

JOHN HOLLAND

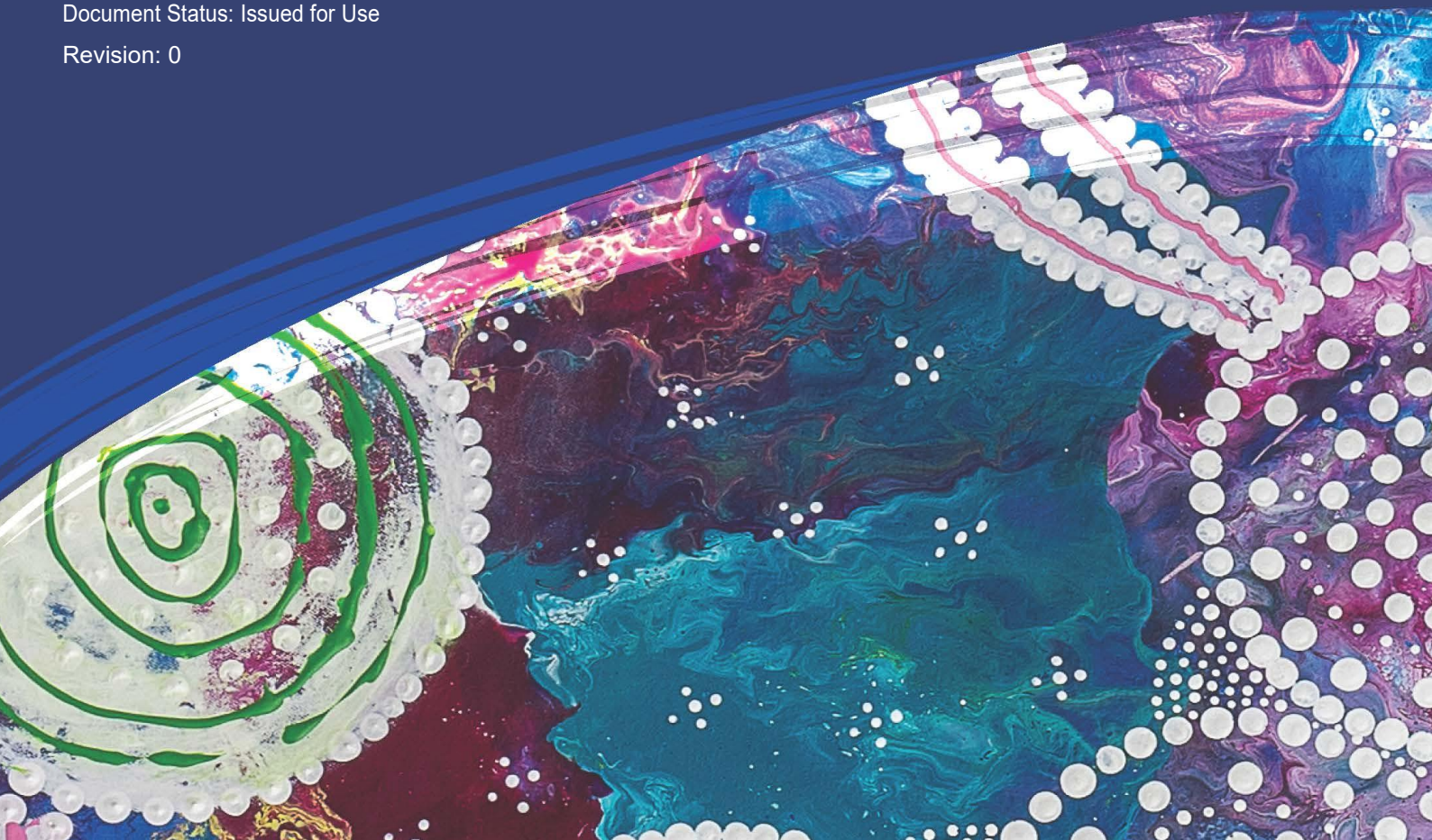
INLAND RAIL
ILLABO TO STOCKINBINGAL PROJECT

Sub Plan: Biodiversity Management

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Prepared By	Inti Apac – Ryan Maxwell Apical Environmental – Brendan Rice	
Document Owner	Daniel Lidbetter (Environmental Approvals Manager)	
	REVIEWED BY	**APPROVED BY**
Name	Daniel Lidbetter	Andy Robertson
Title	Environment Approvals Manager	Environment and Sustainability Manager
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1 Revisions and Distribution

1.1 Revisions

Draft issues of this document are identified as Revision A, B, C etc. Following acceptance by the document approver, the first finalised revision will be Revision 0. Subsequent revisions will have an increase of “1” in the revision number (1, 2, 3 etc.).

1.2 Distribution

The controlled master version of this document is available for distribution as appropriate and maintained on the document management system being used on the project. All circulated hard copies of this document are deemed to be uncontrolled.

Client’s Representative	Conrad Strachan
Project Director	Rob Pitt
Environmental Representative	Ricardo Prieto-Curiel
Environmental Representative	Tim Elder
Environment & Sustainability Manager	Andy Robertson
Quality Manager	Rao Talada
Project Personnel	Aconex Distribution

2 References, Definitions and Abbreviations

2.1 Compliance Roadmap

The following section provides a tabular representation of the Project requirements as described in the Conditions of Approval (CoA) for the State (SSI-9406) and Commonwealth (EPBC-2018-8233) approvals, and a reference link to detail how Inland Rail – Illabo to Stockinbingal (I2S or Project) intend to comply.

This Biodiversity Management Sub-plan (BMSP) provides a consistent approach to address the requirements of both the State and Federal approvals in a single document. The requirements of the State and Federal conditions relevant to the development of this BMSP are shown in Section 2.1.1 and 2.1.2. The Revised Mitigation Measures (RMMs) from the Submissions Report and relevant Infrastructure Sustainability Council (ISC) are provided in Section 2.1.3 and 2.1.4 respectively. A cross reference is also included to indicate where each requirement is addressed in this BMSP or other Project management documentation.

2.1.1 Federal Conditions of Approval

The Commonwealth CoA relevant to the Project and BMSP (EPBC-2018/8233) are provided in Table 2-1. Note that CoA that require compliance with the NSW SSI approval and administrative CoA are not repeated in Table 2.1. Reporting requirements of these CoA included in Section 9.

Table 2-1 Commonwealth CoA relevant to the BMSP

CoA No.	Condition Requirements	Document Reference
1	The approval holder must not clear and construct outside of the Action area unless either of the following are met: a) such clearing and construction is limited to locations with no habitat of protected matters; b) such clearing and construction is limited to locations required to facilitate minor design adjustments and only as allowable under the NSW Approval, and the total extent of clearing for the Action will not exceed the limits specified in condition 2 of this approval and specified in condition E25 of the NSW Approval.	Section 8.19
2	The approval holder must not clear more than: a) 16.77 hectares (ha) of Grey Box Woodlands b) 17.48 ha of Box-Gum Grassy Woodlands	Section 7.2.3 Section 8.6 Section 8.19
6	The approval holder must ensure that, in complying with condition C20(c) of the NSW Approval, the weed, pest and pathogen management plan: a) Prevents both the introduction of new weeds and spread of weeds, as a result of the Action, into any retained areas of Grey Box Woodland and Box-gum Grassy Woodlands within and immediately adjacent to the Action Area; and b) addresses and incorporates appropriate actions and objectives identified in the relevant TAPs.	Section 8.9 Box Gum Woodland Restoration Plan (BGWRP) Section 8.19
12	The approval holder must not commence the Action until the biodiversity credits for the protected matters have been retired in accordance with condition E28 of the NSW Approval.	Section 8.17
13	Within 5 business days of retiring any biodiversity credits in respect of protected matters, the approval holder must submit evidence in writing to the department demonstrating that the biodiversity credits have been retired in accordance with condition E28 of the NSW Approval and specify, in relation to each relevant protected matter, how many biodiversity credits were retired.	Section 8.17

25	The approval holder must ensure that any monitoring data, surveys, maps, and other spatial and metadata required under the conditions of this approval are prepared in accordance with the Guidelines for biological survey and mapped data, Commonwealth of Australia 2018, or as otherwise specified by the Minister in writing.	Section 9.8
26	The approval holder must ensure that any monitoring data, surveys, maps, and other spatial and metadata required under the conditions of this approval are prepared in accordance with the Guide to providing maps and boundary data for EPBC Act projects, Commonwealth of Australia 2021, or as otherwise specified by the Minister in writing.	Section 9.8
27	The approval holder must submit all monitoring data, surveys, maps, other spatial and metadata and all species occurrence record data (sightings and evidence of presence) electronically to the department within 20 business days of the next anniversary of the date of this approval decision except where otherwise specified in a plan.	Section 9.8
28	The approval holder must prepare a compliance report for each Annual Compliance Report period (ACR period).	Section 9
35	The approval holder must notify the department electronically, within 2 business days of becoming aware of any incident. The approval holder must specify in each notification: a) any condition or commitment made in a plan which has not been, or may have not been, complied with, b) a short description of the incident, and c) the location (if applicable, including co-ordinates), date and time of the incident.	Section 9.6

2.1.2 NSW Minister of Planning and Public Spaces Conditions of Approval

The NSW Minister of Planning and Public Spaces CoA relevant to the Project and BMSP under the NSW *Environmental Planning and Assessment Act 1979* are provided in Table 2-2.

Table 2-2 Primary NSW CoA relevant to biodiversity management

CoA No.	Condition Requirements	Document Reference
C14	CEMP(s) (and relevant CEMP sub-plans) must be submitted to the Planning Secretary for approval except those permitted to be endorsed by others pursuant to a CEMF approved by the Planning Secretary under Condition C1.	Section 3.4.3 Section 3.5
C15	Where a CEMP (and relevant CEMP sub-plans) requires the Planning Secretary's approval, the CEMP (and relevant CEMP sub-plans) must be endorsed by the ER and then submitted to the Planning Secretary for approval no later than one (1) month before the commencement of construction, or where construction is staged, no later than one (1) month before the commencement of each stage.	Section 3.4.3
C16	CEMP(s) (and relevant CEMP sub-plans) not requiring the Planning Secretary's approval, but requiring ER endorsement, must be submitted to the ER no later than one (1) month before the commencement of construction or where construction is staged no later than one (1) month before the commencement of that stage. The CEMPs (and relevant CEMP sub-plans) must be endorsed by the ER as being consistent with the conditions of this approval and all undertakings made in the documents listed in Condition A1.	Section 3.4.3

<table>
<tr><td>C17</td><td>Except as provided by Condition C1, the following CEMP Sub-plans must be prepared in consultation with the relevant state agencies, relevant councils and RAPs identified for each CEMP Sub-plan. Evidence of consultation must be provided consistent with Condition A10.
<table><tr><th></th><th>Required CEMP Sub-plan</th><th>Relevant Authority to be consulted</th></tr><tr><td>(c)</td><td>Biodiversity</td><td>CPHR</td></tr></table>Notes:
CEMP Sub-plan (
1.) may reflect the staged construction of the project through geographical activities, temporal activities or activity-based contracting and staging.
2. Nothing in this condition prevents the Proponent from combining any of the above CEMP Subplans.
3. The Biodiversity CEMP Sub-Plan must be consistent with goals and objectives, mitigation measures and monitoring requirements of the Commonwealth approved conservation advice and any Recovery Plans for all Matters of National Environmental Significance.</td><td>Section 3.5</td></tr>
<tr><td>C18</td><td>The CEMP Sub-plans listed in Condition C17 must state how:
(a) the environmental performance outcomes identified in the documents listed in Condition A1, as modified by these conditions, will be achieved;
(b) the mitigation measures identified in the documents listed in Condition A1, as modified by these conditions will be implemented;
(c) the relevant terms of this approval will be complied with; and
(d) issues requiring management during construction, as identified through ongoing environmental risk analysis, will be managed.</td><td>Section 4.2.1
Section 8
Section 2.1
Section 9</td></tr>
<tr><td>C20(a)</td><td>The Biodiversity Management Sub-plan must be endorsed by a suitably qualified and experienced ecologist and include, but not be limited to:
a) details of the measures to avoid and minimise disturbance to native vegetation, and other habitat of threatened flora and fauna species, and consistency with the goals and objectives, mitigation measures and monitoring requirements of the Commonwealth approved conservation advices and any Recovery Plans and Threat Abatement Plans for all Matters of National Environmental Significance;</td><td>This BMSP
Section 3.4.3
Section 6.5
Section 6.5.1
Section 8</td></tr>
<tr><td>C20(b)</td><td>b) procedures for undertaking pre-clearing surveys for native fauna, including surveys by a suitably qualified and experienced ecologist to determine the presence of native fauna in the area impacted by the CSSI, and procedures and measures to manage their relocation;</td><td>Section 8.10
Appendix B
Appendix C</td></tr>
<tr><td>C20(c)</td><td>c) a weed, pest and pathogen management plan consistent with the Biosecurity Act 2015 and Riverina Regional Strategic Weed Management Plan 2023-2027;</td><td>Section 8.9</td></tr>
<tr><td>C20(d)</td><td>d) procedures for the dewatering of farm dams and coffer dams, including the relocation of aquatic fauna;</td><td>Appendix E</td></tr>
<tr><td>C20(e)</td><td>e) procedures for working within and adjacent to waterways including relocation of fauna and measures to maintain fish passage when the waterway is in flow;</td><td>Appendix D</td></tr>
<tr><td>C20(f)</td><td>f) protocols for unexpected and incidental finds of threatened species and threatened ecological communities within the construction boundary including in accordance with Condition E27.</td><td>Appendix I</td></tr>
<tr><td>E23</td><td>The clearing of native vegetation must be minimised to the greatest extent practicable with the objective of reducing impacts to threatened ecological communities, threatened species and their habitat.</td><td>Section 8.2</td></tr>
<tr><td>E24</td><td>Prior to the commencement of work that would impact biodiversity values of (a)-(g), the Proponent must demonstrate to the satisfaction of the Planning</td><td>Section 8.2</td></tr>
</table>

	Secretary that impacts to the following potential serious and irreversible impact entities have been avoided to the greatest extent possible: (a) White Box-Yellow Box Blakely's Red Gum Grassy Woodland and Derived Native Grassland comprising Plant Community Types (PCT) PCT 266, PCT 276, PCT 277, PCT 347 (b) Caladenia arenaria / Sand-hill Spider Orchid (c) Caladenia concolor / Crimson Spider Orchid (d) Euphrasia arguta / Euphrasia arguta (e) Grevillea wilkinsonii / Tumut Grevillea (f) Indigofera efoliata / Leafless Indigo (g) Prasophyllum sp. Wybong / Prasophyllum sp. Wybong Avoidance, reduction in impacts and additional conservation measures must be documented in consultation with CPHR and the Planning Secretary.	Section 8.3 Section 8.4 Section 8.5 Section 8.19
E25	Impacts to plant community types and species credit species must not exceed those identified in the documents listed in Tables in SCHEDULE 1 and SCHEDULE 2 of APPENDIX C and the corresponding number and class of ecosystem and species credits as set out in the BAM Biodiversity Credit Report which forms part of Condition A1(c).	Section 7.2 Section 8.17 Section 8.19
E26	Prior to impacts on the biodiversity values of the CSSI, the number and classes of ecosystem credits and species credits (like-for-like) as set out in the BAM Biodiversity Credit Report which forms part of the Condition A1(c), must be retired. The number and classes of ecosystem credits and species credits that must be retired (prior to impacting the biodiversity values) are detailed in SCHEDULE 1 and SCHEDULE 2 of APPENDIX C. The Proponent may review and reduce the ecosystem and species credit requirements in Tables in SCHEDULE 1 and SCHEDULE 2 of APPENDIX C to reflect the final construction footprint; the further surveys required by Condition E31; and the resulting extent and type of plant community types to be cleared. Amendments to the ecosystem and species credit requirements must be undertaken in consultation with CPHR and DECCEW(Cth) and documented in a report prepared in accordance the Biodiversity Assessment Method and accompanied by an updated Credit Report. The report and the updated Credit Report must be submitted to the Planning Secretary for approval prior to the retirement of credits.	Section 8.17
E27	On the discovery of potential or actual impacts to any threatened communities or species not listed in SCHEDULE 1 or SCHEDULE 2 of APPENDIX C, all work which may impact the identified species or community must stop to prevent further impact and the Planning Secretary and CPHR (and DCCEEW(Cth) where relevant) notified in writing. Work must not recommence until the relevant agencies have been consulted and any required management plans or approvals have been obtained. This condition does not permit additional impacts to Threatened Species and Threatened Ecological Communities that were not assessed as part of the CSSI.	Section 8.17 Section 8.19
E28	The retirement of the credits must be carried out in accordance with the *Biodiversity Conservation Act 2016* (BC Act), and can be achieved by: (a) acquiring and retiring "biodiversity credits" within the meaning of the BC Act; and / or (b) making a payment into the Biodiversity Conservation Fund of an amount equivalent to the class and number of ecosystem and species credits, as calculated by the Biodiversity Conservation Fund (BCF) Charge System; and/or (c) funding a biodiversity conservation action that benefits the entity impacted and is listed in the ancillary rules of the Biodiversity Offset Scheme. *Note: "Impacted site" in the application of the like-for-like offset rules is*	Section 8.17 Section 8.19

	taken to be the subject land described in the Biodiversity Development Assessment Report referred to in Condition A1. The subject land is the disturbance footprint subject to assessment under the Biodiversity Assessment Method.	
E29	Evidence of the retirement of credits in satisfaction of Condition E28 must be provided to the Planning Secretary prior to impacts to the biodiversity values occurring.	Section 8.17 Section 8.19
E30	Where evidence of compliance with the Ancillary rules: Reasonable steps to seek like-for-like biodiversity credits for the purpose of applying the variation rules has been provided to, and approved by the Planning Secretary, the variation rules may be applied to retire the relevant ecosystem credits and species credits as set out in the BAM Biodiversity Credit Report (Variation).	Section 8.17
E31	Biodiversity surveys of unsurveyed land identified in SCHEDULE 3 of APPENDIX C must be completed to confirm the CSSI will not result in a greater impact than Condition E32. The surveys must be completed by an accredited assessor in accordance with the Biodiversity Assessment Method prior to retiring credits in accordance with Condition E27 for the unsurveyed areas.	Section 8.14
E32	The CSSI must not result in an impact on Threatened Ecological Communities and/or threatened flora species within the unsurveyed lands identified in SCHEDULE 3 of APPENDIX C that is greater than that indicated in Table 4. (Refer to copy of conditions where Table 4 is located)	Section 8.14
E33	A report confirming the biodiversity impacts within unsurveyed land identified in SCHEDULE 3 of APPENDIX C must be prepared in consultation with CPHR and submitted to the Planning Secretary for approval prior to Work that would impact biodiversity values occurring in the unsurveyed areas identified in SCHEDULE 3 of APPENDIX C. The Confirmation of Biodiversity Impacts of Unsurveyed Land Report must include: (a) details of the surveys completed in accordance with Condition E31; (b) the location of biodiversity to be impacted; (c) confirmation that impacts to the threatened ecological communities and threatened species impacted are the same or less than that permitted by Condition E32; (d) demonstration of how detailed design and refinement of areas of impact has resulted in minimising impacts to threatened ecological communities and threatened species including maps identifying changes to areas of impact; and (e) any reduction in the type and/or credit requirements as a result of this report. *Note: This condition does not preclude combining the requirements of Condition E24 and the confirmation of biodiversity impacts of unsurveyed land into one report, where the requirements of both conditions are met.*	Section 8.14
E34	Within 12 months of the date of this approval, the Proponent must apply for, and, if approved, enter into a Biodiversity Stewardship Agreement (BSA) to ensure ongoing management and active restoration of 45.7ha hectares of Box Gum Woodland within a 123.15-hectare restoration site of a portion of Lot 3 DP 591854 as outlined in documents listed in Condition A1(e) and A1(f). The management and restoration actions are additional to credit obligations required by Condition E26.	Section 8.18.3
E35	Box Gum Woodland Restoration Plan must be prepared by an ecologist with appropriate qualifications and experience in Box Gum Woodland restoration determined in consultation with CPHR for the management of the restoration site identified in Condition A1(e) and A1(f) to ensure: (a) in perpetuity management of existing Box Gum Woodland (b) increase in the extent of Box Gum Woodland and	Section 8.18.3

	(c) improve connectivity within and across the site identified in Condition E34. The Box Gum Woodland Restoration Plan must be submitted to and approved by the Planning Secretary prior to the commencement of construction. The Box Gum Woodland Restoration Plan must be implemented and made publicly accessible.	
E36	The Box Gum Woodland Restoration Plan must include: (a) site map identifying the site boundary, existing vegetation to be maintained, areas to be actively restored and connectivity or movement corridors to be established or maintained; (b) active restoration and maintenance activities, including seed collection, fire management, threatened species habitat management, feral pest and weed management; (c) proposed restoration and connectivity targets; (d) timeframes and responsibilities for meeting targets, including all actions to be completed prior to entering into a Biodiversity Stewardship Agreement; (e) monitoring plan; (f) adaptive management program to assess the effectiveness of the restoration and maintenance activities in meeting the targets identified in (c), and (g) a process to ensure adaptive management measures, if targets are not met. ***Note:*** *The Box Gum Woodland Restoration Plan is not intended to replace or duplicate the requirements for the management of the site in accordance with a Biodiversity Stewardship Agreement. This condition does not preclude utilising documents or data from the BSA from being included in the Box Gum Woodland Restoration Report.*	Section 8.18.3
E37	A Box Gum Woodland Restoration Report must be prepared by an ecologist with appropriate qualifications and experience in Box Gum Woodland restoration determined in consultation with CPHR, every 12 months unless otherwise agreed by the Planning Secretary and made publicly available. The Box Gum Woodland Restoration Report must include: (a) active restoration and maintenance activities completed in the previous 12 months; (b) monitoring results; (c) performance against restoration and connectivity targets; and (d) adaptive management measures implemented in the event that targets are not being met. The Box Gum Woodland Restoration Report must be finalised within 2 months of each 12-month period. The Report must also be provided to the Planning Secretary and CPHR on request. Note: This condition does not preclude utilising documents or data from the BSA from being included in the Box Gum Woodland Restoration Report.	Section 8.18.3
E38	Riparian land disturbed during construction must be rehabilitated and revegetated with native species of local provenance from the relevant plant community type on completion of Work impacting the riparian land in accordance with the Guidelines for controlled activities on waterfront land – Riparian corridors (NRAR, 2018).	Section 8.18 Rehabilitation Strategy (Section 8.18.1)
E39	Seed from native plants to be removed must be collected before clearing and used in revegetation, restoration and rehabilitation across the project area and the site identified in Condition E34. Plant propagation must ensure that native species of local provenance from the relevant native vegetation community are available for successful revegetation and landscaping.	Section 8.8
E40	Baseline monitoring of existing fauna movement corridors, pathways and connectivity within the Assessment Area as defined in the Biodiversity	Section 8.15

	Assessment Development Report must be undertaken in accordance with a Baseline Monitoring Program prepared by a suitably qualified and experienced expert in consultation with CPHR. The Baseline Monitoring Program must: (a) be adequate for determining existing fauna movement corridors, pathways and connectivity for: (i) Brown Treecreeper; (ii) Diamond Firetail; (iii) Flame Robin; (iv) Grey-Crowned Babbler; (v) Rainbow Bee-eater; (vi) Scarlet Robin; (vii) Speckled Warbler; (viii) Superb Parrot; (ix) Varied Sittella; (x) White-fronted Chat; and (xi) Squirrel Glider; and (b) consider the broader landscape connectivity, pathways and movement corridors; and (c) consider relevant State and Commonwealth threatened species guidelines, species biology and the results of on-ground surveys in determining the length of time and time of year for baseline monitoring.	
E41	The design of the fauna connectivity measures must have regard to: (a) baseline monitoring completed in accordance with Condition E40; (b) fauna habitat/fauna furniture and refuges within and near the CSSI to facilitate fauna movement for all native species (threatened and non-threatened) that will potentially use the connectivity structures; (c) relevant State and Commonwealth threatened species guidelines, species biology and the results of on-ground surveys; (d) Fauna Sensitive Road Design Manual Volume 2 (Queensland Government, 2010); (e) Fauna Sensitive Road Design Guidelines (VicRoads, 2012); and (f) industry best practice measures.	Section 8.16 Connectivity Strategy
E42	Watercourse crossings must be designed in consultation with DPI Fisheries and in accordance with Why do fish need to cross the road? Fish passage requirements for waterway crossings (Fairfull & Witheridge, 2003).	Appendix D
E43	Fauna access pathways to connectivity measures must: (a) not be impeded by crossing loops, ancillary facilities, service roads and tracks, level crossings and roads; and (b) use local native flora species in approaches to connectivity structures.	Section 8.16 Connectivity Strategy
E44	The draft Connectivity Strategy listed in Condition A1 must be finalised by a suitably qualified and experienced ecologist(s) with experience in fauna connectivity, fauna crossings and experimental design. The final Connectivity Strategy must be prepared in consultation with CPHR and DPI Fisheries and submitted to the Planning Secretary for approval prior to construction commencing. The Connectivity Strategy must include, but not limited to: (a) details of existing fauna movement corridors, pathways and connectivity informed by baseline monitoring completed in accordance with Condition E40 and other on-ground surveys completed;	Section 8.16 Connectivity Strategy

	(b) justification for the location and design, and spacing of the connectivity structures with reference to the requirements of Condition E41; (c) justification for not proceeding with a fauna connectivity measure outlined in Table L.3 of the draft Connectivity Strategy and the location and design of alternative fauna connectivity measures where the measure could not be implemented; (d) demonstration of the effectiveness of the proposed connectivity structures and measures in terms of location, design and number to mitigate impacts to the relevant threatened species, and that the design will: (i) maintain or improve connectivity and movement pathways of species within regional, local and riparian corridors; (ii) reduce the risk of mortality for threatened species; (iii) be located at sufficient frequency along the alignment, based on the ecological requirements of the targeted species, including but not limited to home range size, movement patterns, and habitat use; and (iv) consider the effects of connectivity structures on the maintenance or improvement of population viability and gene flow for targeted species; (e) details and design (including a map) of all connectivity structures including: (i) flight diversion structures and (ii) fauna exclusion fencing (f) a map showing the location and design of all fauna connectivity measures to be implemented (g) the maintenance activities for all connectivity structures and measures for the life of the impact of the CSSI, including timing and frequency of maintenance actions, including after flooding events; (h) an assessment of the flooding risk for proposed structures and measures to confirm and provide for flood immunity of those structures as a result of this assessment; (i) include Operational Fauna Connectivity Monitoring, Predator Prevention and Adaptive Mitigation Program required by Condition D7.	
E45	Fauna funnel fencing and exclusion fencing must be provided to prevent fauna from accessing the rail alignment. The fencing must be installed before the commencement of operation. The fencing must be designed in accordance with best practice measures in consultation with suitably qualified experts in both fauna fencing and the target fauna species (threatened and non-threatened species) and in consideration of baseline monitoring results required by Condition E40. *Note: It is envisaged that different types of fauna fencing will be required in different areas depending on the requirements to exclude or funnel the target species.*	Section 8.16 Connectivity Strategy
E46	Cleared native vegetation and other landscape features must be reused as part of the CSSI, including for re-snagging of waterways, in consultation with DPI Fisheries. If reuse is not practicable, consultation with the relevant council(s), landcare groups and relevant state agencies must be undertaken to determine if: (a) hollows, tree trunks, mulch, bush rock and root balls; and (b) collected plant material, seeds and/or propagated plants; can be used by others in habitat enhancement, beneficial re-use and rehabilitation work, before pursuing other disposal options.	Appendix D Section 8.7 Section 8.18 Rehabilitation Strategy (Section 8.18.1)
E83	The construction of the CSSI must protect the integrity of riparian corridors in accordance with the Guidelines for controlled activities on waterfront land: Riparian Corridors (Department of Industry 2018) when carrying out Work within 40 metres of a watercourse.	Appendix D

E120	The Proponent must minimise the fire risks of the development, including managing vegetation fuel loads within and adjacent to the corridor during construction of the CSSI, and ensure that the development: (a) (i) complies with the relevant asset protection requirements in the RFS's Planning for Bushfire Protection 2019 (or equivalent) and Standards for Asset Protection Zones; (ii) incorporates the recommendations of a fire risk assessment as per TfNSW design standards; and (iii) is suitably equipped to respond to any fires on site, including provision of a 20,000 litre water supply tank fitted with a 65 mm Storz fitting and a FRNSW compatible suction connection located at each at locations identified by the fire risk assessment (including all weather access to the water supply tanks for Category 1 tankers); and (b) develop procedures to manage fire hazard and potential fires on site, in consultation with the RFS and FRNSW; (c) assist the RFS, FRNSW and emergency services as much as practicable if there is a fire in the vicinity of the site; and (d) notify the relevant local emergency management committee following completion of construction of the development, and prior to commencing operations.	Section 8.19 Bushfire Emergency Plan
E121	Prior to commencing construction, the Proponent must develop and implement a comprehensive Bushfire Emergency Plan and detailed emergency procedures for the infrastructure, in consultation with RFS and FRNSW and provide a copy of the plan to the local Fire Control Centre. The plan must: (a) be consistent with: (i) *RFS's Planning for Bushfire Protection 2019* (or equivalent); (ii) *RFS's Development Planning - A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan;* (iii) the *Fire and Rescue NSW Act 1989*; (iv) the *Work Health and Safety (WHS) Act 2011*; (b) identify the fire risks and hazards and detailed measures for the CSSI to prevent or mitigate fires igniting, including risks associated with the revegetation within the rail corridor; (c) include procedures that would be implemented if there is a fire on-site or in the vicinity of the site; (d) list works that should not be carried out during a total fire ban; (e) include availability of fire suppression equipment, access and water; (f) include procedures for the storage and maintenance of any flammable materials; (g) detail access provisions for emergency vehicles and contact details for both a primary and alternative site contact who may be reached 24/7 in the event of an emergency; (h) include a figure showing site infrastructure, any Asset Protection Zones and the on-site water supply tank(s); (i) include location of hazards (physical, chemical and electrical) that may impact on fire fighting activities and procedures to manage identified hazards during fire fighting activities; (j) include details of the location, management and maintenance of any Asset Protection Zone (including maintaining the Asset Protection Zones at a height of 100 mm or less at the construction compounds and temporary	Section 8.19 Bushfire Emergency Plan

	workforce accommodation facilities) and who is responsible for the maintenance and management of the Asset Protection Zone; (k) include bushfire emergency management planning; (l) include details of the how RFS and FRNSW would be notified, and procedures that would be implemented, in the event that: (i) there is a fire on-site or in the vicinity of the site; (ii) there are any activities on site that would have the potential to ignite surrounding vegetation; or (iii)there are any proposed activities to be carried out during a bushfire danger period that have the potential to ignite surrounding vegetation.	
E126	The Proponent must prepare and implement a Visual and Landscape Impact Mitigation Plan to mitigate visual and landscape impacts of the CSSI. In preparing the plan, the Proponent must: (a) consult landowners and residents of land zoned RU1 within 500 metres of the CSSI and all landowners and residents of all other land within 100 metres of the CSSI; (b) prepare a landscaping plan for all locations identified in (a) above that specifies plants and trees to be used, with a preference for native vegetation and a program for implementation and ongoing maintenance; (c) document the responses in (a) above and detail how the Plan responds to them. The Visual and Landscape Impact Mitigation Plan must be made publicly available no later than six (6) months after the commencement of construction of the CSSI.	Visual and Landscape Impact Mitigation Plan Section 8.19

2.1.3 Revised Mitigation Measures

This BMSP and associated documents have been prepared to describe how the Project will meet the construction phase requirements of the RMMs required as part of the Environmental Assessment Documentation. Table 2-3 includes additional requirements to be incorporated into this BMSP.

