a transect downstream of the construction activity would provide information that can be used to understand environmental risk. Combining this with collection of shore-based, drone-based and potentially also underwater imagery would help to extrapolate the point measurements to determine the spatial scale of the disturbance and impacts on other aspects of water quality e.g. aesthetics.</p> <p>Suggested amendment included.</p> | <p>Amend part of Condition WQ5.4 as follows:</p> <p>"... 4.1 an estimate of the frequency of sediment disturbance caused by the construction activity through the different phases of the Project. This should include a discussion of factors that could cause the magnitude and spatial extent of sediment disturbance to vary from that measured in the Water Quality Impact Study e.g. vessel size or task, piling close to shore versus closer to the main river channel. 4.2. an evaluation of water quality impacts within the vicinity of the construction activity and along a gradient with the current away from the source via measurements which may include field measurements, laboratory analyses, photography and video footage;"</p> |

| Condition | | Proponent Comment | Proposed Amendment |
|---------------------------------------------------------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| | | amendments to the Estuarine Water Quality Monitoring Plan and Estuarine Water Quality Management Plan required by these conditions. | |
| | | 5. For each water quality impact study, a report must be completed within one month of completion of the study. The report must be provided with the monitoring plan(s) and management plan(s) required by these conditions where amendments to these plans are required. | Nil |
| Contingency management plan for construction in the Derwent estuary | WQ 6 | 1. The Contingency Management Plan for construction in the Derwent estuary required under these conditions must detail measures to prevent and mitigate environmental harm if an unplanned event occurs. Unplanned events that must be addressed by the plan include but are not limited to: 1.1. Incidents, accidents, equipment failure and malfunctions with the potential to cause environmental harm as a result of: 1.1.1. the release of pollutants to the aquatic environment; or 1.1.2. the disturbance and release of large quantities of sediment to the estuarine water column at greater rates, volume or over a larger area than otherwise planned for; 1.2. the release from capture and containment facilities of extracted estuarine sediments; and 1.3. weather or other environmental conditions which may result in greater levels of disturbance of sediment from areas of operations than otherwise expected. | Nil |
| | | 2. The plan must include communication procedures that ensure that the general public and relevant Government agencies are informed of any unplanned event to the extent necessary to allow them to take precautions against adverse impacts upon the environment and the public. | Nil |

| Condition | | Proponent Comment | Proposed Amendment | |
|-------------------------------------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Final design hydrodynamic modelling | WQ 7 | <p>1. Unless otherwise approved in writing by the Director, within two (2) months of the issuing of these conditions:</p> <p>1.1. hydrodynamic modelling based on the chosen design must be undertaken over a sufficient area, timeframe and scale to determine potential changes in sediment mobilisation, deposition and general bathymetry in the Derwent estuary resulting from the Project, following completion of construction; and</p> <p>1.2. a report on the hydrodynamic modelling results must be submitted to the Director for approval.</p> | No comment | Nil |
| | | <p>2. Hydrodynamic modelling undertaken must be sufficient to determine whether significant impacts to existing ecosystems are possible, or the extent of any potential impacts to water quality as a result of the final bridge design, such as from scouring or other mechanisms.</p> | <p>“Existing ecosystems” should be replaced by “the aquatic ecosystem” in this sentence.</p> | <p>Amend Condition WQ7.2 as follows:</p> <p><i>"2. Hydrodynamic modelling undertaken must be sufficient to determine whether significant impacts to the aquatic ecosystem are possible, or the extent of any potential impacts to water quality as a result of the final bridge design, such as from scouring or other mechanisms."</i></p> |
| | | <p>3. Where potential negative impacts are identified, recommendations must be made in the report for mitigation measures and ongoing management of impacts, to be either incorporated as part of the constructed bridge or implemented post-construction.</p> | No comment | Nil |
| | | <p>4. This condition will be deemed to be satisfied only when the Director indicates in writing that the submitted report adequately addresses the requirements of this condition to his or her satisfaction.</p> | No comment | Nil |
| Aquatic sediment management | WQ 8 | <p>1. Unless otherwise approved in writing by the Director:</p> <p>1.1. all sediments extracted during construction or demolition phases of the Project must be removed from the aquatic environment, such that no</p> | No comment | Nil |

| Condition | | Proponent Comment | Proposed Amendment |
|-----------|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| | | <p>extracted sediment is released to the aquatic environment;</p> <p>1.2. any removed aquatic sediments must only be stored onshore temporarily and must be contained during storage so as to prevent such sediments becoming entrained in stormwater; and</p> <p>1.3. all removed aquatic sediments must be disposed of to an appropriately licenced facility.</p> | |

Attachments

Attachment A – Vibration Risk Assessment

Attachment B – Assessment of potential for impacts on the heritage values of adjacent Local Historic Heritage Places

Attachment C – Justification for the necessary demolition of 37 Black Snake Road

Attachment D – Consolidated submission requirements

Attachment E – Addendum to the Landscape and Visual Analysis

Attachment A – Vibration Risk Assessment

Attachment B – Assessment of potential for impacts on the heritage values of adjacent Local Historic Heritage Places

Attachment C – Justification for the necessary demolition of 37 Black Snake Road

The requirement for demolition of buildings at 37 Black Snake Road to facilitate the southern interchange works associated with the replacement Bridgewater Bridge has long been acknowledged in Glenorchy’s planning schemes and through State Growth’s acquisition of the land.

The justification for this demolition is premised on the following key points.

1. The design of this intersection is a trade-off between a number of design elements, all balanced to achieve the best-case outcome for the project. Prior designs have considered different versions of this interchange, but the overarching outcome is that impacts to 37 Black Snake Road are unavoidable.
2. The scheme clearly contemplates the requirement for demolition of 37 Black Snake Road, both in the interim scheme and in the now-declared scheme.
3. Acquisition and relocation of the previous owner was completed with a view that this was necessary and unavoidable.
4. The Proponent took feedback from stakeholders, including both the community and the Derwent Valley Council, that a direct link from the Brooker Highway to the Lyell Highway was necessary.

Prior designs

As mentioned, design of the southern interchange is a trade-off between a number of elements of design. These include the following:

- Cultural heritage – 37 Black Snake Road and the Black Snake Inn.
 - o Avoiding one site may well impinge on another site as the interchange is bounded by constraints and requires a certain ‘footprint’ to achieve the required movements.
- Aboriginal heritage – the PAD located adjacent to Black Snake Road.
 - o Prior designs that avoided some impact to 37 Black Snake Road impacted on the PAD on Black Snake Road.
- The alignment of the highway leading to the bridge itself.
 - o The alignment of the bridge and highway leading to it are critical aspects of the design and changes to this can see a substantial change in the way the bridge is constructed and/or add significant cost to the construction works required.
- The extent of earthworks and thus the extent of cut and fill required on site.
 - o Greater levels of cut on the southern side of the interchange would be required if the interchange is shifted in that direction or alternatively more fill on the northern side (in proximity to the Black Snake Inn) if moved north.
- Standards for road design and construction.
 - o The standards dictate the minimum radius of ramps to/from the highway, lengths of road for queuing and sight lines and the like. Any flexibility or relaxation of these standards would significantly impact the safety and efficiency of the road network.
- Efficiency of the interchange.
 - o The size of the interchange and the connectivity it provides are directly related. A key requirement for this project is to reduce travel time and thus increases to efficiency of traffic movements are key requirements.
- Safety of the interchange.

- A well-designed interchange, with adequate space for all movements to occur, is critical and is not something that can be compromised on.

Prior designs have considered these items and provided designs that achieve different outcomes with respect to these elements – these are summarised, below.

Concept Design (2011/2012)

In general, this design avoided 37 Black Snake Road outbuildings, but encroached on the property significantly with impacts to the main house.

The off ramp to Black Snake Road passes through an Aboriginal Heritage site (PAD 4, site I3880).

This design has a significantly longer bridge structure and more extensive road layout and therefore a higher, overall project cost.

Significantly, while impacts are minimised and do not require total demolition of all buildings on 37 Black Snake Road, the land parcel will become isolated and local access would not be possible with resultant occupancy of this property being questionable – particularly being an island within an interchange.

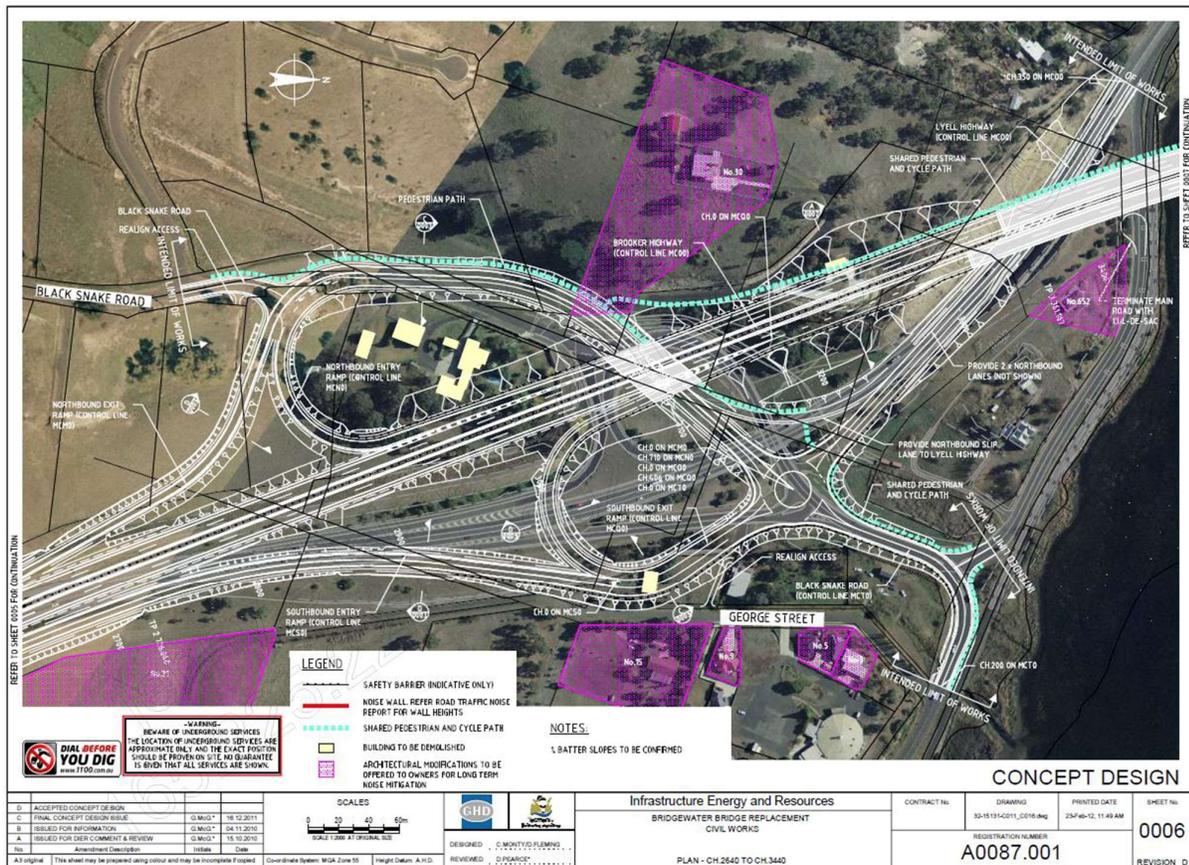


Figure A – Concept Design (2011)

State's Reference Design (2020)

The Reference design provided by the State avoids the majority of 37 Black Snake Road, however the road alignment and grades do not meet Austroads guidelines in terms of design speeds, curve radii and ramp gradients.

Significantly, this interchange design was minimised in size to reduce cost but made significant sacrifices to efficiency, with no “free flowing” connection between the Brooker and Lyell Highways.

As mentioned below, this was a key point of feedback from community and stakeholder consultation prior to the selection of the ‘chosen design’.

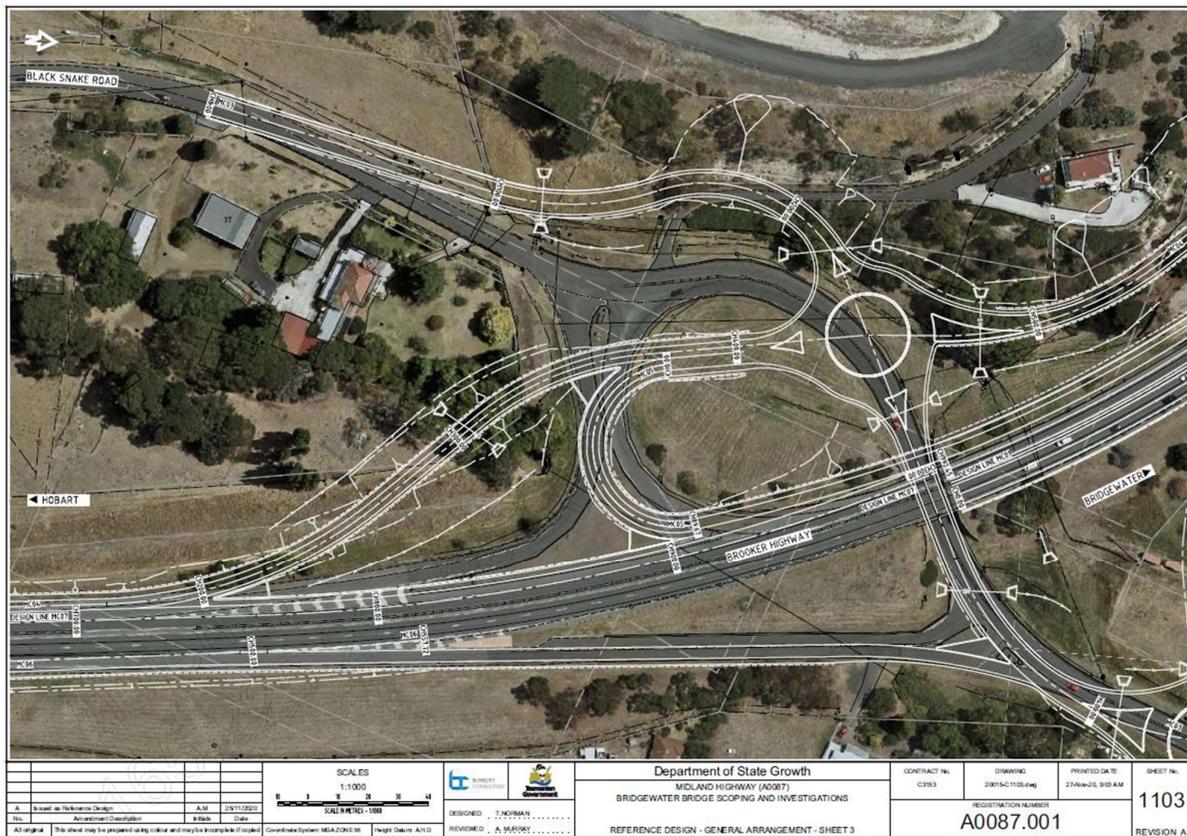


Figure B – Reference Design (2020)

Separate to the design team review, an Assessment of Potential for Impacts on the Heritage Values of Adjacent Local Historic Heritage Places was undertaken by Purcell (February 2022). This assessment identified that 18.01 and 18.07 will be directly impacted and 18.05 may be directly impacted. It was noted that the other buildings on site could, in principle, be retained. However, it was noted that a viable long-term use would need to be established to several structures which are, by design, unsecured, such as the stables. It was also noted that the buildings may be prone to vandalism and anti-social behaviour. The heritage assessment recommended that in light of this, the items to be retained on site include 18.02, 18.08, 18.09 and 18.10. However, due to the proximity of 18.02 to planned construction and the risk of construction impacts to the structure's integrity, the Proponent does not believe it will be feasible to guarantee that this building will remain unimpacted.

Planning scheme intent

Although not noted at the time of the preparation of the MPIS, the Glenorchy Local Provisions Schedule of the Tasmanian Planning Scheme includes a Site-Specific Qualification GLE-C6.1 that permits the demolition of the farm outbuildings if required as part of the replacement of the Bridgewater Bridge and associated works.