Table 2-3 Revised Mitigation Measures relevant to this BMSP

Ref.	Issue	Mitigation Measure	Timing	BMSP Reference
BD-1	Impacts on fish passage	Watercourse crossing structures, both temporary and permanent in nature, would meet Inland Rail design standards and be designed in accordance with Why do fish need to cross the road? Fish passage requirements for waterway crossings (Fairfull, S. and Witheridge, G., 2003) and Policy and Guidelines for fish habitat conservation and management (DPI, 2013a) and Guidelines for controlled activities on waterfront land: riparian corridors (Department of Industry, 2018) as far as practicable.	During Design	Appendix D
BD-2	Fauna connectivity	A final fauna connectivity strategy would be prepared to guide detailed design, based on the draft fauna connectivity strategy provided in Appendix L of the revised BDAR	During Design	Connectivity Strategy
BD-3	Managing the potential for biodiversity impacts during construction	Pre-clearing surveys would be undertaken prior to construction, by a suitably qualified ecologist, in accordance with the biodiversity management plan. Specific surveys would include: - surveys for roosting microbats and birds in structures, including telegraph poles and buildings that are proposed to be removed	During Construction	Appendix B Appendix C Appendix D

Ref.	Issue	Mitigation Measure	Timing	BMSP Reference
		- searches for nest trees - identification of hollow-bearing trees and logs requiring fauna management during removal - aquatic fauna salvage in watercourses or residual pools within 50 m of the construction footprint and in areas that would be enclosed by silt curtains (e.g. piling locations).		
BD-4	Managing the potential for biodiversity impacts during construction	Clearing extents/site boundary/limit of works would be consistent with proposal extents defined in a condition of approval.	During Construction	Section 8.19 Section 7.2
BD-5	Managing the potential for biodiversity impacts during construction	The clearing extents/site boundary/limit of works would be clearly defined with flagging or marking tape, signage or other suitable means to delineate exclusion zones. This delineation and marking process would align with the project proposal flagging/marking tape process and specifications.	During Construction	Section 8.2 Section 8.3
BD-6	Managing the potential for biodiversity (aquatic) impacts during construction	Direct impacts on in-stream vegetation and native vegetation on the banks of watercourses would be avoided as far as practicable by establishing appropriate setback distances.	During Construction	Appendix D
BD-7	Managing the potential for biodiversity impacts during construction	A biodiversity management plan would be prepared prior to construction and implemented as part of the Construction Environmental Management Plan (CEMP). The plan would include measures to manage biodiversity and minimise the potential for impacts during construction. The plan would be prepared in accordance with relevant legislation, guidelines and standards. The plan would include, but not be limited to: - locations and requirements for pre-clearing surveys, including terrestrial and aquatic habitats - establishing protocols for the staged clearing of vegetation and safe tree felling and log removal to reduce the risk of fauna mortality - measures to avoid and minimise clearing of hollow-bearing trees and paddock trees where practicable - measures relating to the provision and management of nest boxes, including reuse of hollows and monitoring protocols - animal handling protocols, including relocation and emergency care - an unexpected finds protocol - measures to manage biosecurity risks (including livestock pests/ diseases such as Japanese encephalitis and foot & mouth disease) in accordance with the *Biosecurity Act 2015* (CtH) (NSW) - measures to manage high-threat weeds	Prior to Construction	This BMSP Appendix B Appendix B Appendix B Section 8.7, 8.18 Connectivity Strategy Appendix I Biosecurity Management Plan Biosecurity Management Plan

Ref.	Issue	Mitigation Measure	Timing	BMSP Reference
		- measures to reduce the risk of terrestrial and aquatic fauna mortality/injury - measures relating to the stripping, stockpiling and management of topsoil where it contains seedbank or weed material.		Appendix B, C, D, E Biosecurity Management Plan
BD-8	Rehabilitation of vegetation and habitats subject to temporary disturbance	A rehabilitation strategy would be prepared to guide rehabilitation planning, implementation, monitoring and maintenance of disturbed areas once construction is complete. The strategy would include clear objectives for seed collection and rehabilitation of native vegetation in temporary disturbances areas and in riparian areas.	During Design	Rehabilitation Strategy (Section 8.18.1)
BD-9	Managing the potential for biodiversity (aquatic) impacts during construction	Scheduling of construction activities to minimise time of works in or adjacent to drainage lines and waterfront land (watercourse bed and land within 40 m of the highest bank of the watercourse (DPI, 2012a), particularly during periods of flow.	During Construction	Appendix D
BD-10	Managing the potential for biodiversity (aquatic) impacts during construction	Where it is not practicable to work in the dry, a sediment or silt curtain attached to the same sides of the bank and around the works area would be installed for erosion and sediment control, and to maintain fish passage.	During Construction	Appendix D
BD-14	Little Eagle nest and breeding habitat	Prior to construction commencing in the vicinity of CH 740, schedule construction activities to commence between January to July (outside the breeding season of the Little Eagle). Where this is not possible, investigate the potential options for relocation of an unoccupied nest to a suitable location determined by an appropriately qualified ecologist, with relocation to be complete before July.	During Construction	Section 8.19
ABD-1	Vegetation clearance management	The proposed access tracks in the northeast and southeast of the accommodation camp site would be located within existing disturbed areas/exotic grassland areas where possible. Surveys would be conducted within PCT 76 (Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions) during detailed design to ensure the siting of the access tracks avoids impacts on PCT 76 as far as possible. If impact on PCT 76 is unavoidable, tree clearing would be minimised by locating access tracks in vegetation gaps visible within aerial imagery, and the existing mapping and refined upon site inspection, targeting areas of previous disturbance/exotic grassland to minimise potential impacts to derived native grassland.	During Construction	Section 8.19
ABD-2	Light disturbance	Lighting of the accommodation camp would be designed in accordance with best practice design to limit impacts on wildlife and minimise light spill to woodland area. including AS/NZS 4282:2019 (Outdoor Lighting Obtrusive Effects). This would include the following measures:	During Construction	Section 8.19

Ref.	Issue	Mitigation Measure	Timing	BMSP Reference
		- orient lighting away from native vegetation patches where possible and focus light on intended area (avoid light spill into vegetated areas) - where light impacts to vegetation cannot be avoided, use lowest intensity lighting appropriate for the task or consider modifying spectral composition (i.e. reduced or filtered light of blue, violet or ultraviolet wavelengths) to reduce impact.		
LV-3	Batter slopes in contrast with the existing landform	Batter slopes would be integrated into the surrounding landscape as far as practicable. Appropriate slope stabilisation would be integrated into batter design to ensure successful rehabilitation and stabilisation.	During Construction	Section 8.19
HF-7 and WQ-4	Dewatering of farm dams that require relocation and/or decommissioning	A dam dewatering protocol would be developed as part of the soil and water management plan. It would consider: - options for reuse of water in the dam - licensing and approval requirements, where relevant - the quality and quantity of the water to be released, where relevant - strategies to minimise impacts on native, threatened or protected species - strategies to minimise spread of nuisance flora and fauna species.	During Construction	Soil and Water Management Sub-plan Appendix E
LV-5	Landscape character and visual impacts	Rehabilitation of disturbed areas would be undertaken progressively in accordance with the rehabilitation strategy (mitigation measure BD-8 and the appendix of the landscape character and visual impact assessment for the proposal) to be undertaken during detailed design and individual property plans (where relevant).	During Construction	Visual and Landscape Impact Mitigation Plan Section 8.19
LV-8	Landscape character and visual impacts	Vegetation provided in accordance with the rehabilitation strategy (mitigation measure BD -8) and the urban design and landscape plan (mitigation measure LV-2) would be subject to ongoing monitoring and maintenance in accordance with ARTCs standard operating procedures.	After Construction	Rehabilitation Strategy Visual and Landscape Impact Mitigation Plan

2.1.4 Sustainability

In accordance with CoA E148, the CSSI is required to achieve a minimum ‘excellent’ rating for both ‘Design’ and ‘As built’ civil works, under the ISC of Australia infrastructure rating tool, or through the use of an equivalent process or an equivalent level of performance using a demonstrated equivalent rating tool. JHG will be delivering a the ISC rating using v1.2.

The implementation of ISC requirements is embedded across all relevant works and environmental management practices. Biodiversity will be managed under the relevant Infrastructure Sustainability Council (ISC) Scheme credits including Eco-1 and Eco-2 and will be aligned with commitments made in the Project Sustainability Management Plan. key requirements, goals and measures relevant to biodiversity under the ISC Ratings Scheme are provided in Table 2-4.

Table 2-4 ISC Rating Requirements for Biodiversity

Credit*	Credit Name	Benchmark	Must Statement	Where addressed
Eco-1	Ecological Value	**Level 1 –** The ecological value of the infrastructure site is maintained	An ecological management plan (or similar) must be developed and implemented that prioritises minimising ecological impacts, and is managed, reviewed or audited by a suitably qualified professional.	This BMSP Section 8.2
		Level 1-3 – The ecological value of infrastructure site is enhanced by 0 to 20%. Fractions of Levels may be achieved on a sliding scale up to 20% for Level 3.	There are two methods for ecological assessment which are allowed under this credit. The first is a simple assessment using an 'Ecological Value Calculator'. This approach may be used where Ecology has low or medium Materiality. The second method is a more sophisticated approach using 'Ecological Impact Assessment' (EcIA). This method must be used where Ecology has high or very high Materiality. Second method requirements: - EcIA must be managed, reviewed or audited by a suitably qualified professional. - It must be demonstrated that it is "probable" (at least a 50% chance) that the enhancement can be achieved. - Offsets used under this credit must be calculated and assessed, as a priority, in accordance with any existing regional policy that sets out specific measurement criteria. - Evidence must be provided that demonstrates how ecological values have been maintained or enhanced, using quantifiable metrics where possible. These metrics must be specific to the features and values impacted, and developed by a suitably qualified professional. - If financial or indirect offsets are proposed, evidence must be provided that the offset provided will benefit the impacted matter/s. - Evidence must be provided that shows how the offset achieves a maintenance or enhancement outcome using accepted metrics that are currently in use in various jurisdictions, or are developed by a suitably qualified professional. - If land-based offsets are proposed, evidence must also be provided that shows what actions will be implemented on the offset site to achieve maintenance or enhancement, ensuring these are additional to baseline duty of care - Evidence must also be provided that demonstrates how the offset area will be protected and managed in perpetuity for conservation purposes. - If it is desired to exceed the requirements in any existing region policy or such processes do not exist, then: It must be demonstrated that the offsets are permanent and that management regimes are in place to ensure stated outcomes are achieved or maintained - Voluntary offsetting beyond regulatory requirements may provide evidence towards enhancement. The extent of the enhancement must be quantified by a SQP. It must be demonstrated that the ecological value of the entire site is maintained or enhanced.	Section 8.17 Connectivity Strategy BGWRP
Eco-2	Habitat Connectivity	**Level 1 –** There is a low or moderate degree of existing habitat connectivity identified. AND	- Offsets used under this credit must be calculated and assessed, as a priority, in accordance with any existing regional policy that sets out specific measurement criteria.	Section 8.17

		The existing degree of habitat connectivity is maintained (offsetting allowed).	- It must be demonstrated that the offsets are permanent and that management regimes are in place to ensure stated outcomes are achieved or maintained - If financial or indirect offsets are proposed, evidence must be provided that the offset provided will benefit the impacted matters. - Evidence must be provided that shows how the offset achieves a maintenance or enhancement outcome using accepted metrics that are currently in use in various jurisdictions or are developed by a SQP. - If land-based offsets are proposed, evidence must also be provided that shows what actions will be implemented on the offset site to achieve maintenance or enhancement. - Evidence must also be provided that demonstrates how the offset area will be protected in perpetuity for conservation purposes	
		Level 2 – There is a low or moderate degree of existing habitat connectivity identified. AND The existing degree of habitat connectivity is enhanced (offsetting allowed). OR There is a high degree of existing habitat connectivity identified. AND The existing degree of habitat connectivity is maintained (offsetting allowed).	'- The degree of habitat connectivity before and after infrastructure development must be based on ecological assessment. - It must be demonstrated that it is “probable” (at least a 50% chance) that the enhancement can be achieved. - Voluntary offsetting beyond regulatory requirements may provide evidence towards enhancement. The extent of the enhancement must be quantified by a SQP. It must be demonstrated that the ecological value of the entire site is maintained or enhanced.	Connectivity Strategy
		Level 3 – There is a low or moderate degree of existing habitat connectivity identified. AND The existing degree of habitat connectivity is enhanced (with no offsetting). OR There is a high degree of existing habitat connectivity identified. AND The existing degree of habitat connectivity is maintained (with no offsetting).	-	Connectivity Strategy

* Source: Infrastructure Sustainability Council (ISC) Ratings Scheme (https://www.iscouncil.org/is-ratings/)

2.2 Definitions and Abbreviations

Definitions and abbreviations to be applied to the BMSP are listed below in Table 2-5.

Table 2-5 – Definitions and abbreviations

Term / Abbreviation	Definition / Expanded text
AMS	Activity Method Statement
ARTC	Australian Rail Track Corporation
BA Act	*Biosecurity Act 2015*
BAM	Biodiversity Assessment Method
BC Act	*Biodiversity Conservation Act 2016*
BDAR	Biodiversity development assessment report V11.1, May 2024
BGWRP	Box Gum Woodland Restoration Plan
BMSP	Biodiversity Management Sub-Plan required under CoA Condition C20
CBIULR	Confirmation of Biodiversity Impacts on Unsurveyed Land Report (Rev 2, 28 July 2025)
CCS	Community Communication Strategy
CEMP	Construction Environmental Management Plan as defined in CoA C12 and C13.
CoA	The Minister's Conditions of Approval for the CSSI
Construction	Includes work required to construct the CSSI as defined in the documents listed in Condition A1, including commissioning trials of equipment and temporary use of any part of the CSSI, but excluding low impact work which is carried out or completed prior to approval of the CEMP
CPHR	Conservation, Programs, Heritage and Regulation Group
CSSI	Critical State Significant Infrastructure, as generally described in Schedule 1 (of the Conditions of Approval), the carrying out of which is approved under the terms of the Conditions of Approval.
Detailed Design	The phase of works within which detailed design is completed, this phase may take place preconstruction or during construction. Detailed design of specific pieces of infrastructure is completed prior to commencement of the infrastructure item in question.
DCCEEW(cwth)	Department of Climate Change, Energy, the Environment and Water
DPHI	Department of Planning, Housing and Infrastructure
DPI	Department of Primary Industries
EIS	The Environmental Impact Statement referred to in Condition A1 submitted to the Planning Secretary seeking approval to carry out the CSSI described in it, as revised if required by the Planning Secretary under the EP&A Act, and including any additional information provided by the Proponent in support of the application for approval of the CSSI
EMS	Environmental Management System
Environment	Includes all aspects of the surroundings of humans, whether affecting any human as an individual or in his or her social groupings.

Term / Abbreviation	Definition / Expanded text
Environmental Assessment Documentation	• Inland Rail – Illabo to Stockinbingal Environmental Impact Statement (ARTC 2022) • Illabo to Stockinbingal Project Response to Submissions (ARTC 2023) • Response to Submissions – Appendix E - Biodiversity Development Assessment Report version 12 (IRDJV, June 2024) • I2S – Mitigation Measures (Inland Rail, April 2024) • Illabo to Stockinbingal (SSI-9604) Additional and Appropriate Measures for Box Gum Woodland Impacts (Inland Rail, June 2024) • Technical and Approvals Consultancy Services: Illabo to Stockinbingal – Box Gum Woodland Gum Flat Rehabilitation Opportunity (IRDJV, June 2024)
EPA	Environment Protection Authority
EP&A Act	*Environmental Planning and Assessment Act 1979*
EPBC Act	*Commonwealth Environment Protection and Biodiversity Conservation Act 1999*
EPL	Environment Protection Licence under the *Protection of the Environment Operations Act 1997*
ER	Environmental Representative for the CSSI as approved by the Planning Secretary
ESCP	Erosion and Sediment Control Plan
EWMS	Environmental Work Method Statement
FM Act	*Fisheries Management Act 1994*
FRNSW	Fire and Rescue NSW
GDEs	Groundwater Dependant Ecosystems
GIS	Geographical Information System
GMRs	Global Mandatory Requirements
GMMSP	Groundwater Mitigation and Management Sub-Plan
IMS	John Holland Integrated Management System
Incident	An occurrence or set of circumstances that causes or threatens to cause material harm, and which may or may not be or cause a non-compliance.
IRPL	Inland Rail Pty Ltd
ISC	Infrastructure Sustainability Council
I2S	Inland Rail – Illabo to Stockinbingal Project
JHG	John Holland Group
KFH	Key Fish Habitat
km	Kilometre
LGA	Local Government Area

Term / Abbreviation	Definition / Expanded text
Material Harm	is harm that: (a) involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial; or (b) results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000, (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment).
MNES	Matters of National Environmental Significance
Non-compliance	An occurrence, set of circumstances or development that is a breach of this approval.
NSW	New South Wales
PCT	Plant Community Type
PDCA	Plan-Do-Check-Act
Planning Secretary	Planning Secretary of the Department (or nominee, whether nominated before or after the date on which this approval was granted).
POEO Act	*Protection of the Environment Operations Act 1997*
Project	Inland Rail – Illabo to Stockinbingal Project
RFS	Rural Fire Service
RMMs	Revised Mitigation Measures
SAP	Sensitive Area Plan
SEARs	Secretary's Environmental Assessment Requirements
SEP	Site Environmental Plan
SMART	Specific, Measurable, Achievable, Realistic and Timely
SRZ	Structural Root Zone
SSI	State Significant Infrastructure
SWMSP	Soil and Water Management Sub-plan required under CoA C22
TEC	Threatened Ecological Community
The 'Blue Book'	*Managing Urban Stormwater – Guidelines published by Landcom, 2004* and used for industry best practice erosion and sediment control planning and management
TPZ	Tree Protection Zones
VLIMP	Visual and Landscape Impact Mitigation Plan
WoNS	Weed of National Significance
WM Act	*Water Management Act 2000*
Work	Any physical work for the purpose of the CSSI including construction and low impact work but not including operational maintenance work. *Note: that 'work' does not include ecological surveys, inclusive of woodland bird and glider monitoring.*

3 Introduction

3.1 Context

This BMSP forms part of the Construction Environmental Management Plan (CEMP) for the Project.

This BMSP has been prepared to address the requirements related to biodiversity management associated with CoA (SSI-9406), the measures listed in the Environmental Impact Statement (EIS) as amended by the Submissions Report (known as RMMs), Environmental Protection License (EPL issued under the Protection of the Environment Operations Act 1997 (POEO Act), *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) Controlled Action Approval (EPBC Referral 2018/8233) and all applicable legislation, guidelines, standards and specifications.

3.2 Background

3.2.1 The Project

The Project is located in south-western New South Wales (NSW) in the Riverina region (refer to Figure 1 1). Illabo is a small town located at the southern end of the alignment 16 kilometres (km) north-east of Junee in the Junee Local Government Area (LGA). Stockinbingal is situated at the northern end of the Project, approximately 20 km north-west of Cootamundra in the Cootamundra–Gundagai Regional LGA. The major towns surrounding the Project are Wagga Wagga, about 50 km to the south, Young to the north-east and Cootamundra to the east.

The Project comprises a new rail corridor that would connect Illabo to Stockinbingal. The alignment branches out from the existing rail line north-east of Illabo and travels north to join the Stockinbingal–Parkes Line west of Stockinbingal. The route will travel primarily through undeveloped land predominantly used for agriculture. The Project includes modifications to the tie-in points at Illabo and Stockinbingal to allow for trains to safely enter and exit the Illabo to Stockinbingal section of Inland Rail. The alignment also crosses several local and private roads, watercourses and privately owned properties. Additionally, no major towns are located within the Project site between Illabo and Stockinbingal.

The Project will include a total extent of approximately 42.5 km, including 39 km of new, greenfield railway which will incorporate the following key features:

- single track standard gauge on a combination of existing ground level embankments and within cuttings
- new bridges and road overpasses
- crossing loop and maintenance siding
- new level crossings, stock crossings and upgrades to existing level crossings
- new major stormwater diversion and minor drainage works associated with installation and upgrades to culverts.

The Project will also include upgrades to approximately 3 km of existing track associated with tie-in works and construction of an additional 1.7 km of new track to maintain the existing rail network connections. Road upgrade works will also be undertaken to re-align approximately 1.4 km of Burley Griffin Way to provide a road-over-rail bridge at Stockinbingal. Re-alignment of Ironbong Road will also be completed to allow for safe sight lines. A temporary workforce accommodation camp will also be constructed to house the workforce for the duration of the Project. Key features of the Project are shown on Figure 3-1 and Figure 3-2.

A detailed Project description is provided in Section 3 of the CEMP.

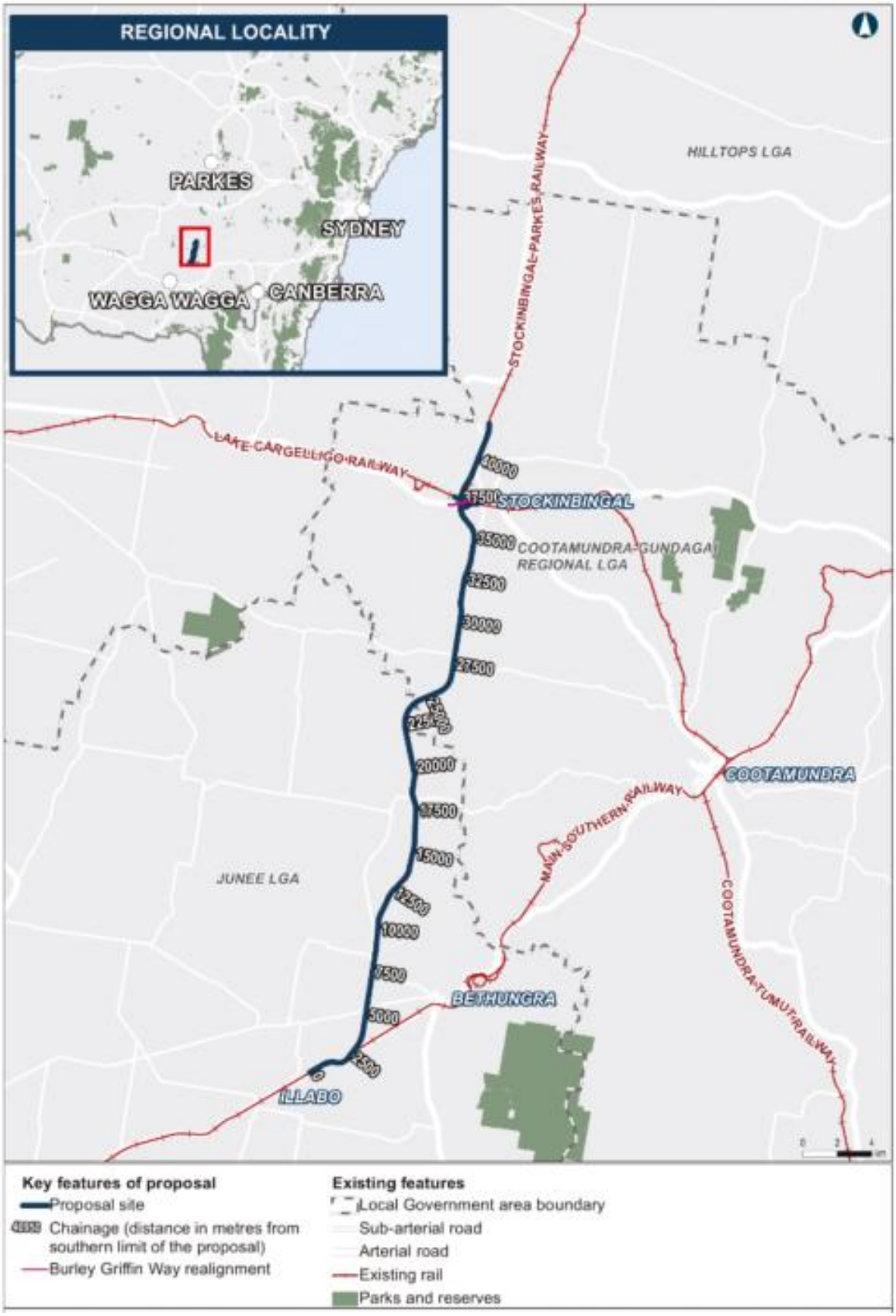


Figure 3-1 Key features of the Project

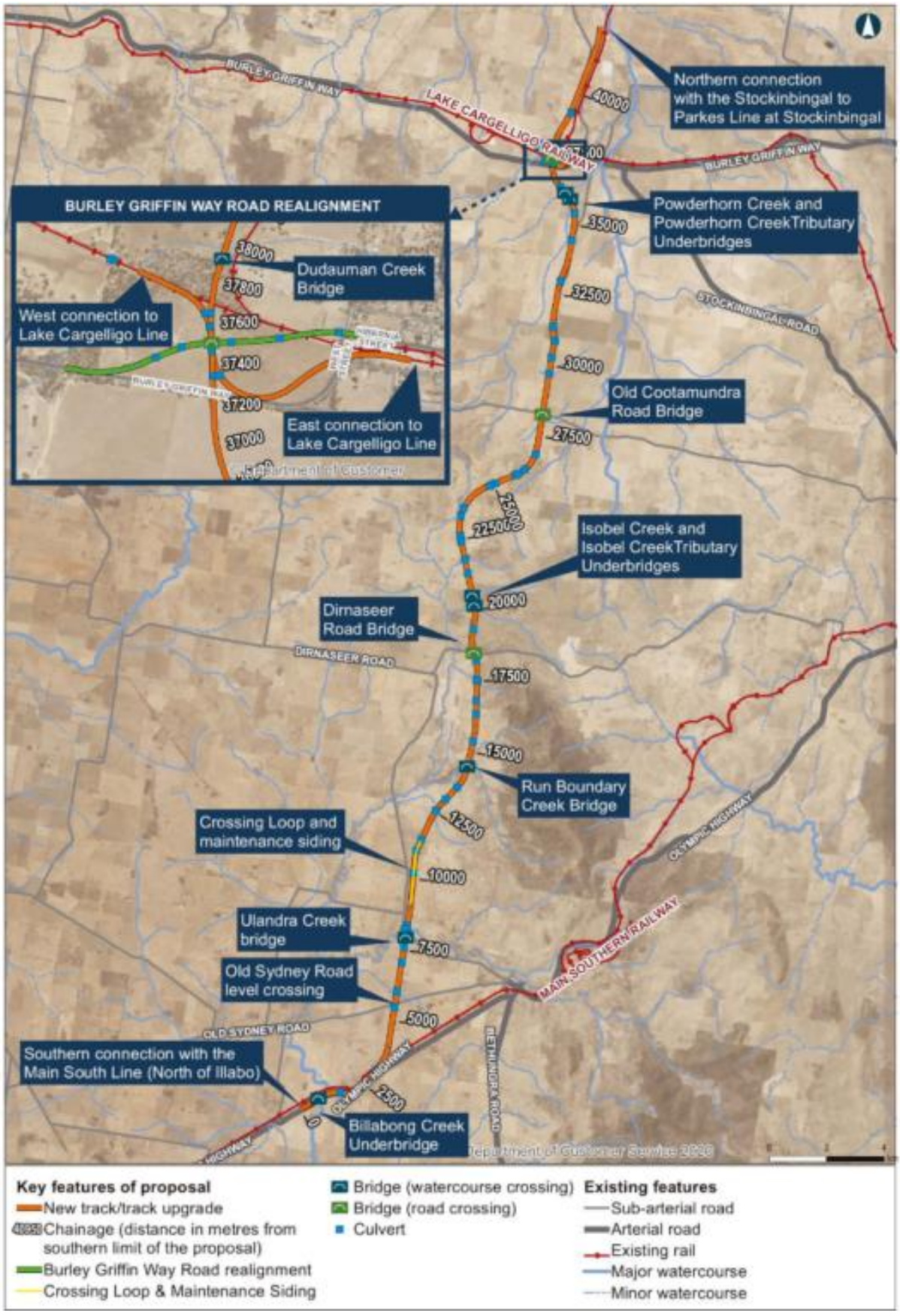


Figure 3-2 Key features of the Project and existing features

3.2.2 Statutory Context

The Project was declared to be Critical State Significant Infrastructure (CSSI) in 2021, requiring approval under Division 5.2 of the *NSW Environmental Planning and Assessment Act 1979* (EP&A Act). In accordance with the Secretary's Environmental Assessment Requirements (SEARs) (dated 30 April 2021), an EIS was prepared by Australian Rail Track Corporation (ARTC) in August 2022. The EIS was exhibited by the Department of Planning, Housing and Infrastructure (DPHI) for a period of six (6) weeks, commencing on 14 September 2022 and concluding on 26 October 2022.

Following public exhibition of the EIS, ARTC prepared a Submissions Report to respond to submissions and describe Project design refinements.

Approval for the Project was granted on 4 September 2024 by the Minister for Planning and Public Spaces (SSI-9406) and was subject to a number of CoAs.

The Project was determined to be a controlled action under the EPBC Act. The Project received EPBC Controlled Action Approval from Department of Climate Change, Energy, the Environment and Water (DCCEEWcth) (EPBC Referral 2018/8233) on 28 October 2024.

3.3 Scope of the plan

The BMSP will outline how the Project will minimise environmental risks and achieve environmental outcomes associated with biodiversity management. This BMSP:

- Provides a description of Project construction activities
- Details environmental obligations attached to the Project.
- Identifies legislation and external licenses, permits and approvals required for the Project.
- Describes objectives and targets.
- Describes the following biodiversity items:
- the locations and requirements for pre-clearing surveys, including terrestrial and aquatic habitats
- protocols for the staged clearing of vegetation and safe tree felling and log removal to reduce the risk of fauna mortality
- measures to avoid and minimise clearing of hollow-bearing trees and paddock trees where practicable
- measures relating to the provision and management of nest boxes, including reuse of hollows and monitoring protocols
- animal handling protocols, including relocation and emergency care
- an unexpected finds protocol
- measures to manage biosecurity risks (including livestock pests/ diseases such as Japanese encephalitis and foot & mouth disease) in accordance with the *Biosecurity Act 2015*
- measures to manage high-threat weeds
- measures to reduce the risk of terrestrial and aquatic fauna mortality/injury
- measures relating to the stripping, stockpiling and management of topsoil where it contains seedbank or weed material.
- Describes compliance management items including roles and responsibilities, training, monitoring and inspections, non-compliance protocols, incident response, auditing, reporting complaints management etc.

- Describes review and improvement requirements for the Project.

3.4 Environmental Management System Overview

3.4.1 Environmental Management System

The Project Environmental Management System (EMS) is based on the ISO 14001 accredited JHG EMS, which itself forms part of the overall JHG Integrated Management System (IMS), tailored to satisfy Project-specific requirements. It provides a framework to ensure an integrated approach to meeting Project requirements and defines how the Project will minimise impacts to the environment. It comprises a combination of governance documentation, Project-specific management plans (including this BMSP), procedures and tools.

The basis for the EMS is the concept of Plan-Do-Check-Act (PDCA), as shown in Figure 3-3.

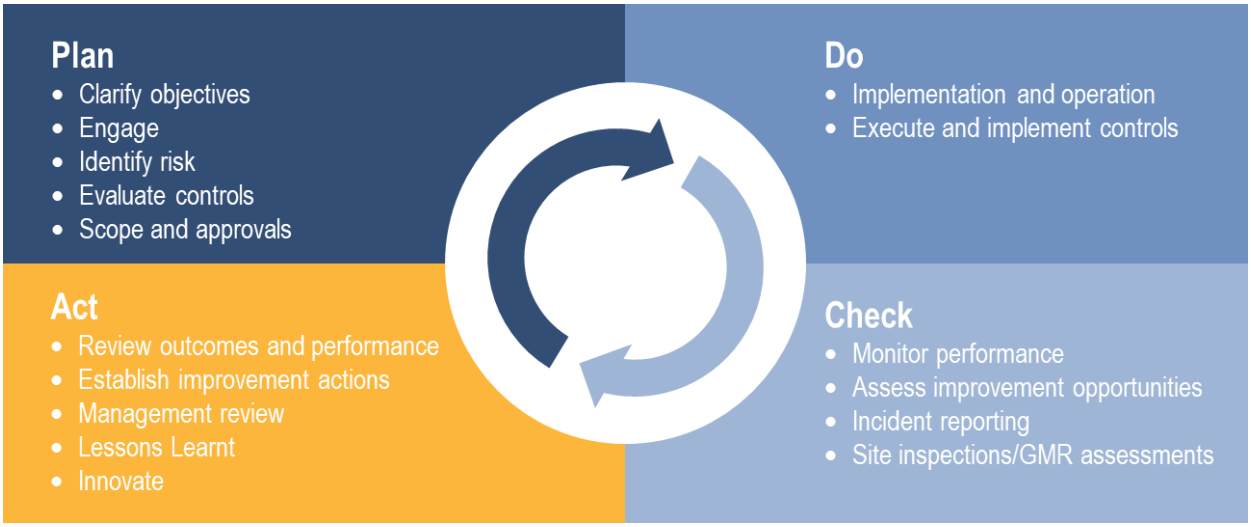


Figure 3-3 PDCA model

The PDCA model provides an iterative process to achieve continual improvement. As applied to the Project environmental processes, it can be briefly described as follows:

- **Plan**: Establish environmental objectives and processes necessary to deliver results in accordance with the JHG environmental policy.
- **Do**: Implement the environmental processes as planned.
- **Check**: Monitor and measure processes against the environmental policy, including its commitments, environmental objectives, and operating criteria, and report the results.
- **Act:** to continually improve the environmental processes.
- The framework introduced in ISO14001 is integrated into a PDCA model within the EMS and in turn the Project CEMP and this BMSS.

In accordance with the JHG Environmental Policy (refer to Appendix A5 of the CEMP), the Project will:

- Continually improve the EMS to enhance performance, through management review and CEMP and BMSP revisions
- Maintain third party certification of the overarching EMS to ISO 14001 with independent verification of implementation and effectiveness.

The EMS provides structure to environmental management of the Project and covers areas such as training, record management, inspections, objectives, and policies. This CEMP has been prepared as part of the EMS using JHG documentation as the basis for some documents (Figure 3-4).

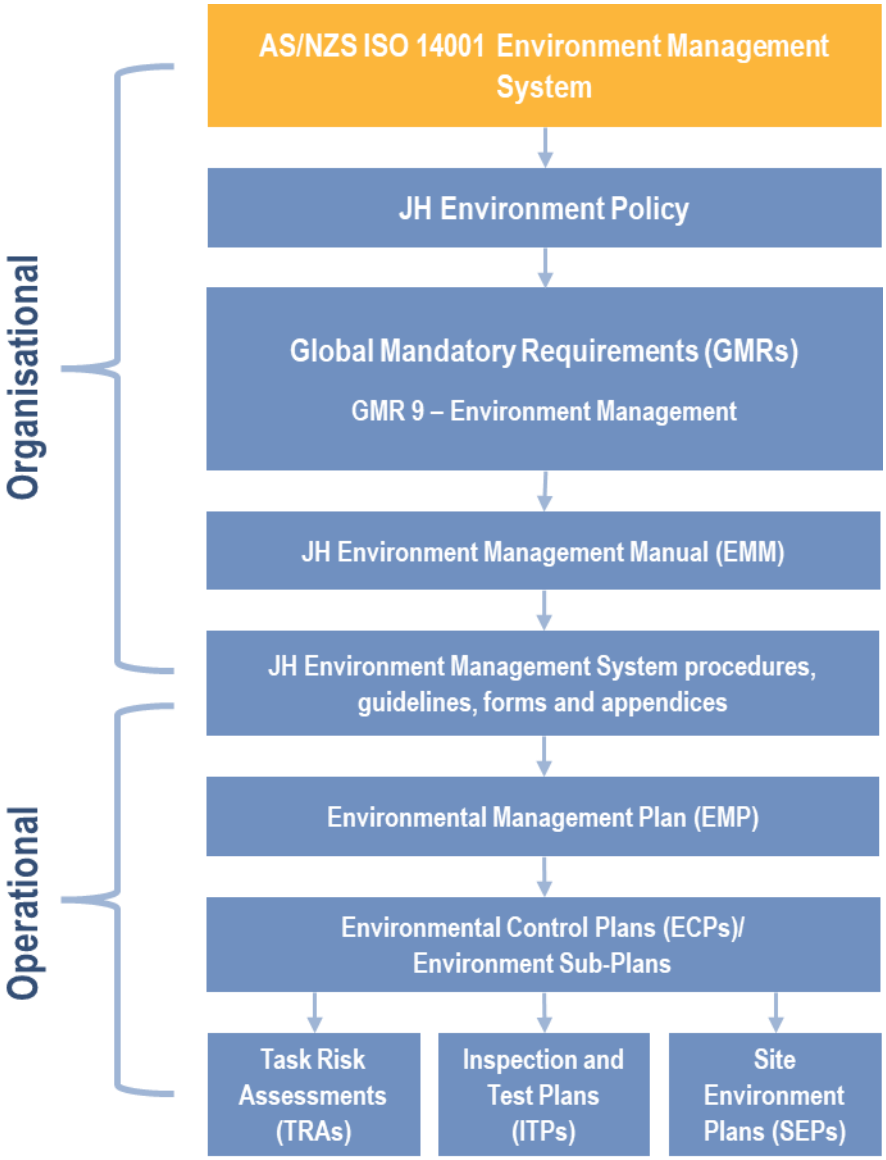


Figure 3-4 – EMS structure

The EMS contains policies, standards, manuals, plans, procedures, processes, and other documents that enable the Project to achieve its objectives through planned and controlled processes.

3.4.2 Global Mandatory Requirements

JHG's Global Mandatory Requirements (GMRs) outline the control strategies and minimum standards for managing, and where possible, eliminating key risks across the Project. These standards have been developed to:

- Minimise the impact of our activities on the environment and communities.
- Reduce our use of natural resources and energy, and the generation of waste.
- Be a reliable and trustworthy partner to our customers, dedicated to providing environmentally sustainable solutions throughout our diverse business.

The GMR's form part of the Project EMS and are to be used as tools in development of planning documents for management of environmental risks / impacts.

GMR's which are relevant to this BMSP and will be implemented include GMR 9 – Environmental Management.

3.4.3 Plan preparation, endorsement and approval

This BMSP has been prepared by suitably qualified personnel from Inti Pty Ltd, JHG with specialist input from biodiversity consultant Bianca Heinze – NGH Technical Lead – Biodiversity and has been endorsed by the Environmental Representative (ER) in accordance with CoA 15. The BMSP will then be submitted to the Planning Secretary for approval (CoA C14) no later than one month before the commencement of construction. Where relevant, CEMP(s) (and relevant CEMP sub-plans) not requiring the Planning Secretary's approval, but requiring ER endorsement, must be submitted to the ER no later than one (1) month before the commencement of construction in accordance with CoA 15. Construction will not commence until the CEMP and all CEMP Sub-plans have been endorsed by the ER and approved by the Planning Secretary.

3.4.4 Interactions with other management plans and strategies

This BMSP is a sub-plan to the CEMP and should also read in conjunction with the Soil and Water Management Sub-Plan (SWMSP) and the Groundwater Mitigation and Management Sub-Plan (GMMSP).

3.5 Consultation

In accordance with CoA C17(c) of the Infrastructure Approval (SSI-9406), JHG is required to consult with the following agencies in relation to this BMSP.

- Regional Delivery within the Conservation, Programs, Heritage and& Regulation Group CPHR (CPHR DCCEEW).

In accordance with CoA C10, a Consultation Summary Report which summarises the consultation with the above agencies has been prepared and provided in Appendix A.

4 Purpose and Objectives

4.1 Purpose

The purpose of this BMSP is to describe how construction impacts on local biodiversity will be minimised and managed during the construction of the Project in accordance with Specific, Measurable, Achievable, Realistic and Timely (**SMART**) principles. These include:

- **S**pecific – biodiversity management measures explored in Section 8 of this Plan specifically speak to JHG's approach to reducing impacts to local fauna and fauna during construction, including proactive management of weed, pests and pathogens and other potential/cumulative biodiversity impacts during construction as identified within the EIS.
- **M**easurable – Inspection and monitoring requirements detailed in Section 9.3 of this Plan include specific measures or indicators for which inspection and monitoring requirements will be triggered. Provision of Project-specific inspection and monitoring requirements for the management of biodiversity, including pre-clearing inspections for tree removal and monitoring of fauna during the dewatering of farm dams.
- **Ac**hievable – Ongoing compliance with relevant infrastructure approval (SSI-94069406), RMMs, EPL and Controlled Action Approval (EPBC 2018/8233) in Section 2.1, is achievable throughout the delivery of the Project and represents the minimum requirements to be implemented by JHG.
- **R**elevant - The management measures outlined in Section 8 of this Plan represent JHG's approach to monitoring and tracking against the objectives, targets and environmental performance outcomes (which are identified in Section 4 of this Plan).
- **T**ime-bound – On a broader scale, the management measures set out within Section 8 of this Plan are required to be implemented for the duration of construction, setting a clear and defined time frame and includes reference to other temporal applications, including during detailed design, pre-construction, post-construction and/or operation.

4.2 Objectives

The objective of this BMSP is to ensure that all avoidance, mitigation and management measures relevant to biodiversity matters within the following documents, are adopted and implemented. The documents are:

- The EIS prepared for the Project
- The Submissions Report prepared for the Project, including the RMMs
- Infrastructure Approval (SSI-9406) and associated CoA
- Commonwealth EPBC Controlled Action Approval (EPBC 2019/2018/8233)
- Relevant conditions of the Project's EPL
- IRPL Specifications
- Legislative requirements detailed in Section 5.1 of this BMSP.
- The Biodiversity Assessment Report (V11.1)
- The Unsurveyed Land Report (Rev 2, 28 July 2025)

4.2.1 Performance Outcomes

Project design and construction will be prepared in consideration of the 'desired performance outcomes' provided in the SEARs. Project-specific performance outcomes are further defined in Chapter 27 (Table 27.7) of the EIS. The environmental performance outcomes related to biodiversity for the Project are included in Table 4-1.

Table 4-1 Biodiversity Performance Outcomes

Item	SEARs Desired Performance Outcome	I2S Specific Environmental Performance Outcomes	Where addressed
Biodiversity	The project design considers all feasible measures to avoid and minimise impacts on terrestrial and aquatic biodiversity. Offsets and/or supplementary measures are assured, which are equivalent to any remaining impacts of project construction and operation.	• The proposal is designed to minimise the surface footprint and impacts on biodiversity • The biodiversity outcome is consistent with the NSW Biodiversity Assessment Method 2020 • Offsets are provided in accordance with the NSW Biodiversity Offsets Scheme.	Section 8.2 Section 8.17

4.3 Targets

The following targets related to biodiversity matters have been identified for implementation during the Project:

- Ensure compliance with the relevant legislative requirements, Infrastructure Approval (SSI-9406), EPBC Controlled Action Approval (EPBC 2018/8233), Submissions Report and relevant RMMs and the Project EPL.
- Ensure training is provided in the form of inductions to relevant Project personnel relating to flora and fauna issues before they begin work on site.
- Implement mitigation measures to minimise flora and fauna impacts during construction.
- No unapproved impacts on threatened species, populations and ecological communities.
- No disturbance to flora and fauna outside the proposed Project footprint unless otherwise specified, or required under, other approval pathways.
- Minimise impact to aquatic biodiversity values.
- Minimise removal of habitat trees.
- Do not exceed clearing limits within the EPBC Controlled Action Approval (EPBC 2018/8233) and Infrastructure Approval (SSI-9406).
- Compliance with JHG GMRs.

5 Environmental Requirements

5.1 Relevant legislation and Guidelines

The primary legislation, guidelines and standards relevant to biodiversity management are presented in Table 5-1. Also refer to Appendix A1 of the CEMP for a full register of legal and other requirements for the Project.

Table 5-1 Principal legislation and guidelines relevant to Biodiversity management

Legislation	• *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) • *Environmental Planning and Assessment Act 1979* (EP&A Act) • *Water Management Act 2000* (WM Act) • *Water Act 1912* • *Fisheries Management Act 1994* (FM Act) • *Protection of the Environment Operations Act 1997* (POEO Act) • *Biodiversity Conservation Act 2016* (BC Act) • *Biodiversity Conservation Regulation 2017* • *Biosecurity Act 2015*
Guidelines and Specifications	• *Guidelines for vegetation management plans on waterfront land* (NSW Office of Water, 2022) • *Guidelines for controlled activities on waterfront land – Riparian Corridors* (NRAR, 2022) • *Riverina Regional Strategic Weed Management Plan 2023-2024 (latest version dated 2023-2027)* • *Guidelines for biological survey and mapped data,* Commonwealth of Australia (2020) • *Guide to providing maps and boundary data for EPBC Act projects,* Commonwealth of Australia (2021) • *Guidelines for controlled activities on waterfront land – Riparian corridors* (NRAR,2022) • *Matters of National Environmental Significance – Significant Impact Guidelines 1.1* (Department of the Environment, 2013) • *Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities – Working Draft* (NSW Department of Environment and Conservation, 2004) • *NSW State Groundwater Dependant Ecosystem Policy* (DLWC, 2002) • *Biodiversity Offset Scheme* (OEH, 2022) • *NSW Guide to Surveying Threatened Plants* (OEH, 2016) • *Why do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings* (Fairfull and Witheridge, 2003) • *Policy and Guidelines for Fish Habitat Conservation and Management* (DPI Fisheries, 2013) • *Factsheet: Vehicle Biosecurity Kit – Plant Industries* (Department of Primary Industries, 2012) • *Noxious and environmental weed control handbook – A guide to weed control in non-crop, aquatic and bushland situations 7th Edition (DPI, 2018 Australian Weeds Strategy 2017–2027* • *Australian Standard AS 4373 Pruning of Amenity Trees* • *Australian Standard 4970 – 2009 Protection of Trees* • *NSW WorkCover Code of Practice for the Amenity Tree Industry* (1998) • *IS Technical Manual version 1.2* (ISC, 2018) • *ARTC Landscape and Rehabilitation Strategy* (0-0000-900-ELE-00-ST-0001) • *ARTC Landscape and Rehabilitation Framework* (0-0000-900-ELE-00-GU-0001)

	• *ARTC Inland Rail Program Biosecurity Strategy* (0-0000-900-EEC-00-ST-1000) • *ARTC NSW – Legislation, Guidelines and Policies - Flora and Fauna Guideline* (5-0000-902-EEC-00-GU-0003) • *ARTC NSW – Legislation, Guidelines and Policies, Flora and Fauna Management Sub-Plans Guideline* (5-0000-902-EEC-00-GU-0009) • Relevant Recovery Plans and Threat Abatement Plans

6 Existing Environment

The following information has been summarised based on the Environmental Assessment Documentation contained within CoA A1.

6.1 Terrestrial Fauna

6.1.1 Habitat

While there are patches of moderate to good quality fauna habitat with features like tree canopy, hollow-bearing trees, woody debris, an intact shrub layer, and rock outcrops, the connectivity between these patches is often limited by cleared agricultural land and roads. This makes much of the habitat suitable for highly mobile species such as birds and some mammals, but less so for other species. Overall, the site provides moderate quality habitat for terrestrial fauna with large areas of low-quality habitat. Two types of terrestrial habitats were identified within the Project site as detailed below.

Open woodland habitat, the majority being in moderate condition. Better quality fauna habitat is typically in areas with reduced livestock grazing and agricultural practices, retaining microhabitats like fallen timber and shrubs. These habitats typically consist of *Eucalyptus camaldulensis* (River Red Gum) and *Eucalyptus microcarpa* (Western Grey Box) as canopy species, and *Maireana microphylla* (Small-leaved Bluebush), *Salsola australis* and *Sclerolaena muricata* (Black Rolypoly) as mid to low-storey species. Microhabitats such as leaf litter, fallen timber, and rocky outcrops support ground-dwelling fauna, including reptiles and small mammals

Cleared grassland and agricultural land which consists of predominantly cleared habitat with scattered trees including *Eucalyptus camaldulensis* (River Red Gum) and *Eucalyptus microcarpa* (Western Grey Box) which may provide foraging habitat for nectivorous and seed-eating fauna, nesting opportunities for birds, and roosting sites for microbats. The mid to low-storey vegetation was often highly disturbed, offering only marginal habitat for highly mobile species.

Based on the data provided within Section 3.5 of the Unsurveyed Land Report (Rev 2, 28 July 2025) within the above habitats, there are 65 scattered trees requiring credits.

6.1.2 Fauna Species

A total of 106 fauna species are found within the Project site. The species listed in Table 6-1 are those which are threatened under either the BC Act and EPBC Act and whether they are present onsite or assumed to be present and therefore included in ecosystem credits. Refer to the BDAR for further details.

Table 6-1 Threatened fauna species present or assumed present

Scientific name	Common name	BC Act[1]	EPBC Act[1]	Present or assumed present
Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	V	-	Present onsite
Nyctophilus corbeni	Corben's Long - eared Bat	-	V	Assumed to be onsite
Stagonopleura guttata	Diamond Firetail	V	V	Present onsite
Pteropus poliocephalus	Grey-headed Flying-fox	V	V	Assumed to be onsite
Keyacris scurra	Key's Matchstick Grasshopper	E	E	Assumed to be onsite
Anthochaera phrygia	Regent Honeyeater	CE	CE	Assumed to be onsite
Aphelocephala leucopsis	Southern Whiteface	V	V	Present onsite
Polytelis swainsonii	Superb Parrot	V	V	Present onsite
Lathamus discolor	Swift Parrot	E	CE	Assumed to be onsite
Hirundapus caudacutus	White-throated Needletail	-	V, M	Assumed to be onsite
Apus pacificus	Fork-tailed Swift	-	M	Assumed to be onsite
Hieraaetus morphnoides	Little Eagle	V	-	Present onsite
Petaurus norfolcensis	Squirrel Glider	V	-	Present onsite
Pomatostomus temporalis	Grey-crowned Babbler (eastern subspecies)	V	-	Present onsite
Epthianura albifrons	White-fronted Chat	V	-	Present onsite
Falco subniger	Black Falcon	V	-	Present onsite
Petroica phoenicea	Flame Robin	V	-	Present onsite
Artamus cyanopterus cyanopterus	Dusky Woodswallow	V	-	Present onsite
Merops ornatus	Rainbow Bee-eater	-	M	Present onsite
Circus assimilis	Spotted Harrier	V	-	Present onsite
Lophoictinia isura	Square-tailed kite	V	-	Present onsite
Rostratula australis	Australian Painted Snipe	E	E	Assumed to be onsite
Callocephalon fimbriatum	Gang-gang Cockatoo	V	E	Assumed to be onsite
Calyptorhynchus lathami	Glossy Black-Cockatoo	V	V	Assumed to be onsite
Falco hypoleucos	Grey Falcon	E	V	Assumed to be onsite

Scientific name	Common name	BC Act[1]	EPBC Act[1]	Present or assumed present
Melanodryas cucullata cucullata	Hooded Robin (south-eastern form)	V	E	Assumed to be onsite
Grantiella picta	Painted Honeyeater	V	V	Assumed to be onsite
Lophochroa leadbeateri	Pink Cockatoo (eastern)	-	E	Assumed to be onsite
Dasyurus maculatus maculatus	Spotted-tailed Quoll	V	E	Assumed to be onsite

[1]Listed under the BC Act and EPBC: V = Vulnerable, E = Endangered, CE = Critically Endangered, M = Migratory

6.2 Terrestrial Flora

6.2.1 Plant Community Types

The majority of native vegetation within the Project site has been previously cleared for agriculture and other land uses, resulting in large scale fragmentation and degradation of biodiversity values in the area, however there are patches of remnant native vegetation of varying size and condition. Eight Plant Community Types (PCTs) are present within the Project, totalling an area of 73.15ha. Six of these PCTs conform to a Threatened Ecological Community (TEC) listed under both the BC Act and the EPBC Act as shown in Table 6-2. It's noted that additional ecological surveys are required to confirm/ground-truth PCT's in 'Unsurveyed Land' which is further detailed in Section 6.2.2. Figures showing known biodiversity value along the Project footprint are provided in Appendix F. These figures incorporate outcomes from both the Revised BRAD and Unsurveyed Lands Report and include vegetation zones and scattered trees, revised flora and fauna species polygons, the location of PCTs and occurrence of TECs.

Table 6-2 PCTs and the equivalent TECs under the BC Act and EPBC Act

Native PCT Name	Equivalent TEC under BC Act	Equivalent TEC under EPBC Act
PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions	Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions (endangered)	Grey Box (*E. microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-Eastern Australia (endangered)[1]
PCT 80 Western Grey Box - White Cypress Pine tall woodland on loam soil on alluvial plains of NSW South Western Slopes Bioregion and Riverina Bioregion		
PCT 266 White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion	White Box Yellow Box Blakely's Red Gum Woodland (endangered)	White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (critically endangered)[2]
PCT 276 Yellow Box grassy tall woodland on alluvium or parna loams and clays on flats in NSW South Western Slopes Bioregion		
PCT 277 Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion		
PCT 347 White Box - Blakely's Red Gum shrub/grass woodland on metamorphic hillslopes in the mid-southern part of the upper slopes sub-region of the NSW South Western Slopes Bioregion		
PCT 309 Black Cypress Pine - Red Stringybark - red gum - box low open forest on siliceous rocky outcrops in the NSW South Western Slopes Bioregion	Not listed as a TEC	Not listed as a TEC
PCT 79 River Red Gum shrub/grass riparian tall woodland or open forest wetland mainly in the upper slopes sub-	Not listed as a TEC	Not listed as a TEC

Native PCT Name	Equivalent TEC under BC Act	Equivalent TEC under EPBC Act
region of the NSW South Western Slopes Bioregion and western South Eastern Highlands Bioregion		

[1] Vegetation classified as 'poor' condition is not considered TEC under the EPBC Act and has therefore not been included in TEC calculations.

[2] Vegetation classified as 'poor' 'low' or 'planted native' condition is not considered TEC under the EPBC Act and has therefore not been included in TEC calculations.

Vegetation within the Project site that was not able to be assigned to a recognised PCT was assigned to a miscellaneous ecosystem (non-native vegetation zone) referred to as exotic species/ornamental landscape plantings. This vegetation was predominantly recorded has highly disturbed exotic grasslands with limited native vegetation and in some areas planted native vegetation.

6.2.2 Unsurveyed land

Some of the PCT's identified in the EIS were not able to be physically surveyed during the EIS development phase due to restricted access, time constraints, or ongoing design changes. As a result, this the quantity of each PCT within 'unsurveyed land' for the EIS was determined using desktop methods, predictive modelling, and extrapolated data from surveyed regions.

In accordance with CoA E31, additional ecological surveys have been undertaken to confirm/ground truth PCT's in unsurveyed land and are described within the Unsurveyed Land Report (Rev 2, 28 July 2025).

6.2.3 Flora Species

A total of 166 flora species were found within the Project site, of which 109 were native. No threatened flora species were recorded within the subject land during survey undertaken for the BDAR. However, not all areas of the subject land were able to be accessed for targeted flora surveys, therefore using the precautionary approach, the species contained within Table 6-3 were assumed to be present as part of surveys completed and discussed in the Unsurveyed Land Report (Rev 2, 28 July 2025).

Table 6-3 Threatened flora species

Scientific name	Common name	BC Act[1]	EPBC Act[1]
Caladenia arenaria	Sand-hill Spider Orchid	E	E
Swainsona murrayana	Slender Darling Pea	V	V

[1]Listed under the BC Act and EPBC: V = Vulnerable, E = Endangered, CE = Critically Endangered

6.2.4 Connectivity

Overall, the landscape has been heavily fragmented due to agricultural practices. The existing connectivity within the Project site includes watercourses comprising of Billabong Creek, Ulandra Creek, Ironbong Creek, Run Boundary Creek and road reserves of Old Sydney Road, Ironbong Road and Dirnaseer Road.

These connectivity features link with the largest intact patch of remnant vegetation occurring to the east of the Project site in association with the nearby Bethungra and Ulandra Mountain range. Watercourses and associated riparian vegetation with the rivers and streams mentioned above predominantly run from east to west and provide the remaining link to movement between Bethungra and Ulandra Mountain range to the east and areas to the west.

Linear habitat elements such as roadside vegetation and plantings along fence lines also provide connectivity between patches of vegetation in paddocks and scattered trees. This network of vegetation increases the permeability of the landscape.

6.2.5 Weed and pathogens

A high number of introduced flora species are located within the Project site, particularly in areas with a history of agricultural use, where native vegetation has been heavily disturbed or removed. Of these weed species, seven are listed as high threat weeds under the BC Act, and one as a Priority Weed under the *Biosecurity Act 2015* and listed as a Weed of National Significance (WoNS) as shown in

Table 6-4.

Table 6-4 Weeds present in the Project

Scientific name	Common name	HTW	Priority Weed	WoNS
Alternanthera pungens	Khaki Weed	Yes	-	-
Bromus diandrus	Brome grass	Yes	-	-
Hypericum perforatum	St John's-wort	Yes	-	-
Lycium ferocissimum	African Boxthorn	-	Yes	Yes
Paspalum dilatatum	Paspalum	Yes	-	-
Romulea rosea var. australis	Onion Grass	Yes	-	-
Rosa rubiginosa	Sweet Briar	Yes	-	-
Xanthium spinosum	Bathurst Burr	Yes	-	-

In addition to the above, vegetation within the miscellaneous zone/non-native ecosystem (Section 6.2) is predominately highly disturbed exotic grasslands which are dominated by *Alternanthera pungens*, (Khaki Weed), A*vena fatua* (Wild Oat), *Bromus spp*., *Trifolium spp*., *Paspalum dilatatum* (Paspalum) and *Cucumis myriocarpus subsp. leptodermis* (Paddy melon).

Weeds and Pathogens, as well as pests and disease (i.e. including Japanese encephalitis and foot and mouth disease) are addressed in the Biosecurity Management Plan. (BSMP).

6.3 Aquatic Biodiversity

6.3.1 Key Fish Habitat

The Project site crosses six named watercourses which are classified as Key Fish Habitat (KFH), and numerous other minor drainage lines and tributaries as detailed in Table 6-5. All of the waterways within the Project site are highly ephemeral, flowing only after rainfall and quickly receding. The watercourses have been modified by agricultural land practices with minimal native vegetation retained along the banks of the watercourses. Further details on these waterways are provided in the SWMSP.

Table 6-5 Key Fish Habitat within the Project

Waterway	Strahler stream order	Habitat sensitivity type	Classification of waterway for fish passage
Billabong Creek	6th order	Type 3 – minimal	Class 3 – minimal
Ulandra Creek	5th order	Type 3 – minimal	Class 3 – minimal
Run Boundary Creek	3rd order	Type 3 – minimal	Class 3 – minimal
Isobel Creek	3rd order	Type 2 – moderate	Class 2 - moderate
Powder Horn Creek	3rd order	Type 3 – minimal	Class 4 – unlikely
Dudauman Creek (two crossings)	3rd order	Type 3 – minimal	Class 3 – minimal

6.3.2 Farm Dams

There are several farm dams within the Project site. The farm dams may contain protected native species, such as turtles and eels, for example the *Anguilla reinhardtii* (Longfin Eel). The edges of drainage lines and dams with aquatic vegetation would provide refuge habitat for amphibian species such as *Crinia parinsignifera* (Beeping Froglet) and *Limnodynastes tasmaniensis* (Spotted Grass Frog).

6.3.3 Threatened ecological communities and species

Endangered aquatic ecological communities listed under the FM Act within the Project site are provided in Table 6-6.

Table 6-6 TECs under the FM Act

Threatened Ecological Community	Catchment
Lowland Lachlan River aquatic ecological community	Dudauman Creek
Lowland Murray River aquatic ecological community.	Billabong Creek, Ulandra Creek, Run Boundary Creek and Isobel Creek

Due to the ephemeral nature of the waterways and lack of preferred habitat, no threatened aquatic species are expected to be present in waterways within the Project site. However, it's noted that these waterways flow into larger river systems which may contain threatened species including *Galaxias rostratus* (Flathead Galaxias), *Notopala hanleyi* (Hanley's River Snail), *Maccullochella peelii* (Murray Cod), *Euastacus armatus* (Murray Crayfish), *Mogurnda adspersa* (Southern Purple Spotted Gudgeon), *Maccullochella macquariensis* (Trout Cod) and *Ambassis agassizii* (Western population of Olive Perchlet).

6.3.4 Wetlands of national and international importance

Bethungra Dam Reserve, a wetland of national importance, occurs approximately 8 km to the east of the Project site. There are no waterways within the Project site which flow into this wetland. There are no international wetlands of importance (Ramsar) in the vicinity of the Project site. Farm dams and small areas of wetland vegetation may provide habitat for transient threatened or migratory waterbirds.

While the Project site does not directly intersect any wetlands of national or international importance, the surrounding region includes notable wetland areas that hold ecological and conservation significance.

6.4 Groundwater Dependent Ecosystems

Eight Groundwater Dependant Ecosystems (GDEs) have been identified within the Project area that may rely on the subsurface presence of groundwater for their ecological processes and health. Within these ecosystems, the following high potential GDEs have been identified.

Four high potential aquatic (river) GDEs—Billabong Creek, Ulandra Creek, Ironbong Creek and Dudauman Creek. These ecosystems depend on subsurface groundwater, particularly during periods of low surface water availability, to maintain hydrological and ecological balance.

Four high potential terrestrial (vegetation) GDE species—Blakely's red gum, yellow box, western grey box and white cypress pine. These vegetation communities rely on groundwater to sustain growth, particularly in fragmented and degraded landscapes where surface water is scarce.

6.5 Matters of National Environmental Significance

A referral under the EPBC Act was prepared and submitted to the Department of Climate Change, Energy, the Environment and Water (DCCEEWcth). The Project was determined to be a controlled action

under the EPBC Act based on it's potential to impact on the following Matters of National Environmental Significance (MNES):

- Grey Box *(Eucalyptus microcarpa)* Grassy Woodlands and Derived Native Grasslands of South-Eastern Australia – listed as Critically Endangered.
- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland – listed as Critically Endangered
- Swift Parrot (*Lathamus discolor*) – critically endangered under the EPBC Act
- Regent Honeyeater (*Anthochaera phrygia*) – critically endangered under the EPBC Act
- Superb Parrot (*Polytelis swainsonii)* – vulnerable under the EPBC Act

Based on field surveys and assessment completed, 11 threatened flora species are considered to have moderate or higher likelihood of occurrence within or in proximity to the Project area.