“The demolition of the farm outbuildings if required as part of the replacement of the Bridgewater Bridge and associated road works, where archival records are prepared for the property and materials are salvaged, generally in accordance with Recommendation 111 of the Austral Tasmania report titled 'Bridgewater Crossing: Granton Interchange, Historic Heritage Assessment, Final Report prepared for GHD Pty, 2 June 2011’”

This Site-Specific Qualification essentially replaces the previous exemption under the Glenorchy Interim Planning Scheme 2015.

Lyell Highway connection and stakeholder feedback

The State's Reference Design was advertised for public comment in late 2020.

A key piece of feedback was that the design of the southern interchange, while optimised for cost, was not the most efficient design – particularly with respect of the connection from the Brooker Highway to the Lyell Highway.

A submission from the Derwent Valley Council noted that the Reference Design showed “...a convoluted journey to connect the Brooker Highway with the Lyell Highway heading towards the Derwent Valley.”

They further went on to say that “...these connections introduce new bottlenecks at roundabouts and will impose constraints on freight vehicles.”

Derwent Valley Council requested that “... due consideration be given to direct off and on ramps...”.

Similar feedback was received by the community on the Social Pinpoint site established for the project.

Feedback received during this time was integrated into subsequent planning and fed into the Early Contractor Involvement (ECI) tender process undertaken by the Department and is one of the reasons the southern interchange has been planned as presented in the Chosen Design.

Summary

Avoidance of 37 Black Snake Road will significantly impact the design that is able to be constructed, and is likely to require a design that will impact on other environmental or heritage values or amenity in the adjacent area (i.e. it would be a trade-off of impacts).

Having regard to the above, the demolition of most of the buildings at 37 Black Snake Road is unavoidable.

The buildings at 37 Black Snake Road are not listed on the National Heritage Register or the Tasmanian Heritage Register, and under the local Planning Scheme the demolition of farm outbuildings is specifically listed as permitted if required as part of the replacement of the Bridgewater Bridge and associated works.

The proposed mitigation measures including archival recording and investigation of the viability of replanting options for significant features 18.9 and 18.10. These are included as commitments in Section 4.11.10 of the MPIS and are consistent with the Planning Scheme requirements.

Upon further review of the chosen design, it is noted that the viability of retaining the trees 18.09 and 18.10 in their current location could be explored via an arborist assessment, and that if required, 18.03, 18.04 and 18.08 could be retained on site, although demolition to allow clear access to the site for construction efforts is the preferred position of the Proponent, noting that:

- 18.03 (stable) and 18.04 (relocated railway shed) would become isolated structures without an identified viable long-term use and would potentially be prone to vandalism and anti-social behaviour if retained; and
- 18.08 (sandstone culvert) may be impacted by the construction of the optimum drainage design solution.

Attachment D – Consolidated submission requirements

| Title | Condition | Listed Approval Authority in IAR | Comment |
|-----------------------------------------------------|-----------|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Final design plans | 4 | Relevant decision maker | Design plans will be provided (refer separate comments regarding definition of design plans). |
| Construction Environmental Management Plan | 7 | Relevant decision maker | This is a double up with the requirements of the EPA. As proposed within the MPIS, the intention was to create a Construction Environment Management Plan (CEMP) with a number of sub-plans. The CEMP should be approved by EPA, as the relevant regulator. |
| Construction Traffic Management Plan | 13 | Relevant decision maker | The road authority (the Minister is the relevant road authority for State highways and subsidiary roads) |
| Flood Management Plan | 20 | Relevant decision maker | No comment |
| Landscape Plan | 33 | Relevant decision maker | This plan should be considered part of the design plans to be submitted. |
| Lighting Plan | 35 | Relevant decision maker | This plan should be considered part of the design plans to be submitted. |
| Weed Disease and Hygiene Management Plan | 38 | Relevant decision maker | No comment |
| Construction Management Plan (TasWater assets) | 52 | TasWater | A Construction Plan (CP) is proposed to be created for the project and this would be provided to TasWater and other authorities as required. As it will cover more than just aspects relating to TasWater assets, TasWater's consideration and approval should only apply to those parts of the plan that are relevant. |
| Construction Noise and Vibration Management Plan | 61 | Tasmanian Heritage Council | Title should be the same as the EPA plan (Noise and Vibration Management Plan) |
| Construction Management Plan (Black Snake Inn) | 61 | Tasmanian Heritage Council | This plan will form part of the broader CP being prepared. The section relating to the Black Snake Inn will be provided to the THC. |
| Air Quality Management Plan | G7 | EPA | |
| Noise and Vibration Management Plan | | | This plan should be the overarching plan on noise and vibration management. The requirement stated for the THC will be a portion of this plan. |
| Estuarine Water Quality Monitoring Plan | | | No comment, other than this plan could be easily combined with the Estuarine Water Quality Management Plan |
| Estuarine Water Quality Management Plan | | | No comment, other than this plan could be easily combined with the Estuarine Water Quality Monitoring Plan |
| Contingency Management Plan | | | No comment |
| Stormwater Management Plan | | | No comment |
| Environmentally Hazardous Materials Management Plan | | | No comment |
| Waste Materials Management Plan | | | No comment |

| | | | |
|-----------------------------------------|--|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lighting Plan | | | It is assumed this is focussed on construction phase and therefore this plan differs from that requested under condition 35. As such, it is proposed that these be differentiated by name to clarify that this lighting plan is approved only by the EPA. |
| Decommissioning and Rehabilitation Plan | | | No comment |

Attachment E – Addendum to the Landscape and Visual Analysis

Resonate

Bridgewater Bridge Project

Vibration Risk Assessment

M210270RP2 Revision 0

Wednesday, 2 February 2022



Document Information

| | |
|-----------------------|----------------------------------------------|
| Project | Bridgewater Bridge Project |
| Client | McConnell Dowell Constructors (Aust) Pty Ltd |
| Report title | Vibration Risk Assessment |
| Project Number | M210270 |

Revision Table

| Report revision | Date | Description | Author | Reviewer |
|------------------------|-----------------|--------------------|-----------------|-----------------|
| 0 | 2 February 2022 | For Issue | Mingsan Boulter | Tom Evans |
| | | | | |
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Glossary

| | |
|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Amplitude | The measurement of energy or movement in a vibrating object. Amplitude is measured and expressed in three ways: Displacement (commonly in mm Pk-Pk), Velocity (commonly in mm/s Pk), and Acceleration (commonly in m/s ² RMS). Amplitude is also the y-axis of the vibration time waveform and spectrum, and helps define the severity of the vibration. |
| Frequency (Hz) | The number of times a vibrating object oscillates (moves back and forth) in one second. Fast movements produce high frequency sound (high pitch/tone), but slow movements mean the frequency (pitch/tone) is low. 1 Hz is equal to 1 cycle per second. |
| Hertz (Hz) | Vibration can occur over a range of frequencies extending from the very low, such as the rumble of thunder, up to the very high such as the crash of cymbals. The frequency of vibration and sound is measured in hertz (Hz). One hertz is one cycle per second. Structural vibration is generally measured over the frequency range from 1 to 100 Hz. |
| One-third (1/3 rd) octave band | The whole frequency range can be divided into a set of frequencies called bands. A One-Third Octave band is defined as a frequency band whose upper limit of the band is the lower limit of the band times cube root of two. |
| Peak-to-Peak (Pk-Pk or P-P) | This is the measure of the vibration amplitude, maximum to minimum, equal to twice of square root of 2 times the RMS value of a sine wave. |
| Peak Particle Velocity (PPV) | Vibration velocity can be measured in a number of ways. For some projects vibration levels can be given in terms of Peak Particle Velocity (PPV). |
| Resonance | When a forcing frequency is the same as a resonant frequency of the structure, the structure is said to be in resonance. |
| RMS Velocity | For most applications where there is continuous vibration, vibration is measured in terms of root mean square (RMS) velocity. |
| Root mean square (RMS) | The square root of the mean square (the arithmetic mean of the squares of a set of numbers). |
| Vector sum | A vector sum is the result of adding two or more vectors together via vector addition. |
| Vibration | Movement in solid materials. Can be felt at higher levels but can also disturb the operation of sensitive equipment at levels below that which would be felt by building occupants. |

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1 Introduction

Resonate has been tasked with assessing construction vibration associated with works for a new bridge at Bridgewater, Tasmania. The Bridgewater Bridge has a span of approximately 1 km across the River Derwent and a new bridge is to be built to strengthen Tasmania's National Highway.

McConnell Dowell is responding to a request from the State to undertake a Vibration Risk Assessment associated with the construction of the Project potentially impacting on local heritage places, in particular the following locations:

- Black Snake Inn complex at 650 Main Road, Granton
- Granton Watch House, 1 Lyell Highway
- Granton Memorial Hall, Forest Road, Granton
- Commandant's Cottage, 4 Forest Road v. 6 Forest Road, Granton
- 19 Tarrants Road, Granton
- St Mary's Anglican Church and Cemetery, 20 Old Main Road, Bridgewater
- Coronation Hall, 25 Old Main Road, Granton.

This Vibration Risk Assessment assesses the risk associated with the Project to these buildings and addresses the management of potential impacts from vibration associated with the construction works. In particular, it:

- Defines relevant vibration limits that the works should adhere to.
- Provides a vibration risk assessment of the works based on current knowledge.
- Identifies management and mitigation measures to be implemented during the works
- Details vibration monitoring procedures that should be implemented to proactively manage vibration levels from construction works.

2 Project and site details

2.1 Project location

The project is located in the suburb Bridgewater, within the municipality of Brighton Council. Bridgewater Bridge is expected to span approximately 1 km across the river Derwent. Sensitive receivers are located on both the Northern and Southern banks and in close proximity of construction activities.

The site and key features are shown in Figure 1.

2.2 Project work

Key construction activities

Key vibration-generating construction activities that will occur as part of the works will involve:

- Removal of existing asphalt and concrete
- Potential use of rock hammers to remove hard rock
- Smooth surfaces with use of graders
- Removal of excavated rock, asphalt and concrete
- Transport of excavated waste materials away from site
- Construction of new road
- Some piling works around proposed bridge area

2.3 Sensitive land uses

2.3.1 Heritage structures

There are several heritage structures with the vicinity of the site. These are:

- Black Snake Inn complex at 650 Main Road, Granton
- Granton Watch House, 1 Lyell Highway
- Granton Memorial Hall, Forest Road, Granton
- Commandant's Cottage, 4 Forest Road v. 6 Forest Road, Granton
- 19 Tarrants Road, Granton
- St Mary's Anglican Church and Cemetery, 20 Old Main Road, Bridgewater
- Coronation Hall, 25 Old Main Road, Granton.

2.3.2 Building occupants

As this Vibration Risk Assessment has been conducted to assess the risk construction works pose to heritage structures, disturbance to building occupants is outside of the scope of this report. People typically perceive vibration at much lower levels than would pose a risk to structures such that vibration levels that would be considered acceptable for managing the risk to structures can still be readily perceptible to people. It is expected that a Construction Noise and Vibration Management Plan (CNVMP) would be prepared and implemented during the Project and this would address measures to address residents being disturbed by vibration.



Figure 1 Project Site

3 Vibration limits

There is no Tasmanian regulation or guideline that specifies appropriate vibration limits for the prevention of cosmetic or structural damage to buildings. Instead, limits have been adopted from German Standard DIN 4150-3 *Structural Vibration, Part 3 – Effects of Vibration on Structures* (Din 4150-3) which is widely used throughout Australia. It includes specific guidance for heritage-listed structures, which is relevant to a number of buildings in the Project area.

The DIN 4150-3 limits are shown in Table 1 and Figure 2, and are specified in PPV levels measured directly at the building foundations in any direction. The targets increase with dominant frequency of the vibration as shown in Figure 2. It is common for construction activities to result in vibration levels at approximately 30 Hz, where the vibration targets are higher (5.5 mm/s) than at lower frequencies.

Table 1 DIN 4150 guideline vibration limits for structural damage to buildings

| Building type | Peak Component Particle Velocity, mm/s | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|-------------|--------------|-------------------------------------------------------------------|
| | Vibration at building foundation | | | Vibration at horizontal plane of highest floor at all frequencies |
| | 1 Hz to 10 Hz | 10 to 50 Hz | 50 to 100 Hz | All frequencies |
| Building used for commercial purposes, industrial buildings and buildings of similar design | 20 | 20 to 40 | 40 to 50 | 40 |
| Dwellings and buildings of similar design and/or occupancy | 5 | 5 to 15 | 15 to 20 | 15 |
| Structures that have a particular sensitivity to vibration, cannot be classified under lines 1 and 2 and are of great intrinsic value (e.g. listed buildings under preservation order) | 3 | 3 to 8 | 8 to 10 | 8 |

DIN 4150-3 states that exposing buildings to vibration levels higher than that recommended above would not necessarily result in damage. Rather it recommends these values as maximum levels of short-term construction vibration at which experience has shown that damage that reduces the serviceability of structures will not occur due to vibration effects.

DIN 4150-3 is considered to be suitable for the assessment of both structural and cosmetic damage as the Standard considers a reduction in serviceability of the structure is deemed to have occurred if:

- Cracks form in plastered surfaces of walls
- Existing cracks in the building have enlarged
- Partitions become detached from loadbearing walls or floors

Due to the heritage nature of the structures assessed within this report, the most stringent DIN 4150-3 limits have been adopted, with the risk assessment carried out initially against the minimum applicable limit of 3 mm/s PPV.

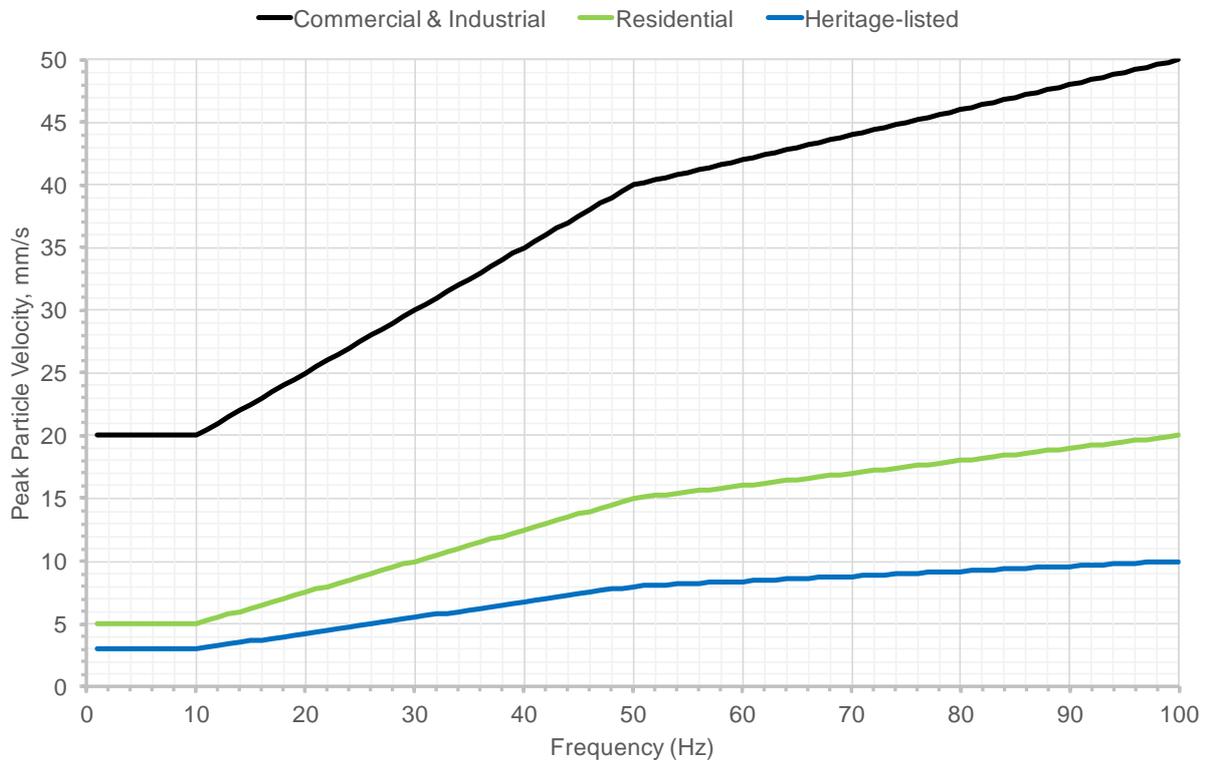


Figure 2 DIN 4150-3 building damage vibration limits

4 Vibration assessment

4.1 Prediction methodology

A desktop assessment of potential vibration arising from construction has been conducted.