A search of the EPBC Protected Matters Search Tool identified 25 species listed under the EPBC Act as being known to occur or considered likely to occur within the study area.

Based on desktop review 11 migratory fauna species were identified to potentially occur. No listed Migratory species were recorded within the subject land during surveys.

No matters of national environmental significance, including nationally listed aquatic dependent threatened species, endangered populations, EECs or aquatic migratory species are expected to occur in the watercourses within the proposal site

The Assessments of Significance completed for the biodiversity assessments concluded that a significant impact to any of the above listed species is considered unlikely. Mitigation measures are discussed further in Section 8.

The Project was determined to be a controlled action under the EPBC Act. The Project received EPBC Controlled Action Approval from Department of Climate Change, Energy, the Environment and Water (DCCEEWcth) (EPBC Referral 2018/8233) on 28 October 2024, for further information refer to Section 3.2.2. Impacts to biodiversity, including threatened species and threatened ecological communities are included in Section 7.2.

6.5.1 Recovery Plans and Threat Abatement Plans

Recovery Plans and Threat Abatement Plans (TAPs) relevant to the Project are presented in Table 6-7

Table 6-7 Recovery Plans and Threat Abatement Plans relevant to the Project

Name	Description / Requirement	Is this BMSP consistent?
National Recovery Plan for the Trout Cod	The Trout Cod is Listed as Endangered under the Australian Government Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). The first national Recovery Plan for the Trout Cod was prepared in 1994 (Douglas et al. 1994) and revised in 1998 (Brown et al. 1998). The plan was updated in 2008, and details the species' distribution and biology, conservation status, threats, and recovery objectives and actions necessary to ensure the long-term survival of the Trout Cod.	Yes
Trout Cod Recovery Plan	A recovery plan was prepared for Trout Cod in 2006. The overall objective of the plan is to ensure the recovery and natural viability of Trout Cod populations within their former range in the Murray-Darling Basin. The plan was developed in accordance with the requirements of the NSW *Fisheries Management Act 1994*. A review of this plan was undertaken in 2017 in consultation with a range of managers and scientists and drew on several different sources of information (e.g. Fisheries Scientific Committee's Annual Reviews of the threatened species lists, scientific papers, consultants reports, internal department reports and personal communication with a range of professionals with involvement in Trout Cod research, management and compliance operations). The recovery plan includes six program areas: ▪ Habitat protection and restoration ▪ Reduction of negative fishing impacts ▪ Minimising risks from inter-specific competition and introduced species ▪ Establishing new populations through stocking ▪ Research and monitoring ▪ Community awareness, involvement and support	Yes
River Snail Recovery Plan	The River Snail Recovery Plan was finalised and released in 2007 (DPI 2007) and subsequently reviewed and updated in 2017. The overall objective of the recovery plan is to prevent the extinction and promote the recovery of River Snail populations in NSW. Specific objectives of the recovery plan are to:	Yes

Name	Description / Requirement	Is this BMSP consistent?
	▪ Increase awareness of the current status of the River Snail throughout its former natural range. ▪ Locate and protect remnant populations in natural habitats or translocated populations in artificial habitats. ▪ Investigate the feasibility of establishing an artificial breeding and translocation program for the River Snail in NSW. ▪ Increase our understanding of the threats to the River Snail and undertake management actions to ameliorate threats; and ▪ Establish a program to monitor the status of the River Snail populations (either natural or introduced) and assess the effectiveness of recovery actions.	
Threat abatement plan - large woody debris	This plan was developed in accordance with the requirements of the Fisheries Management Act 1994 to reduce or eliminate threats associated with the removal of large woody debris from NSW rivers and streams. provides guidance on the actions required to eliminate, manage or mitigate the threat posed by the removal of large woody debris from NSW watercourses. The objective of this threat abatement plan is to abate, ameliorate or eliminate the adverse effects from the removal of large woody debris on threatened species, populations and ecological communities listed on the schedules of the NSW Fisheries Management Act 1994. The threat abatement plan contains 10 strategies to be achieved in 3 action areas including: ▪ Research and information activities. ▪ Compliance and regulation activities; and ▪ Management activities	Yes
Threat Abatement Plan for disease in natural ecosystems caused by	This is identified as a key threatening process in the Environmental Assessment Documentation and under the BC Act and EPBC Act. Mitigation measures would be implemented as part of the CEMP to reduce this risk	Yes

Name	Description / Requirement	Is this BMSP consistent?
Phytophthora cinnamomic		
Threat abatement plan for infection of amphibians with chytrid fungus resulting in chytridiomycosis	This is identified as a key threatening process in the Environmental Assessment Documentation and under the BC Act and EPBC Act. Mitigation measures would be implemented as part of the CEMP to reduce this risk.	Yes
Threat abatement plan for predation by European red fox	This is identified as a key threatening process in the Environmental Assessment Documentation and under the BC Act and EPBC Act. Mitigation measures would be implemented as part of the CEMP to reduce this risk.	Yes
Threat abatement plan for predation by feral cats	This is identified as a key threatening process in the Environmental Assessment Documentation and under the BC Act and EPBC Act. Mitigation measures would be implemented as part of the CEMP to reduce this risk.	Yes

Environmental mitigation and management measures identified in the Environmental Assessment Documentation and submissions report are discussed in Section 8.

7 Environmental Aspects and Impacts

7.1 Construction Activities

Key aspects of the Project that could result in adverse impacts to biodiversity include:

- Enabling works and establishment of construction compounds, ancillary facilities and accommodation facilities
- Vegetation clearing and topsoil stripping.
- Construction of culverts, bridges and drainage works in and around waterways
- Dewatering and discharging from sediment basins, farm dams and other construction sources
- Compounds operation including fuel and chemical storage, refuelling and chemical handling
- Refer also to the Aspects and Impacts Register included in Appendix A3 of the CEMP.

7.2 Impacts

Direct and indirect impacts to terrestrial and aquatic biodiversity may occur as a result of the Project, including:

- Loss of native vegetation, including TECs
- Loss of habitat, including threatened and listed migratory fauna species habitat
- Loss of assumed habitat for threatened flora species
- Impacts to GDE's, including vegetation and waterways
- Changes in water quality, aquatic habitat loss and instream barriers to movement of fauna
- Direct injury and mortality of fauna (including vehicle strike)
- Edge effects on adjacent native vegetation and habitat
- Fragmentation of habitats and wildlife corridors
- Invasion and spread of weeds, pests, pathogens and disease
- Noise, vibration, dust, light and contaminants
- Cumulative impacts in association with nearby projects
- Further detail of these impacts is provided in the following sections.

7.2.1 Loss of native vegetation

Vegetation would need to be cleared to construct and locate the new rail corridor and permanent operational infrastructure. Construction of the Project would result in the loss of 73.17ha of native vegetation, including several PCTs. This correlates to a total credit retirement 1,817 credits as detailed in Table 7-1.

Table 7-1 Quantity of native vegetation impact/clearing and Required Credit Retirement

Name of Plant Community Type/ID	Name of threatened ecological community	Area of impact[1]	HBT Cr	No HBT Cr	Total credits to be retired
PCT 76 – Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions.	Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions	16.7	455	5	460
PCT 80 – Western Grey Box – White Cypress Pine tall woodland on loam soil on alluvial plains of NSW South Western Slopes Bioregion and Riverina Bioregion.	Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions	5.8	135	4	139
PCT 266 – White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion.	White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions	12	169	5	174
PCT 276 – Yellow Box grassy tall woodland on alluvium or parna loams and clays on flats in NSW South Western Slopes Bioregion.	White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions	1.5	39	13	52
PCT 277 – Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion.	White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions	27.3	490	259	749
PCT 309 – Black Cypress Pine – Red Stringybark – red gum – box low open forest on siliceous rocky outcrops in the NSW South Western Slopes Bioregion.	Not a TEC	4.0	49	0	49

PCT 347 – White Box – Blakely's Red Gum shrub/grass woodland on metamorphic hillslopes in the mid-southern part of the upper slopes sub-region of the NSW South Western Slopes Bioregion.	White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions	0.2	1	4	5
PCT 79 – River Red Gum shrub/grass riparian tall woodland or open forest wetland mainly in the upper slopes sub-region of the NSW South Western Slopes Bioregion and western South Eastern Highlands Bioregion.	Not a TEC	5.7	189	0	189
Totals		**73.2**	**1527**	**290**	**1817**

*BAM Case 00015331/BAAS18097/19/00015332/Revision: 28

(1) Note this area of impact is rounded to 1 decimal place in BAM credit report

7.2.2 Loss of threatened ecological communities under the BC Act and EPBC Act

The total loss of TEC under the BC Act requiring credits is provided in Table 7-2.

Table 7-2 Vegetation loss for plant community types for Illabo to Stockinbingal project

Vegetation zone	Plant Community Type	BC Act TEC	EPBC Act TEC	Updated total extent within BDAR (ha) based on field verification
VZ1	PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions – Good	Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions	Grey Box (*Eucalyptus microcarpa*) grassy woodlands and derived grasslands of south-east Australia	1.00
VZ2	PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions – Moderate	Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions	Grey Box (*Eucalyptus microcarpa*) grassy woodlands and derived grasslands of south-east Australia	8.80
VZ3	PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions – Poor	Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions	–	5.07
VZ4	PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions – Low – derived native grassland	Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions	Grey Box (*Eucalyptus microcarpa*) grassy woodlands and derived grasslands of south-east Australia	1.81
VZ5	PCT 80 Western Grey Box – White Cypress Pine tall woodland on loam soil on alluvial plains of NSW South Western Slopes Bioregion and Riverina Bioregion (Moderate condition)	Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions	Grey Box (*Eucalyptus microcarpa*) grassy woodlands and derived grasslands of south-east Australia	0.88
VZ7	PCT 266 White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion (Moderate condition)	White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	2.45
VZ8	PCT 266 White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion – Poor	White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	–	2.98

Vegetation zone	Plant Community Type	BC Act TEC	EPBC Act TEC	Updated total extent within BDAR (ha) based on field verification
VZ12	PCT 277 Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion (Moderate condition)	White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	9.04
VZ13	PCT 277 Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion – Poor	White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	–	2.81
VZ14	PCT 277 Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion – Low – derived native grassland	White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	–	11.49
VZ16	PCT 347 White Box – Blakely's Red Gum shrub/grass woodland on metamorphic hillslopes in the mid-southern part of the upper slopes sub-region of the NSW South Western Slopes Bioregion (Moderate condition)	White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	0
VZ17	PCT 347 White Box – Blakely's Red Gum shrub/grass woodland on metamorphic hillslopes in the mid-southern part of the upper slopes sub-region of the NSW South Western Slopes Bioregion (Poor condition)	White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	–	0.18
VZ20	PCT 277 Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion – Planted Native Vegetation	White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	–	3.93

7.2.3 Loss of threatened flora

The loss of threatened flora under the BC Act from surveys completed for the Unsurveyed Land Report is provided in Table 7-3.

Table 7-3 Loss of threatened flora under the BC Act and Credits to be Retired

Scientific name	Common name	Amount	Unit	Total credits to be retired
Caladenia arenaria	Sand-hill Spider Orchid	0.1	Ha	3
Swainsona murrayana	Slender Darling Pea	0.1	Ha	2

7.2.4 Loss of fauna habitat and connectivity

The Project would exacerbate fragmentation in areas where vegetation would be removed. Due to the importance of connectivity, dispersal opportunities and habitat quality for species at a local scale, this impact has the potential to be negative to the dispersal of relatively sedentary species such as mammals, frogs, reptiles and small woodland birds.

The Project would result in habitat loss from the removal of native vegetation (see Section 7.2.1). Surveys have identified 65 scattered trees requiring credits.

Further, the Project would result in the loss of potential habitat for threatened fauna species. Threatened species which have a species credit obligation are provided in Table 7-4 and have been updated from project approval conditions with credit information from the Unsurveyed Lands Report (Rev 2, 28 July 2025).

Table 7-4 – Threatened fauna habitat impacted by the Project

Common name	Scientific name	BC Act[1]	EPBC Act[1]	Impact extent within the Project site (ha)	Total credits to be retired
Little Eagle	*Hieraaetus*	V	-	1.02	21
Squirrel Glider	*Petaurus norfolcensis*	V	-	46.22	1,385
Superb Parrot	*Polytelis swainsonii*	V	V	28.52	902
Total					2,308

(1) Listed under the BC Act and EPBC: V = Vulnerable, E = Endangered

7.2.5 Injury and mortality

The injury and mortality of fauna has the potential occur during construction of the Project. Injury and mortality may occur prior to construction when vegetation and habitat is being cleared, and during construction when machinery and plant is moved to, from and on site. A range of fauna species are at risk of vehicle strike during construction. Fauna at risk of injury and mortality include the Squirrel Glider and other terrestrial fauna, as well as birds, bats and other gliders.

7.2.6 Invasion and spread or weeds and pests

Various weed species, some of which are classified as WoNS and Priority Weeds, are located within the Project boundary. Typically, weed invasion and spread is an indirect impact of projects that is often generated during construction by clearing vegetation and moving plant throughout the area. Other activities, including earthworks and movement of soil, can also result in the dispersal and introduction of weeds throughout the area. This can impact native vegetation and also agricultural farms located within and adjacent to the site.

7.2.7 Impacts to aquatic biodiversity

Construction has the potential to impact on waterways and water quality in the Project area. The Project would directly impact 4.94ha of riparian corridor (on sensitive waterfront land) located within the Project site through vegetation clearing for construction. Associated potential impacts from construction of the Project on aquatic biodiversity may include the following direct impacts:

- removal of riparian corridor vegetation
- removal of instream vegetation and large woody debris
- temporary obstruction of fish passage
- impacts on water quality
- loss of aquatic habitat within farm dams within the Project site
- an increase in the rate of spread of exotic macrophyte species.

Dams which require dewatering may result in impacts to aquatic species. The dewatering process also has the potential to impact water quality in receiving waters, through the input of mobilised sediments.

7.3 Cumulative Impacts

The concurrent construction of various projects within the vicinity of the Project gives rise to the potential for cumulative biodiversity impacts. Other projects within the vicinity of the Project include, but are not limited to:

- Inland Rail - Stockinbingal to Parkes – immediately to the North
- Inland Rail - Albury to Illabo – immediately to the South
- Cootamundra Solar Farm – 15km to the East
- Humelink 500kV Transmission line (SSI 36656827) – 60km to the East of the alignment
- Grade-separating Road interfaces – 1.5km to the South-West.

Although there are some minor cumulative impacts during construction of the Project with the projects identified above, particularly in relation to vegetation clearing, it's unlikely that there would be any significant cumulative impacts in relation to biodiversity management.

8 Environmental Mitigation and Management Measures

8.1 Sensitive Area Plan

Sensitive Area Plans (SAPs) provide a simple but effective tool to identify key risk areas, assist in the planning and management of specific areas and promote ongoing communication with construction personnel for the duration of the Project. They consist of a series of plans that clearly show the environmental items to be managed / protected within and surrounding the Project footprint, including vegetation, heritage, sensitive receivers, waterways, contamination, etc. SAPs will be developed based on sensitive land use, ecological and other environmental data incorporated from publicly available sources, the EIS, BDAR v11.1 and/or as supplemented by technical investigations and studies undertaken as required by the CEMP and associated Sub-Plans (e.g. protected ecological areas). A SAP template is provided in Appendix A5 of the CEMP.

8.2 Minimising Vegetation Clearing

As detailed in the EIS, potential environmental impacts, including biodiversity, were included in the list of selection criteria used for the analysis of options. This included areas of lower biodiversity value, such as areas disturbed from agricultural land use. As a result of the route selection process, the potential for biodiversity impacts has been avoided and/or minimised by:

- minimising impacts to high biodiversity values (i.e. areas with highest vegetation integrity score, TEC, Class 3 scattered trees and areas of potential habitat for threatened fauna). For example, the avoidance of impacts to of Inland Grey Box Woodland TEC along Ironbong Road and both Inland Grey Box Woodland and Box Gum Woodland TEC along Dudauman Road to significantly reduce the overall impact to endangered ecological communities
- avoiding areas that provide connectivity where possible—at Ulandra Creek the proposal was relocated to an area of lower biodiversity value to avoid significant riparian vegetation and retain significant east–west connectivity.

In addition to the above and in accordance with CoA E23, JHG will minimise the clearing of native vegetation to the greatest extent practicable with the objective of reducing impacts to TECs, threatened species and their habitat. This will be achieved by the following and further environmental mitigation measures included in this plan as a result of commitments in the BDAR:

- As part of the development of the detailed design, the Project team will take into consideration any identified impacts to biodiversity, specifically to avoid additional vegetation clearing of native vegetation, fauna habitat (hollow bearing trees, nests, woody debris) and works within waterways.
- Where the construction footprint extends beyond the design/operational footprint (i.e. compounds, general room for construction), this will be minimised as much as possible and will avoid the unnecessary clearing of native vegetation. Priority will be given to areas which do not contain native vegetation where reasonable and feasible.
- Vegetation clearing would not exceed the clearing limits provide in Section 7.2 and from the Infrastructure Approval (SSI-9406) and Commonwealth EPBC Approval (EPBC 2018/8233).
- Prior to the commencement of work that would impact biodiversity values of detailed in CoA E24, the Project will demonstrate to the satisfaction of the Planning Secretary that impacts to those biodiversity values have been avoided to the greatest extent possible. Avoidance, reduction in impacts and additional conservation measures will be documented in consultation with CPHR and the Planning Secretary.

In accordance with CoA E24, prior to the commencement of work that would impact biodiversity values, JHG must demonstrate to the satisfaction of the Planning Secretary that impacts to the following potential serious and irreversible impact entities have been avoided to the greatest extent possible:

- White Box-Yellow Box Blakely's Red Gum Grassy Woodland and Derived Native Grassland comprising Plant Community Types (PCT) PCT 266, PCT 276, PCT 277, PCT 347
- Caladenia arenaria / Sand-hill Spider Orchid
- Caladenia concolor / Crimson Spider Orchid
- Euphrasia arguta / Euphrasia arguta
- Grevillea wilkinsonii / Tumut Grevillea
- Indigofera efoliata / Leafless Indigo
- Prasophyllum sp. Wybong / Prasophyllum sp. Wybong

8.3 Exclusion Zones and Demarcation

There are no formal biodiversity exclusion zones located within the Project boundary, however there will be instances where demarcation of vegetation will be required as detailed below. Demarcation will be required for the following.

- Project boundary
- Extent of vegetation clearing in compliance with the clearing permit for those works (Section 8.5).
- Trees which are being retained, including scarred trees (refer to the Heritage Management Sub-plan)
- Ecological features which will require further inspection or action i.e. ecologist supervision.

Types of demarcation to be used by the Project are provided in Table 8-1. Variations to Table 8-1 must be discussed with the Environment Team.

Table 8-1 – Types of demarcation to be used by the Project

Type	Comment	Example
Project boundary	Orange flagging to be installed to demarcate the Project boundary. No works permitted outside this flagging.	
Clearing limits/exclusion zone	Green flagging to be installed at clearing limits or around exclusion zones (as per the above).	
Habitat features	Blue and white tape around the habitat feature e.g. habitat tree, woody debris	
Signage	Where appropriate, signage may also be installed e.g. environmentally sensitive area, no-go zone, tree protection zone etc.	

8.4 Tree Protection

This section provides general guidance with regards to tree protection. Where relevant, specific advice should be sought from the Project Arborist.

8.4.1 Tree Protection Zones

Trees at risk of being damaged due to works are to have tree protection zones (TPZs) established in accordance with the *Australian Standard 'Protection of Trees on development sites' AS 4970-2009*. TPZs will be designed in consultation with the Project Arborist however will typically include high visibility fencing or flagging and signage around each relevant tree as shown in Figure 8-1. The size of the TPZ will be confirmed by the Project Arborist. The use of and storage of plant, equipment and materials (including stockpiles) is not permitted within a TPZ unless otherwise assessed and approved by the Project Arborist.

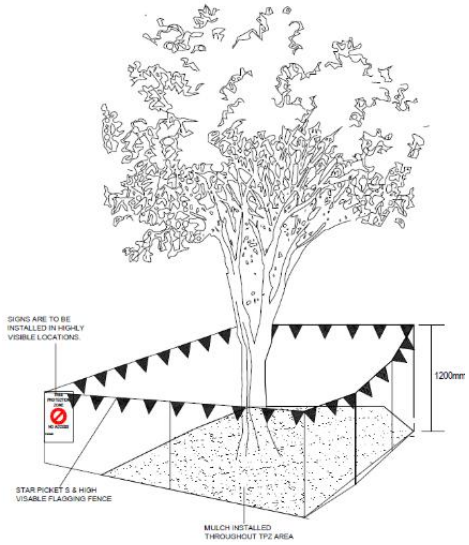


Figure 8-1 – TPZ measures for trees

8.4.2 Trunk and Root Protection

In some situations, physical protection may be required around the tree trunk, limbs and roots. This is often the case when trees are located along haulage routes to work sites. These techniques may also be employed when works are required within the TPZ and have been assessed and approved by the Project Arborist. An example of trunk, limb and root protection is provided in Figure 8-2.

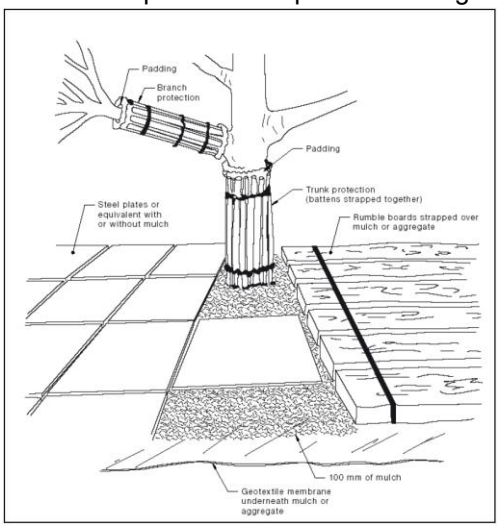


Figure 8-2 – Trunk and root protection for trees

8.4.3 Pruning/Trimming

Canopy pruning is an effective way to retain tree species which would otherwise require complete removal to allow construction works to proceed. Common reasons for pruning are to remove dead branches, to remove crowded or rubbing limbs, eliminate hazards and allow construction access.

All pruning is to be in accordance with *AS 4373-2007 Pruning of amenity trees* and will be undertaken by a qualified AQF Level 3 arborist. Correct methods of pruning are to be used to prevent unnecessary damage/impact to the tree as shown in Figure 8-3.

Root pruning is the practice of removing a portion of a tree's root system to conserve and protect the tree, allow construction, and maintain long term health and vitality. Root pruning sometimes becomes necessary in order to accommodate construction, trenches, footings, built structures and landscape features such as walks, retaining walls, drains, fencing or utilities.

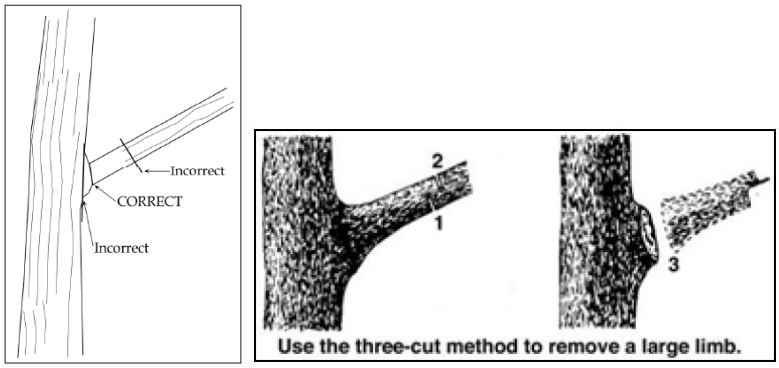


Figure 8-3 - Correct pruning technique for small limbs (left) and large limbs (right).

8.5 Vegetation Clearing Procedure

A Clearing Procedure (Appendix B) has been prepared to provide guidance to ensure that vegetation clearing activities associated with the Project are undertaken to minimise biodiversity impacts. This Procedure details the following information.

- Pre-clearance Surveys
- Delineation of vegetation to be cleared and retained
- Pre-clearing inspections
- Hold Point
- Clearing works
- Clearing Permit
- Ecologist supervision requirements
- Staged clearing processes
- Fauna interaction
- Unexpected and Incidental Finds Protocol – Threatened species
- Post clearing inspections

8.6 Vegetation Clearing Tracking

JHG will develop a vegetation clearing tracker to track the amount of vegetation cleared throughout the Project. The intent of the vegetation clearing tracker is to ensure that the Infrastructure Approval (SSI-9406) and Commonwealth EPBC Approval (EPBC 2018/8233) clearing limits detailed in Section 7.2, are not exceeded. The vegetation clearing limits defined under EPBC 2018/8233 include:

- 16.77 hectares (ha) of Grey Box Woodlands
- 17.48 ha of Box-Gum Grassy Woodlands

The amount of vegetation cleared will be calculated using on-ground survey, Geographical Information System (GIS) mapping or other suitable methods. The vegetation clearing tracker will be continuously updated throughout the Project.

8.7 Reuse of Native Vegetation and Landscape Features

In accordance with CoA E46, during construction, hollows, tree trunks, mulch, bush rock, root balls and any other item which could be considered a habitat feature, will be reused for habitat enhancement, revegetation, restoration, rehabilitation and stabilisation across the Project. These features will be stockpiled within designated stockpile areas during the clearing process until such time that they can be reused. Re-snagging of waterways may also be undertaken in consultation with the Department of Primary Industries (DPI) Fisheries.

Where reuse within the Project is not practicable, consultation with the relevant councils, Landcare group and relevant state agencies will be undertaken to determine whether hollows, tree trunks, mulch, bush rock, root balls, collected plant material, seeds and/or propagated plants can be used by other in habitat enhancement, beneficial re-use and rehabilitation work, before pursuing other disposal options

8.8 Seed Collection

In accordance with NSW CoA E39, seed from relevant native plants to be removed by the Project will be collected before clearing and used in revegetation, restoration and rehabilitation across the Project area where practical. Collection will be conducted by a suitably qualified professional and will ensure that native species of local provenance from the relevant native vegetation community are available for successful revegetation and landscaping. Local provenance may also be achieved by sourcing already propagated plants whose seed was sourced from the local area. Discussions with nurseries will be undertaken by JH environmental team as native seed is collected, to explore these options.

8.9 Management of Weeds, Pests and Pathogens

The management of weeds, pests and pathogens is provided in the Biosecurity Management Sub-plan required under CoA C25. The Biosecurity Management Sub-plan includes relevant weed, pest and pathogen information as required by CoA C20 from the Infrastructure Approval (SSI-9406) and CoA 6 of the Commonwealth EPBC Approval (EPBC-2018/8233) and will be consistent with the *Biosecurity Act 2015* and *Riverina Regional Strategic Weed Management Plan 2023-2027*.

8.10 Fauna Rescue and Release Procedure

The handling, rescue and release of all fauna encountered on the Project will be undertaken in accordance with the Fauna Rescue and Release Procedure provided in Appendix C.

The purpose of the Procedure is to detail the actions to be implemented in the event that fauna (including injured, shocked, dependent juvenile or other) is discovered that requires handling during construction of the Project.

The Procedure includes, but not be limited to:

- Steps to be followed when rescue or relocation of fauna is required
- A process to ensure that, if native fauna is captured during vegetation clearing or other construction activities, it is released into a suitable nearby habitat that has been identified as such by an ecologist
- Fauna rescue and release management measures for aquatic fauna and fish

- A procedure for handling of fauna by a licensed fauna handler such as a fauna spotter/catcher, fauna ecologist or wildlife carer with specific animal handling experience
- The responsibilities of the Project Ecologist
- A process to keep records of fauna captured and relocated
- A process to report any injury or death of threatened species.

8.11 Working Within and Adjacent to Waterways Procedure

All works within and adjacent to waterways on the Project will be undertaken in accordance with the Working Within and Adjacent to Waterways Procedure provided in Appendix D. This includes temporary and permanent waterway crossings, in-stream works, waterway diversions and general construction works within waterfront land (40m from the waterway).

8.12 Farm Dam Dewatering Procedure

Construction of the Project will involve the dewatering of farm dams. In accordance with CoA C20, the Farm Dam Dewatering Procedure (Appendix E) provides guidance to ensure that farm dam dewatering activities are completed in a manner that does not cause harm to the environment including aquatic fauna, receiving waters and landowners. Farm Dam Dewatering Procedure should be read in conjunction with the Dewatering Procedure (Appendix D of the SWMSP), Working Within and Adjacent to Waterways Procedure (Appendix D) and the Fauna Rescue and Release Procedure (Appendix C).

8.13 Unexpected and Incidental Finds Procedure

The Unexpected and Incidental Finds Procedure provided in Appendix I describes how to manage unexpected finds associated with threatened flora species, fauna species and/or TEC. This procedure has been prepared to meet the requirements of the CoA A17.

8.14 Confirmation of Biodiversity Impacts of Unsurveyed Land Report

In accordance with CoA E31, biodiversity surveys of unsurveyed land identified in Schedule 3 of Appendix C of the Infrastructure approval have been completed to confirm the Project will not result in a greater impact to TECs and threatened fauna as detailed in CoA E32.

In accordance with CoA E33, a Confirmation of Biodiversity Impacts on Unsurveyed Land Report (CBIUSLR) has been prepared in consultation with CPHR and submitted to the Planning Secretary for approval.

8.15 Baseline Monitoring Program

Prior to the commencement of construction, baseline monitoring of existing fauna movement corridors, pathways and connectivity within the Assessment Area as defined in the updated BDAR within the Submissions Report, Appendix E, must be undertaken in accordance with a Baseline Monitoring Program. The Baseline Monitoring Program will be prepared by suitably qualified and experienced expert in consultation with CPHR. In accordance with CoA E40, the Baseline Monitoring Program must:

be adequate for determining existing fauna movement corridors, pathways and connectivity for Brown Treecreeper, Diamond Firetail, Flame Robin, Grey-Crowned Babbler, Rainbow Bee-eater, Scarlet Robin, Speckled Warbler, Superb Parrot, Varied Sittella, White-fronted Chat and the Squirrel Glider.

consider the broader landscape connectivity, pathways and movement corridors.

consider relevant State and Commonwealth threatened species guidelines, species biology and the results of on-ground surveys in determining the length of time and time of year for baseline monitoring.

Results from the Baseline Monitoring Program will be used to inform the Connectivity Strategy, as well as the design of fauna connectivity measures in accordance with CoA E41. The design of fauna connectivity measures must have regard to:

- baseline monitoring completed in accordance with CoA Condition E40.
- fauna habitat/fauna furniture and refuges within and near the CSSI to facilitate fauna movement for all native species (threatened and non-threatened) that will potentially use the connectivity structures.
- relevant State and Commonwealth threatened species guidelines, species biology and the results of on-ground surveys.
- Fauna Sensitive Road Design Manual Volume 2 (Queensland Government, 2010).
- Fauna Sensitive Road Design Guidelines (VicRoads, 2012); and
- industry best practice measures.

8.16 Connectivity Strategy

In accordance with CoA E44 and RMM BD-2, the draft Connectivity Strategy provided within the Submissions Report, Appendix E - BDAR, Appendix L, must be finalised by a suitably qualified and experienced ecologist(s) with experience in fauna connectivity, fauna crossings and experimental design. The purpose of the Connectivity strategy is to:

- describe the existing environment including current movement corridors
- identify key fauna species that would benefit from provision of fauna connectivity measures
- describe fauna connectivity structures and measures that are proposed
- identify recommended locations for fauna connectivity measures
- outline proposed monitoring and reporting.

The final Connectivity Strategy must be prepared in consultation with CPHR and DPI Fisheries and submitted to the Planning Secretary for approval prior to construction commencing. The Connectivity Strategy must include, but not limited to:

- details of existing fauna movement corridors, pathways and connectivity informed by baseline monitoring completed in accordance with the Baseline Monitoring Program (Section 8.15) and other on-ground surveys completed.
- justification for the location and design and spacing of the connectivity structures with reference to the requirements of CoA E41.
- justification for not proceeding with a fauna connectivity measure outlined in Table L.3 of the draft Connectivity Strategy (Submissions Report, Appendix E - BDAR, Appendix L) and the location and design of alternative fauna connectivity measures where the measure could not be implemented.

In accordance with CoA E43, fauna access pathways to connectivity measures must:

- not be impeded by crossing loops, ancillary facilities, service roads and tracks, level crossings and roads; and
- use local native flora species in approaches to connectivity structures.
- demonstration of the effectiveness of the proposed connectivity structures and measures in terms of location, design and number to mitigate impacts to the relevant threatened species, and that the design will:

- maintain or improve connectivity and movement pathways of species within regional, local and riparian corridors.
- reduce the risk of mortality for threatened species.
- be located at sufficient frequency along the alignment, based on the ecological requirements of the targeted species, including but not limited to home range size, movement patterns, and habitat use.
- consider the effects of connectivity structures on the maintenance or improvement of population viability and gene flow for targeted species.
- details and design (including a map) of all connectivity structures including:
- flight diversion structures.
- a map showing the location and design of all fauna connectivity measures to be implemented.
- the maintenance activities for all connectivity structures and measures for the life of the impact of the CSSI, including timing and frequency of maintenance actions, including after flooding events.
- an assessment of the flooding risk for proposed structures and measures to confirm and provide for flood immunity of those structures as a result of this assessment.
- include Operational Fauna Connectivity Monitoring, Predator Prevention and Adaptive Mitigation Program required by CoA D7.
- fauna exclusion fencing.

In accordance with CoA E45, fauna funnel fencing and exclusion fencing must be provided to prevent fauna from accessing the rail alignment. The fencing must be installed before the commencement of operation. The fencing must be designed in accordance with best practice measures in consultation with suitably qualified experts in both fauna fencing and the target fauna species (threatened and non-threatened species) and in consideration of baseline monitoring results required by Condition E40. The connectivity Strategy is provided in Appendix H.

8.17 Biodiversity Offsets

The impact to biodiversity values as a result of the Project will require biodiversity offsets to be secured in accordance with the BC Act. Ecosystem and Species credits will be retired prior to any works which impact biodiversity values in accordance with CoA Condition E25 and E26 of the I2S Infrastructure Approval (CSSI-9406), Schedule 1 and 2, Appendix C, and also the Commonwealth EPBC Approval (EPBC 2018/8233).

In accordance with CoA E28, the retirement of the credits will be carried out in accordance with the BC Act, and can be achieved by:

- acquiring and retiring “biodiversity credits” within the meaning of the BC Act; and / or
- making a payment into the Biodiversity Conservation Fund of an amount equivalent to the class and number of ecosystem and species credits, as calculated by the Biodiversity Conservation Fund Charge System; and/or
- funding a biodiversity conservation action that benefits the entity impacted and is listed in the ancillary rules of the Biodiversity Offset Scheme.

Evidence of the retirement of credits will be provided to the Planning Secretary prior to impacts to the biodiversity values occurring, in accordance with CoA E29. Within 5 business days of retiring any biodiversity credits in respect of protected matters, the IRPL holder will submit evidence in writing to DCCEEW demonstrating that the biodiversity credits have been retired in accordance with condition E28 of the Infrastructure Approval (CSSI-9406) and specify, in relation to each relevant protected matter, how

many biodiversity credits were retired. Total credits to be retired are presented in Table 7-1, Table 7-3 and Table 7-4.

Inland Rail as the proponent of the Project will manage the retirement of all credits as required by CSSI and EPBC Approvals. John Holland as the delivery contractor for these works will ensure that evidence of the credits retired has been undertaken in accordance with both approvals prior to any impacts to Biodiversity values occurs.

In accordance with CoA E30, where evidence of compliance with the Ancillary rules, Reasonable steps to seek like-for-like biodiversity credits for the purpose of applying the variation rules has been provided to, and approved by the Planning Secretary, the variation rules may be applied to retire the relevant ecosystem credits and species credits as set out in the BAM Biodiversity Credit Report (Variation). The variation rule does not apply to biodiversity credits for threatened species or TEC that are listed as critically endangered under the BC Act or listed in any capacity under the EPBC Act.

On the discovery of potential or actual impacts to any TEC or species not listed in the Infrastructure Approval (SSI-9406), Appendix C, all work which may impact the identified species, or community must stop to prevent further impact and the Planning Secretary, CPHR and DCCEEW cth (where relevant) be notified in writing. Work must not recommence until the relevant agencies have been consulted and any required management plans or approvals have been obtained. It's noted that CoA E27 does not permit additional impacts to threatened species and TECs that were not assessed as part of the CSSI.

8.18 Rehabilitation and Restoration

8.18.1 Rehabilitation Strategy

In accordance with RMM BD-8, a Rehabilitation Strategy will be prepared to guide rehabilitation planning, implementation, monitoring and maintenance of disturbed areas progressively, once construction is complete. The strategy would include clear objectives for seed collection and rehabilitation of native vegetation in temporary disturbances areas and in riparian areas.

The Rehabilitation Strategy will incorporate the below requirements.

CoA E38 – Riparian land disturbed during construction must be rehabilitated and revegetated with native species of local provenance from the relevant plant community type on completion of Work impacting the riparian land in accordance with the Guidelines for controlled activities on waterfront land – Riparian corridors (NRAR, 2018).

- CoA E39 – Seed from native plants to be removed must be collected before clearing and used in revegetation, restoration and rehabilitation across the Project area and the site identified in CoA E34. Plant propagation must ensure that native species of local provenance from the relevant native vegetation community are available for successful revegetation and landscaping.
- CoA E46 – Cleared native vegetation and other landscape features must be reused as part of the CSSI, including for re-snagging of waterways, in consultation with DPI Fisheries. If reuse is not practicable, consultation with the relevant council(s), Landcare groups and relevant state agencies must be undertaken
- RMM LV-5 – Rehabilitation of disturbed areas will be undertaken progressively in accordance with the Rehabilitation Strategy. Rehabilitation for specific areas will be documented in detailed design drawings/reports and also in individual property plans (where relevant)
- RMM LV-8 – Vegetation provided in accordance with the rehabilitation strategy and the urban design and landscape plan (RMM LV-2) would be subject to ongoing monitoring and maintenance in accordance with ARTC/IRPL standard operating procedures.
- RMM BD-7 – The installation of nest boxes and other habitat features will be explored to provide supplementary additional habitat for fauna.

8.18.2 Visual and Landscape Impact Mitigation Plan

In accordance with CoA E126, JHG will prepare and implement a Visual and Landscape Impact Mitigation Plan (VLIMP) to mitigate visual and landscape impacts of the CSSI. In preparing the plan, the Proponent must:

a) consult landowners and residents of land zoned RU1 within 500 metres of the CSSI and all landowners and residents of all other land within 100 metres of the CSSI.
b) prepare a landscaping plan for all locations identified in (a) above that specifies plants and trees to be used, with a preference for native vegetation and a program for implementation and ongoing maintenance.
c) document the responses in (a) above and detail how the Plan responds to them.

The VLIMP must be made publicly available no later than six (6) months after the commencement of construction of the CSSI.

8.18.3 Box Gum Woodland Restoration Plan

A Box Gum Woodland Restoration Plan (BGWRP) in accordance with CoA E35 and E36. The BGWRMP will be prepared by an ecologist appropriate qualifications and experience in Box Gum Woodland restoration determined in consultation with CPHR for the management of the restoration site identified in CoA A1(e) and A1(f) to ensure:

- in perpetuity management of existing Box Gum Woodland
- increase in the condition and extent of Box Gum Woodland and
- improve connectivity within and across the site identified in CoA E34.

The BGWRP will include:

- site map identifying the site boundary, existing vegetation to be maintained, areas to be actively restored and connectivity or movement corridors to be established or maintained.
- active restoration and maintenance activities, including seed collection, fire management, threatened species habitat management, feral pest and weed management.
- proposed restoration and connectivity targets.
- timeframes and responsibilities for meeting targets, including all actions to be completed prior to entering into a Biodiversity Stewardship Agreement.
- monitoring plan.
- adaptive management program to assess the effectiveness of the restoration and maintenance activities in meeting the targets.
- a process to ensure adaptive management measures, if targets are not met.

The BGWRP must be submitted to and approved by the Planning Secretary prior to the commencement of construction and is separate to the scope of this BMP. The BGWRP must be implemented and made publicly accessible.

In accordance with CoA E34, within 12 months of the date of the Infrastructure Approval (SSI-9406), the Project must apply for, and, if approved, enter into a Biodiversity Stewardship Agreement to ensure ongoing management and active restoration of 45.7ha hectares of Box Gum Woodland within a 123.15 hectare restoration site of a portion of Lot 3 DP 591854 as outlined in documents listed in CoA A1(e) and A1(f). The management and restoration actions are additional to credit obligations required by CoA E26.

A Box Gum Woodland Restoration Report must be prepared by an ecologist with appropriate qualifications and experience in Box Gum Woodland restoration determined in consultation with CPHR,

every 12 months unless otherwise agreed by the Planning Secretary and made publicly available. In accordance with CoA E37, the Box Gum Woodland Restoration Report must include:

- active restoration and maintenance activities completed in the previous 12 months.
- monitoring results.
- performance against restoration and connectivity targets.
- adaptive management measures implemented in the event that targets are not being met.

The Box Gum Woodland Restoration Report must be finalised within 2 months of each 12-month period. The Report must also be provided to the Planning Secretary and CPHR on request.

8.19 Biodiversity Mitigation and Management Measures

In addition to the mitigation and management measures provided in previous sections, the following general mitigation and management measures associated with biodiversity management in Table 8-2 will be implemented throughout the Project. These have been sourced from the Infrastructure Approval (SSI-9406), EPBC Approval (EPBC 2018/8233), RMMs, relevant ARTC/IRPL specifications and other relevant guidelines, documents and procedures.

Table 8-2 Biodiversity mitigation and management measures

Ref	Measure / Requirement	When to implement	Responsibility	Reference / Source
General				
BD1	This BMSP is to approve by the Planning Secretary prior to the commencement of Construction.	Prior to construction	JHG Environment Manager	CoA C15
BD2	All staff and subcontractors will undergo Project-specific induction training as detailed in Section 9.2. Discussion points may include (but not limited to) • Clearing requirements and penalties (including fines) for over-clearing. • Commonwealth and Stage restrictions for the clearing of certain habitats and threatened species • Exclusion zones and protected area requirements • Threatened species photos and known locations on or near the Project and processes to follow in unexpected, threatened flora/fauna is discovered. • Fauna interaction rules • Vegetation clearing procedures • Any other biodiversity related matter deemed necessary	Prior to construction During construction	JHG Environment Manager	CEMP Good practice
BD3	Additional daily and task-specific training and awareness material may be delivered to relevant staff and workforce, in the form of toolbox talks and pre-start meetings, to ensure that where detailed information is required, it is accessible to all involved with the Project.	During construction	JHG Environment Manager	CEMP Good practice
BD4	Develop SAPs and Site Environmental Plans (SEPs) will include identification of ecologically sensitive areas, areas of known priority	Prior to construction	JHG Environment Manager	JHG EMS Good practice

Ref	Measure / Requirement	When to implement	Responsibility	Reference / Source
	weeds and other relevant information. SEPs and SAPs will be communicated and made available to relevant personnel.			
BD5	Ensure all key actions of this BMSP (e.g. clearing demarcation, locations and details of known threatened species in proximity to work zone, erosion control measures and clearing permit requirements, including fencing of no-go zones) are incorporated in relevant Project risk management documentation i.e. Activity Method Statement (AMS), SEPs etc.)	PPrior to relevant works	JHG Environment Manager JHG Construction Manager	JHG EMS Good practice
BD6	Throughout the planning and construction phases of the Project, suitable planning and coordination will be undertaken to ensure the following: • Biodiversity control requirements are raised in regular planning meetings • Adequate time in the program is allowed for installation and maintenance of controls Adequate resources are allocated for the installation and maintenance of controls.	Prior to construction During construction	JHG Environment Manager	Good practice
BD7	A suitably qualified and experienced ecologist(s) and an AQF level 5 arborist will be appointed and used by the Project.	Prior to construction	JHG Environment Manager	CEMP Good practice
BD8	Biodiversity offsets will be retired prior to any works which impact biodiversity values detailed in the Infrastructure Approval (SSI-9406), Appendix C, and also the Commonwealth EPBC Approval (EPBC 2018/8233). Evidence of the retirement of credits will be provided to the Planning Secretary.	Prior to construction	JHG Environment Manager ARTC/IRPL	CoA E29
BD9	Prior to conducting any works which may impact biodiversity values occurring in unsurveyed land, a Confirmation of Biodiversity Impacts on Unsurveyed Land Report (CBIUSLR) must be prepared in consultation with CPHR and submitted to the Planning Secretary for approval. Final version REV 2, 28 July 2025 has been submitted to DPHI pending approval.	Prior to works impacting biodiversity values	JHG Environment Manager ARTC/IRPL	CoA E31
BD10	All construction activities will be planned and carried out within the Project boundary and approved clearing limits to ensure that there is no damage to any vegetation outside the specified clearing limits. Any additional clearing will be subject to additional assessment and, if	Prior to construction During construction	JHG Environment Manager JHG Construction Manager	CEMP

Ref	Measure / Requirement	When to implement	Responsibility	Reference / Source
	required, ecosystem and/or credit species requirements will be updated.			
BD11	Any incidents, non-compliances and non-conformances are to be managed in accordance with Section 8 of the CEMP. Notification of biodiversity incidents is to be made to ARTC/IRPL and any relevant statutory authorities such as NSW EPA, DPHI, DPI Fisheries, etc.	During construction	JHG Environment Manager JHG Construction Manager	CEMP JHG EMS
Vegetation Clearing				
BD12	All vegetation clearing will be undertaken in accordance with the Clearing Procedure provided in Appendix B. This includes pre-clearing survey, clearing limit demarcation, pre-clearing inspection, hold points, clearing permits, ecologist supervision, clearing of habitat trees and post clearing.	During construction	JHG Environment Manager JHG Construction Manager JHG Site Supervisor	CoA C20
BD13	JHG will minimise the clearing of native vegetation to the greatest extent practicable with the objective of reducing impacts to TECs, threatened species and their habitat. JHG note that the vegetation clearing limits defined under EPBC 2018/8233 include: 16.77 hectares (ha) of Grey Box Woodlands 17.48 ha of Box-Gum Grassy Woodlands	During construction	JHG Environment Manager JHG Construction Manager	CoA E23 EPBC 2018/8233 CoA No. 2
BD14	JHG to confirm clearing footprint at least 80 days prior to being issued for construction and provide to ARTC/IRPL	Prior to clearing	JHG Environment Manager	CEMP
BD15	Pre-clearing surveys would be undertaken prior to construction, by a suitably qualified ecologist, in accordance with the biodiversity management plan. Specific surveys would include: • surveys for roosting microbats and birds in structures, including telegraph poles and buildings that are proposed to be removed • searches for nest trees requiring fauna management during removal	Prior to clearing	JHG Environment Manager	RMM BD-3

Ref	Measure / Requirement	When to implement	Responsibility	Reference / Source
	• identification of hollow-bearing trees and logs requiring fauna management during removal • aquatic fauna salvage in watercourses or residual pools within 50 m of the construction footprint and in areas that would be enclosed by silt curtains (e.g. piling locations). • Identification of weeds and pests observed during Preclearance surveys. Refer to the Clearing Procedure Provided in Appendix B for further details.			
BD16	All hold points are to be released by ARTC/IRPL prior to the commencement of any clearing.	Prior to clearing	JHG Environment Manager	CEMP
BD17	Prior to any clearing or trimming, a clearing permit will be issued by the Environment Team.	Prior to clearing	JHG Environment Manager	JHG EMS
BD18	The clearing extents/site boundary/limit of works would be clearly defined with flagging or marking tape, signage or other suitable means to delineate exclusion zones and communicated to relevant personnel prior to the commencement of clearing.	Prior to clearing	JHG Environment Manager JHG Site Supervisor	CEMP
BD19	Erosion and sediment controls will be installed in accordance with the Erosion and Sediment Control Plan (ESCP)	Prior to clearing	JHG Environment Manager JHG Site Supervisor	CEMP (Section 5.2.3) SWMP Good practice
BD20	A suitably qualified and experienced ecologist shall be available to the Contractor at all times and be on Site during high-risk activities (i.e. vegetation and habitat clearing).	During construction	JHG Environment Manager	CEMP
BD21	No disturbance to any vegetation (native and non-native) shall occur outside of the clearing zones or the Project boundary unless the necessary approvals have been obtained.	During construction	JHG Environment Manager JHG Site Supervisor	CEMP Good practice
BD22	If any vegetation clearing or damage to vegetation occurs outside the Project boundary, works are to immediately stop, and notification made the JHG Environment Team and ARTC/IRPL. See Section 8 of the CEMP for further details.	During construction	JHG Environment Manager JHG Site Supervisor	CEMP JHG EMS

Ref	Measure / Requirement	When to implement	Responsibility	Reference / Source
BD23	Leave rootstock in ground to stabilise the soil for as long as possible, where feasible prior to earthworks.	During construction	JHG Environment Manager JHG Site Supervisor	Good practice
BD24	Holes remaining after trees and stumps have been grubbed are to be backfilled where appropriate with sound material (either onsite material from earthworks or imported clean fill) to prevent the infiltration and ponding of water.	During construction	JHG Environment Manager JHG Site Supervisor	Good practice
BD25	All pruning is to be in accordance with *AS 4373-2007 Pruning of amenity trees* and *NSW WorkCover Code of Practice for the Amenity Tree Industry (1998)* and will be undertaken by a qualified AQF Level 3 arborist.	During construction	JHG Environment Manager JHG Site Supervisor	AS4373-2007
BD26	Any branch, which overhangs into the Project boundary, will be cut back flush with the tree trunk where it is required to be removed in accordance with *AS 4373-2007 Pruning of amenity trees*.	During construction	JHG Environment Manager JHG Site Supervisor	AS 4373
BD27	Where possible, mulch derived from any native trees will be reused onsite for erosion and sediment controls or landscaping. Tannins must be managed in accordance with the SWMSP.	During construction	JHG Environment Manager JHG Site Supervisor	CEMP Good practice
BD28	Mulch stockpile sites must be located away from drainage lines and watercourses and must be arranged to minimise damage to natural vegetation and trees. Refer to the SWMSP for further details.	During construction	JHG Environment Manager JHG Site Supervisor	CEMP Good practice
BD29	Retain all felled trees and hollows where possible for placement to provide further fauna habitat. Reuse native vegetation and other habitat features that have been approved for removal wherever possible within other areas of the Project footprint as part of the rehabilitation works. Where such reuse is not possible, consultation prior to the removal of vegetation and other habitat is to occur in accordance with the Clearing Procedure (Appendix B) in an effort to find alternative reuse options. Cleared native vegetation and other landscape features must be reused as part of the CSSI, including for re-snagging of waterways, in consultation with DPI Fisheries. If reuse is not practicable, consultation with the relevant council(s), landcare groups and relevant state agencies must be undertaken to determine if: (a) hollows, tree trunks, mulch, bush rock and root balls; and	During construction	JHG Environment Manager JHG Site Supervisor JHG Construction Manager	CoA E46 Good Practice

Ref	Measure / Requirement	When to implement	Responsibility	Reference / Source
	(b) collected plant material, seeds and/or propagated plants. can be used by others in habitat enhancement, beneficial re-use and rehabilitation work, before pursuing other disposal options.			
BD30	The proposed access tracks in the northeast and southeast of the accommodation camp site will be located within existing disturbed areas/exotic grassland areas where possible. Surveys will be conducted within PCT 76 (Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW Southwestern Slopes and Riverina Bioregions) during detailed design to ensure the siting of the access tracks avoids impacts on PCT 76 as far as possible. If impact on PCT 76 is unavoidable, tree clearing will be minimised by locating access tracks in vegetation gaps visible within aerial imagery, and the existing mapping and refined upon site inspection, targeting areas of previous disturbance/exotic grassland to minimise potential impacts to derived native grassland.	Prior to construction	JHG Environment Manager JHG Construction Manager JHG Design Manager	RMM ABD-1 SEMP (CoA C5)
BD31	Cleared vegetation will be tracked in a register which will be regularly updated to ensure Project clearing limits are not exceeded. Verification that the area cleared is correct and within the boundary and GIS data provided to ARTC/IRPL.	During construction	JHG Environment Manager	Best practice
BD32	JHG must minimise the fire risks of the development, including managing vegetation fuel loads within and adjacent to the corridor during construction of the Project. It's noted that any clearing of vegetation for the purposes of bushfire management will still be subject to the requirements of this BMSP i.e. clearing procedures, clearing limits etc. Refer to the Bushfire Emergency Plan for more details.	During construction	JHG Construction Manager	CoA E120 CoA E121
Exclusion Zones, Demarcation and Tree Protection				
BD33	Demarcation and signage for the Project boundary, vegetation clearing limits, exclusion zones, TPZs and ecological features will be installed as required in accordance with Section 8.3.	Prior to construction During construction	JHG Environment Manager JHG Site Supervisor	Best practice CEMP
BD34	Trees at risk of being damaged due to works are to have TPZs established in accordance with the *Australian Standard 'Protection of Trees on development sites' AS 4970-2009*. TPZs will be designed in	Prior to construction During construction	JHG Environment Manager JHG Site Supervisor	Best practice CEMP

Ref	Measure / Requirement	When to implement	Responsibility	Reference / Source
	consultation with the Project Arborist however will typically include high visibility fencing or flagging and signage around each relevant tree.			
BD35	The use of and storage of plant, equipment and materials (including stockpiles) is not permitted within a TPZ unless otherwise assessed and approved by the Project Arborist.	During construction	JHG Environment Manager JHG Site Supervisor	Best practice CEMP
BD36	Trunk and root protection to be installed around trees where there is an increased risk of damage in consultation with an arborist.	During construction	JHG Environment Manager JHG Site Supervisor	Best practice
BD37	Where relevant works within a trees TPZ or Structural Root Zone (SRZ) are required that has the potential to impact the tree, advice must be sought, and if required, supervision provided by a AQF level 5 consulting arborist.	During construction	JHG Environment Manager JHG Site Supervisor	AS 4373
BD38	Damage or destruction of threatened flora species and trees which have been identified for preservation will be minimised by: • Installing fencing around trees clear of the canopy line. • Ensuring no materials are stockpiled and no vehicles are parked under the canopy. • Avoiding excavation or the placing of fill near any tree without advice from an ecologist • Routing haul roads and access tracks clear of the canopy.	During construction	JHG Environment Manager JHG Site Supervisor	Best Practice
Fauna Management				
BD39	All fauna rescue, handling and relocations will be undertaken in accordance with the Fauna Rescue and Release Procedure which is provided in Appendix C.	During construction	JHG Environment Manager JHG Site Supervisor	RMM BD-7
BD40	The Unexpected and Incidental Finds Procedure provided in Appendix F will be followed for all unexpected finds associated with threatened flora species, fauna species and/or TEC. This procedure has been prepared to meet the requirements of the CoA A17.	During construction	JHG Environment Manager JHG Site Supervisor	CoA A17
BD41	Any identified habitat trees will be managed in accordance with the Clearing Procedure (Appendix B). This includes a staged clearing	During construction	JHG Environment Manager JHG Site Supervisor	RMM BD-7 Good practice

Ref	Measure / Requirement	When to implement	Responsibility	Reference / Source
	approach and ecological supervision where there is a risk of fauna interaction.			
BD42	Prior to construction commencing in the vicinity of CH 740, construction activities are to be scheduled to commence between January to July (outside the breeding season of the Little Eagle). Where this is not possible, potential options for relocation of an unoccupied nest to a suitable location determined by an appropriately qualified ecologist, with relocation to be complete before July.	Prior to construction	JHG Environment Manager JHG Site Supervisor JHG Construction Manager	RMM BD-14
BD43	A contact list of fauna handlers and local vet/wildlife organisations is to be developed and maintained that considers their location and travel time with respect to active work areas.	Prior to construction	JHG Environment Manager	CEMP
BD44	Any injury or death of threatened species will be reported to ARTC/IRPL.	During construction	JHG Environment Manager JHG Site Supervisor	CEMP
BD45	No feeding of fauna by Project personnel. No domestic animals are to be brought to site.	During construction	JHG Site Supervisor	CEMP
BD46	All personnel must drive to the conditions, speed limits and road rules. Any fauna strikes must be reported to ARTC/IRPL as soon as possible (within 48 hours where possible)	During construction	JHG Construction Manager JHG Site Supervisor	CEMP
Weeds, Pests and Pathogens				
BD47	All weeds, pests and pathogens will be managed in accordance with the Biosecurity Management Sub-plan which has been developed in accordance with CoA C25.	During construction	JHG Environment Manager JHG Construction Manager JHG Site Supervisor	CoA C25 Biosecurity Management Plan
BD48	Areas of weed infestation will be identified by an ecologist during pre-clearance survey (weed and pathogens) and will identify the species and location of any weeds, along with the proposed management approach to contain and reduce the spread of the weed.	Prior to construction	JHG Environment Manager JHG Site Supervisor	CEMP
BD49	Relevant staff will be made aware of high threat weeds present on-site and requirements if they are encountered.	During construction	JHG Environment Manager JHG Site Supervisor	RMM BD-7

Ref	Measure / Requirement	When to implement	Responsibility	Reference / Source
BD50	If identified on site pest species and pathogens would be managed in accordance with the Biosecurity Management Plan.	During construction	JHG Environment Manager	Biosecurity Management Plan s6.6.4
BD51	Weeds and topsoil stripped from areas containing high densities of weeds will be treated and/or disposed of according to jurisdictional requirements. This may include removal to an appropriately licensed waste management facility where appropriate.	During construction	JHG Environment Manager JHG Site Supervisor	Biosecurity Management Plan s6.6.4
BD52	Any weed infested material (including topsoil) will be appropriately segregated away from other non-contaminated (weed) material to prevent cross contamination.	During construction	JHG Environment Manager JHG Site Supervisor	Good practice
BD53	Weeds will be removed and disposed of in accordance with the Biosecurity Act 2015, POEO Act and council requirements.	During construction	JHG Environment Manager JHG Site Supervisor	*Biosecurity Act 2015*
BD54	Any weed management works are to be undertaken in consultation with an appropriately qualified and experienced weed management contractor.	During construction	JHG Environment Manager	Good practice
BD55	Works will generally be carried to minimise the risk of weeds being imported to site or around the site.	During construction	JHG Environment Manager JHG Site Supervisor	CEMP
BD56	Vehicle washdown and hygiene protocols will be undertaken for all vehicles and machinery as applicable, in accordance with the Biosecurity Management Plan.	During construction	JHG Environment Manager JHG Site Supervisor	CEMP Biosecurity Management Plan
BD57	The washdown of vehicles, plant and equipment will be conducted when excessive mud, dirt, weed/seed or other organic material is observed. Wastewater will be effectively contained and removed from site to minimise the spread of any weeds. Vehicle washdown and hygiene protocols will be undertaken for all vehicles and machinery as applicable, in accordance with the Biosecurity Management Plan.	During construction	JHG Environment Manager JHG Site Supervisor	Good practice Biosecurity Management Plan
BD58	Mobile plant and vehicles, including deliveries are to use designated travel routes, site access tracks and lay-down areas where reasonable.	During construction	JHG Environment Manager JHG Site Supervisor	Good practice
BD59	Weekly inspections will include weed and pest checklist items.	During construction	JHG Environment Manager	JH EMS

Ref	Measure / Requirement	When to implement	Responsibility	Reference / Source
BD60	Herbicide/pesticide application will only be undertaken by suitably qualified personnel in accordance with the requirements of the *Pesticides Act 1999* so as not pose a threat to site personnel or nearby sensitive receivers.	During construction	JHG Environment Manager JHG Construction Manager	*Pesticides Act 1999* Best Practice
BD61	Care will be taken to ensure that any herbicide/pesticide application within or adjacent to native vegetation does not impact that vegetation e.g. spray drift, runoff, waterways etc.	During construction	JHG Environment Manager JHG Site Supervisor	Best Practice
BD62	Herbicide application will be undertaken during optimal seasonal conditions and in accordance with manufactures guidelines on application rates, intervals etc.	During construction	JHG Environment Manager	*Pesticides Act 1999*
BD63	All chemical applications will be communicated and coordinated with relevant land holders.	During construction	JHG Community and Stakeholder Manager	*Pesticides Act 1999*
BD64	Application of herbicide will only be applied such that impacts on surrounding properties (including agricultural land/ sensitive environments) are avoided.	During construction	JHG Environment Manager JHG Site Supervisor	*Pesticides Act 1999*
BD65	Any movement restrictions (e.g. fire ant zone restrictions) will be assessed prior to undertaken the movement of high-risk material (e.g. soil, gravel, ballast)	During construction	JHG Environment Manager JHG Construction Manager JHG Site Supervisor	CEMP
BD66	Should pest population control be required, a qualified specialist will be engaged to undertake this work and provide detailed advice. Where pest control has been undertaken, a record will be made and maintained. Monitoring of the effectiveness of the pest control measures as well as notification or neighbouring landholders will be undertaken as advised by the qualified pest specialist.	During construction	JHG Environment Manager JHG Construction Manager	Good practice
BD67	Pathogens will be managed in accordance with the Biosecurity Management Plan. If pathogens are identified by ecologists during the pre-clearing survey, additional controls may be required including (but not limited to. • Exclusion zones using fencing and signage.	During construction	JHG Environment Manager	Good practice Biosecurity Management Plan

Ref	Measure / Requirement	When to implement	Responsibility	Reference / Source
	• Hygiene washdowns for plant, light vehicles and personnel; and • Additional toolbox training in relation to locations of pathogen and requirements for personnel.			
Working in and adjacent to waterways				
BD68	All works within or adjacent to waters (within 40m) will be managed in accordance with the Working Within and Adjacent to Waterways Procedure provided in Appendix D.	Prior to construction During construction	JHG Environment Manager JHG Construction Manager JHG Site Supervisor	CoA C20
BD69	The dewatering of any farm dams is to be undertaken in accordance with the Farm Dam Dewatering Procedure provided in Appendix E.	Prior to construction During construction	JHG Environment Manager JHG Construction Manager JHG Site Supervisor	CoA C20
BD70	Watercourse crossing structures, both temporary and permanent in nature, and works on waterfront land would meet Inland Rail design standards and be designed in accordance with *Why do fish need to cross the road? Fish passage requirements for waterway crossings* and P*olicy and Guidelines for fish habitat conservation and management* and *Guidelines for controlled activities on waterfront land: riparian corridor*s as far as practicable.	Prior to construction	JHG Environment Manager JHG Construction Manager JHG Design Manager	RMM BD-1
BD71	Where feasible, existing vegetation (tree stumps, grasses, groundcover) will be retained within waterfront land until immediately before construction commences in the area. If an access track is required within these areas, it will be constructed on an alignment that will minimise erosion in accordance with the Blue Book. All trees in these areas will be felled manually, leaving grasses and small understorey species wherever possible.	During construction	JHG Environment Manager JHG Site Supervisor	Good practice CEMP
BD72	Direct impacts on in-stream vegetation and native vegetation on the banks of watercourses would be avoided as far as practicable by establishing appropriate setback distances.	During construction	JHG Environment Manager JHG Site Supervisor	RMM BD-6
BD73	Scheduling of construction activities to minimise time of works in or adjacent to drainage lines and waterfront land (watercourse bed and	Prior to construction	JHG Environment Manager JHG Construction Manager	RMM BD-09