Typically, vibration decays exponentially with distance from the source, with the rate of decay depending on variables such as the frequency of the vibration and the ground (geotechnical) conditions. The following equation has been used to calculate the Peak Particle Velocity (PPV) for the modelling based on work conducted by Amick:¹

$$PPV = PPV_{ref} \left(\frac{R_{ref}}{R} \right)^{\gamma} e^{-\rho \pi f (R - R_{ref})}$$

Where:

PPV – Peak Particle Velocity (mm/s) at distance R (m) from the source

PPV_{ref} – Peak Particle Velocity (mm/s) due to the source at a reference distance R_{ref} (m)

γ – Geometrical attenuation coefficient.

ρ – Frequency independent soil property. This is a site-specific damping coefficient dependent on the geotechnical conditions at the site (s/m)

f – Frequency of vibration (Hz)

Geometrical attenuation coefficient

A value of 0.5 has been adopted for the geometrical attenuation coefficient (γ), representative of Raleigh waves dominating the propagation. This is typical for surface vibration.

Geotechnical parameters

Table 2 presents typical values of the frequency independent soil property (ρ) for various ground types based on information from Amick (1999).

Table 2 Frequency independent soil parameters

| Class | Description of soil | Frequency independent soil property, ρ , s/m |
|-------|----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| 1 | Weak or soft soils (shovel penetrates easily): Loess, peat, loose beach / dune sand, topsoil, mud. | 6×10^{-4} to 2×10^{-3} |
| 2 | Competent soils (can dig with shovel): Most sands, sandy clay, silty clays, gravel, silts, completely weather rock. | 2×10^{-4} to 6×10^{-4} |
| 3 | Hard soil (cannot dig with shovel, must use pick to break up): Dense compacted sand, dry consolidated clay, moderately weathered rock. | 2×10^{-5} to 2×10^{-4} |
| 4 | Hard rock (difficult to break with a hammer): Bedrock, freshly exposed hard rock | $< 2 \times 10^{-5}$ |

¹ Amick H, 1999, *A Frequency-Dependent Soil Propagation Model*, Proceedings of SPIE Conference on Current Developments in Vibration Control for Optomechanical Systems, Denver, Colorado, 20 July 1999.

Limited information regarding ground conditions at project site was available for input to the modelling. McConnell Dowell has advised that the ground in certain areas will vary from rock cuttings to sandstone fill. For the purposes of the modelling, the soil type has been modelled as on the border between hard soil and hard rock (2×10^{-5}). This is considered a conservative approach.

Source elevation

For the assessment, all vibration sources have been modelled as occurring at natural ground level.

4.1.1 Predicted construction vibration levels

Table 3 presents predicted vibration levels for key construction activities at various distances based on the prediction methodology described above.

Table 3 Typical vibration levels from key construction activities

| Vibration source | Typical dominant frequency | Typical PPV at stated distance, mm/s | | | |
|------------------------------------------|----------------------------|--------------------------------------|------|------|-------|
| | | 10 m ¹ | 20 m | 50 m | 100 m |
| Road profiler | 25 | 2.4 | 1.7 | 1.0 | 0.7 |
| Rock hammers (attached to 30t excavator) | 40 | 3.0 | 2.1 | 1.2 | 0.8 |
| Graders 25t | 31.5 | 0.8 | 0.6 | 0.3 | 0.2 |
| Dozers up to D6 / 20t | 20 | 2.8 | 1.9 | 1.2 | 0.8 |
| Excavator 30t | 31.5 | 3.6 | 2.5 | 1.5 | 1.0 |
| Excavator 5t | 31.5 | 1.5 | 1.0 | 0.6 | 0.4 |
| Vibratory roller 7t | 25 | 5.6 | 3.9 | 2.4 | 1.5 |
| Vibratory roller 13t | 25 | 8.8 | 6.1 | 3.7 | 2.4 |
| Vibratory roller 20t | 25 | 10.1 | 7.0 | 4.2 | 2.8 |
| Paver | 31.5 | 1.2 | 0.8 | 0.5 | 0.3 |
| Trucks and trailers (rough surface) | 31.5 | 1.0 | 0.7 | 0.4 | 0.3 |
| Crane 40t | 31.5 | 0.6 | 0.4 | 0.2 | 0.2 |
| Bored piling rig | 31.5 | 2.7 | 1.9 | 1.1 | 0.7 |
| Under bore drilling rig | 20 | 3.8 | 2.6 | 1.6 | 1.1 |
| Impact piling rig | 31.5 | 25.5 | 17.7 | 10.5 | 6.7 |

(1) Reference level based on previous measurements.

4.2 Safe working distances

Based on the predictions summarised in Table 3, Table 4 presents typical safe working distances for different activities identified by McConnell Dowell as likely to be required for construction works on site. The safe working distances represent the distance predicted to be required to achieve the minimum applicable DIN 4150-3 vibration limit of 3 mm/s PPV.

Table 4 Safe working distances for different construction activities

| Vibration source | Typical safe working distance for heritage buildings, m |
|-----------------------------------------|---------------------------------------------------------|
| Road profiler | 10 |
| Rock hammer (attached to 30t excavator) | 10 |
| Graders up to 25t | < 5 |
| Dozers up to D6 / 20t | 10 |
| Excavator 30t | 20 |
| Excavator 5t | 5 |
| Vibratory roller 7t | 35 |
| Vibratory roller 13t | 70 |
| Vibratory roller 20t | 90 |
| Paver | < 5 |
| Trucks and trailers | < 5 |
| Crane 40t | < 5 |
| Bored piling rig | 10 |
| Under bore drilling rig | 20 |
| Impact piling rig | 280 |

It is important to note that works occurring within these safe working distances will not necessarily result in vibration levels above the DIN 4150-3 limits for heritage buildings. The distances are based on conservative assumptions regarding:

- The dominant frequency of the vibration. Frequencies higher than 10 Hz would enable a higher vibration limit than 3 mm/s PPV to be applied.
- The ground conditions, noting that safe working distances would be lower for softer ground conditions than the assumed rocky conditions.
- The intensity of the proposed activities, noting that impact piling rig levels would be lower for a smaller hammer or less intensive hammer drop.

5 Risk assessment

5.1 Identified activities

Based on construction information supplied by McConnell Dowell and the location of the identified heritage-listed structures, Table 5 summarises works that may present a risk of exceeding 3 mm/s PPV.

Table 5 Vibration risk assessment

| Address | High risk activities |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Black Snake Inn Complex – 650 Main Road | <p>The following works are considered to present a risk of exceeding 3 mm/s PPV:</p> <ul style="list-style-type: none"> • Impact piling may occur up to 150 m from the heritage building, within the 280 m safe working distance. • Vibratory rollers may need to be used for roadworks up to 15 m from the heritage building. This is within the safe working distance for 7 – 20t rollers. • Excavation works using a 30t excavator may present a risk if occurring within 20 m for road upgrade works. |
| Granton Watch House – 1 Lyell Highway | <p>The following works are considered to present a risk of exceeding 3 mm/s PPV:</p> <ul style="list-style-type: none"> • Impact piling may occur up to 190 m from the heritage building, within the 280 m safe working distance. • Vibratory rollers may need to be used for roadworks up to 10 m from the heritage building. This is within the safe working distance for 7 – 20t rollers. • Excavation works using a 30t excavator may present a risk if occurring within 20 m for road upgrade works. |
| Granton Memorial Hall – Forest Road | <p>The following works are considered to present a risk of exceeding 3 mm/s PPV:</p> <ul style="list-style-type: none"> • Impact piling may occur up to 190 m from the heritage building, within the 280 m safe working distance. • Vibratory rollers may need to be used for roadworks up to 10 m from the heritage building. This is within the safe working distance for 7 – 20t rollers. • Excavation works using a 30t excavator may present a risk if occurring within 20 m for road upgrade works. |
| Commandant's Cottage | <p>The following works are considered to present a risk of exceeding 3 mm/s PPV:</p> <ul style="list-style-type: none"> • Vibratory rollers may need to be used for roadworks up to 15 m from the heritage building. This is within the safe working distance for 7 – 20t rollers. • Excavation works using a 30t excavator may present a risk if occurring within 20 m for road upgrade works. |
| 19 Tarrants Road | 19 Tarrants Road is sufficiently distant from construction activities such that vibration levels are not predicted to exceed 3 mm/s PPV. |
| St Mary's Anglican Church and Cemetery | <p>The following works are considered to present a risk of exceeding 3 mm/s PPV:</p> <ul style="list-style-type: none"> • Vibratory rollers are proposed to occur within 45 m of the heritage building. This is within the safe working distance for 13 – 20t rollers. |
| Coronation Hall | <p>The following works are considered to present a risk of exceeding 3 mm/s PPV:</p> <ul style="list-style-type: none"> • Vibratory rollers may need to be used for roadworks up to 10 m from the heritage building. This is within the safe working distance for 7 – 20t rollers. • Excavation works using a 30t excavator may present a risk if occurring within 20 m for road upgrade works. |

Based on Table 5, the primary identified risks relate to impact piling and vibratory compaction works. The setback distances for these works are shown graphically for each heritage building in Appendix A.

5.2 Recommendations

During the construction phase, it is expected that works may need to occur within the safe working distances at times. The safe working distances are considered conservative but are intended to guide the implementation of monitoring and management measures for construction vibration.

The following recommendations apply for any works carried out within the safe working distances from heritage structures. With appropriate implementation of the measures below, it is expected that the risk of vibration to heritage listed buildings will be able to be suitably managed during the works.

5.2.1 Monitoring

Undertake monitoring to assess whether vibration levels present a risk of exceeding the DIN 4150-3 vibration limits. In particular:

- Undertake vibration monitoring at the commencement of works prior to works occurring within the safe working distance to determine if there is a risk of exceedance. Review the measured levels against the DIN 4150-3 vibration limits before works progress within the safe working distance.
- In cases where a residual risk of exceedance is considered to remain at a heritage structure, implement an unattended vibration monitoring system that:
 - Monitors vibration continuously during the works adjacent to the foundations of the building or at an alternative representative location.
 - Has the capability to send email and/or SMS alerts to site staff. The staff members receiving the alerts should have the authority to stop works in response to an alert.
 - It is recommended that the threshold for alerts is set no higher than 80% of the applicable DIN 4150-3 vibration limit.
- Where a continuous vibration monitoring system sends an exceedance alert that is a result of construction works, pause works and assess what changes are required to ensure vibration levels remain below the DIN 4150-3 limits.

5.2.2 Use of lower vibration plant and equipment

- Use bored or CFA piling in preference to impact piling.
- The use of smaller hammers or smaller drop heights for impact piling.
- Avoid dynamic pile testing near sensitive structures where possible.
- Use the smallest vibratory roller reasonably capable of completing the task.
- Use static rolling where possible when in close proximity to sensitive structures.
- Use the smallest excavator reasonably capable of completing the task.
- Run plant that has high and low vibration settings on the lowest effective vibration setting capable of completing the works.

5.2.3 General site management

- The induction of site staff should include a reference to potential vibration impacts and the identification of vibration-sensitive land uses.
- Restrict construction traffic speed to 20 km/h across the site, or 40 km/h for haul roads. Signpost the speed limit.
- Restrict construction traffic to designated roadways.
- All plant should be properly maintained. Balance variable speed vibrating plant.

5.2.4 Building condition surveys

- Undertake pre-construction building condition surveys prior to works near any building within the safe working distances for building damage.
- Undertake post-construction building condition surveys following works near any building within the safe working distances for building damage.

6 Conclusion

A vibration risk assessment has been carried out for construction vibration associated with works for a new bridge at Bridgewater, Tasmania. The risk assessment has considered the potential for vibration from construction works to exceed building damage limits at identified heritage structures.

Based on a conservative assessment, impact piling and vibratory rollers are considered to present the primary risk to the structures. Where works are proposed to occur within the nominated safe working distances from the structures, it is recommended that mitigation and management measures be implemented including monitoring, use of lower vibration plant and equipment, general site management measures and building condition surveys. With appropriate implementation of the measures, it is expected that the risk of vibration to heritage listed buildings will be able to be suitably managed during the works.



Appendix A—Safe working distances

Bridgewater Bridge Granton Watch House

Typical safe working distance

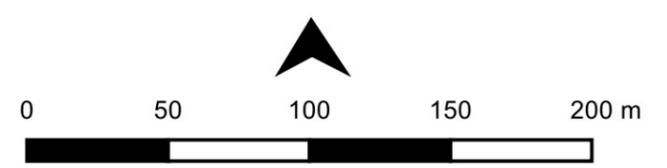
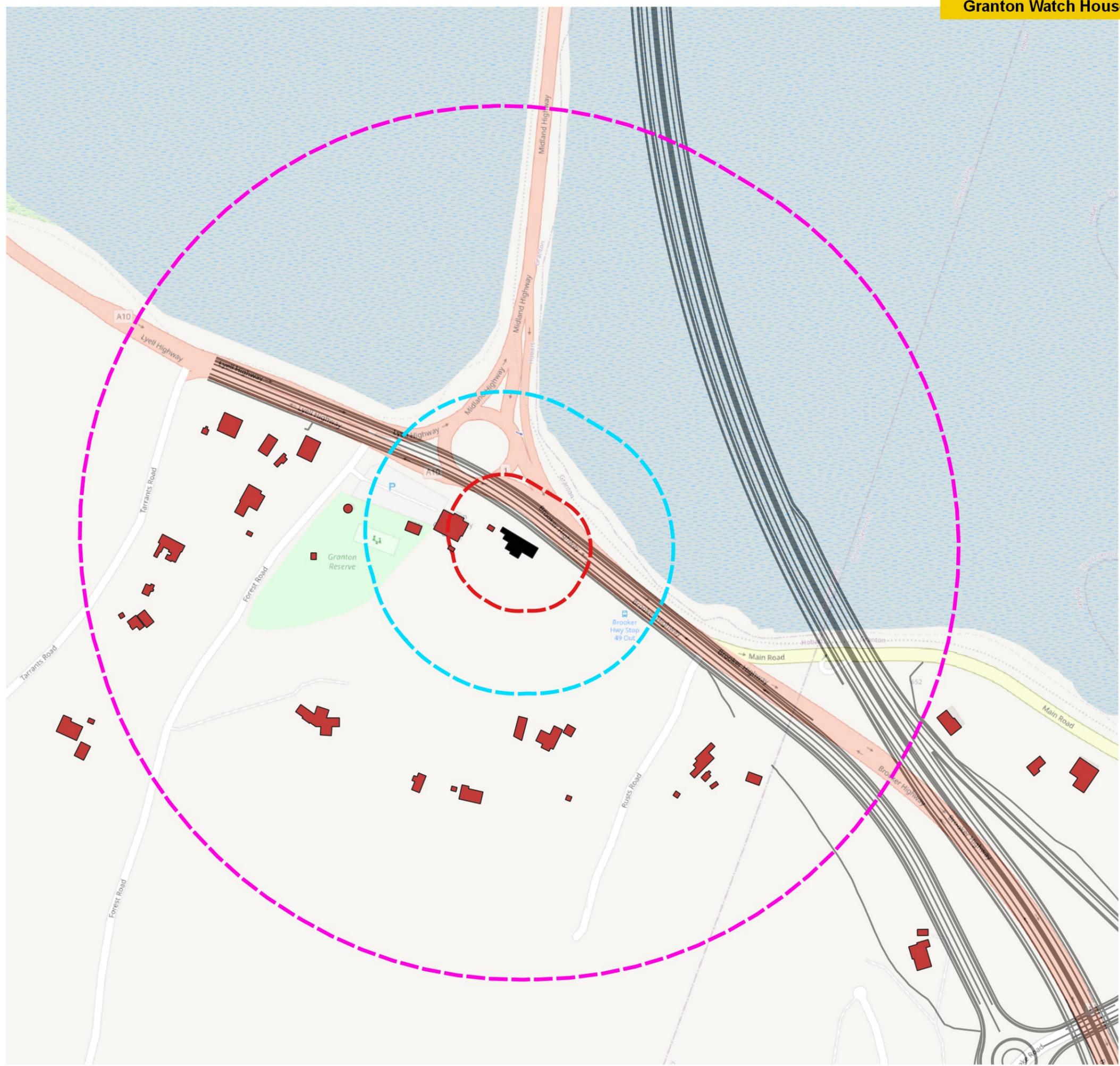
Client: McConnell Dowell Constructors (AUST) Pty Ltd
Drawn by: MB
Checked by: TE
Dated: 2022
Page size: A3

Legend

- Proposed Bridge Location
- Buildings
- Granton Watch House Building

Minimum safe working distance

- Impact Piling
- 7t Vibratory Roller
- 20t Vibratory Roller



Bridgewater Bridge Black Snake Inn

Typical safe working distance

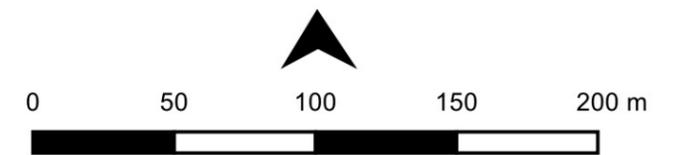
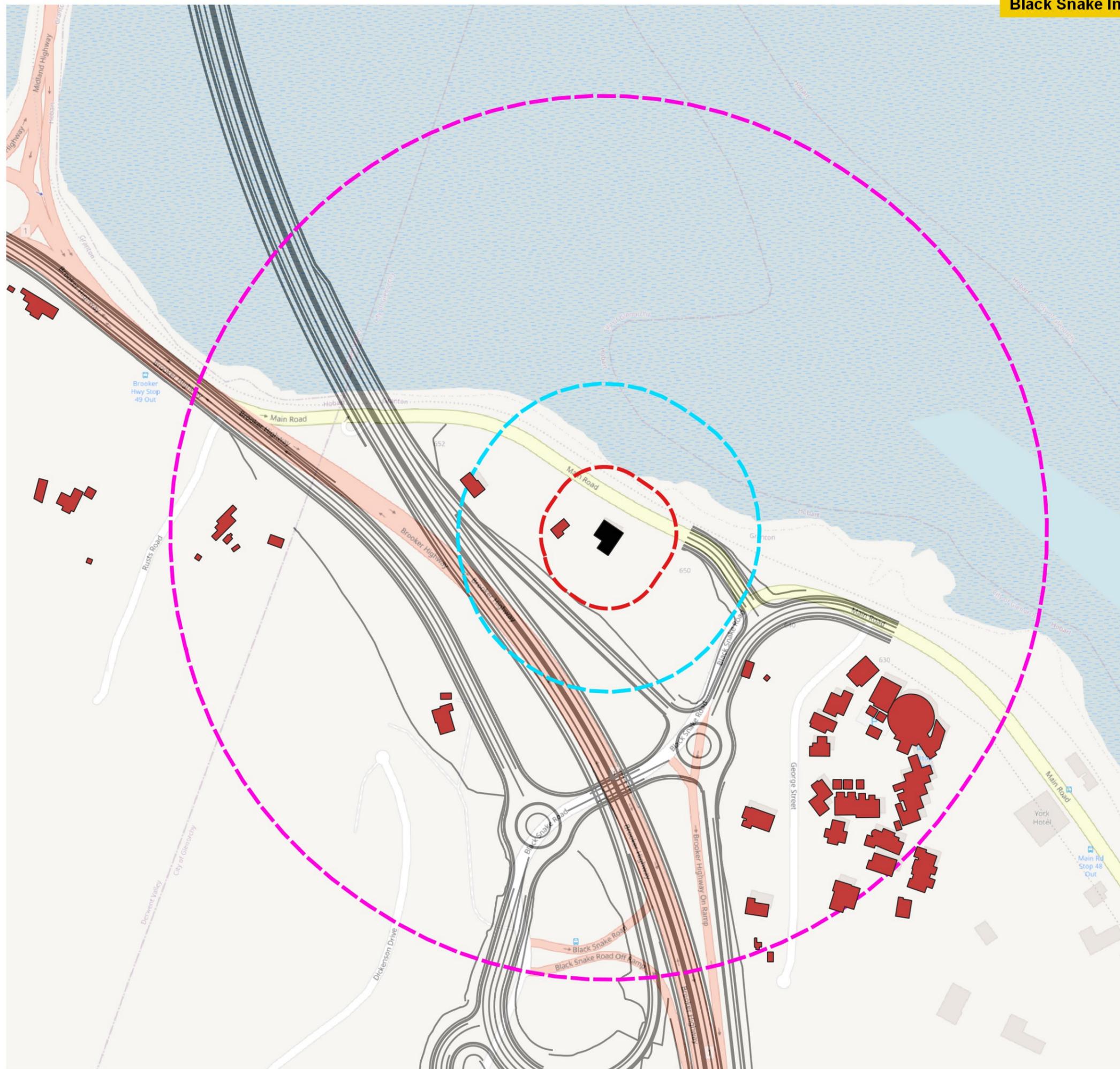
Client: McConnell Dowell Constructors (AUST) Pty Ltd
Drawn by: MB
Checked by: TE
Dated: 2022
Page size: A3

Legend

- Proposed Bridge Location
- Buildings
- Black Snake Inn Building

Minimum safe working distance

- Impact Piling
- 7t Vibratory Roller
- 20t Vibratory Roller



Bridgewater Bridge Granton Memorial Hall

Typical safe working distance

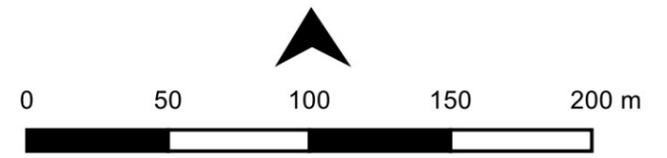
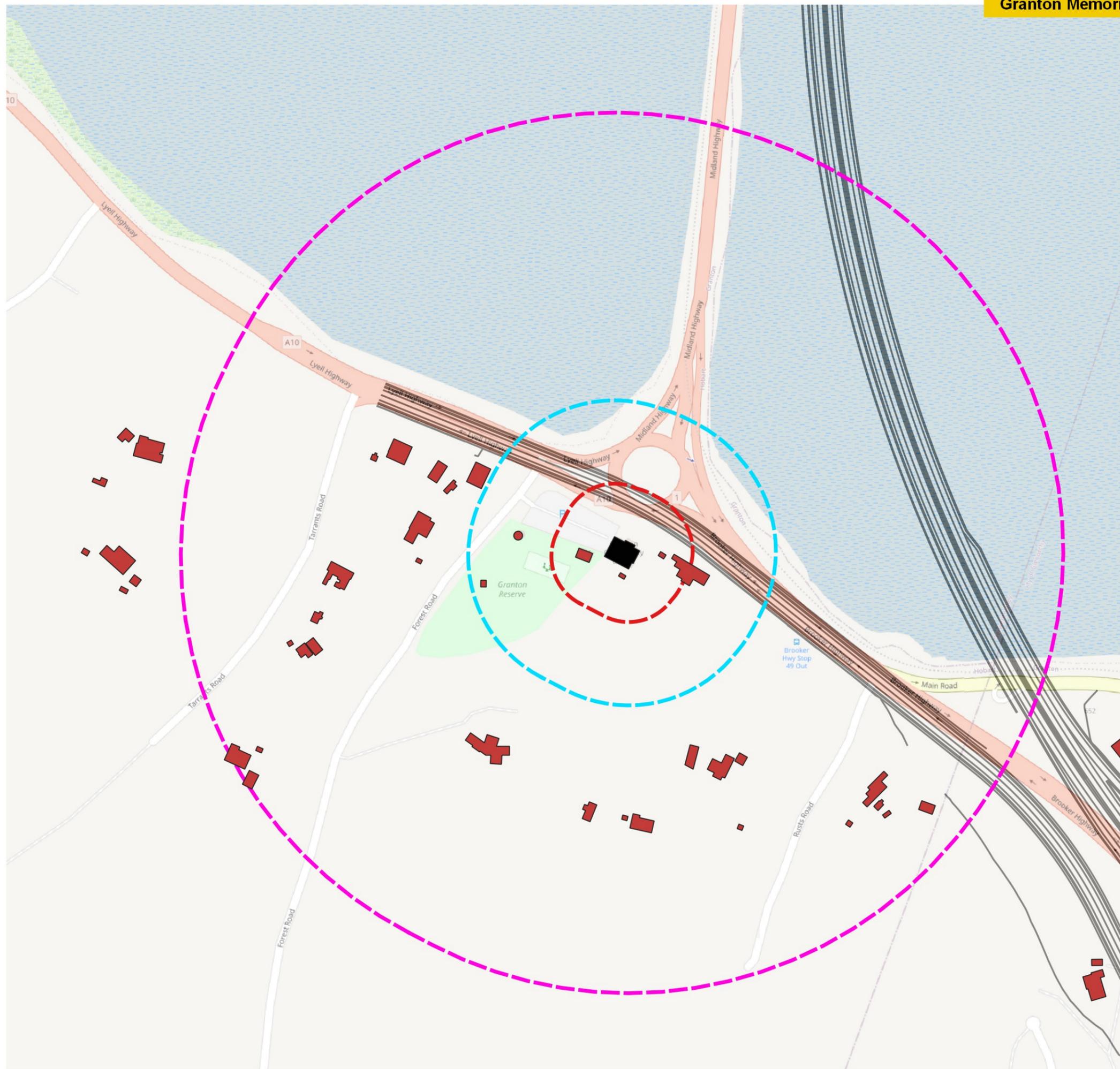
Client: McConnell Dowell Constructors (AUST) Pty Ltd
Drawn by: MB
Checked by: TE
Dated: 2022
Page size: A3

Legend

- Proposed Bridge Location
- Buildings
- Granton Memorial Building

Minimum safe working distance

- Impact Piling
- 7t Vibratory Roller
- 20t Vibratory Roller



Bridgewater Bridge Commandant's Cottage

Typical safe working distance

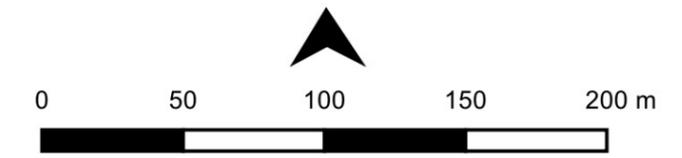
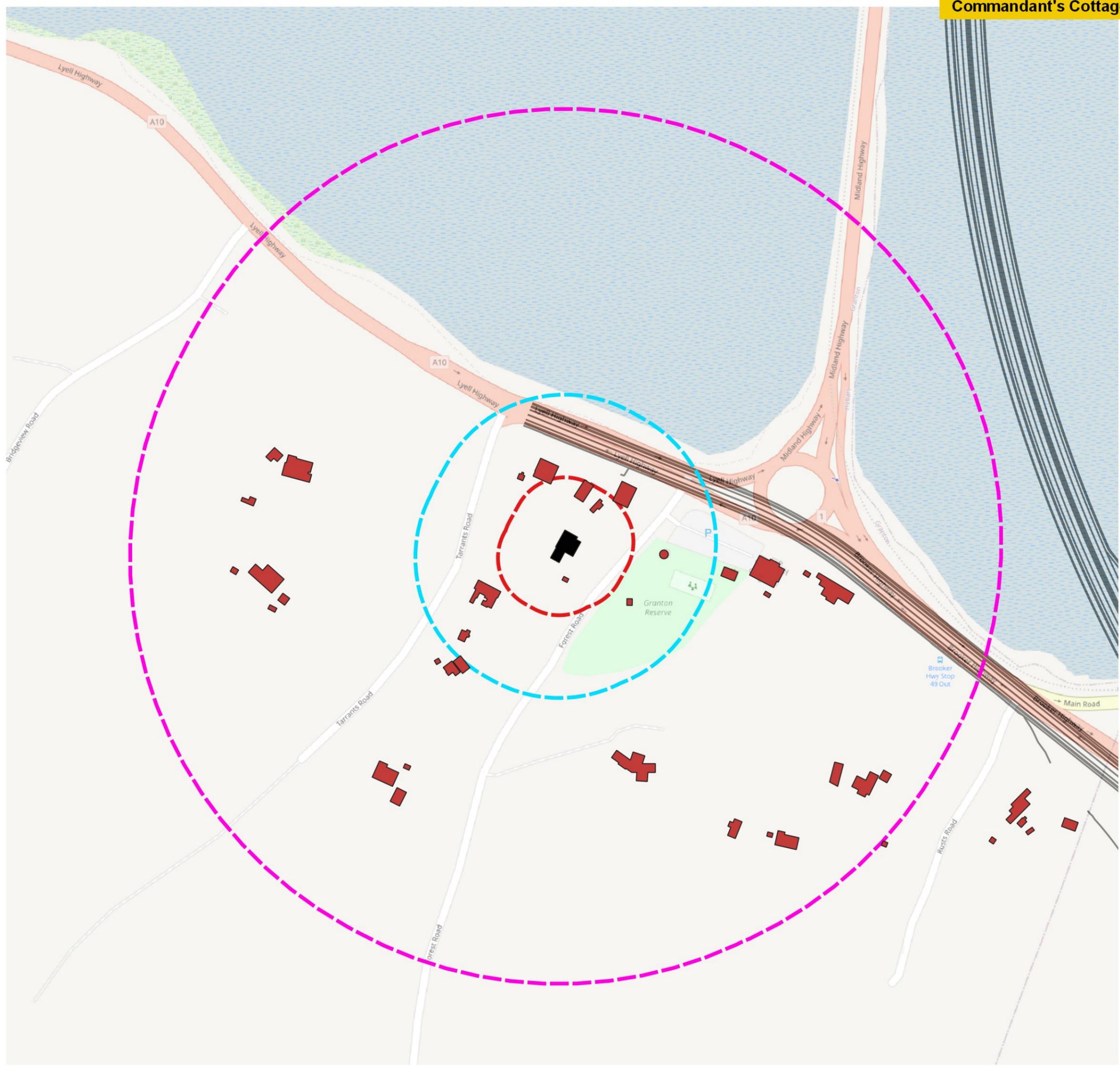
Client: McConnell Dowell Constructors (AUST) Pty Ltd
Drawn by: MB
Checked by: TE
Dated: 2022
Page size: A3