Ref	Measure / Requirement	When to implement	Responsibility	Reference / Source
	land within 40 m of the highest bank of the watercourse, particularly during periods of flow.			
BD74	Where it is not practicable to work in the dry, a sediment or silt curtain attached to the same sides of the bank and around the works area would be installed for erosion and sediment control, and to maintain fish passage.	During construction	JHG Environment Manager JHG Site Supervisor	RMM BD-10
Noise, Vibration, Dust and Light				
BD75	Noise and vibration controls should be implemented to minimise impacts to biodiversity in accordance with the Noise and Vibration Management Sub-plan. This is particularly important when undertaking works, including out-of-hours work, within adjacent to vegetation known to inhabit fauna.	Prior to construction During construction	JHG Environment Manager JHG Construction Manager JHG Site Supervisor	Best practice Noise and Vibration Management Sub-plan (NVMSP)
BD76	Air quality and dust management controls should be implemented to minimise impacts to biodiversity in accordance with Air Quality Management Sub-plan. This is particularly important when undertaking ground disturbance (and therefore dust generating) works within or adjacent to native vegetation.	Prior to construction During construction	JHG Environment Manager JHG Construction Manager JHG Site Supervisor	Best practice NVMSP
BD77	Orientate temporary construction lighting to minimise light spill into fauna habitat areas (including aquatic habitat).	During construction	JHG Environment Manager JHG Site Supervisor	Best practice RMM LV-6 NVMSP
BD78	Lighting of the accommodation camp would be designed in accordance with best practice design to limit impacts on wildlife and minimise light spill to woodland area. including *AS/NZS 4282:2019 Outdoor Lighting Obtrusive Effects*. This would include the following measures: • orient lighting away from native vegetation patches where possible and focus light on intended area (avoid light spill into vegetated areas) • where light impacts to vegetation cannot be avoided, use lowest intensity lighting appropriate for the task or consider modifying spectral composition (i.e. reduced or filtered light of blue, violet or ultraviolet wavelengths) to reduce impact.	Prior to construction	JHG Environment Manager JHG Construction Manager JHG Design Manager	RMM ABD-2 NVMSP

Ref	Measure / Requirement	When to implement	Responsibility	Reference / Source
Rehabilitation and Restoration				
BD79	A Rehabilitation Strategy will be developed and implemented for the Project in accordance with Section 8.18.1. The strategy would be incorporate requirements from CoA E38, E39, E46, RMM LV-5 and LV-8.	During construction	JHG Environment Manager	RMM BD-8
BD80	A BGWRP be prepared by an ecologist with appropriate qualifications and experience in Box Gum Woodland restoration determined in consultation with CPHR for the management of the restoration site identified in CoA A1(e) and A1(f). The BGWRP must be submitted to and approved by the Planning Secretary prior to the commencement of construction. The BGWRP must be implemented and made publicly accessible. See Section 8.18.3 for further details.	Prior to construction	IRPL	CoA E35 CoA E36
BD81	A Box Gum Woodland Report must be prepared annually by an ecologist. See Section 8.18.3 for further details.	Annually	IRPL	CoA E37
BD82	During construction, hollows, tree trunks, mulch, bush rock, root balls and any other item which could be considered a habitat feature, will be reused for habitat enhancement, revegetation, restoration, rehabilitation and stabilisation across the Project where possible. These features will be stockpiled during the clearing process until such time that they can be reused. Re-snagging of waterways may also be undertaken in consultation with DPI Fisheries. See Section 8.11 for further details.	During construction	JHG Environment Manager JHG Site Supervisor	CoA E46
BD83	Seed from relevant native plants to be removed by the Project will be collected before clearing and used in revegetation, restoration and rehabilitation across the Project area where practical. Collection will be conducted by a suitably qualified professional and will ensure that native species of local provenance from the relevant native vegetation community are available for successful revegetation and landscaping. See Section 8.8 for further details.	Prior to construction During construction	JHG Environment Manager	CoA E39
BD84	A baseline monitoring program and relevant surveying will be undertaken prior to the commencement of construction. Results from the Baseline Monitoring Program will be used to inform the Connectivity Strategy.	Prior to construction	JHG Environment Manager	CoA E40

Ref	Measure / Requirement	When to implement	Responsibility	Reference / Source
BD85	The draft Connectivity Strategy must be finalised by a suitably qualified and experienced ecologist(s) with experience in fauna connectivity, fauna crossings and experimental design. The final Connectivity Strategy must be prepared in consultation with CPHR and DPI Fisheries and submitted to the Planning Secretary for approval prior to construction commencing. Outcomes of baseline monitoring will be used to design fauna connectivity measures and prepare the Connectivity Strategy in accordance with CoA E41 and E44	Prior to construction	JHG Environment Manager	CoA E44 RMM BD-2 CoA E41 and E44
BD86	A Visual and Landscape Impact Management Plan (VLIMP) will be developed and implemented for the Project in accordance with CoA E126 and Section 8.18.2. In preparing the VLIMP, the proponent must: • consult landowners and residents of land zoned RU1 within 500 metres of the CSSI and all landowners and residents of all other land within 100 metres of the CSSI. • prepare a landscaping plan for all locations identified in (a) above that specifies plants and trees to be used, with a preference for native vegetation and a program for implementation and ongoing maintenance. • document the responses in (a) above and detail how the Plan responds to them. The Visual and Landscape Impact Mitigation Plan must be made publicly available no later than six (6) months after the commencement of construction.	During construction	JHG Environment Manager	CoA E126
BD-87	Batter slopes would be integrated into the surrounding landscape as far as practicable. Appropriate slope stabilisation would be integrated into batter design to ensure successful rehabilitation and stabilisation.	During construction	JHG Construction Manager	RMM LV-3

9 Compliance Management

9.1 Roles and Responsibilities

Roles and responsibilities related to the environment discipline and the Projects organisational structure are outlined in Section 7.1 of the CEMP. In addition to this, the JHG Environment and Sustainability Manager and Project ecologist will be responsible for the following.

- Review and endorse this BMSP.
- Undertake pre-clearance surveys and inspections, including habitat and other ecological features as per Section 8.3.
- Supervision of vegetation clearing where required e.g. where habitat trees are being removed.
- The handling, rescue and relocation of any fauna encountered on the Project, including those related to farm dam dewatering.
- Provide advice on relevant works within and adjacent to waterways.
- Seed collection
- Identification of any flora and fauna, and whether they are threatened.
- Conduct additional surveys and reporting on unsurveyed land.
- Prepare the Baseline Monitoring Program and relevant surveying.
- Finalisation of the Connectivity Strategy.
- Provide any other relevant advice and guidance to manage and minimise potential impacts to flora and fauna.
- The Project Arborist (AQF level 5) will be responsible for the following:
- Undertake tree surveys and assessments for relevant vegetation within the Project boundary.
- Provide advice of TPZs, SRZs and tree protection measures.
- Supervise the trimming of any complex or high-risk trees.
- Supervise and/or provide advice where ground disturbance works is proposed within a trees TPZ.
- Any other relevant arboriculture advice or guidance as necessary.

9.2 Training

All staff and subcontractors will undergo Project-specific induction training that includes relevant biodiversity matters and associated management measures that must be implemented and/ or considered when planning and delivery work. The induction will include a component on flora and fauna management to ensure that personnel understand the potential impacts from construction and the proposed mitigation measures. This will include, but not be limited to, the following:

- Existence and requirements of this BMSP.
- Relevant legislation, licenses and permits.
- Types of threatened flora (including areas of TEC) and fauna identified within the Project area and how these species can be recognised.
- Fauna rescue requirements.
- Exclusion zones and the requirement to remain outside of these locations.

- Types of weeds and pests identified within the Project area.
- The Project two-stage clearing procedure.
- General vegetation and flora and fauna management procedures.
- Specific responsibilities for the protection of flora and fauna.

Additional daily and task-specific training and awareness material may be delivered to relevant staff and workforce, in the form of toolbox talks and pre-start meetings, to ensure that where detailed information is required, it is accessible to all involved with the Project. Toolbox and prestart meetings will be used, as required, to highlight any specific issues that arise on-site and posters will be used to further educate employees and sub-contractors, particularly immediately prior to clearing works. Training requirements for the Project are discussed further in Section 7.4 of the CEMP.

9.3 Monitoring and Inspections

Table 9-1 details the inspections related to biodiversity management required to be undertaken during for the Project. A full list of inspections is provided in Section 9.1 of the CEMP.

Table 9-1 Monitoring and Inspection requirements related to Biodiversity

Inspection	CoA	**Timing**	**Responsibility**	**Reporting /** Record
Daily visual surveillance	NA	Daily	JHG Site Supervisor	Supervisor / Foreperson's Logbook / Site Diary
General environmental inspections, which includes biodiversity management	NA	Weekly	JHG Environment Manager/Advisor	Inspection checklist
GMR inspection	NA	Monthly	JHG Site Supervisor, JHG Environment Manager/Advisor	Monthly inspection checklist
IRPL environmental inspections	NA	Fortnightly or as determined based on risk level.	IRPL personnel	Environmental Inspection checklist / notes
ER inspections	A26(j)	Fortnightly or as determined based on risk level.	ER	ER Inspection Report ER Monthly Report
External agencies inspections i.e. Environmental Protection Authority, DPHI	NA	As required, determined by the respective Agency	External regulator	Inspection checklist
Pre-Clearance Surveys	C20(b)	6 months prior to planned clearing	Project Ecologist	Preclearance survey report
Pre-Clearance inspection	C20(b) CoA 2 of EPBC-2018/8233	48 hours prior to planned clearing	Project Ecologist	Preclearance inspection report Vegetation clearance tracking register
Clearing supervision/inspections	C20(b)	During clearing	Project Ecologist	Completed Vegetation Clearing Permits and

Inspection	CoA	Timing	Responsibility	Reporting / Record
	CoA 2 of EPBC-2018/8233			Post clearing inspection report Vegetation clearance tracking register
Post clearing inspection	CoA 2 of EPBC-2018/8233	Within 3 months of clearing	Project Ecologist	Completed Vegetation Clearing Permits and Post clearing inspection report Vegetation clearance tracking register
Unsurveyed land assessments	E31	Prior impacting biodiversity values on unsurveyed land	Project Ecologist	Unsurveyed land inspection report
Baseline Monitoring	CoA E40	Prior to the commencement of Construction	Project Ecologist	Baseline monitoring Report
Pre-clearance survey of PCT-76	UMM ABD-1	Prior to the construction of access tracks associated with the accommodation camp facility	Project Ecologist	Preclearance survey report
Box Gum Woodland Restoration Monitoring Plan	E36(e)	Prior to the Commencement of Construction and every 12-months during Construction	Project Ecologist	Box Gum Woodland Restoration Report

9.4 Hold Points

In accordance with I*nland Rail Specification: Construction Environmental Management Framework – A2P (00-0000-900-EEC-00-SP-0002_2)*, the following hold points in Table 9-2 are applicable to vegetation clearing. Hold points are to be released by ARTC/IRPL prior to any vegetation clearing.

Table 9-2 Hold points applicable to vegetation clearing

Hold Point	Releasing Authority	Record
Flora and Fauna No Go Zones assessed and protected/delineated prior to commencing any relevant works	ARTC/IRPL Principal Environment Advisor (or Delegate)	Submission of evidence to ARTC/IRPL 5 days before commencing works
Disturbance footprint/Construction Impact Zone to be delineated by a surveyor before works commence.	ARTC/IRPL Principal Environment Advisor (or Delegate)	Submission of evidence to ARTC/IRPL 5 days before commencing works

9.5 Non-Compliance and Non-Conformance

Non-compliances and non-conformances, including those related to biodiversity management, are detailed in Section 9.3 of the CEMP. This includes the definitions of non-compliance and non-

conformance, corrective and preventative actions, communication of corrective and preventative actions to staff and non-conformance close-out.

9.6 Incident Response

Incident management, including biodiversity management, are detailed in Section 8 of the CEMP. This includes incident classification, notification and reporting including to external authorities, incident investigation and closeout.

9.7 Auditing

Audits (both internal and external) will be undertaken to assess the effectiveness of environmental controls, compliance with this sub plan, CoA and other relevant approvals, licenses and guidelines. Audit requirements are detailed in Section 9.4 of the CEMP.

9.8 Reporting

General Project reporting will be undertaken in accordance with Section 9.5 of the CEMP however biodiversity specific reporting requirements are provided in Table 9-3.

Table 9-3 Reporting requirements

Reporting Output	Recipient	Timing	Reference
Pre-Clearance Survey Report	Internal ER upon request	6 months prior to planned clearing 48 hours prior to clearing as required	Clearing Procedure (Appendix B) CoA C20(b)
Post-Clearance Survey Report	Internal ER upon request	3 months after clearing	Clearing Procedure (Appendix B) CoA C20(b)
Fauna rescue, handling and relocations	Internal ER upon request	After rescue, handling and relocations (including dam dewatering)	Fauna Rescue and Release Procedure (Appendix C) CoA C20(b), C20(d) C20(e)
Baseline Monitoring Program monitoring	Feeds into Connectivity Strategy which is provided to Planning Secretary, CPHR and DPI Fisheries. ER upon request	As required by the Baseline Monitoring Program	Section 8.15 CoA E40
Box Gum Woodland Restoration Report	CPHR, Planning Secretary ER upon request	Within 2 months of the end of the 12-month reporting period	Section 8.18.3 CoA E37
Confirmation of Biodiversity Impacts on Unsurveyed Land Report	Confirmation of Biodiversity Impacts on Unsurveyed Land Report ER upon request	Prior to conducting any work which may impact biodiversity values occurring in unsurveyed land	Section 8.14 CoA E33

Reporting Output	Recipient	Timing	Reference
Commonwealth EPBC Approval Annual Compliance Report	DCCEEW ER upon request	Within 20 business days of reporting period	Commonwealth EPBC Approval (CoA 28-34)

Regarding the Commonwealth EPBC Approval Annual Compliance Report, the following is noted.

The approval holder must ensure that any monitoring data, surveys, maps, and other spatial and metadata required under the CoAs of the Infrastructure Approval (SSI-9406) is approval are prepared in accordance with the Guidelines for biological survey and mapped data, Commonwealth of Australia 2018, or as otherwise specified by the Minister in writing.

The approval holder must ensure that any monitoring data, surveys, maps, and other spatial and metadata required under the CoAs of the Infrastructure Approval (SSI-9406) are prepared in accordance with the Guide to providing maps and boundary data for EPBC Act Projects, Commonwealth of Australia 2021, or as otherwise specified by the Minister in writing.

9.9 Complaints Management

Section 7.6 of the CEMP details communication and complaints management processes and procedures. The Community Consultation Strategy (CCS) identifies key stakeholder groups that will be consulted and engaged with during the Project and outlines the communication tools that will be used to consult and engage with these groups. During construction, any comments, feedback or complaints relating to biodiversity management issues will be addressed through the Complaints Management System. The Complaints Management System includes complaints register within the stakeholder database.

10 Review and Improvement

10.1 Continuous Improvement

Continuous improvement of this plan will be achieved by the ongoing evaluation of environmental management performance against environmental policies, objectives and targets for the purpose of identifying opportunities for improvement.

The continuous improvement process is designed to:

- Identify areas of opportunity for improvement of environmental management and performance.
- Determine the cause or causes of non-conformances and deficiencies.
- Develop and implement a plan of corrective and preventative action to address any non-conformances and deficiencies.
- Verify the effectiveness of the corrective and preventative actions.
- Document any changes in procedures resulting from process improvement, including spatial data; and
- Make comparisons with objectives and targets.

In addition to this, this plan will be reviewed or audited by a suitably qualified professional in accordance with the IS ECO-1 requirements.

10.2 Plan Amendments and Version Control

The processes described in Section 3.10 of the CEMP may result in the need to update or revise this Plan. In accordance with Section 9.7.2 of the CEMP, management plans will be reviewed, and where necessary updated, every 6 months or as otherwise required by the Project. Only the Environment Manager, or delegate, has the authority to change any of the environmental management documentation.

Minor amendments to the Plan may be approved and endorsed by the ER (at the Planning Secretary's discretion) in accordance with the CEMP and are to be implemented for the duration of construction and for any longer period set out in the monitoring programs or specified by the Planning Secretary, whichever is the greater. Amendments not considered minor by the ER require endorsement by the ER, and then approval by the Planning Secretary.

A copy of the updated plan and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure detailed in the CEMP

11 Appendices

Appendix A – Consultation Records

CPHR

Date	Details of Engagement / Attempted Engagement
18/06/2025	Email from JHG to CPHR team confirming the finalisation of the draft Biodiversity Management Sub-Plan (BMSP) which would be ready for consultation in the coming weeks. Acknowledged by CPHR.
24/06/2025	Provision of the BMSP via email from IRPL to the CPHR team for consultation under CoA C17.
15/07/2025	Provision of the BMSP comments from CPHR to JHG and IRPL via email.
28/07/2025	Revised BMSP and comments sheet submitted back to CPHR via email addressing all comments from the CPHR review. E33 Unsurveyed lands report comments and E44 Connectivity Strategy comments still to be discussed with CPHR.
30/07/2025	Revised BMSP and comments sheet submitted back to CPHR via email addressing all open comments from the previous CPHR review (most recent Unsurveyed Lands Report and relevant figures).
8/08/2025	Provision of outstanding open comments from CPHR to JHG.
12/08/2025	Revised BMSP and comments sheet submitted back to CPHR via email addressing all open comments from the previous CPHR review.
18/08/2025	Provision of outstanding open comments from CPHR to JHG.
21/08/2025	Revised BMSP and comments sheet submitted back to CPHR via email addressing all open comments from the previous CPHR review.
25/08/2025	Confirmation from CPHR that all comments are closed and that no further action is required on the BMSP by JHG.

Comment	Project Response	CPHR close out	Project Response	CPHR close out	Section	Status
When is the phase happening? Is it complete yet?	detailed design phase occurs pre construction and may still be concluding during construction, but prior to the construction of the specific watercourse crossing structures. No update to plan required	Noted			Table 2.3	Closed
As there is no references section in the BMP, this section must include the full details to ensure the correct documents are being relied upon.	reference information included for BDAR per comment below. Other completed documents are referenced appropriatel (see Environmental Assessment Documentation) or are currenlty in development (eg other plans)				Section 2.2	Closed
Include detailed design - define when that happens relative to actions required for the BMP. Section 4 specifies it as a phase for timebound actions	definition included in Table 2.5				Section 2.2	Closed
Replace with Conservation, Programs, Heritage and Regulation	updated throughout				throughout	Closed
Include document date and version V11.1, May 2024	updated	Noted that this has been added. The final date for the CBIULR should be added as well as this includes the final credit reports for the project.	updated		Table 2.5	Closed

Comment	Project Response	CPHR close out	Project Response	CPHR close out	Section	Status
Distinction between Commonwealth and NSW DCCEEW as this BMP contains reference to conditions from both DCCEEW Departments	reference to commomwealth deprtment in text of BMP only, definitions updated to reflect this.				Table 2.5	Closed
biodiversity	updated				Section 3.1	Closed
specify the BDAR, unsurveyed land report and versions, as it contains the detail and must be implemented for the offset liability to be adequate.	updated	The version of the unsurveyeyd land report is incorrect. The final version is Rev 2 dated 28 July 2025	Updated		Section 4.2	Closed
does this mean habitat trees? hollow-bearing trees? something else?	updated				Section 4.3	Closed
from the BDAR?	Environmental Assessment Documentation - is defined within the definitions and includes more than the BDAR - no update required				S6	Closed
Better quality	updated				Section 6.1	Closed
consist	updated				Section 6.1	Closed
This should be updated to match the final outcomes in the Unsurveyed land report including the credit report which includes a consolidated number of scattered trees and those with hollows for the entire footprint.	updated	The updated sentence regarding Unsurveyeyd land and scattered trees is appropriate. However the reference to the Unsurveyed land report needs to be updated to the 28 July 2025 document.	updated		Section 6.1	Closed

Comment	Project Response	CPHR close out	Project Response	CPHR close out	Section	Status
by assumed present, does this mean predicted (ecosystem) species from the BDAR? If so there are quite a few assumed species missing as per the BDAR and final credit reports	The table has been updated. The previous table included species which were present or directly thought to be present. I have updated the table to include all relevant species which use a PCT (at some stage of their life-cycle) impacted by the Project which feed into the ecosystem credits. I have also inserted a statement to refer to the BDAR for more information as it's quite complex and nuanced which is hard to summarise into a simple table.				Section 6.1.2	Closed
should say ornamental planting instead of native (per s.5.3 of the BDAR)	updated				Section 6.1	Closed
Update as required from the unsurveyed land report and final credit reports in the Unsurveyed land report	updated				Section 6.2.1	Closed
update as per outcomes in report. or at least say that unsurveyed land was then surveyed in accordance with the relevant CoA and final results in this BMP include the results of the previously unsurveyed land.	updated	The update in s6.2.2 is acceptable. The exception is the incorrect reference to the final Unsurveyed land report. Change to 28 July 2025 version.	updated		Section 6.2.2	Closed

Comment	Project Response	CPHR close out	Project Response	CPHR close out	Section	Status
Again - update to reflect outcomes of unsurveyed land report. only two flora species with remaining assumed presence and both have reduced area (Swainsona murrayana and Caladenia arenaria)	updated	Part of the update is accepted. It should be made clear though that the two species in Table 6-3 were not "found to be present" but are 'assumed to be present'. Also change report version to 28 July 2025.	Updated		Section 6.2.3	Closed
Chytrid fungus identified as potential issue in BDAR.	sentence deleted				Section 6.2.5	Closed
BDAR s.10.3.5 - Farm dams and small areas of wetland vegetation may provide habitat for transient threatened or migratory waterbirds.	updated as suggested				Section 6.3.2	Closed
This should be updated to reflect the EBPC approval and bilateral assessment outcomes. At present, this section seems to reflect mostly desktop based assessment. There should be specific reference to the known and assumed impacts to species and TECs that are MNES.	updated as suggested	The wording in the green addition should be similar/reflect the words in s3.2.2 and the controlled acitvity approval and assessment under the bilateral agreement (rather than 'approval of referal' as this reads here). Reference to the actual EPBC impacts is ok.	Updated		Section 6.5	Closed
terrestrial and aquatic biodiversity. Then can remove the fifth dot point	updated as suggested				Section 7.2	Closed

Comment	Project Response	CPHR close out	Project Response	CPHR close out	Section	Status
assumed habitat for threatened flora species	updated as suggested				Section 7.2	Closed
Impact areas and credit requirements to be updated from the Unsurveyed land report and final credit reports within that report	updated	The number of 1417 ecosystem credits is incorrect becasue it has been taken from the incorrect version of the unsurveyed land report. The total number of ecosystem credits required is 1817 (this number includes 62 ecosystem credits for scattered trees and 1755 for the main case).	updated	18/08/2025 While table 7-1 has the correct credits for each PCT, the preceding paragraph in the text still has the total credits as 1417 ecosystem credits. It should be 1817 ecosystem credits.	Table 7-1	Closed
update	updated	Table 7-1 is incorrect. It relies on Revision 26 of the BAM-C. The actual final version is Revision 28. In addition, these numbers should also include the credits required for scattered trees, which is a seperate BAM-C case. This table should be amended to reflect RD advice to Inland Rail dated 05/08/2025 (DOC25/516897-8) which includes the final recommended credits to DPHI to amend the consent conditions. Note that the total number of credits should include both the scattered tree	updated with information shown in the letter to DPHI		Table 7-1	Closed

Comment	Project Response	CPHR close out	Project Response	CPHR close out	Section	Status
		ecosystem credits and the ecosystem credits from the main case.				
Impact areas and credit requirements to be updated from the Unsurveyed land report and final credit reports within that report	updated	Table 7-2 has the incorrect credits for same reason as outlined above for Table 7-1. Table 7-2 also includes a number of vegeation zones that do not form part of any BC Act or EPBC Act TEC, so they do not need to be included in this table and probably create further confusion. This table should only include the vegeattion zones which form part of a TEC as per Table 3.3 and Table 3-4 of the 28 July 2025 version of the unsurveyed land report. This section should also be supported by maps that show the location of BC and EPBC TECs.	updated to include info from Table 3-3, 3-4 of the final unsurveyed land report - but not to incluyde vegetation zones that do not conform to TECs	18/08/2025 Partially updated. The VZs in Table 7-2 do not wholly reflect Table 3.2 and 3.3 of the unsurveyed land report. VZ6,9,10 and 11 should not be included in Table 7-2 of the BMP as they don't meet listing criteria for the TECs. This table should only have the the final updated total extent rather than presenting the two figures (as per previous comment on 05/08/2025). TECs are not noted on	Table 7-2	

Comment	Project Response	CPHR close out	Project Response	CPHR close out	Section	Status
		This table should only include the total actual impact areas. By including the previous unsurveyd areas, this only serves to create some confusion in the BMP. They should be outlined as vegetation zones with the toal impact area and credits for each as at 28 July 2025 report.		the biodiversity values maps in the appendix either.		
Impact areas and credit requirements to be updated from the Unsurveyed land report and final credit reports within that report	updated	Areas and credits are incorrect and rely on older versions of the unsurveyd land report. Please see RD advice to Inland Rail dated 05/08/2025 (DOC25/516897-8) in Attachment A for correct areas and credits for Table 7-3.	updated with information shown in the letter to DPHI		Section 7.2.3	

Comment	Project Response	CPHR close out	Project Response	CPHR close out	Section	Status
Impact areas and credit requirements to be updated from the Unsurveyed land report and final credit reports within that report. Should only be two flora species retained	updated	Areas and credits correct in Table 7-4 for fauna species credits (but the total area is not required - only credit total). There is also no credit requirment for Keys Matchstick Grasshopper so it should be removed from Table 7-4. Remove and correct reference to Rev D of Unsurveyed land report	updated as requested		Table 7.4	
update as per previous comment	updated				Secion 7.2.5	
Impact areas and credit requirements to be updated from the Unsurveyed land report and final credit reports within that report. reduction for Superb Parrot, Squirrel Glider and Keys Matchstick Grasshopper	updated	N.B - this is now Table 7-4			Table 7.5	
In relation to SAPs CHECK - these should be in this plan. Seems crazy not to have the relevant ones in here. This plan should specify the features to be protected and reference the most up-to-date maps and spatial datasets.	SAPs are appended to the CEMP main document in appendix A6. as these are not required to be completed for each sub-plan - per conditions of approval, these plans have not been appended to sub-plans.				NA	

Comment	Project Response	CPHR close out	Project Response	CPHR close out	Section	Status
new term that does not relate to BDAR data	updated to clarify				Section 8.1	
Specify BDAR V11.1 for this plan	updated as suggested				Section 8.1	
and commitments in the BDAR	updated as suggested				Section 8.2	
Remove once report approved by DPHI and CPHR/RD	wording of this dot point remains correct until unsurveyed land report is approved	To be updated	removed		Section 8.3	
Is there a dataset, maps in BDAR? Are these all hollow-bearing trees?	no - this could refer to any retained tree not cleared, either inside or outside the proposed footprint where impacts are avoided. No change required				Section 8.3	
What are the ecological features?	anything that is identified through unexpected find process that is temporarily retianed for further investigation. No change required				Section 8.3	
What's the difference between habitat features to be removed and those to be retained? Will habitat features to be retained have the blue/white tape and the green bunting?	refer to above comments regarding temporary retention. No change made				Table 8.1	

Comment	Project Response	CPHR close out	Project Response	CPHR close out	Section	Status
Given the considerable info above to protect individual trees, this section (and toolbox talks, clearing tracker etc) need to make it clear that TECs are present in areas with native groundcover and no trees. All mapped areas of TEC outside the and abutting the clearing footprint should be identified and demarcated as no-go zones, particularly where there are no trees.	Sedction 8.3 provides clear demarcation measures for the project. No updates made				Section 8.8	
where?	within designated stockpile areas - updated to include				Section 8.7	
last option assume is mulching or discarding as green waste at landfill. What happens if mulching? Will it be used on site are sent offsite? Any use on site should only be within the project footprint	refer to first sentence in Section 8.7				Section 8.7	
what is the plan for this, and who will do it? BD29 provides no details	updated to provide role and timing				Section 8.8	
As per previous comments. Update from final Unsurveyed land report	updated to discuss Unsurveyed Land report completion and current status	Insert approval date once received.	Noted- JHG propose to update this Plan with the final approval date at the next revision. The current Plan is still not approved by DPHI.		Section 8.14	

Comment	Project Response	CPHR close out	Project Response	CPHR close out	Section	Status
Assuming this will be updated when results available?	JHG do not propose to include the E40 surveys into the BMP at this time. The Baseline monitoring does not have an impact on the implementation of the BMP and is a requirement to fulfill the E44 Connectivity Strategy.				NA	
Again, this section though general at the moment, would be more useful once updated with the final connectivity strategy to include key locations, maps, populations etc and then the detail of the mitigation being implemented and monitored.	As above, it is intended that the BMP will reference the final Connectivity Strategy that is consulted with CPHR and approved by DPHI but not for implementation as part of Biodiversity Management during construction.	As per our meeting on 01/08/2025, RD acknolwedge that the Connectivity strategy has not been drafted or finalised. However, it is a key component of biodiversity managment during costruction and operation. As agreed in the meeting, the strategy must be appended to the BMP once finalised and relavent construction information summarised in s8.16 of the BMP.	agreed - in future revision of this plan will have the connectivity strategy appended, once approved. In the interim John Holland are seeking an extnesion of time for completion of this report under CoA A9.	18/08/2025 Can we include an appendix holding location for the Connectivity Strategy?	NA	
this sentence an paragraph can be removed and or appropriately amended when the unsurveyed land report is finalised (which is close to happening).	paragraph deleted				Section 8.17	
areas required for construction but not operation?	correct - standard construction terminology - no change made				Section 8.18	

Comment	Project Response	CPHR close out	Project Response	CPHR close out	Section	Status
supplementary	updated as suggested				Section 8.18.1	
condition and extent	updated as suggested				Section 8.18.3	
Worth noting that the BGWRP will be additional to the MP required as part of the BSA establishment	updated as suggested				Section 8.18.3	
As this is to be done prior to construction, these SAPs should be included in an updated version of this BMP	SAPs are appended to the CEMP main document in appendix A6. as these are not required to be completed for each sub-plan - per conditions of approval, these plans have not been appended to sub-plans.				Section 8.19	
Implementing this measure requires the correct information to be available and used. The unsurveyed lands data should be consolidated with the BDAR data and identified and mapped in this BMP	unsurveyed land report information has now been inlcuded throughout the document	Update as per document dated 28 July 2025 as per previous comments.	updated with current status in mitigation measures table BD-9		Section 8.19	
Is this short for the Unsurveyed Land Report?	defined in upfront definitions. No change made				Section 8.19	
wouldn't this be a project modification?	not necessarily - these works could be undertaken under a consistency assessment approved through IR. No change made				Section 8.19	