Legend

-  Proposed Bridge Location
-  Buildings
-  Commandant's Cottage Building

Minimum safe working distance

-  Impact Piling Buffer
-  7t Vibratory Roller
-  20t Vibratory Roller



Bridgewater Bridge St Mary's Anglican Church and Cemetery

Typical safe working distance

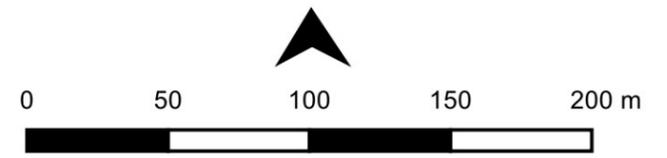
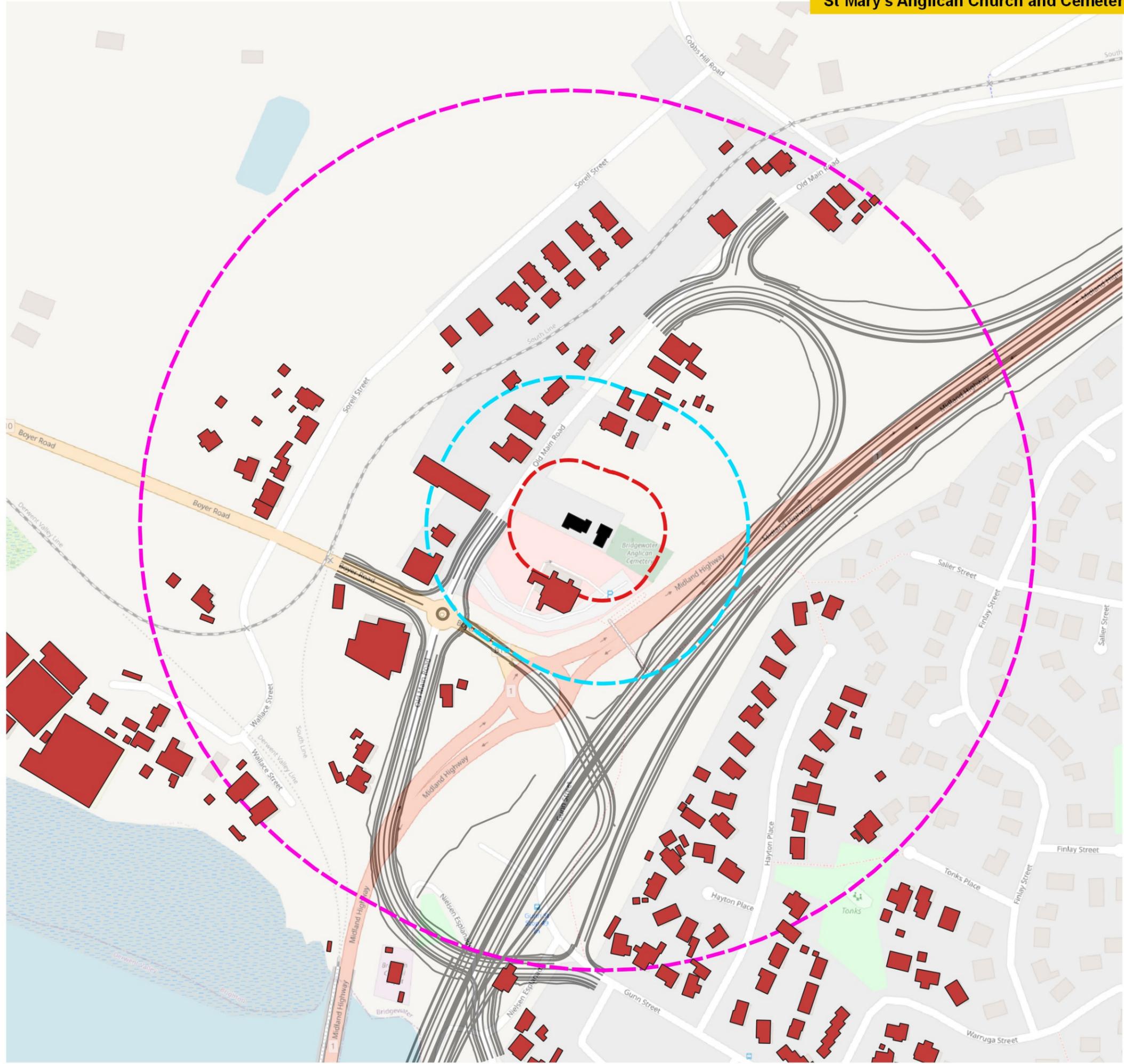
Client: McConnell Dowell Constructors (AUST) Pty Ltd
Drawn by: MB
Checked by: TE
Dated: 2022
Page size: A3

Legend

- Proposed Bridge Location
- Buildings
- St Mary's Anglican Church and Cemetery Building

Minimum safe working distance

- Impact Piling
- 7t Vibratory Roller
- 20t Vibratory Roller



Bridgewater Bridge Coronation Hall

Typical safe working distance

Client: McConnell Dowell Constructors (AUST) Pty Ltd
Drawn by: MB
Checked by: TE
Dated: 2022
Page size: A3

Legend

- Proposed Bridge Location
- Buildings
- Coronation Hall

Minimum safe working distance

- Impact Piling
- 7t Vibratory Roller
- 20t Vibratory Roller

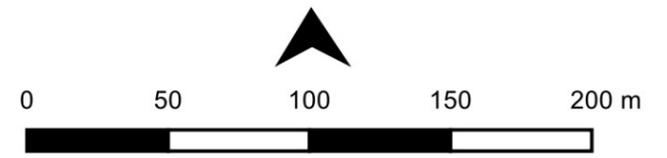
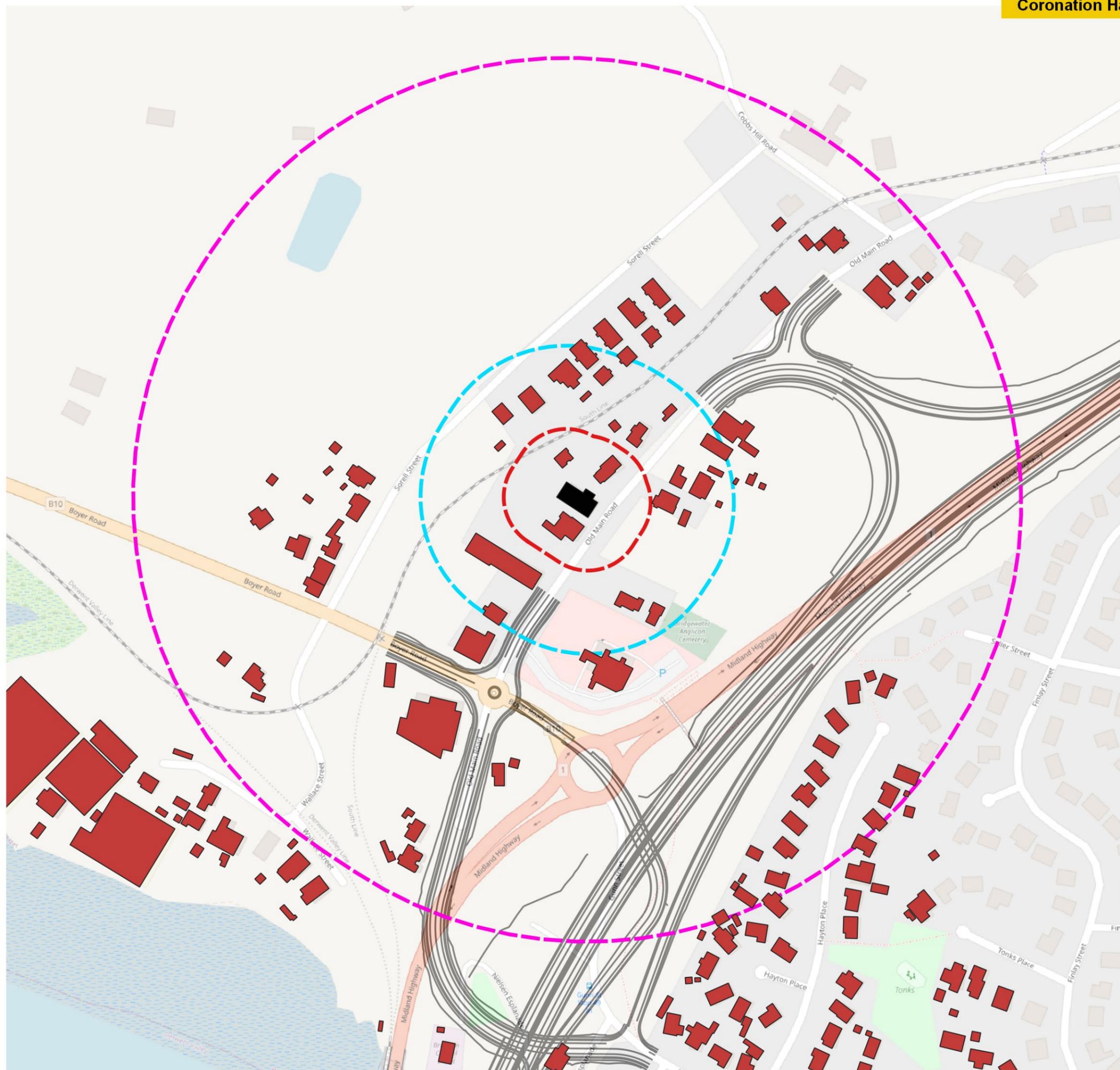


FIGURE A7

**Bridgewater Bridge
19 Tarrants Road**

Typical safe working distance

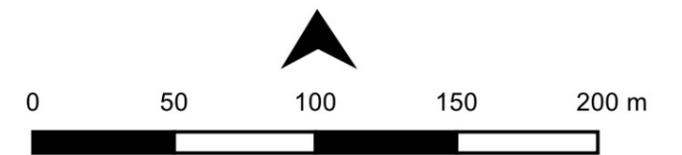
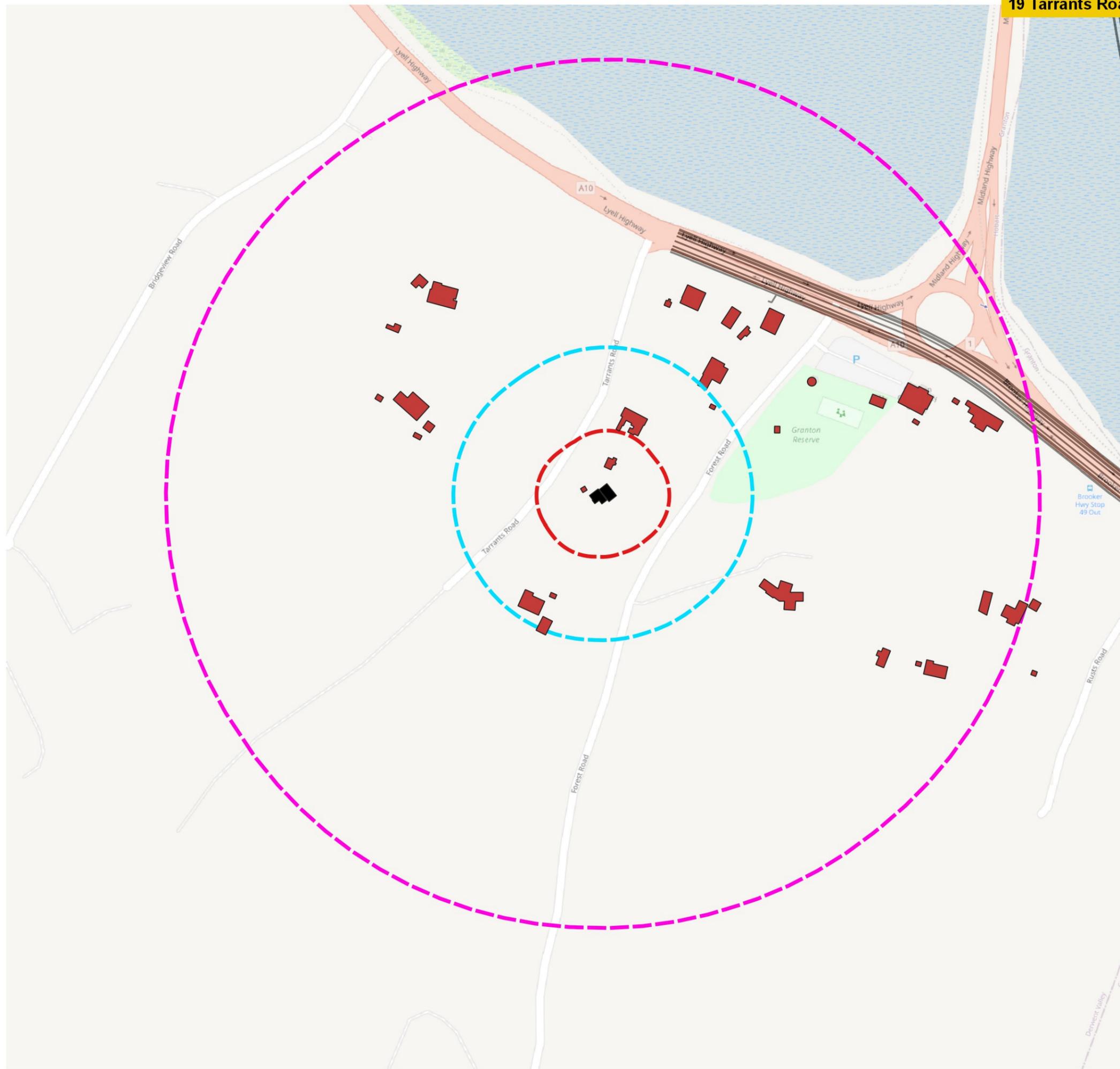
Client: McConnell Dowell Constructors (AUST) Pty Ltd
Drawn by: MB
Checked by: TE
Dated: 2022
Page size: A3

Legend

- Proposed Bridge Location
- Buildings
- 19 Tarrants Road

Minimum safe working distance

- Impact Piling
- 7t Vibratory Roller
- 20t Vibratory Roller



**NEW BRIDGEWATER BRIDGE PROJECT
BURBURY CONSULTING ON BEHALF OF
THE DEPARTMENT OF STATE GROWTH**
ASSESSMENT OF POTENTIAL FOR IMPACTS ON THE HERITAGE
VALUES OF ADJACENT LOCAL HISTORIC HERITAGE PLACES
16 FEBRUARY 2022

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NEW BRIDGEWATER BRIDGE PROJECT

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NEW BRIDGEWATER BRIDGE PROJECT

I.0 INTRODUCTION

I.1 CLIENT AND PROJECT DETAILS

The Department of State Growth is proposing to renew the crossing of the River Derwent between Granton and Bridgewater. As part of this process, Purcell and Austral Tasmania were engaged by Burbury Consulting on behalf of The Department of State Growth, to prepare a Heritage Impact Statement to address the heritage related aspects of the Assessment Criteria for the New Bridgewater Bridge Major Project - May 2021. The Initial Assessment Report (IAR) for the New Bridgewater Bridge Major Project considered Local historic heritage values, as outlined in Section 4.11. The Panel noted that the MPIS did not address the potential for impacts on the heritage value of:

- Parkview (BLPS 2021, BRI-C6.1.20)
- Fairfield, formerly Hayfield (BLPS 2021, BRI-C6.1.70)
- Duke of York Hotel (GLPS 2021, GLE-C6.1.180)
- portions of 37 Blacksnake Road (GLPS 2021, GLE-C6.1.181)

This Assessment has been prepared as part of the Department of State Growth representation on the IAR. It employs the assessment methodology of the MPIS Heritage Impact Assessment.

In reviewing the potential for heritage impacts, a distinction can be drawn between those impacts that are likely to directly affect a place (e.g., requiring the removal, modification or subdivision of a place); and those impacts which may be indirect, such as changes to the setting of a place, impact during construction or important public views. For the purpose of this assessment works have been categorised as direct or indirect impacts.