Comment	Project Response	CPHR close out	Project Response	CPHR close out	Section	Status
hold?	updated as suggested				Section 8.19	
and requiring management during removal like the HBTs?	updated as suggested				Section 8.19	
vegetation and habitat clearing	updated as suggested				Section 8.19	
where is the material to be sourced from, or stockpiled? Is it weed free?	updated as suggested				Section 8.19	
must be within the disturbance footprint and not be placed within any native vegetation, including native groundcover	no change made. There are a number of rules regarding location of stockpile sites (including the rules mentioned in this comment) and these are detailed in the SWMSP as referenced in the mitigation measure requirement.				Section 8.19	
will	updated as suggested				Section 8.19	
will	updated as suggested				Section 8.19	
will	updated as suggested				Section 8.19	
does this include TEC groundcover?	yes and no changes to mitigation measure are deemed to be required as a result of this comment				Section 8.19	
These should be in this BMP rather than relying on finding them later	a commitment has been made to developing the list of contacts - are CPHR suggesting that this	Not suggesting it can't be met. Comments provided later in App C			Section 8.19	

Comment	Project Response	CPHR close out	Project Response	CPHR close out	Section	Status
	commitment cannot be met? No change made					
this would be better with a time-frame or it could be months before it is reported. may be a high risk area which reduced speeds or other alerts may help to reduce risk if alerted early.	updated as suggested				Section 8.19	
will these then be included on SAPs or similar?	SAPs are appended to the CEMP main document in appendix A6. as these are not required to be completed for each sub-plan - per conditions of approval, these plans have not been appended to sub-plans.				Section 8.19	
contained and removed from site?	updated as suggested				Section 8.19	
as indicated on the SAPs?	SAPs are appended to the CEMP main document in appendix A6. as these are not required to be completed for each sub-plan - per conditions of approval, these plans have not been appended to sub-plans.				Section 8.19	

Comment	Project Response	CPHR close out	Project Response	CPHR close out	Section	Status
will the connectivity strategy be appended to this BMP?	The timing of the connectivity strategy is still being determined. The E44 connectivity strategy will require future consultation with CPHR and DPI Fisheries and is not proposed to be attached to this Management Plan in this revision prior to construction.	See comment in row 52. Final connectivity stragey to be appended to BMP as a stand alone report.	as per comment in row 52		NA	
what about other habitat and ecological features as per s8.3?	updated as suggested				Section 9.1	
by when? Timeframe for monitoring is in table 9-1 but there is no timeframe for finalising this plan other than before construction	this covered by a COA. As stated in the comment timeframe is in Table 9.1				Section 9.1	
New sentence no dot point? as new person responsibility?	updated as suggested				Section 9.1	
and threatened ecological communities, including areas where there are no trees	updated as suggested				Section 9.2	
and vegetation	updated as suggested				Section 9.2	
are all biodiversity-related inspections in this BMP?	yes. No change made				Section 9.3	

Comment	Project Response	CPHR close out	Project Response	CPHR close out	Section	Status
If there are any checklists required in this table like this one, they should be included as an appendix in this BMP (if not already).	checklists, and forms developed under the BMP will be developed by JH separately for the project and are not required to be appended to the BMP in accordance with the conditions of approval				Section 9.3	
What is unplanned clearing, and why does it not have the required pre-clearing protocols	refer to Section 2.1 and 2.3 of App B				Section 9.8	
including updating spatial data and maps	updated as suggested				Section 10.1	
might not be vegetation only - include other habitat attributes as per s8.3	updated as suggested				S1.1	
and fauna habitats?	updated as suggested				S2.1	
and threatened ecological communities	updated as suggested				S2.1	
and SAPs are reviewed?	updated as suggested				S2.1	
this is way to long for some aspects of pre-clearing. While it may be appropriate for demarcation and other similar tasks, it is too long for checking of threatened flora, potential nests etc. e.g. nests or habitat that was unoccupied or not built 6 months prior to clearing may	I think this comment is answered by the next comment. Text in S2.1 has been updated to reflect .				S2.1	

Comment	Project Response	CPHR close out	Project Response	CPHR close out	Section	Status
be in use immediately before clearing						
It might be worth referencing this in the previous s2.1 which says 6 months before clearing (see previous comment). To address this reference to the 48 hours before and this section would be helpful.	updated as suggested				S2.1	
and site maps/gps	updated as suggested				S2.5	
care should be taken not to cut across hollow sections of trees where nesting animals could be and have not vacated.	updated as suggested				S2.5.3	
which species? and what is the timing? This is unlikely to be implemented without specific detail	it is not possible to predict or specifiy every potential species that may be identified in order to implement the suggested information into the mitigation measures. Advice will be sought from an ecologist during clearing as described in S2.5.3. no change made				S2.5.4	

Comment	Project Response	CPHR close out	Project Response	CPHR close out	Section	Status
not be placed or stockpiled on native vegetation, including ground cover?	stockpiled in designated stockpile areas as defined in the Soil and Water Management Plan				S2.5.4	
Again, three months sounds like a long time. If it wasn't done in accordance with the clearing permit, then that problem/mistake could be repeated multiple times and locations in that three month period.	3 months gives ecologist time to complete all required clearing on the ground then write the detailed report. The brief post clearing report described in the first paragraph in this section will be provided in the interim to confirm any non-compliances / learnings required.				S2.6	
While we understand that details of local WIRES carers cannot be placed in this document, if they are known it should be noted where these details are held. This section should also have the contact details for local vets in Cootamundra and Junee	no change. Wires phone number included as required.	Provide details for local vets (likely Junee, Cootamudra, Temora)	added		S3.1	
would this be #2?	updated as suggested				S3.2	
and vaccinated	updated as suggested				S3.2	
should wear gloves as well	updated as suggested				S3.2	

Comment	Project Response	CPHR close out	Project Response	CPHR close out	Section	Status
?	updated as suggested				S1.1	
already listed at dot point 3	updated as suggested				S2	
This whole table is highlighted - can see it probably needs a fair bit of review for consistency with the rest of the BMP. Will not complete detailed review of this Table until updated.	This table is now finalised.				Section 4.3	
what kind of ecological assessment? to record what? wouldn't this be known already by this stage?	updated to pre-clearance survey				S4.3	
terminology consistency with previous sections of BMP	updated to exclusion zones				S4.3	
review of project ecological data (BDAR, Unsurveyed Lands report, sensitive area maps and pre-clearing reports)	updated as suggested				S2.2.1	
and aquatic vegetation	updated as suggested				S2.2.2	
if possible will the mud at the bottom be checked once all water is out? some frogs etc are tricky to capture or will be missed with nets	updated as suggested				S2.2.2	

Comment	Project Response	CPHR close out	Project Response	CPHR close out	Section	Status
This is the first time an aquatic ecologist is mentioned. Will they be a different person to the ecologist for all other procedures? assume not?	updated as suggested				S2.2.5	
It would make more sense to have these checklist/report templates included for s3.1 and s3.2 included as part of this procedure/appendix.	no change made. As per the COA and for consistency with other CEMP documentation, reports, checklists and forms to be developed by JH following approval of the CEMP				S3.1	
species?	Please confirm the coment associated with this query. The Unexpected Finds Protocol has been developed and endorsed by the ER and the NGH Project Ecologist.	This was in regard to the fact it said photograph items - just wondered for an unexpected finds protocol for biodiversity if this meant species?	unexpected finds protocol is for any/all unesxpected finds - flora or fauna species.		Appendix F	
remove once unsurveyed land report finalised	Noted, This will be removed once the Unsurveyed Lands Report is finalised. The report is still yet to be finalised and JHG propose to update at the next revision once this document is finalised and note that it is a separate document that does not directly impact on the management measures of the BMP.				Appendix G	

Comment	Project Response	CPHR close out	Project Response	CPHR close out	Section	Status
RD note that the Unexpected finds protocol has been deleted as an appendix from the version of the report we were given to review. This should be retained and the comments from our first review addressed.	Noted- UFP re-added as a version to the clean copy provided for final review.	18/058/2025 There is a PDF page (pg145) that has the listing as Unexpected and Incidental Finds Procedure. But it does not have any information following that and is not Appendix F as stated in the BMP. Appendix F is currently the maps of Biodiversity values along the route.	Appendix I included in the document as a placeholder for the Unexpected and Incidental Finds Procedure. This procedure has already been approved under CoA A17 for Low Impact Works. It is the intention that this procedure will be utilised for the BMP and will be provided for information in Appendix I. s8.13 updated to include a reference to Appendix I		Appendix F (previously Appendix H)	
The maps in Appendix F say they are the biodiversity values along the project footprint, yet they do not contain any records of species polygons or threatenend species records from the BDAR and unsurveyed lands report. These should be included as biodiversity values for the project footprint. This comment was provided in RD's first revision but has not been addressed for this revision.	updated to include figures from unsurveyed land report final	18/08/2025 While CPHR note that these maps have been updated to include the revised vegetation zones and scattered trees from the unsurveyd lands report, they still do not have locations of threatenend species recorded or species polygons. There are some mitigation measures that are specific to locations of species polygons and known habitat (e.g. BD42), so these locations and polygons must be included on these maps.	Appendix F updated to include figures showing: - Vegetation zones and scattered trees - Threatened flora species - Threatened fauna species - Revised species polygons - location of PCTs - Location of TECs It is noted that the information from the Unsurveyed Lands Report has been utilised in combination with the figures from the updated BDAR to cover all aspects / biodiversity values along the alignment. these maps will be		Appendix F (previously Appendix H)	

Comment	Project Response	CPHR close out	Project Response	CPHR close out	Section	Status
			consolidated to show all layers on one package of maps pripr to submission to DPHI. the maps provided are indicative of the layers planned for consolidation to adequately show values.			

Appendix B – Clearing Procedure

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Terms and Abbreviations

Term / Abbreviation	Definition / Expanded text
ARTC	Australian Rail Track Corporation
BMSP	Biodiversity Management Sub-plan
CEMP	Construction Environmental Management Plan
EPBC	*Environmental Protection and Biodiversity Conservation Act 1999*
EPL	Environmental Protection License
ESCP	Erosion and Sediment Control Plan
I2S	Inland Rail - Illabo to Stockinbingal Project
JHG	John Holland Group
Project	Inland Rail - Illabo to Stockinbingal Project
Procedure	Clearing Procedure
RMMs	Revised Mitigation Measures
SSI	State Significant Infrastructure
TPZ	Tree Protection Zone

1 Introduction

1.1 Purpose and Scope

The purpose of this Clearing Procedure (this Procedure) is to provide guidance to ensure that vegetation clearing activities associated with the Inland Rail - Illabo to Stockinbingal Project (I2S or 'Project') are undertaken to minimise biodiversity impacts. This Procedure details the following information.

- Pre-clearing surveys
- Delineation of clearing and demarcation limits
- Pre-clearing inspections
- Hold Point
- Clearing works
- Clearing Permit
- Ecologist supervision requirements
- Staged clearing processes
- Fauna interaction
- Unexpected and Incidental Finds Protocol – Threatened species
- Post clearing inspections

This Plan is an appendix of the Biodiversity Management Sub-plan (BMSP) which forms part of the Construction Environmental Management Plan (CEMP) for the Project.

This Procedure has been prepared to address the requirements related to vegetation clearing associated with the Infrastructure Approval (SSI-9406), Submissions Report (known as Revised Mitigation Measures (RMMs)), Environmental Protection License (EPL), EPBC Controlled Action Approval (EPBC Referral 2018/8233) and all applicable legislation, guidelines, standards and specifications.

This Procedure is applicable to all personnel involved in the vegetation clearing process for the Project including employees, sub-contractors and consultants.

1.2 Objective

The objectives of this Procedure include:

- Ensure compliance with all environmental requirements of the Project
- Minimise the impact of vegetation clearing on biodiversity
- Implement industry standard methods for vegetation clearing
- Provide a clear methodology vegetation clearing to be implemented throughout the Project
- Prevent of minimise the risk of unapproved vegetation clearing

1.3 Training

The requirements of this Procedure and the BMSP will be appropriately communicated to all employees and sub-contractors involved in vegetation clearing for the Project.

2 Procedure

The following procedure is to be followed for all relevant vegetation clearing works.

2.1 Pre-clearing Survey

Pre-clearing surveys will be carried out by a suitably qualified and experienced ecologist prior to removal of the target vegetation and potential fauna habitat. The Pre-clearing survey will assess the following.

- Confirm the vegetation to be cleared is within the Project boundary and approved for clearing.
- Identify the presence and location of any habitat features (including tree hollows, snags, bird nests and/or potential bat roosts), any potential timber reuse options (see Section 8.7 of the BMSP) and any seed collection opportunities (Section 8.8 of the BMSP).
- Identify the presence and location of any aquatic fauna where salvages required in watercourses or residual pools within 50 m of the construction footprint and in areas that would be enclosed by silt curtains (e.g. piling locations)
- Check for the presence of listed threatened flora species and TECs within and adjacent to the area to be cleared. Ensure any threatened flora species found within clearing limit has been approved for removal prior to clearing (otherwise implement the Unexpected and Incidental Finds Protocol (Appendix F of the BMSP).
- Identify the presence of any fauna which may require relocation ion accordance with the Fauna Rescue and Release Procedure (Appendix C of the BMSCP). Depending on when clearing is scheduled, it may be more appropriate to relocate any fauna during the pre-clearing inspection (Appendix B). If threatened fauna species are discovered, refer to the Unexpected and Incidental Finds Protocol (Appendix F of the BMSP).
- Identify nearby habitats which may be suitable for release of any captured fauna.
- Identify weeds pets and pathogens that may require management during the clearing process in accordance with the Biosecurity Management Sub-plan.
- Review SAPs and check to ensure any exclusion zones and/or clearing boundaries are demarcated noting that this step may, in some situations, be more suitable during the pre-clearing inspection (Section 2.2).
- Any other relevant ecological features, issues or items which require management during the clearing process.

The results of the pre-clearing survey, and any recommendations to implement prior to or during clearing, will be documented in a pre-clearing report by the ecologist and provided to JHG. Pre-clearing surveys will typically be undertaken within 6 months of the planned vegetation clearing however this may change based on the vegetation and associated risk present at a site. Additional preclearance activities will be undertaken within 48 hours as per Section 2.3

2.2 Demarcation of clearing limits

All vegetation to be cleared and protected must be clearly demarcated prior to the commencement of clearing works to avoid confusion and potential over clearing. The types of demarcation will be undertaken in accordance with Section 6.3 of the BMSP.

Variations to demarcation may be required, however this will be clearly explained to all relevant personnel and detailed in the clearing permit as required. For example, if vegetation is too thick preventing installation of flagging, marker ribbons and the use of survey may be a suitable alternative.

Trees for retention, including their Tree Protection Zone (TPZ), should be protected in accordance with *Australian Standard 4970-2009 for the Protection of Trees on Development Sites*.

2.3 Pre-clearing inspection

A final pre-clearing inspection will be undertaken by an ecologist a minimum of 48 hours prior to the planned clearing works. The pre-clearing inspection will include the below.

- Identify, locate and mark habitat features, timber reuse options.
- Confirm that areas to be cleared and retained are clearly demarcated.
- Identify any fauna that has the potential to be disturbed, injured or killed during clearing. Relocate any fauna residing in the area to a suitable nearby location in accordance with the Fauna Rescue and Release Procedure (Appendix C of the BMSP).
- Identify any threatened flora or fauna species that may have moved into the area since previous surveys were undertaken. If so, manage in accordance with the Unexpected and Incidental Finds Protocol (Appendix F of the BMSP).
- Where possible, collect any available seed in accordance with Section 8.8 of the BMSP.
- Identify any weeds which may need management during clearing activities in accordance with the Biosecurity Management Sub-plan.
- Determine any specific clearing methodologies i.e. staged clearing etc.
- Determine whether ecologist supervision is required during clearing.

Following completion of the pre-clearing inspection, the ecologist will detail any specific information in the pre-clearing inspection report and sign the clearing permit.

2.4 Hold Point

In accordance with I*nland Rail Specification: Construction Environmental Management Framework – A2P (00-0000-900-EEC-00-SP-0002_2)*, the following hold points in Table 4 are applicable to vegetation clearing. Hold points are to be released by Australian Rail Track Corporation (ARTC) prior to any vegetation clearing.

Table 4Hold points applicable to vegetation clearing

Hold Point	Releasing Authority	Record
Flora and Fauna No Go Zones assessed and protected/delineated prior to commencing any relevant works	ARTC / Inland Rail Principal Environment Advisor (or Delegate)	Submission of evidence to ARTC 5 days before commencing works
Disturbance footprint/Construction Impact Zone to be delineated by a surveyor before works commence.	ARTC / Inland Rail Principal Environment Advisor (or Delegate)	Submission of evidence to ARTC 5 days before commencing works

2.5 Clearing Works

2.5.1 Clearing permit

Prior to the commencement of vegetation clearing, a clearing permit will be issued by the JHG Environment Team. Clearing permits will be signed off by the JHG Environment Manager or delegate, site supervisor, operators and ecologists. Any relevant information, as determined via the pre-clearing

survey and pre-clearing inspection, will be included in the clearing permit and communicated to all relevant personnel involved. An example of the clearing permit template is provided in Appendix A.

2.5.2 Ecologist supervision requirements

The requirement for ecologist supervision will be determined during the pre-clearing survey and pre-clearing inspection which will be based on the ecologist risk of the works. Examples of when ecologist supervision may be required is provided below.

- Where fauna habitats are being removed or impacted including nests, hollow-bearing trees, woody debris etc. and staged clearing is used (Section 2.5.3).
- Where fauna was present during the pre-clearing inspection.
- Where not all areas could be thoroughly inspected by the ecologist during the pre-clearing inspection e.g. vegetation to thick, access etc.
- In areas generally considered to have an increased risk e.g. Threatened Ecological Communities, riparian vegetation etc.
- Undertaking fauna rescue and release activities if required (refer to Appendix C).

2.5.3 Staged clearing

The following staged habitat removal process will be used when identified habitat feature (e.g. hollow-bearing trees, habitat trees, nests, woody debris or bush rock), as confirmed by the ecologist, is required to be removed.

1. Following issuing of the clearing permit, non-habitat feature vegetation and surrounding understorey vegetation will be felled or cleared first. This can be carried out without supervision by the Ecologist.
2. Leave the habitat feature overnight, or preferably 24 hours, in order to give any fauna an opportunity to vacate the site.
3. A suitable release location is to be determined by the Ecologist/fauna handler prior to the removal of habitat feature vegetation for any fauna captured during the habitat tree removal.
4. The following day, ecologist/fauna handler to carry out final inspection of habitat feature vegetation for evidence of fauna occupation. The ecologist/fauna handler must supervise the removal of all habitat trees.
5. The plant operator is to “knock” or disturb the habitat tree prior to felling, with the intent to encourage the movement of fauna out of hollows/nests
6. Once confirmed Ok to re-commence by the ecologist/fauna handler, the tree will be removed as carefully as possible and placed on the ground using the ‘slow drop’ technique, with consideration for removing the habitat feature prior to felling.
7. Machinery is then to be made safe while the ecologist/fauna handler undertakes a thorough inspection of the felled tree and the habitat features present for any fauna that may still be present. Care should be taken not to cut across hollow sections of trees where nesting animals could be and have not vacated.
8. Any fauna displaced will be captured and inspected for injury prior to relocation in the pre-determined area
9. Hollow sections of the tree are to remain undisturbed on the ground for at least 24 hours following felling if the ecologist/fauna handler determines that fauna is likely to be present.

Where the use of a crane and/or elevated work platform are required due to the presence of fauna within trees to be felled, the above process is to be modified as required to ensure impacts to fauna are minimised.

2.5.4 General mitigation measures

The following general measures will be implemented during clearing. Also refer to Section 8.19 of the BMSP.

- Erosion and sediment controls will be installed in accordance with the Erosion and Sediment Control Plan (ESCP)
- Carefully clear vegetation so as not to mix topsoil with debris and to avoid impacts to surrounding native vegetation
- Non-woody vegetation should be incorporated into the stripping of topsoil to retain any organic materials and nutrients
- Pruning will be supervised by a Level 3 or above qualified arborist.
- Removal works will be timed to minimise impacts on fauna where possible (e.g. avoid known breeding/nesting seasons)
- Contact vets and wildlife carers prior to commencing works to ensure willingness to assist if required
- Any fauna interactions are to be managed in accordance with the Fauna Rescue and Release Procedure (Appendix C of the BMSCP).
- Any unexpected, threatened flora or fauna finds will be managed in accordance with the Unexpected and Incidental Finds Protocol (Appendix F of the BMSP).
- All weeds, pathogens and pests will be managed in accordance with the Biosecurity Management Sub-plan.
- Weed material, including infested topsoil, will be segregated separated to native vegetation and stockpiled in designated stockpile areas as defined in the Soil and Water Management Plan.
- Woody debris for potential reuse will be stockpiled separately
- Where fauna is observed during the clearing process, and is at risk of injury or death, works are to stop, and an ecologist is to attend site to ascertain next steps and possible capture/relocation.
- Any fauna injury or death is to be reported to the JHG Environment Manager immediately.

2.6 Post Clearing

Within 3 months of clearing in areas of where native vegetation was removed (i.e. Plant Community Types), a post-clearing inspection will be undertaken by the Project ecologist to confirm all works were undertaken in accordance with the clearing permit. Immediately following clearing, a brief post-clearing report will be prepared summarising key information from the clearing process.

At relevant intervals, JHG will calculate the amount of vegetation cleared to ensure clearing limits are not exceeded which will be documented in the Projects vegetation clearing tracker.

Appendix C – Fauna Rescue and Release Procedure

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Terms and Abbreviations

Term / Abbreviation	Definition / Expanded text
BMSP	Biodiversity Management Sub-plan
CEMP	Construction Environmental Management Plan
EPBC	*Environmental Protection and Biodiversity Conservation Act 1999*
EPL	Environmental Protection License
I2S	Inland Rail - Illabo to Stockinbingal Project
JHG	John Holland Group
PPE	Personal Protective Equipment
Procedure	Fauna Rescue and Release Procedure
Project	Inland Rail - Illabo to Stockinbingal Project
RMMs	Revised Mitigation Measures
SSI	State Significant Infrastructure
TRA	Task Risk Assessment
WIRES	NSW Wildlife Information, Rescue and Education Service

1 Introduction

1.1 Purpose and Scope

Handling of fauna may be necessary during the construction of the Inland Rail - Illabo to Stockinbingal Project (I2S or Project') when they need to be relocated or, if injured, taken to a vet or wildlife carer. The careful handling of fauna is essential to minimising stress or further injury on the animal, to prevent the spread of diseases and to avoid injury to fauna handlers.

The purpose of this Fauna Rescue and Release Procedure (this Procedure) is to outline how fauna will be safely rescued, handled and released during construction of the Project. This procedure is applicable to all native and introduced (domestic, wild or pest) fauna species that are found on the Project site. This Procedure is also applicable to nocturnal fauna or slow-moving species that may not be capable of moving away from plant and equipment.

This Procedure has been prepared to address the requirements related to fauna rescue and release works associated with the Infrastructure Approval (SSI-9406), Submissions Report (known as Revised Mitigation Measures (RMMs)), Environmental Protection License (EPL), EPBC Controlled Action Approval (EPBC Referral 2018/8233) and all applicable legislation, guidelines, standards and specifications. This Plan is an appendix of the Biodiversity Management Sub-plan (BMSP) which forms part of the Construction Environmental Management Plan (CEMP) for the Project.

This Procedure is to be followed by all personnel involved in the Project including employees, sub-contractors and consultants.

1.2 Objective

The objective of this Procedure is to minimise impacts to fauna as a result of being handled by humans and prevent injury to the people handling fauna.

To minimise the requirements to handle fauna, it is assumed that the processes outlined in the Clearing Procedure (Appendix B of the BMSP), have been completed prior to clearing.

1.3 Training

All site personnel and subcontractors will be made aware of the actions to be taken in the event that fauna is discovered on the project. This training will occur on site during the Project induction and as required in toolbox talks.

2 Impacted Fauna

Fauna is expected to be encountered during the following activities and stages of the Project.

- Pre-clearing surveys and vegetation clearing
- Dewatering of farm dams
- Works in waterways
- Fauna that traverses site during construction
- Cattle/livestock which are loose and within the Project area
- While some mobile species, such as birds, may be able to move away from the clearing and construction activities, other species likely to be directly affected by the works include the following.

- Less mobile species unable to move rapidly over relatively large distances (e.g. frogs and reptiles, nesting birds and juvenile fauna)
- Species using tree hollows (e.g. possums, gliders, microbats and birds)
- Microbats residing in structures (bridges and culverts) and vegetation
- Fish, turtles, frogs and eels in farm dams and waterways.

3 Procedure

3.1 Contacts

The contacts nominated for fauna rescue and release for the Project are provided in Table 3-1.

Table 3-1 – Contacts related to fauna rescue and release

Contact	Contact Phone Number
NSW Wildlife Information, Rescue and Education Service (WIRES)	1300 094 737
Project Ecologist	(02) 6882 0118
JHG Environment Manager	1800 732 761
JHG Community and Stakeholder Manager (for stray cattle/livestock)	1800 732 761
Junee Council (for stray cattle/livestock)	(02) 6924 8100
Cootamundra-Gundagai Regional Council (for stray cattle/livestock)	1300 459689
Cootamundra Veterinary Clinic	02 6942 2033
Junee Veterinary Clinic	02 6924 1182
Temora Veterinary Clinic	02 6977 1451

3.2 Fauna Capture and Release

If fauna is discovered on site during activities that may harm the animal when the Project Ecologist is not on site, or if the animal poses a risk to site personnel, the following procedure will be followed:

1. **STOP ALL WORKS** near the animal and notify the area Supervisor or Superintendent, who is to notify the JHG Environment Manager. The JHG Environment Manager (or delegate) will notify the Project Ecologist or Wildlife Carer of the fauna requiring rescue and relocation.
2. Establish a safe exclusion area around the animal. Control vehicle, plant, and personnel movements around exclusion area
3. Confirm whether the animal is a threatened species, and if it is, implement the Unexpected and Incidental Finds Protocol (Appendix E of the BMSP).
4. Provide the location of the animal, clear directions to access the area and contact details for Supervisor to meet the Project Ecologist and direct them to the animal(s)
5. Allow animal to leave the area without handling if the animal is mobile. Make sure the animal has a clear, safe path to leave the construction area
6. If the animal is unable to leave the area of its own accord, the Project Ecologist or Wildlife Carer with specific animal handling experience will handle and relocate the animal. The animal will be

relocated to suitable habitat identified during pre-clearance survey, at a suitable time of day for the species (i.e. night for nocturnal, day for diurnal).

7. In the event that the Project Ecologist or Wildlife Carer is not immediately available to attend site, to minimise stress to the animal and/or remove the risk of further injury before the appropriate rescue agency arrives onsite, a member of the Environment Team or delegate may handle the animal under direction of the Project Ecologist or Wildlife Carer. Prior to handling, ensure that all Personal Protective Equipment (PPE) is worn and relevant risk assessments (e.g. Task Risk Assessment (TRA)) have been carried out. Specific directions will be species specific and will be provided by the Project Ecologist or Wildlife Carer, however, may include the items detailed in Table 3-2.

Table 3-2 – Animal handling consideration

Fauna Group	Handling Considerations
Snakes	**ONLY TO BE HANDLED BY QUALIFIED/TRAINED PERSONNEL** Handling of snakes can pose a safety risk from bites. Handling of snakes should be done by appropriately qualified personnel, and where possible, use of no-direct contact handling techniques (i.e. snake hook and bag, as opposed to handling the animal).
Bats	**ONLY TO BE HANDLED BY QUALIFIED/TRAINED AND VACCINATED PERSONNEL** Some species of bats carry the Australian Bat Lyssavirus, a form of rabies. Project Ecologists handling bats must have a current rabies vaccination and wear gloves. Bats that are held should be stored in a calico bag or sealed bat nest box for release after dusk.
Frogs	Gloves must be worn at all times when handling frogs. Frogs and tadpoles are to be placed into plastic bag (zip lock) or other plastic containers with a small amount of water and vegetation. Handling of frogs can result in the spread of the Amphibian Chytrid Fungus and must be undertaken in accordance with the *DECC Hygiene Protocol for Control of Disease in Frogs* (DECC, 2008).
Mammals and birds	Small mammals and birds can cause injury to handlers including bites and scratches if handled incorrectly. Mammals and birds should be placed into a calico/hessian bag or a cardboard box. Possums can easily rip through calico bags and should be placed within double lined canvas bags or a nest box.
Nestlings or juveniles	Where possible, the trees with nestlings or juvenile birds should be left intact until juveniles have vacated the nest or den. If construction timing does not permit this, attempts will be made to rescue juveniles for captive-rearing by a responsible wildlife group (such as Wires) and subsequent release into translocation sites. The success of this will depend upon the species, their stage of development and likely chances of survival.
Arboreal animals (animals in tree hollows)	If arboreal animals do not move or they cannot be captured because the tree hollow is too large or high, then the tree will be felled using staged clearing method (refer to Clearing Procedure in Appendix B of the BMSP) and animals recovered post-felling.
Fish and aquatic species	Ensure that containers for holding aquatic species provide enough water and adequate aeration. Refer to the Farm Dam Dewatering Procedure in Appendix E of the BMSP.
Domestic animals (pets)	Check is a collar, and tag has contact details for the owner. Alternatively take the animal to the nearest vet to scan the pet for a microchip to try and reunite the pet with its owner.
Pest species	Pest animals are not to be released and may need to be euthanised (see below).
Cattle and livestock	Contact the JHG Community and Stakeholder Manager to identify who the animal belongs to make arrangements with the farmer to relocate the animal.

In some instances, severely injured and pest animals may need to be euthanised. Euthanasia is only permitted by the Project Ecologist, wildlife carer (WIRES) or a veterinarian that is trained and competent in methods of euthanasia. The Project Ecologist will consider methods that are humane, painless and rapid such as those in accordance with *Methods of Euthanasia* (Sharp and Saunders 2004, prepared for NSW Department of Primary Industries).

For animals up to 150g, cervical dislocation will be used, followed by pithing as secondary technique. Animals over 150g should be taken to veterinarian, or veterinarian brought to it, for lethal injection. Lethal injection will be completed only by a veterinarian or other suitable trained professional. The use of firearms is not permitted by any personnel on site.

8. Relocation of fauna captured during construction works, including clearing and associated works and dewatering works (i.e. dewatering of farm dams or coffer dams) will be undertaken by the Project Ecologist or rescue agency as appropriate. If the animal is not injured or stressed, it should be released to an area that is not to be disturbed by the project construction works, in accordance with the following:

    a. sites identified as suitable release points by the Project Ecologist or rescue agency
    b. release site will contain similar habitat and occur as close to the original capture location as possible.
    c. if the species is nocturnal, release will be carried out at dusk or placed in a suitably dark and appropriate location (i.e. an unoccupied tree hollow or temporary nest box)
    d. release would generally not be undertaken during periods of heavy rainfall (i.e. except frogs, turtles), and
    e. non-native fauna will not be translocated and will be euthanised
    f. availability of roosting features, such as tree hollows of suitable size, structure and location; whether the habitat is likely to be fully occupied by the species being released; and the known or likely abundance of food resources for each species released.

9. If the animal has been placed into care due to injury, age (i.e. young) or shock, upon its rehabilitation it will be released in an area that is not to be disturbed by the project construction works at the discretion of the Project Ecologist or rescue agency.

10. Following consultation with all relevant stakeholders, the Project Ecologist/ Environmental Manager will implement any corrective actions and additional management measures/ safeguards have been implemented and construction works can recommence in the area.

4 Record Keeping

The JHG Environment Team will keep a register of all fauna species captured (number of individuals, sex, age class and general health of each individual), release sites and dates, individuals taken into care and release date or fate.