To assist in decision making, the following Table summarises the key results of this Assessment. It identifies each site subject to statutory control; the level of significance; direct and indirect impacts; and, if management of potential impacts are recommended. The datasheet for each feature, contained within Section 3.3 contains site-specific management recommendations.

| Site No. | Name | Heritage Listed? | Significance Level | Direct Impacts | Indirect Impacts | Management Recommended |
|----------|---------------------------------------------------------|-------------------------|--------------------|----------------|------------------|------------------------|
| 18.00 | Cypress Grove, 37 Black Snake Lane – Listing Boundaries | GLPS 2021, GLE-C6.1.181 | Local | Yes | Yes | Yes |
| 18.01 | 37 Black Snake Lane - House | GLPS 2021, GLE-C6.1.181 | Local | Yes | Yes | Yes |
| 18.02 | 37 Black Snake Lane - Cottage | GLPS 2021, GLE-C6.1.181 | Local | No | Yes | Yes |
| 18.03 | 37 Black Snake Lane - Stable | GLPS 2021, GLE-C6.1.181 | Local | No | Yes | Yes |
| 18.04 | 37 Black Snake Lane - Railway Shed | GLPS 2021, GLE-C6.1.181 | Local | No | Yes | Yes |
| 18.05 | 37 Black Snake Lane - Blacksmith's Shop | GLPS 2021, GLE-C6.1.181 | Local | Possibly | Yes | Yes |
| 18.06 | 37 Black Snake Lane - Worker's Cottages | GLPS 2021, GLE-C6.1.181 | Local | No | Yes | Yes |
| 18.07 | 37 Black Snake Lane - Old Coach House | GLPS 2021, GLE-C6.1.181 | Local | Yes | Yes | Yes |
| 18.08 | 37 Black Snake Lane - Culvert | GLPS 2021, GLE-C6.1.181 | Local | No | Yes | Yes |
| 18.09 | 37 Black Snake Lane - Cherry Tree | GLPS 2021, GLE-C6.1.181 | Local | No | Yes | Yes |
| 18.10 | 37 Black Snake Lane - Fig Tree | GLPS 2021, GLE-C6.1.181 | Local | No | Yes | Yes |
| 25.0 | Parkview | BLPS 2021, BRI-C6.1.20 | Local | No | No | No |

1.0 INTRODUCTION

| | | | | | | |
|------|------------------------------|-------------------------|-------|----|----|----|
| 26.0 | Fairfield, formerly Hayfield | BLPS 2021, BRI-C6.1.70 | Local | No | No | No |
| 27.0 | Duke of York Hotel | GLPS 2021, GLE-C6.1.180 | Local | No | No | No |

1.2 AUTHORSHIP

Lucy Burke-Smith and Linda Mott of Purcell Asia Pacific prepared this Assessment.

1.3 LIMITATIONS AND CONSTRAINTS

No social values or Aboriginal heritage assessment has been carried out for this investigation. This report has been prepared to provide a high-level overview of historic heritage issues related to the crossing renewal.

The results and judgments contained in this report are constrained by the limitations inherent in overview type assessments (including accessibility of historical information, safety considerations and related access restrictions).

Whilst every effort has been made to gain insight to the historic heritage profile of the subject study area, the authors cannot be held accountable for errors or omissions arising from such constraining factors.

NEW BRIDGEWATER BRIDGE PROJECT

2.0 HISTORIC HERITAGE ASSESSMENT

2.1 LOCAL HERITAGE MANAGEMENT

2.1.1 Brighton Local Provisions Schedule, 2021.

The northern shore of the River Derwent is located within the planning area of the *Brighton LPS 2021*. Table BRI-Table C6.1 contains the list of local Heritage Places, including:

- 01 BRI-C6.1.20, Parkview, 11 Weily Park Road, Bridgewater, CT 92072/1. The description from BRI Table C6.1 is: "A house with a projecting gable out each side and a veranda between. It is detailed with paired columns on the veranda and finials on the gable ends."
- 02 BRI-C6.1.70, Fairfield, formerly Hayfield, 14 Nielsen Esplanade, Bridgewater, CT 176642/2. The description from BRI Table C6.1 is: "This is a single storey weatherboard house with a protruding wing to the side, central door, flanking double hung windows and a side return veranda with slender posts and cast iron brackets."

2.1.2 Glenorchy Local Provisions Schedule, 2021

The Project Land is partially located within the planning area of the *Glenorchy LPS, 2021*, to the east of the causeway. The Scheme includes a list of local heritage places in Table GLE-Table C6.1, including:

- 01 GLE-C6.1.180, Duke of York Hotel, 624 Main Road, Granton, CT 40307/1, and CT 40308/1. The description from BRI Table C6.1 is: "Hotel and outbuildings."
- 02 GLE-C6.1.181, Farm complex, 37 Black Snake Road, Granton, CT 156256/20.

It should be noted that the Glenorchy LPS, 2021 outlines a Site Specific Qualification GLE-C6.1, with the following statement:

The demolition of the farm outbuildings if required as part of the replacement of the Bridgewater Bridge and associated road works, where archival records are prepared for the property and materials are salvaged, generally in accordance with Recommendation 1/1 of the Austral Tasmania report titled 'Bridgewater Crossing: Granton Interchange, Historic Heritage Assessment, Final Report prepared for GHD Pty, 2 June 2011.⁰¹

⁰¹ GLPS, 2021 - GLE Site Specific Qualifications

NEW BRIDGEWATER BRIDGE PROJECT

3.0 FRAMEWORK FOR ASSESSMENT

3.1 INTRODUCTION

The following section provides a framework for an assessment based on works and potential impacts. It identifies the heritage places; provides an assessment of potential heritage impacts; and makes recommendations, where warranted, for further works or impact mitigation.

3.2 SUMMARY DESCRIPTION OF PROPOSED USE AND DEVELOPMENT

The Department of State Growth have prepared a Proposal Description, the relevant aspects of which are outlined within Section 3.2 and set the context for this Assessment. Full details of the Chosen Design are further outlined in Proposal Description.

3.2.1 Preface

This Proposal Description has been prepared to support the development of the Major Project Impact Statement (MPIS) to be submitted to the Development Assessment Panel (the Panel) via the Tasmanian Planning Commission (the Commission).

3.2.2 General proposal description

The Project will provide a new river crossing for motor vehicles between the Brooker Highway and Midland Highway, with connections to the Lyell Highway and other surrounding roads.

The Project will also provide a new river crossing for pedestrians and cyclists from the northern and southern shores.

The new bridge will include two motor vehicle lanes in each of the two directions of traffic (north bound and south bound).

The Project will include the grade separation of the Lyell Highway and Black Snake Road junctions at Granton and connecting ramps with Gunn Street and Old Main Road at Bridgewater.

Water traffic will be accommodated by a minimum air draft clearance consistent with the clearance under the Bowen Bridge.

The new bridge will include a shared path for pedestrians and cyclists.

The new bridge will include safety screens and barriers.

3.2.2.1 Proposed development

The proposed development includes:

- A road bridge crossing of the River Derwent between Granton and Bridgewater;
- Two grade separated interchanges, one on the southern shore and one on the northern shore, of the River Derwent, and associated modifications to existing intersections;
- Ancillary facilities to the proposed bridge and interchanges, such as new and / or relocated shared paths, road signage and stormwater drainage;
- Demolition of the existing Bridgewater Bridge structure, including the existing road and rail lift span crossing;
- Demolition of features at 37 Black Snake Lane; and
- Demolition of other features of no heritage significance, as identified in Table 3-5 of the MPIS.

3.0 FRAMEWORK FOR ASSESSMENT

3.3 INVENTORY DATASHEETS

| 18. CYPRESS GROVE, 37 BLACK SNAKE ROAD, GRANTON | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Heritage Status | Glenorchy Local Provisions Schedule 2021, GLE-C6.1.181, Farm Outbuildings, 37 Black Snake Road, Granton, CT 156256/20 | |
| Grid co-ordinates (AGD 94) | <p>18.00 518675E/5266423N</p> <p>18.01 518695E/5266419N</p> <p>18.02 518686E/5266403N</p> <p>18.03 518680E/5266377N</p> <p>18.04 518687E/5266346N</p> <p>18.05 51873E/5266383N</p> | <p>18.06 518704E/5266383N</p> <p>18.07 518716E/5266400N</p> <p>18.08 518708E/5266394N</p> <p>18.09 518716E/5266445N</p> <p>18.10 518700E/5266456N</p> |
|  <p>Figure 1: Looking east to tree 17.01.</p>  <p>Figure 2: Looking east to tree 17.02</p> | <p>Summary History:</p> <p>The property at 37 Black Snake Road was granted to Frederick Coape Smith in 1847, purchased by John King in 1855, and taken up by John Dickenson sometime before 1875. It has remained in possession of the Dickenson family since then, being a farm and orchard as well as the family domicile.</p> <p>The house was constructed by John King after 1855. The house was substantially renovated in 1955. This saw removal of the external kitchen, the addition of a full second storey, western and eastern wings, and a portico and columns supporting a veranda at the front – with large parts of the amalgamated structure rendered and painted. It is thought that the old coach house was also extensively modified at this time.</p> <p>Other structures were added from time to time in response to the practical requirements of a working property, with the worker's hut and associated sheds being brought to the current site from elsewhere on the property, and a shed relocated from the Granton Railway Station in the 20th Century.</p> <p>Relevant Sources:</p> <p>Austral Tasmania Pty Ltd Austral Tasmania Pty Ltd, Bridgewater Crossing: Granton Interchange. Historic Heritage Assessment, report prepared for GHD Pty Ltd, 2 June 2011</p> <p>Description:</p> <p>The complex comprises a substantial house and a number of outbuildings straddling the Black Snake Rivulet between Black Snake Road in the west and the Brooker Highway in the east. Extant buildings include the modified house (18.01), a small cottage (originally the maid's quarters) (18.02), stable (18.03), relocated railway shed (18.04), a blacksmith's shop (18.05), worker's cottages (18.06), old coach house (18.07), and a sandstone culvert (18.08). Two notable historic trees on the property include a nineteenth century cherry tree (18.09), and an early fig tree (18.10).</p> <p>The house and outbuildings are set in extensive gardens, with a brick wall marking the perimeter.</p> | |

3.0 FRAMEWORK FOR ASSESSMENT

18. CYPRESS GROVE, 37 BLACK SNAKE ROAD, GRANTON

STATEMENT OF LOCAL HISTORIC HERITAGE SIGNIFICANCE AND HISTORIC HERITAGE VALUES

The nucleus of a fine circa 1850 – mid/late 20th century working farm complex.

Significant because of:

- (a) Its role in, representation of, or potential for contributing to the understanding of:
- (a)(i) **Local history including** – the evolution of a rural complex over a century-and-a-half.
 - (a)(ii) **Creative or technical achievements** - evident in the techniques of stone masonry employed in construction of the sandstone arch culvert on Black Snake Rivulet and coinciding with what was originally laid out as Union Street in a township reserve that never eventuated at this location
 - (a)(iii) **A class of building or place that exhibits** – the characteristics of a working farm complex. Significant attributes include but are not necessarily limited to: the main house (circa 1855 and 1955), a two-storey hand-pressed brick cottage (possibly servants quarters), circa 1898 (part adapted) timber stable, gable-roofed, weatherboard shed with finial relocated from Granton Railway Station, weatherboard former blacksmiths shop on the eastern bank of Black Snake Rivulet, three weatherboard workers huts, a vertical board pickers hut, a sandstone arch culvert on Black Snake Rivulet, historic garden plantings including pre-1875 cherry tree, two fig trees and coral tree.
 - (a)(iv) **Aesthetic characteristics including** – an established landscape containing a combination of formal garden elements, structures and established trees in the functional areas.
- (b) Its association with:
- (b)(i) **A particular community for social or spiritual reasons being** – Not applicable
 - (b)(ii) **The life or works of** – the Dickenson family, locally prominent in the business and agricultural sectors, whose association with the Place dates from at least 1881 (and potentially pre-1875), encompassing 6 generations

REVIEW OF POTENTIAL IMPACTS

- The proposal involves the construction of a new interchange between the junctions of the Brooker Highway and Black Snake Road. With regard to 37 Black Snake Road, this will involve the construction of a new slip lane off the Brooker Highway which will cross through the northern portion of the property (MPIS Appendix AA Drawing 10.02.01.0002 - MASTER PLAN).
- The road alignment will directly impact features 18.01 modified house and 18.07 modified old coach house, and may directly impact 18.05 blacksmith's shop. The remaining features will not be directly impacted but the current setting and context will be indirectly impacted.
- Those features which will not be directly impacted could, in principle, be retained. A viable long term use would need to be established to several structures which are by design unsecured (18.03 relocated stable) with large open elevations would need to be secured to mitigate risk of vandalism and anti-social behaviour.
- Note that the *Glenorchy LPS, 2021* outlines a *Site Specific Qualification GLE-C6.1*, with the following statement: *The demolition of the farm outbuildings if required as part of the replacement of the Bridgewater Bridge and associated road works, where archival records are prepared for the property and materials are salvaged, generally in accordance with Recommendation 111 of the Austral Tasmania report titled 'Bridgewater Crossing: Granton Interchange, Historic Heritage Assessment, Final Report prepared for GHD Pty, 2 June 2011.01.*

Impact Mitigation Recommendations

- Retain features 18.02 cottage 18.08 sandstone culvert 18.09 cherry tree and 18.10 fig tree.
- In determining retention/removal of others features not directly impacted assess the viability of a long term use, maintenance and security.
- Prepare an archival record of significant features prior to demolition.

3.0 FRAMEWORK FOR ASSESSMENT

| 25.0 PARKVIEW, 11 WEILY PARK ROAD, BRIDGEWATER | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Heritage Status | Brighton Local Provisions Schedule 2021, BRI-Table C6.1.20 Parkview, CT 92072/1. |
| Property ID | 5035245 |
| | <p>Summary History Not available</p> |
| | <p>Description</p> <p>The house has a gabled roof wing to the northwest and another the north east in an L-shape, with a hipped roof and attached verandah return verandah on tow sides joining the two wings. The gables have moulded bargeboards and a slight half timbered effect with finials. There are five original brick chimneys. The verandah columns are painted with wrought iron brackets, fringe, and wooden balustrades. Windows are double hung, sash and are symmetrically placed. The entrance door is at one end of the verandah and is Victorian in style, with half sidelights and moulded lower panels. There is a fanlight above in three sections. On the southern side at the rear of the house is a half gabled, half hipped twin section also with double hung windows. Attached to this, ad to part of the return verandah is possibly a later skillion additions, (facing NE) which has been infilled with different window detailing.</p> <p>Relevant Sources Brighton Heritage Study, Listed Buildings, G. Sheridan, 1997 p. 39</p> |
| STATEMENT OF LOCAL HISTORIC HERITAGE SIGNIFICANCE AND HISTORIC HERITAGE VALUES | |
| <p>Significant because of:</p> <p>(a) Its role in, representation of, or potential for contributing to the understanding of:</p> <p style="margin-left: 20px;">(a)(i) Local history including – its association with the settlement and development of the local community.</p> <p style="margin-left: 20px;">(a)(ii) Creative or technical achievements - Not applicable.</p> <p style="margin-left: 20px;">(a)(iii) A class of building or place that exhibits – characteristics of the early Federation queen Anne style.</p> <p style="margin-left: 20px;">(a)(iv) Aesthetic characteristics including – Not applicable.</p> <p>(b) Its association with:</p> <p style="margin-left: 20px;">(b)(i) A particular community for social or spiritual reasons being – Not applicable.</p> <p style="margin-left: 20px;">(b)(ii) The life or works of – Not applicable.</p> <p>Relevant Sources Brighton Heritage Study, Listed Buildings, G. Sheridan, 1997 p. 39</p> | |
| REVIEW OF POTENTIAL IMPACTS | |
| <ul style="list-style-type: none"> • The place is outside the Project Land and the works present no direct impacts to the fabric of the Place (MPIS Appendix AA Drawing 10.02.01.0002 - MASTER PLAN). • The works do not present an indirect impact to the visual setting and curtilage of the place. | |
| Impact Mitigation Recommendations | |
| <ul style="list-style-type: none"> • No conservation actions are considered necessary | |

3.0 FRAMEWORK FOR ASSESSMENT

| 26.0 FAIRFIELD (FORMERLY HAYFIELD), 14 NIELSEN ESPLANADE, BRIDGEWATER | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Heritage Status | Brighton Local Provisions Schedule 2021, BRI-Table C6.1.70 Fairfield, formerly Hayfield, CT 176642/2 |
| Property ID | 9163757 |
| | <p>Summary History Not available</p> |
| | <p>Description</p> <p>The front part of the property has a hipped roof with boxed eaves and two original chimneys with cowls and elaborate brickwork decoration which are set into the roof. There is an attached, return verandah on two sides, (facing southwest and southeast) with paired supports and cast iron brackets. The SW end of the verandah is enclosed with multipaned glass, rounded at the upper level. Windows are double hung, sashed and the two in front are symmetrically placed astride the late Victorian style central panel door with half side lights and fanlights above. On the western rear side section of the house extends a wind which has a gabled roof, moulded bargeboard and finial. A further gables L-shaped section extends to the north east. This is the section which has an attic dormer, now boarded up and facing a courtyard at the back. An attached verandah connects the main section and the side sections of the house at the rear, enclosing a multipaned window and a wooden door with glass uppers.</p> <p>Relevant Sources Brighton Heritage Study, Listed Buildings, G. Sheridan, 1997 p. 29</p> |
| STATEMENT OF LOCAL HISTORIC HERITAGE SIGNIFICANCE AND HISTORIC HERITAGE VALUES | |
| <p>Significant because of:</p> <p>(a) Its role in, representation of, or potential for contributing to the understanding of:</p> <p>(a)(i) Local history including – its ability to demonstrate the early twentieth century residential development of Bridgewater.</p> <p>(a)(ii) Creative or technical achievements - Not applicable.</p> <p>(a)(iii) A class of building or place that exhibits – particular characteristics of the late Victorian Georgian style.</p> <p>(a)(iv) Aesthetic characteristics including – the retention of a large curtilage, and mature macrocarpa pines flanking the entrance drive.</p> <p>(b) Its association with:</p> <p>(b)(i) A particular community for social or spiritual reasons being – Not applicable.</p> <p>(b)(ii) The life or works of – Not applicable.</p> <p>Relevant Sources Brighton Heritage Study, Listed Buildings, G. Sheridan, 1997 p. 29 Heritage Impact Assessment & Management Plan, GHD, 2011, p.71</p> | |
| REVIEW OF POTENTIAL IMPACTS | |
| <ul style="list-style-type: none"> The place is outside the Project Land and the works present no direct impacts to the fabric of the Place (MPIS Appendix AA Drawing I0.02.01.0002 - MASTER PLAN). Although the works will be visible when viewed from the Place the works do not present an indirect impact to the visual setting and curtilage of the place. This is supported by the findings of the Landscape and Visual Impact Analysis. <p>Impact Mitigation Recommendations</p> <ul style="list-style-type: none"> No conservation actions are considered necessary. | |

3.0 FRAMEWORK FOR ASSESSMENT

| 27.0 DUKE OF YORK HOTEL, 624 MAIN ROAD, GRANTON | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Heritage Status | THR I611, Duke of York Hotel 622 Main Road Granton <i>Glenorchy Local Provisions Schedule 2021</i> , GLE-C6.I.180, Duke of York Hotel, CT 40307/I, and CT 40308/I. | |
| Property ID | 2553266 | |
| | Summary History A staging Inn for a long time, where horses were changed. | |
| | Description This two storey building has a hipped roof, boxed eaves and symmetrical facade. There are four double hung windows on both floors. The later additions include a cantilevered awning, part of which is verandah and a central parapet above the upper door. The GLPS 2021 is specific to the listing of the Hotel and outbuildings, and not the full CPR extent of the THR listing. Relevant Sources THR Datasheet THR ID Number I611; GLPS 2021 | |
| SIGNIFICANCE ASSESSMENT | | |
| Level of Significance: | State Significance | |
| Value | Key State/Local Threshold Indicators ⁰² | Justification |
| (a) the place is important to the course or pattern of Tasmania's history | <i>A notable example of regional settlement that demonstrates an important period or phase in the settlement and development of the local area.</i> <i>Demonstrates an important historical period or phase in the history of the local area.</i> <i>Notable example of the development of maritime and terrestrial civil infrastructure, transport and communications in the local area.</i> | Duke of York Hotel is of historic cultural heritage significance as an element in the development of road transportation in Colonial Tasmania. |
| (f) The place has a strong or special association with a particular community or cultural group for social or spiritual reasons. | <i>A landmark that is visually prominent and possesses picturesque attributes or aesthetic qualities acknowledged by the local community.</i> <i>A place that symbolically represents some aspect of the past that a community or cultural group feels contributes to the local identity.</i> | This building is of historic heritage significance because its townscape associations are regarded as important to the community's sense of place. |
| STATEMENT OF LOCAL HISTORIC HERITAGE SIGNIFICANCE AND HISTORIC HERITAGE VALUES | | |
| Significant because of: | | |
| (a) Its role in, representation of, or potential for contributing to the understanding of: | | |
| (a)(i) Local history including – its ability to demonstrate the development of colonial road transportation in the local area. | | |
| (a)(ii) Creative or technical achievements – Not applicable. | | |
| (a)(iii) A class of building or place that exhibits – Not applicable. | | |
| (a)(iv) Aesthetic characteristics including – Not applicable. | | |
| (b) Its association with: | | |
| (b)(i) A particular community for social or spiritual reasons being – its townscape associations and importance to the community's sense of place. | | |
| (b)(ii) The life or works of – Not applicable. | | |

⁰² Department of Primary Industries, Parks, Water and Environment, October 2011, *Assessing historic heritage significance for Application with the Historic Cultural Heritage Act 1995*

3.0 FRAMEWORK FOR ASSESSMENT

27.0 DUKE OF YORK HOTEL, 624 MAIN ROAD, GRANTON

REVIEW OF POTENTIAL IMPACTS

- The place is outside the Project Land and the works will have will have no direct impact to the fabric of the Place (MPIS Appendix AA Drawing 10.02.01.0002 -MASTER PLAN).
- The works do not present an indirect impact to the visual setting and curtilage of the place.

Impact Mitigation Recommendations

- No conservation actions are considered necessary.

NEW BRIDGEWATER BRIDGE PROJECT

4.0 HERITAGE IMPACT STATEMENT

4.1 GUIDANCE DOCUMENTATION

The following documents provide a best practice management framework of historic sites and have informed this assessment:

- ICOMOS Australia, The Burra Charter (1999, revised 2013)
- State Heritage Office of Western Australia, Heritage Impact Statement – A Guide, 2012
- Tasmanian Heritage Council, Works Guidelines for Historic Heritage Places, 2015

4.2 ASSESSMENT METHODOLOGY

The following assessment is prepared with reference to the Assessment Criteria for the New Bridgewater Bridge Major Project, determined by the Development Assessment Panel, May 2021. Direct (fabric) and indirect (visual impacts, vibration impacts etc) impacts are both considered in this assessment.

4.3 ASSESSMENT AGAINST HERITAGE IMPACT STATEMENT – A GUIDE, 2012

| Demolition of a building or structure | |
|------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Have all options for retention and adaptive re-use been explored? | The retention and adaptive reuse of the farm outbuildings at 37 Black Snake Road Granton, CT 156256/20 have not been formally assessed. It may be difficult to identify sensitive and compatible uses given the present condition, narrow footprint and low ceiling height of features 18.06 and 18.05. The relocated stable has an open elevation and would be difficult to secure without impact, noting the lack of historic integrity. The relocated railway shed has a greater capacity for change, noting that it is not historically associated with the place. |
| Is demolition essential at this time, or can it be postponed in case future circumstances make retention and conservation more feasible? | Demolition of features 18.01 House and 18.07 old Coach House will be essential as they directly conflict with the road alignment. Feature 18.05 may be impacted by associated cuttings. The demolition of remaining features could be postponed until an assessment of their adaptive reuse potential has been undertaken. |
| Can any new development be located elsewhere on the site, so the significant elements of the place can be retained? | The project follows extensive multidisciplinary investigations for the location and siting of the river crossing. It is a project objective that the Bridgewater Crossing be retained within proximity of the present historical crossing, retaining the cultural heritage significance of the place as the continued river crossing since 1829. It is also a project objective that significant elements are retained where possible, as is evidenced through the proposed retention of the causeway and 1874 and 1893 abutments. It is however noted that heritage considerations are one of several complex considerations associated with the planning and delivery of this major project. |
| Has the advice of a heritage consultant been taken? If not, why not? | Heritage advice has been taken across the following disciplines: <ul style="list-style-type: none"> — Aboriginal Heritage (beyond the scope of this study) — Archaeology — Heritage Engineering — Built Heritage — Heritage Consultancy — Cultural Landscapes (beyond the scope of this study) — Interpretation |

4.0 HERITAGE IMPACT STATEMENT

| New development adjacent to a heritage place | |
|------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| How is the impact of the new development on the heritage significance of the place or area to be minimised? | <p>Means of minimizing the impact of the development has been considered beyond that of adjacent heritage places, to account for potential direct and indirect impacts to individual places of local and state historic cultural heritage significance.</p> <p>No mitigating measures are deemed necessary for Parkview, Fairfield or the Duke of York Hotel. Previously identified mitigating measures for 37 Black Snake Lane are to:</p> <ul style="list-style-type: none"> — Investigate the viability of replanting options for significant features 18.9 and 18.10 along with any ongoing management and maintenance requirements. — Prepare an archival record of significant features prior to demolition. <p>These measures are in accordance with the GLPS, 2021 - GLE Site Specific Qualifications.</p> |
| Why is the new development required to be adjacent to a heritage place? | <p>The siting and location of the new Bridgewater Bridge is constrained by the reliance on existing infrastructure, being the existing Brooker and Midland Highway corridors.</p> <p>Further geographic, geotechnical, environmental and heritage constraints which have informed with Chosen Design are outlined within Section 2.2.2.4.5 of the Project Rationale.</p> |
| How does the new development affect views to, and from, the heritage place? What has been done to minimise negative effects? | <p>The Chosen Design will not affect views to or from Parkview or the Duke of York Hotel. Views to Fairfield will not be impacted, although the views from Fairfield will change. It is however noted that views from Fairfield have not been attributed to its aesthetic characteristics, nor is it identified within BRI-Table C6.3 or BRI-C8.0 for such values. The works will impact views to and from 37 Black Snake Lane, while noting that the place is not recognized for its aesthetic characteristics.</p> |
| Is the new development sympathetic to the heritage place? In what way (e.g. form, siting, proportions, design, materials)? | <p>The Chosen Design is an output defined by considerable engineering constraints determined by the design standards and environmental context of the crossing. In this respect there is little tolerance for the exploration of more sympathetic designs. The design measures of colour application, lighting and material selection are not sympathetic to the place and should be further developed as discrete measures, rather than bold statements. Furthermore they should be integrated, where possible, with a program of interpretation.</p> |

4.0 HERITAGE IMPACT STATEMENT

| | |
|------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Will the new building(s) visually dominate the heritage place? How has this been minimised?</p> | <p>The Chosen Design will be visually dominant within the context and setting of the wider landscape and study area.</p> <p>As outlined above the Chosen Design is an output defined by considerable engineering constraints determined by the design standards and environmental context of the crossing. In this respect there is little tolerance for the exploration of options which minimise this impact, beyond the mitigating measures nominated by the Chosen Design and the recommendations of this assessment.</p> <p>The New Bridgewater Bridge Landscape and Visual Impact Analysis, Inspiring Place, November 2021, has evaluated the character, extent and significance of the visual values of the surrounds of the Chosen Design for the New Bridgewater Bridge.</p> <p>The landscape was found to have a relatively high Visual Absorption Capacity which helped to minimise the potential visual impacts that might have arisen with less screening potential (Section 6.1) and that the 'scenic interest' of the New Bridgewater Bridge was a positive moderating influence on any potential visual impact (Section 6.2).</p> <p>Together, these factors suggested that the magnitude of impact of the redevelopment was moderate (Section 7) and the conclusion was reached that the moderate significance of the visual impact of the New Bridge was based on an amalgam of the moderate sensitivity of the landscape to change and the moderate order of magnitude of the proposed development (Section 8).</p> <p>The Landscape and Visual Impact Analysis concludes, that, providing that mitigation measures are undertaken such as those in Sections 8.2 , 8.3 and 8.4, there are no substantive visual impacts that would preclude the New Bridge from proceeding.⁰³</p> |
| <p>Will the public and users of the place, still be able to view and appreciate its significance?</p> | <p>The public will retain the ability to view and appreciate the significance of places of Local Historic Heritage.</p> |
| <p>New landscape works and features</p> | |
| <p>How has the impact of the new work on the heritage significance of the existing landscape been minimised?</p> | <p>There are no identified cultural landscape precincts listed in TE13.3 of the Interim Planning Schemes, nor is E13.4 Scenic Landscape Code applicable to the Interim Planning Schemes. As such there is no recognized significance attributed to the wider existing landscape.</p> <p>There are several items of landscape significance identified within the study area the works will impact on the fig and cherry trees at 37 Black Snake Lane (Items 18.09 and 18.10). Recommendation 5.2.3.3 nominates that the viability of replacement options be determined. Furthermore the recommended CHMP (Section 5.2.3.vii) is suggested to include a landscape management plan to determine the extent of protective exclusion zones required to avoid root truncation and any other prescriptions to ensure trees are maintained in a safe, healthy state.</p> <p>The chosen design includes a landscape concept (shown in MPIS Appendix AA) that includes careful placement and layering of native trees to provide visual screening of the elevated sections of road, including behind the Black Snake Inn. It is our recommendation that the hydroseed grass nominated within the landscape context be coupled with shrubs to further mitigate the visual impact of embankment cuttings</p> |

⁰³ Landscape and Visual Impact Analysis, Inspiring Place, November 2021, Conclusion.

NEW BRIDGEWATER BRIDGE PROJECT

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 CONCLUSIONS

This assessment considers the potential impacts of the Chosen Design to the additional Local historic heritage places as identified within Section 4.11 of the IAR.

In reviewing the potential for heritage impacts, a distinction can be drawn between those impacts that are likely to directly affect a place (e.g., requiring the removal, modification or subdivision of a place); and those impacts which may be indirect, such as changes to the setting of a place, impact during construction or important public views. For the purpose of this assessment works have been categorised as direct or indirect impacts. This assessment concludes that the Chosen Design will not directly, or indirectly impact the values of Parkview, Fairfield, or the Duke of York Hotel. An assessment of the impacts to 37 Black Snake Lane is outlined in Section 3.3 and 4 of this Assessment. An overview of the Local Historic Heritage Places and their assessed impacts is outlined within the following table:

| Site No. | Name | Heritage Listed? | Significance Level | Direct Impacts | Indirect Impacts | Management Recommended |
|----------|---------------------------------------------------------|-------------------------|--------------------|----------------|------------------|------------------------|
| 18.00 | Cypress Grove, 37 Black Snake Lane – Listing Boundaries | GLPS 2021, GLE-C6.1.181 | Local | Yes | Yes | Yes |
| 18.01 | 37 Black Snake Lane - House | GLPS 2021, GLE-C6.1.181 | Local | Yes | Yes | Yes |
| 18.02 | 37 Black Snake Lane - Cottage | GLPS 2021, GLE-C6.1.181 | Local | No | Yes | Yes |
| 18.03 | 37 Black Snake Lane - Stable | GLPS 2021, GLE-C6.1.181 | Local | No | Yes | Yes |
| 18.04 | 37 Black Snake Lane - Railway Shed | GLPS 2021, GLE-C6.1.181 | Local | No | Yes | Yes |
| 18.05 | 37 Black Snake Lane - Blacksmith's Shop | GLPS 2021, GLE-C6.1.181 | Local | Possibly | Yes | Yes |
| 18.06 | 37 Black Snake Lane - Worker's Cottages | GLPS 2021, GLE-C6.1.181 | Local | No | Yes | Yes |
| 18.07 | 37 Black Snake Lane - Old Coach House | GLPS 2021, GLE-C6.1.181 | Local | Yes | Yes | Yes |
| 18.08 | 37 Black Snake Lane - Culvert | GLPS 2021, GLE-C6.1.181 | Local | No | Yes | Yes |
| 18.09 | 37 Black Snake Lane - Cherry Tree | GLPS 2021, GLE-C6.1.181 | Local | No | Yes | Yes |
| 18.10 | 37 Black Snake Lane - Fig Tree | GLPS 2021, GLE-C6.1.181 | Local | No | Yes | Yes |
| 25.0 | Parkview | BLPS 2021, BRI-C6.1.20 | Local | No | No | No |
| 26.0 | Fairfield | BLPS 2021, BRI-C6.1.70 | Local | No | No | No |
| 27.0 | Duke of York Hotel | GLPS 2021, GLE-C6.1.180 | Local | No | No | No |

Purcell Tasmania:

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Other studio locations:

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Cardiff, Colchester, Leeds, London,
Manchester, Norwich, Oxford, York.*

LANDSCAPE AND VISUAL ANALYSIS OF THE NEW BRIDGEWATER BRIDGE (INSPIRING PLACE 2021)

ADDENDUM 1

POTENTIAL IMPACTS OF THE SETBACK, HEIGHT, BULK AND FORM OF THE NEW BRIDGEWATER BRIDGE ON NEARBY RESIDENCES

This addendum to the *Landscape and Visual Analysis of the New Bridgewater Bridge* (the LVIA) addresses the potential impacts of the setback, height, bulk and form of the New Bridgewater Bridge on nearby residences.

The evaluation draws on an understanding of the concept of "over-powering" presence wherein an element is in such close proximity to a viewer that it cannot be 'legibly read' without having to scan up and down to get an understanding of what is being viewed¹. The less legible an element is, the greater the magnitude of impact.

Previous studies have used viewing distances of 3–4 times the height of an element as a guide to evaluating its legibility². Beyond such distances, viewers are likely to be able to take in enough of the bridge structure to understand and appreciate it, for what it is, and its relationship to its surrounds (i.e. it would be legible).

The attached figures show the proposed alignment of the New Bridgewater Bridge in relation to adjacent housing. The figure highlights areas within 3 and 4 times the height of the bridge above ground level.

Examination of the figures reveals that 4+ properties including residences at 6-12 Nielsen Esplanade and a portion of the vacant block at 14 Nielsen Esplanade, fall within areas 3 to 4 times the height of the bridge. The magnitude of the impact of the 'over-powering presence' of the development in these areas will be high, that is the New Bridgewater Bridge will strongly contrast with the existing viewing experience and will permanently dominate the affected residences.

¹ 'Legibility' is, the rational and understandable layout of features and the strong and fitting relationship between the proposed elements and the character of their surrounds (see Section 4.4, Scenic Interest of the LVIA).

² See for instance, Inspiring Place 2002. "Visual Values Inventory and Impact Assessment – Musselroe Wind Farm and Associated Transmission Line" unpublished report to Hydro Tasmania. Inspiring Place 2002. "Visual Values Inventory and Impact Assessment – Heemskirk Wind Farm and Associated Transmission Line" unpublished report to Hydro Tasmania. More recent studies have used similar criteria but these studies are not yet available in the public domain.

The significance of the impact of 'over-powering presence' is also considered to be high, significance being an amalgam of sensitivity to change (rated as moderate, Section 5.2 of the LVIA) and the high magnitude of impact. Highly significant impacts typically require design responses and enhanced mitigation measures (beyond basic mitigation measures) to reduce the significance of the impact.

In this case, the findings are not unexpected due to the constraints dictating the location, form and height of the New Bridgewater Bridge including the bridge deck, its pylons, safety features, lighting and other engineering structures. In addition to these requirements is the necessity to economically integrate the new works with the horizontal and vertical road alignment of the existing highway and for the bridge to be engineered in a fit for purpose manner. Realistically, these considerations cannot be changed in a manner that would mitigate the impact on the adjacent residences.

The LVIA does propose basic and further mitigation measures that will provide some limited relief to the impact of 'over-powering presence' including:

- application of the urban design guidelines which give consideration to the treatment of the bridge abutment and to soft landscape treatments of adjacent embankments;

- control of light spill from road surface lighting; and

- the use of natural colours with a muted hue.

Nonetheless, the overarching impact of the setback, height, bulk and form of the New Bridgewater Bridge as an 'over-powering presence' on nearby residences will remain significant.

Jerry de Gryse
Inspiring Place
09 February 2022

VISUAL IMPACT ASSESSMENT

21-13 NEW BRIDGEWATER BRIDGE BRIDGEWATER TASMANIA 7000

| DWG NO. | REV. | DRAWING TITLE | DATE ISSUED |
|---------|------|-----------------------|-------------|
| L000 | - | TITLE SHEET | 08.02.22 |
| L001 | - | VISUAL IMPACT PLAN 01 | 08.02.22 |
| L002 | - | VISUAL IMPACT PLAN 02 | 08.02.22 |



01 LOCATION PLAN
L-000 1:10000



210 Collins Street, Hobart, Tasmania 7000
ph (03) 6231 1818 email: jerrydegrvse@inspiringplace.com.au

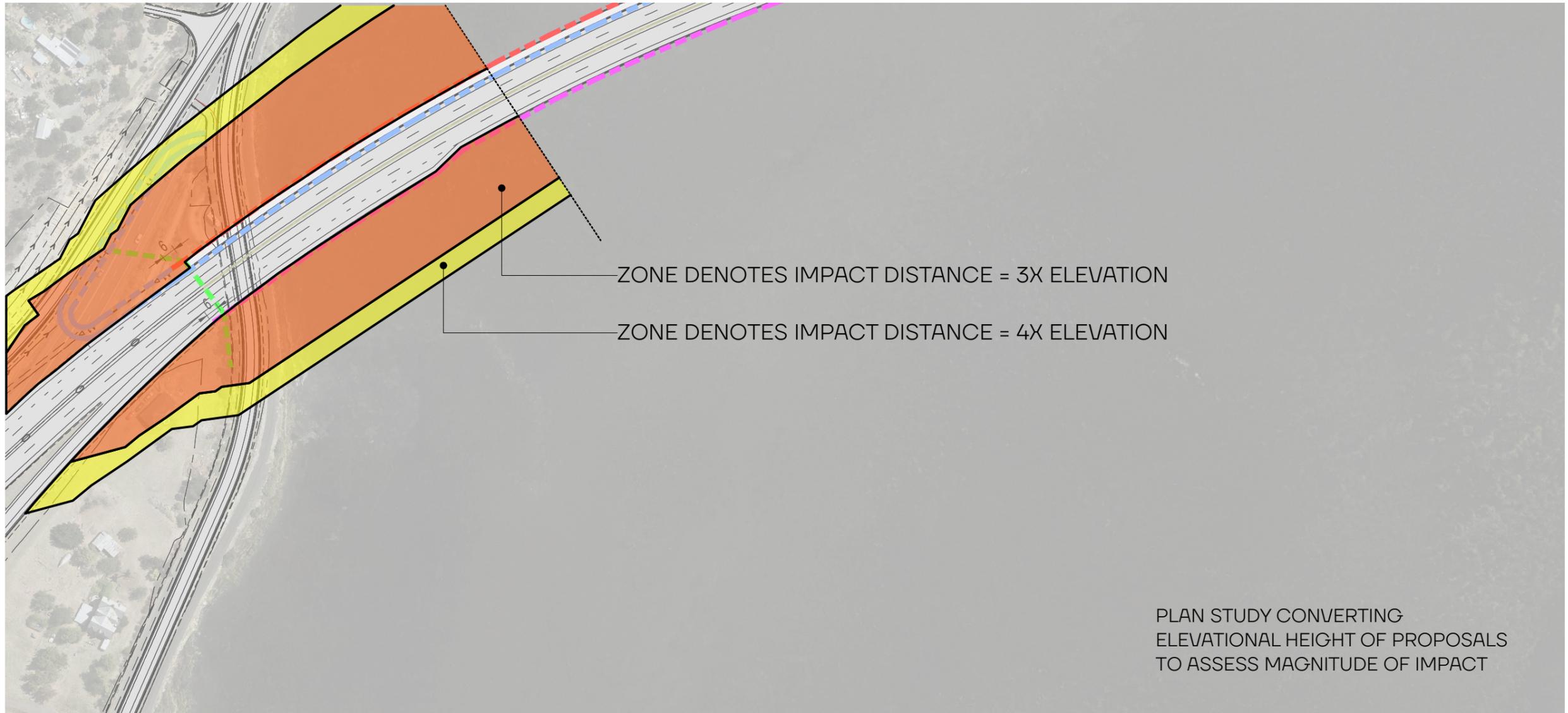
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This drawing must be read in conjunction with other construction documents including the project specifications and any instructions issued during the course of the contract. Contractors must verify all dimensions on site before commencement of works. Do not scale off drawings.

Draft For Review

| | |
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| Project. | BRIDGEWATER BRIDGE |
| Client | PREPARED FOR BURBURY CONSULTING |
| Address | BRIDGEWATER TAS 7000 |

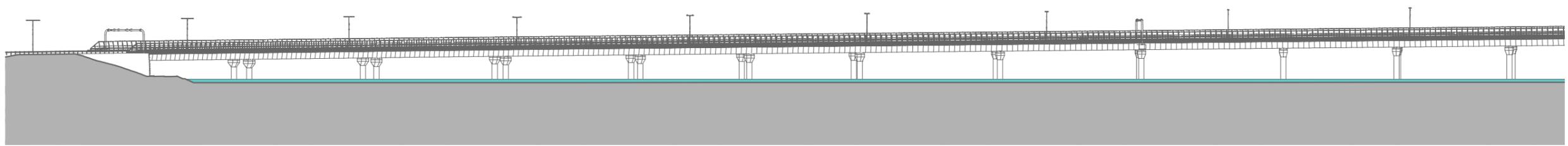
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| Drawing No. | Title | |
| L-000 | TITLE SHEET | |
| Project No. | Drawn | Date Printed |
| 21-13 | AA/AH/EH/JD/SA/XX | 8/2/22 |
| North | Approved | Scale |
|  | JDeg | 1:10000 |
| | Revision. | Stage |
| | | VIA |



PLAN STUDY CONVERTING
ELEVATIONAL HEIGHT OF PROPOSALS
TO ASSESS MAGNITUDE OF IMPACT

02
0002 GENERAL ARRANGEMENT PLAN
SCALE 1:2000

LEGEND



E1
GENERAL ARRANGEMENT ELEVATION
SCALE 1:2000

INFORMATION AS SUPPLIED - DRAWING 0006 GENERAL ARRANGEMENT SHEER 02

DESIGN IS REPRESENTATIVE - NOT FINAL



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ph (03) 6231 1818 email: jerrydegrvse@inspiringplace.com.au

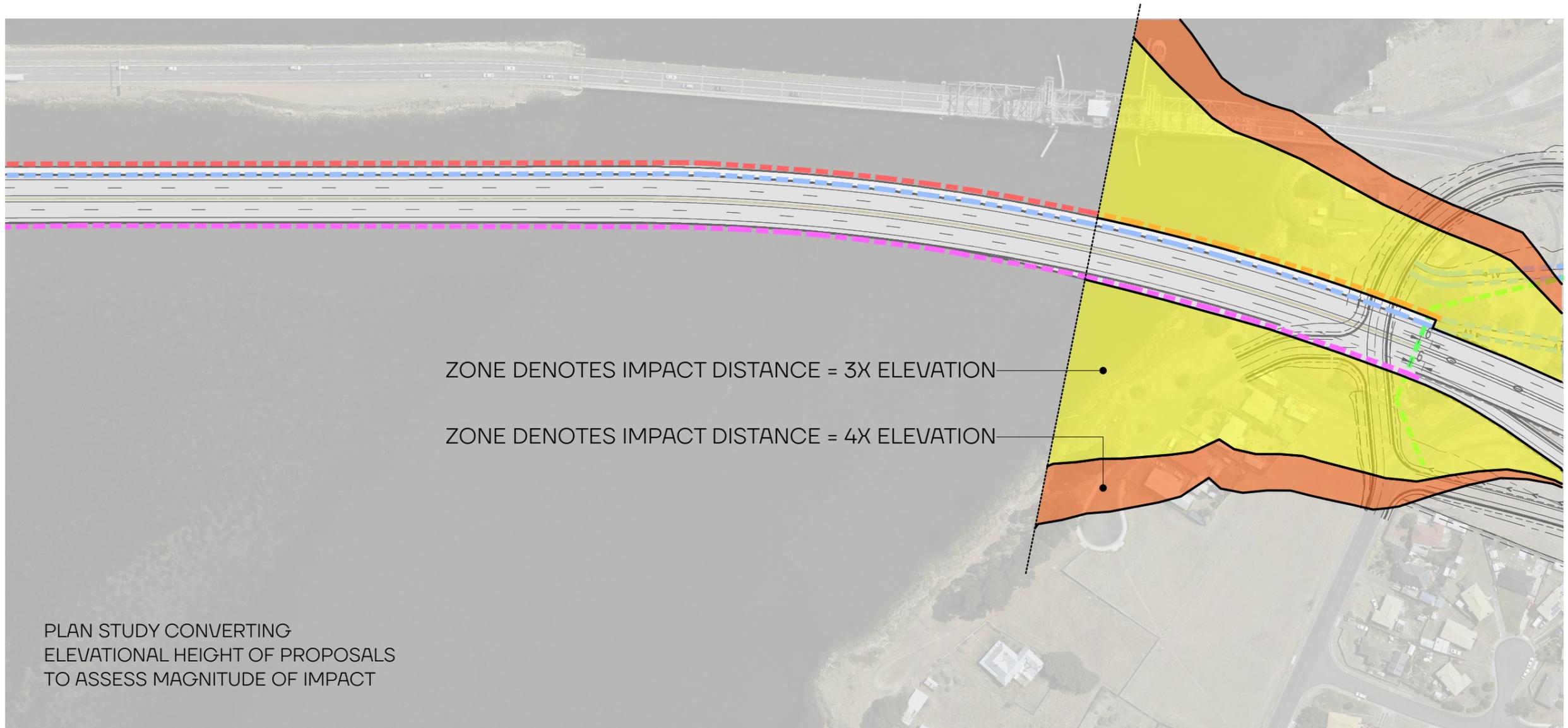
| REV | AMENDMENTS | DATE |
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This drawing must be read in conjunction with other construction documents including the project specifications and any instructions issued during the course of the contract. Contractors must verify all dimensions on site before commencement of works. Do not scale off drawings.

Draft For Review

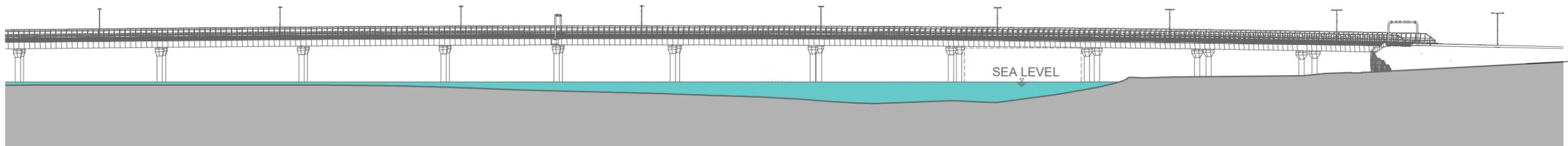
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|----------|---------------------------------|
| Project. | BRIDGEWATER BRIDGE |
| Client | PREPARED FOR BURBURY CONSULTING |
| Address | BRIDGEWATER TAS 7000 |

| | | |
|--------------|-------------------|--------------|
| Drawing No. | Title | |
| L-001 | VIA PLAN | |
| Project No. | Drawn | Date Printed |
| 21-13 | AA/AH/EH/JD/SA/XX | 8/2/22 |
| North | Approved | Scale |
| | JDeg | 1:2000 |
| | Revision. | Stage |
| | | VIA |



03
0002 GENERAL ARRANGEMENT PLAN
SCALE 1:2000

LEGEND



E2
GENERAL ARRANGEMENT ELEVATION
SCALE 1:2000

INFORMATION AS SUPPLIED - DRAWING 0007 GENERAL ARRANGEMENT SHEER 02

DESIGN IS REPRESENTATIVE - NOT FINAL



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| REV | AMENDMENTS | DATE |
|-----|------------|------|
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This drawing must be read in conjunction with other construction documents including the project specifications and any instructions issued during the course of the contract. Contractors must verify all dimensions on site before commencement of works. Do not scale off drawings.

Draft For Review

Project.
BRIDGEWATER BRIDGE

Client
PREPARED FOR BURBURY CONSULTING

Address
BRIDGEWATER TAS 7000

| Drawing No. | Title | |
|----------------------|----------------------------|------------------------|
| L-002 | VIA PLAN | |
| Project No. 21-13 | Drawn AA/AH/EH/JD/SA/XX | Date Printed 8/2/22 |
| North | Approved JDeg | Scale 1:2000 |
| Revision. | Stage VIA | |