Appendix D – Working Within and Adjacent to Waterways

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Terms and Abbreviations

Term / Abbreviation	Definition / Expanded text
AMS	Activity Method Statement
ARTC	Australian Rail Track Corporation
BMSP	Biodiversity Management Sub-plan
CEMP	Construction Environmental Management Plan
CPESC	Certified Professional in Erosion and Sediment Control
CoA	Condition of Approval
DPI	Department of Primary Industries
EIS	Environmental Impact Statement
EPBC	*Environmental Protection and Biodiversity Conservation Act 1999*
EPL	Environmental Protection License
ESCP	Erosion and Sediment Control Plans
EWMS	Environmental Work Method Statement
FM Act	*Fisheries Management Act 1994*
JHG	John Holland Group
Procedure	Working Within and Adjacent to Waterways Procedure
Project	Inland Rail - Illabo to Stockinbingal Project
RMMs	Revised Mitigation Measures
SSI	State Significant Infrastructure
SWMSP	Soil and Water Management Sub-plan

1 Introduction

1.1 Purpose and Scope

In accordance with CoA C20(e), the purpose of this Working Within and Adjacent to Waterways Procedure (Procedure) is to detail the process to be followed when undertaking construction works, including any temporary waterway crossings and diversions, within or adjacent to waterways for the Inland Rail - Illabo to Stockinbingal Project (Project). This Procedure does not detail specific construction methodologies or mitigation measures for specific locations/waterways, but rather a generalised process to be applied for all works within and adjacent to waterway work. This Procedure should be read in conjunction with the Farm Dam Dewatering Procedure (Appendix E of the Biodiversity Management Sub-plan (BMSP)) and the Fauna Rescue and Release Procedure (Appendix C of the BMSP).

This Procedure has been prepared to address the requirements related to working within and adjacent to waterways working within or adjacent to waterways associated with the Infrastructure Approval (SSI-9406), Submissions Report (known as Revised Mitigation Measures (RMMs)), Environmental Protection License (EPL), EPBC Controlled Action Approval (EPBC Referral 2018/8233) and all applicable legislation, guidelines, standards and specifications. This Plan is an appendix of the Biodiversity Management Sub-plan (BMSP) which forms part of the Construction Environmental Management Plan (CEMP) for the Project.

This Procedure is applicable to relevant ground disturbance works within 40m of waterways (known as waterfront land), listed in Section 3, and will be followed by all personnel involved in the Project including employees, sub-contractors and consultants.

1.2 Objective

The objective of this Procedure is to provide a clear methodology to ensure that all construction works undertaken for the Project are managed to minimise impacts to aquatic biodiversity, water quality, waterway geomorphology, fish passage, erosion and sediment issues, and riparian vegetation.

1.3 Training

The requirements of this Procedure and the BMSP will be appropriately communicated to all employees and sub-contractors undertaking relevant works within or adjacent to waterways for the Project.

2 Guidelines

Works undertake within or adjacent to waterways will be done in accordance with the following guidelines where applicable.

- *Policy and Guidelines for Fish Habitat Conservation and Management* (Department of Primary Industries, 2013)
- *Guidelines for controlled activities on waterfront land – Riparian corridors* (NRAR, 2018)
- *Why do fish need to cross the road? Fish passage requirements for waterway crossings* (Fairfull & Witheridge, 2003)
- *Controlled activities on waterfront land – Guidelines for watercourse crossings on waterfront land* (NSW Office of Water, 2012)
- *Managing Urban Stormwater: Soils and Construction* (Landcom, 2004)

3 Waterways

Table 3-1 details the waterways where construction works will occur with the waterway or immediately adjacent to the waterway (within 40m) and will therefore be required to comply with this Procedure. It's noted that additional drainage lines and/or some farm dams may also be required to comply with this Procedure depending on further site assessment.

Table 3-1 – Waterways where construction works will occur

Waterway	Catchment	Strahler stream order	Flow conditions	Comments
Run Boundary Creek	Murrumbidgee	3rd	Ephemeral	Flows in a north-westerly direction, before turning southeast and confluence with Ironbong Creek, and intersected by the Project site.
Dudauman Creek	Lachlan	3rd	Ephemeral	Generally, flows from south–north, turning east through Stockinbingal within the Project area. Flows are influenced by existing road and rail lines, and a number of levees identified near Stockinbingal. Dudauman Creek is intersected by the Project at two locations.
Powder Horn Creek	Lachlan	3rd	Ephemeral	Generally, flows from south–north and confluences with Bland Creek downstream of the Project area, and intersected by the Project site.
Isobel Creek	Murrumbidgee	3rd	Ephemeral	Flows from east to west through the Project area, converging with Ironbong Creek and intersected by the Project site.
Ulandra Creek	Murrumbidgee	5th	Ephemeral	Generally, flows from east to west and confluences with Ironbong Creek and intersected by the Project site.
Billabong Creek	Murrumbidgee	6th	Ephemeral	Flows from north to south and intersected by the Project site.
Ironbong Creek	Murrumbidgee	3rd	Ephemeral	Generally, flows in a north–south direction, converging with Billabong Creek. Ironbong is not intersected by the Project—at its closest point the main channel is less than 250 m from the Project site.
Farm Dams	Murrumbidgee and Lachlan	N/A	Lentic (non-flowing)	Only those farm dams considered to have ecological value (riparian vegetation, aquatic fauna etc.) comparable to waterways as identified in the farm dam register.
Drainage lines	Murrumbidgee and Lachlan	Various	Ephemeral	Any drainage lines which are considered to have ecological value (riparian vegetation, aquatic fauna etc.) comparable to waterways as identified in the farm dam register.

4 Procedure

This section details the procedure to following when undertaken works within or immediately adjacent to waterways as provided in Section 3. Typical works that this Procedure covers are as follows.

- Temporary and permanent waterway crossings
- Construction works within a waterway
- Waterway diversions required for instream works
- General construction works adjacent to a waterway

4.1 Planning and Design

4.1.1 Information gathering

Information the waterways will be gathered from include the Soil and Water Management Sub-plan (SWMSP), BMSP, Environmental Impact Statement (EIS), site observations and any other relevant information sources, including the Project Certified Professional in Erosion and Sediment Control (CPESC) and ecologist where relevant. Information which is typically required includes the following.

- Flora and fauna including any threatened species, Key Fish Habitat, exotic species.
- Physical features and hydrology i.e. flow rates, geomorphology, groundwater, stream order.
- Sensitive receivers which utilise the waterway e.g. water source, dams etc.
- Undertake site inspections of the proposed locations including those undertaken by the CPESC, ecologist where applicable.

4.1.2 Design

For permanent waterways crossings, the information obtained in Section 4.1.1 and the relevant guidelines provided in Section 2, should be used to inform the design of the structure. The JHG Environment Team will work with the design team and be involved in the design process to ensure that all relevant design elements have been considered.

In accordance with CoA Condition E42, watercourse crossings must be designed in consultation with DPI Fisheries and in accordance with “Why do fish need to cross the road? Fish passage requirements for waterway crossings” (Fairfull & Witheridge, 2003). For permanent and temporary waterways crossings, instream works, creek diversions and general works on waterfront land, the information obtained in Section 4.1.1 and the relevant guidelines provided in Section 2, will also be considered to inform the design. Design of fauna access pathways to connectivity measures will also be considered during detailed design in accordance with CoA Condition E43. Review will be undertaken to ensure fauna access pathways are not impeded by construction works, and that local native flora species will be utilised for approaches to connectivity measures. The JHG Environment Team will work with the design and construction team to ensure that all relevant design elements have been considered.

4.1.3 External approvals, licences and permits

Several external licenses, approvals and/or permits may be required to complete the works which will be confirmed by the JHG Environment and Sustainability Manager (of delegate) prior to the related works commencing. Potential licenses which may be required are provided below.

Environmental Protection License issued for scheduled activities under the POEO Act, and any associated discharge criteria if dewatering is required.

Approvals under the *Fisheries Management Act 1994* (FM Act)

Approval requirements under the WM Act (with consideration of S5.23 and 5.24 of the EP&A Act).

4.2 Construction Methodology Development

The following items will be considered when developing the construction methodology for works within or immediately adjacent to waterways.

The construction methodology will be developed by engineers and in consultation with the JHG Environment Team, CPESC, ecologist and ARTC personnel where required. This is usually facilitated during Activity Method Statement (AMS) workshops which are undertaken for all new activities. This provides an opportunity to identify the risks and potential solutions early in the planning phase.

The methodology will be compliant with all Project requirements i.e. CEMP, BMSP, this Procedure, Infrastructure Approval (SSI-9406), Commonwealth EPBC Approval (EPBC-2018/8233), EPL etc. This includes relevant guidelines and policies within Section 2 of this Procedure, and Section 3.1 of the BMSP and Section 3.1 of the SWMSP.

The methodology will be determined based on the risk profile of the creek as determined in Section 4.1.

Key methodology points which require consideration include:

- Creek diversion methodology – determine whether a pump-around diversion or a creek sidetrack (swale or pipe) is required which should consider flow rates, gradient, geomorphology constraints, works timeframe etc. Pumps and sidetracks should be sized/designed to manage base flows and increased flows from rainfall. Flood events, where diversions are exceeded, will also need to be considered in the relevant environmental documentation, including preparation tasks and emergency response. In some cases, isolating waterways may consist of using coffer dams and/or bulka/sandbag bunds. Ephemeral waterways may not require diversions based on the length of works and weather conditions.
- Mitigation measures – appropriate mitigation measure will determine specific to that particular watercourse. Mitigation measures will be sourced from the relevant documentation and guidelines provided in Section 2. Examples of mitigation measures sourced from the DPI guideline include inspection and removal of accumulated debris against sediment booms; all flow diversion barriers and instream sediment control barriers must be removed as soon as practicable.
- Flora, fauna and habitat – the presence of threatened flora, fauna and habitat will inform construction methodologies and consider fauna passage, minimising clearing, fish migration/spawning seasons, weed and pest management etc. Exclusion zones/setbacks will also be implemented as required.
- Erosion and sediment control – Erosion and sediment controls need to be implemented through all stages of the works to minimise impacts to the waterway which will be managed by Erosion and Sediment Control Plans (ESCP). ESCPs will be developed in consultation with and endorsed by the CPESC.
- Rehabilitation – The rehabilitation of creeks and any potential opportunities to improvement waterway health will be investigated and documented in ESCPs and Environmental Work Method Statement (EWMS). Rehabilitation will consider stabilisation/reshaping of creek beds and banks, revegetation, protection of assets (bridges, adjacent properties), improvements to fauna habitat and passage etc.
- Any other factors specific to the selected waterway

4.3 Working Within or Adjacent to Waterways

In accordance with CoA Condition C20(e), the procedure detailed in Table 4.1 below will be implemented for all works within or adjacent to waterways. This includes the relocation of fauna and maintenance of fish passage during instream works. General mitigation measures are discussed further in Section 5.

Table 4-1 – Working within of adjacent to waterways – Tasks, Actions and Management

Phase	Task Description	Required Action	Management Measure	Responsibility
Planning / Pre-construction	• Survey of area to identify footprint of proposed works	• Aquatic Habitat Management - Identify and mark areas that are sensitive areas, exclusion zones, riparian zones and potential noxious and other weeds in the vicinity (if present)	• Identify constraints in accessing waterways by reviewing sensitive area plans and no go mapping (Appendix A) • Undertake preclearance survey where required. All exclusion zones to be listed on the pre-clearing checklist	Environment and Sustainability Manager, Superintendent/, Site surveyor
	• Review of weather forecasts	• Review upcoming weather forecasts and communicate to key personnel	• Regularly review upcoming weather forecast (both forecast predictions and radar reviews). • The commencement of the works will be determined by the Superintendent/ Foreman and Environmental Manager, considering the weather forecast and on-ground conditions. • If the forecast for rain is 90% chance of rainfall greater than 20mm Is this threshold derived from any CoA documents? If not, wonder if it may be too low to be practicable. I guess it's just a trigger for discussion (24-hour period), the Environmental Manager is to discuss works with the Superintendent to	Environment and Sustainability Manager, Superintendent/, Foreman

Phase	Task Description	Required Action	Management Measure	Responsibility
			determine whether the works should be undertaken or delayed until rainfall ceases.	
	• Review of relevant site documentation and legislation	• Undertake review of CEMP and relevant Sub-plans to determine and consultation or permitting requirements needed prior to the works.	• Review to be completed and commencement of any required consultation and permitting processes to be commenced process, including any further inspections to be undertaken.	Environment and Sustainability Manager (or delegate)
	• Installation of flagging based on site survey and determined sensitive areas	• Initial access to waterways to establish clearing extents (i.e. flagging) and identify additional mitigation measures if required	• Install flagging and signage as required to ensure clearing extents and exclusion zones are adequately demarcated prior to works. • Exclusion fencing should not be installed in the waterway, within 3 metres of the top of the bank or in sensitive areas • Identify the construction footprint within the waterway on a map and include in relevant plans such SAPs, SEPs and any required permits. The location of sensitive aquatic habitat features within or adjacent to the footprint should be clearly identified on the map (e.g. snags, aquatic vegetation and gravel beds).	Environment and Sustainability Manager (or delegate)
Site Establishment	• Initial access to waterways for clearing and crossing in	• Establishment of temporary or permanent access to areas dependent on	• Clearing activities will be restricted to stump cutting and removal of weeds within 15 meters of waterways	Environment and Sustainability Manager,

Phase	Task Description	Required Action	Management Measure	Responsibility
	preparation for the commencement of works.	locality / requirement of works • Clearing of vegetation to facilitate initial site access and installation of erosion and sediment controls as required	• Prior to installation, controls to be implemented will be first discussed onsite with the Environmental Manager prior to installation. • If water is present within the waterway, only hydrocarbon booms will be installed within the waterway during clearing activities to ensure fish passage is not blocked. If water is present within the waterway, where stumps are to be removed within 1m of waterline and water is present within the waterway, a turbidity curtain is to be installed parallel to the embankment for the duration of works. To avoid obstruction of fish passage, the turbidity curtain MUST NOT be installed perpendicular to the flow of the creek unless immediately prior to construction commencing. If immediately prior, timeframes for blocking of fish passage are to be in accordance with applicable work method statements. • Where stumps are to be removed greater than 1m from the waterline, sediment control are to be installed at the base of the creek embankment (above the waterline) for the duration of works	Superintendent
Construction	• Accessing site and undertaking works	• Clearing of vegetation in order to	• Erosion and sediment controls for the works are to be in installed and maintained in accordance with the relevant erosion and	Environment and Sustainability Manager,

Phase	Task Description	Required Action	Management Measure	Responsibility
		undertake construction works • Mobilising construction equipment to site • Commencing construction works	sediment control plan (ESCP). Controls will be installed prior to commencing. • Ensure works within/ near waterways are undertaken within the shortest period of time required and scheduled during periods of predicted low flow or dry weather (where possible). • Material used in the waterway must not result in fine sediment material entering the waterway. • Locate stockpiles at least 10 m from likely areas of concentrated water flows and at least 50 m from waterways • Storage of all fuels, chemicals, and liquids will be at least 50 meters away from any waterways or drainage lines and will be undertaken/stored in an impervious bunded area. • Concrete washouts to be set up and maintained. Washouts must be bunded and constructed of impermeable material such as clay, steel containers or double lined with black plastic. • Relocate all aquatic fauna (as necessary) prior to commencement of works by a suitably qualified ecologist in accordance with the Fauna Rescue and Release Procedure (Appendix C).	Superintendent/ Foreman,

Phase	Task Description	Required Action	Management Measure	Responsibility
	• Completion of diversion works, or temporary blocking of creeks required for construction	• Temporary blocking of creeks for excavation and installation of permanent structures and scour protection as per the approved design • Implement measures to ensure fish passage is maintained. • Identification of appropriate downstream locations for any aquatic fauna release in consultation with the Project Ecologist	• Creek blockage to be undertaken as per specific ESCP for each area (to be submitted progressively). • DPI Fisheries to be consulted before commencement • Where creek diversions are required, they must be lined (i.e. with geofabric or similar) to protect the waterway from scouring and potential sedimentation. This is to be outlined on the ESCP along with any other site-specific controls. • Mesh for screening pump-around intakes should have a maximum grid size of 6mm. • Coffer dams may be used during work undertaken within or immediately adjacent to waterways where reasonable and feasible to prevent or minimise increased turbidity. In the event that coffer dams are not reasonable and feasible, silt curtains would be used. • While passage is blocked monitoring should be conducted to ensure fish are not in distress. • Appropriate downstream sites for relocation of aquatic fauna should be identified prior to blockages being installed by the suitably qualified aquatic ecologist, prior to blockages being installed, in accordance with the Fauna	Environment and Sustainability Manager, Superintendent/ Foreman,

Phase	Task Description	Required Action	Management Measure	Responsibility
			Rescue and Release Procedure (Appendix C). • Due to the ephemeral nature of the creeks subject to works, temporary blockage design would typically consist of sandbags under approval of the Environmental Manager and outlined on the ESCP. • All blockages will be installed for the minimum amount of time required to complete the works, weather dependent. • Over pumping will be set up with controls. Upstream end pumps will be covered with fine mesh or other suitable material (e.g., hessian bags) to prevent fish entrainment and must be setup to avoid pumping of silty/turbid water from creek bed. • Water quality will be visually inspected to ensure no construction caused impacts to the downstream creek flows. All other water quality sampling will be in accordance with the monthly water quality program and dewatering procedures. Visual inspections at outlets must ensure that there is no generation of visible turbid plumes. If turbid plumes are evident pumping must cease and if the cause is due to construction related activities, the issue is to be rectified. • If the passage will be temporarily blocked - while passage is blocked, upstream and	

Phase	Task Description	Required Action	Management Measure	Responsibility
			downstream will be monitored by the ecologist for any fish that may need relocation. While passage is blocked monitoring should be conducted to ensure fish are not in distress.	
	• Removal and relocation of snags	• Assess the requirement for management of snags during the works and follow hierarchy of management	Snags are branches, trunks and whole trees that fall into rivers and streams. Fisheries define snags greater than 3 metres in length or 300 millimetres in diameter as being key fish habitat for native fish. Snags may need to be removed and/or relocated before undertaking works. Only the minimum number of snags should be disturbed. The Environment and Sustainability Manager should ensure the hierarchy below (low to high impact) is followed when snags need to be disturbed: • Lopping – Protruding limbs are cut and allowed to sink to the riverbed • Realignment – The snag is rotated from its existing position • Relocation – The snag is physically moved from one location in the waterway to another location. Relocation of snags should be undertaken so as to cause the least disturbance to the bed or nearby sensitive aquatic habitat	Environment and Sustainability Manager, Superintendent,

Phase	Task Description	Required Action	Management Measure	Responsibility
			• Removal – The snag is completely pulled from the water. • The Area Manager and/or Environment and Sustainability Manager should ensure that Fisheries are consulted where snags are proposed to be lopped, realigned, relocated and/ or removed.	
	• Dewatering during works	• Dewatering or pumping associated with diversion or creek blockage as required	• Dewatering will be undertaken in accordance with the Farm Dam De-watering Procedure, this includes dewatering of coffer dams. • All pump outlets must be set up in a manner that is stable and minimizes erosion. • A permit to pump will be issued where required as per JHG procedures • Water is only to be discharged offsite through a licensed discharge point and must meet EPL water quality criteria. • All use of pumps for dewatering and pumping must be monitored while in use. Special consideration can be granted for overnight creek pump arounds with extra mitigation measures in place.	Environment and Sustainability Manager, Superintendent/ Foreman,
Completion of Works	• Area Demobilisation and Site Cleanup	• Removal of any temporary structures and finishing work within the area	• All in-stream erosion and sediment controls are to remain in place until temporary structures are removed, and banks are stabilised.	Environment and Sustainability Manager,

Phase	Task Description	Required Action	Management Measure	Responsibility
			• Progressive stabilisation of disturbed creeks/ rivers and banks is to be undertaken as early as practicable to minimize the risk of erosion and sedimentation, with permanent stabilization to be implemented as early as practicable. • Excess materials to be stockpiled with appropriate environmental controls in place until completion of work. • Ensure all disturbed sites are rehabilitated prior to the conclusion of works • Ensure all erosion and sediment controls are monitored weekly during normal conditions as well as during and post rainfall events for efficacy until site vegetation has reached >70% cover or as instructed by Project Soil Conservationist. • Ensure all loose materials (construction related materials and equipment) are removed from waterway prior to the removal of any booms and/or sediment fencing. • Ensure all tools, plant and equipment requiring cleaning is cleaned in designated cleaning area before removal off site. • Inspections of environmental controls to be undertaken prior to leaving work site for the day by supervisors/leading hands responsible for the work area. Any damaged	Superintendent/ Foreman

Phase	Task Description	Required Action	Management Measure	Responsibility
			environmental controls to be fixed prior to departing from work. • Inspection of temporary pipes for fauna prior to removal. • When relocating creek diversions, an ecologist is to be present for relocating aquatic fauna.	

4.4 Document Preparation

Following development of the draft methodology, an ERSED Plan, EWMS, design drawings and any other relevant documentation will be prepared to identify environmental risk/hazards and detail mitigation measures to reduce the risk of environmental impact or incidents. The documentation will include the proposed construction methodology detailed in Section 4.2.

The documentation will be approved by the JHG Environment Manager and the CPESC.

4.5 Implementation

Weather forecast monitoring will be undertaken to identify any potential inclement weather which may impact the works i.e. significant rainfall, flooding etc. Where possible, works within or adjacent to waterways will be scheduled during dry weather periods to minimise the risk of high rainfall events/flood and inundation of the work area.

Once works commence, appropriate supervision, toolboxes, pre-starts and inspections will be undertaken to ensure all controls/mitigation measures have been installed and the works are compliant with the methodologies detailed in the environmental documentation e.g. EWMS, ESCP. In addition, inspections will be undertaken where required by the Environmental Representative, Australian Rail Track Corporation (ARTC), CPESC and ecologist during the works.

4.6 Rehabilitation

Once construction works are complete, the waterway and adjacent areas will be stabilised and rehabilitated in accordance with Section 8.18of the BMSP and the relevant environmental documentation e.g. EWMS, PESCP. In accordance with CoA E46, rehabilitation will be waterways impacted by the Project may also include re-snagging of waterways using woody debris noting that consultation with DPI-Fisheries will be required.

Stabilisation of the waterway should occur immediately following construction and revegetation should be undertaken as soon as practicable. Rehabilitation considerations for each waterway will consist of:

- Erosion control of the creek bed and banks
- Revegetation
- Any opportunities to enhance or improve the waterway

5 General Mitigation Measures

General mitigation measures related to works within and adjacent to waterways which will be implemented during the Project are provided in Table 5-1.

Table 5-1 – General mitigation measures for works within and adjacent to waterways

Ref	Measure / Requirement	When to implement	Responsibility	Reference / Source
WA-1	All works will be carried out in accordance with this Procedure and subsequent documentation including ESCP, EWMS, design drawings and any other relevant documentation.	At all times	JHG Environment Manager JHG Site Supervisor JHG Construction Manager	Guidelines provided in Section 2 BMSP SWMSP Construction Environmental Management Framework RMMs Best Practice
WA-2	Clearing within riparian corridors will be undertaken in accordance with the Clearing Procedure (Appendix B of the BMSP).	At all times	JHG Environment Manager JHG Site Supervisor	
WA-3	Fauna rescue and release will be undertaken in accordance with the Fauna Rescue and Release Procedure (Appendix C of the BMSP).	At all times	JHG Environment Manager JHG Site Supervisor	
WA-4	Dewatering of any pools in watercourses and farm dams will be undertaken in accordance with Farm Dam Dewatering Procedure (Appendix E of the BMSP) and the Dewatering Procedure (Appendix D of the SWMSP).	At all times	JHG Environment Manager JHG Site Supervisor	
WA-5	Any exclusion zones will be appropriate demarcated to prevent unauthorised access.	Prior to works	JHG Environment Manager JHG Site Supervisor	
WA-6	During instream works, Fish passage will be maintained in accordance with Department of Primary Industries (DPI) Fisheries guideline "*Why do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings*". If used, sediment/erosion booms will be placed so they do not obstruct fish passage, where possible.	During construction	JHG Environment Manager JHG Site Supervisor	
WA-7	Where it is not practicable to work in the dry, a sediment or silt curtain attached to the same sides of the bank and around the works area would be installed for erosion and sediment control, and to maintain fish passage.	During construction	JHG Environment Manager JHG Site Supervisor	

Ref	Measure / Requirement	When to implement	Responsibility	Reference / Source
WA-8	Retaining of tree roots or staged removal on the bank of a waterway in order to maintain bank stability.	During construction	JHG Environment Manager JHG Site Supervisor	
WA-9	Works within the riparian zone will maximise the preservation of any existing vegetation and minimise disturbance.	During construction	JHG Environment Manager JHG Site Supervisor	
WA-10	Existing trees, grasses and other ground cover will be retained within 15 metres of rivers, creeks, and watercourses and in all drainage lines until immediately before construction commences in the area where practicable.	During construction	JHG Environment Manager JHG Site Supervisor	
WA-11	Direct impacts on in-stream vegetation and native vegetation on the banks of watercourses would be avoided as far as practicable by establishing appropriate setback distances.	During construction	JHG Environment Manager JHG Site Supervisor	
WA-12	Where practicable, undertake re-snagging within waterways during rehabilitation and in consultation with NSW DPI – Fisheries.	During construction	JHG Environment Manager JHG Site Supervisor	
WA-13	Undertake rehabilitation/stabilisation progressively throughout the works where possible.	During construction	JHG Environment Manager JHG Site Supervisor	
WA-14	Scheduling of construction activities to minimise time of works in or adjacent to drainage lines and waterfront land (watercourse bed and land within 40 m of the highest bank of the watercourse, particularly during periods of flow.	During construction	JHG Environment Manager JHG Construction Manager	
WA-15	Progressively stabilise disturbed creeks/ rivers to avoid potential scouring and sedimentation and implement permanent stabilisation measures as soon as practicable.	During construction	JHG Environment Manager JHG Site Supervisor	

Ref	Measure / Requirement	When to implement	Responsibility	Reference / Source
WA-16	Where possible, reclaim existing creek/riverbed material and utilise the material in the reconstruction of the creek/river (where it does not present a dispersible soils and subsequent water quality risk.	During construction	JHG Environment Manager JHG Site Supervisor	
WA-17	Application of mulch (both temporary and designed) will be managed to avoid the potential for material and tannin run-off into waterways, including limiting the application of mulch near waterways where practicable	During construction	JHG Environment Manager JHG Site Supervisor	
WA-18	Removal of all temporary works, flow diversion barriers and sediment control barriers within aquatic habitats as soon as practicable and in a manner that does not promote future channel erosion	During construction	JHG Environment Manager JHG Site Supervisor	
WA-19	Keeping vehicles and machinery away from the banks of a waterway where possible	During construction	JHG Environment Manager JHG Site Supervisor	
WA-20	Preventing refuelling of vehicles and plant, and chemical storage and decanting within waterfront land	During construction	JHG Environment Manager JHG Site Supervisor	

Appendix E – Farm Dam Dewatering Procedure

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Terms and Abbreviations

Term / Abbreviation	Definition / Expanded text
BMSP	Biodiversity Management Sub-plan
CEMP	Construction Environmental Management Plan
CoA	Condition of Approval
EPA	Environment Protection Authority
EPBC	*Environmental Protection and Biodiversity Conservation Act 1999*
EPL	Environmental Protection License
EWMS	Environmental Work Method Statement
JHG	John Holland Group
Procedure	Farm Dam Dewatering Procedure
Project	Inland Rail - Illabo to Stockinbingal Project
RMMs	Revised Mitigation Measures
SSI	State Significant Infrastructure
SWMSP	Soil and Water Management Sub-plan

1 Introduction

1.1 Purpose and Scope

Construction of the Inland Rail - Illabo to Stockinbingal Project (Project) will involve the dewatering of farm dams. Coffer dams may also be used during construction where necessary and may require dewatering however, it is unlikely that coffer dams will be required for the Project. In accordance with Condition of Approval (CoA) C20(dd) of the Infrastructure Approval (SSI-9406), the purpose of this Farm Dam Dewatering Procedure (Procedure) is to provide guidance to ensure that site dewatering activities are completed in a manner that does not cause harm to the environment including aquatic fauna, receiving waters and landowners. This Procedure should be read in conjunction with the Dewatering Procedure (Appendix D of the Soil and Water Management Sub-plan (SWMSP)), Working Within and Adjacent to Waterways Procedure (Appendix D of the Biodiversity Management Sub-plan (BMSP)) and the Fauna Rescue and Release Procedure (Appendix C of the BMSP).

This Procedure has been prepared to address the requirements related to farm dam dewatering associated with the Infrastructure Approval (SSI-9406), Submissions Report (including Revised Mitigation Measures (RMMs)), Environmental Protection License (EPL), EPBC Controlled Action Approval (EPBC Referral 2018/8233) and all applicable legislation, guidelines, standards and specifications. This Dewatering Procedure applies also to the dewatering of Coffer dams if coffer dams were built during construction and dewatering was required. This Plan is an appendix of the Biodiversity Management Sub-plan (BMSP) which forms part of the Construction Environmental Management Plan (CEMP) for the Project.

This Procedure will be followed by all personnel involved in the Project including employees, sub-contractors and consultants.

1.2 Objective

The objectives of this Procedure include:

- Ensure compliance with environmental requirements of the Project
- Ensure invasive species are not translocated and are humanely disposed of
- Provide a clear methodology for the dewatering of farm dams and the protection and relocation of aquatic fauna encountered during dewatering.

1.3 Training

The requirements of this Procedure and the BMSP will be appropriately communicated to all employees and sub-contractors undertaking relevant works within or adjacent to waterways for the Project.

2 Procedure

2.1 Environmental Work Method Statement

Prior to commencing farm dam dewatering activities, the Project will develop an Environmental Work Method Statement (EWMS) to manage and control dewatering activities in a manner that does not cause harm to the environment in cases where farms dams require partial or full dewatering.

The EWMS will be prepared by the John Holland Group (JHG) Environment Manager or delegate, in consultation with the construction team, before commencement of the dewatering activity. The EWMS will incorporate appropriate mitigation measures and controls, including those identified in the relevant CEMP sub-plans. They also identify key activity specific procedures to be used concurrently with the EWMS.

EWMS are specifically designed to communicate requirements, actions, processes and controls to construction personnel using plans, diagrams and simple written instructions.

2.2 Farm Dam Dewatering

In addition to the discharge requirements outlined in the Dewatering Procedure (Appendix D of the SWMP) for the discharge of water, the dewatering of waters from farm dams will require:

- Preparing the dam for dewatering
- Aquatic fauna capture
- Relocation of captured aquatic fauna
- Methods to prevent injury to fauna
- Management of pest species.

2.2.1 Preparing the dam for watering

Prior to dewatering of the dam, the following steps will be undertaken.

- Consultation with landowner to establish if any fish have been stocked in the dam and/or if they are aware of any fish present in the dam.
- Review of project ecological data (BDAR, Unsurveyed Lands report, sensitive area maps and pre-clearing reports) and inspection by the Project ecologist to be undertaken prior to dewatering to assist in planning the works. And to understand the species likely to be encountered in the dam. The inspection will be documented by the Project Ecologist in the Pre-de-watering report (refer to Section 3.1).
- Where feasible, install diversion controls to prevent any additional inflows into the dam.
- Identification of suitable habitats near the dam for translocation of native fauna by the Project Ecologist.
- Installation of measures to minimise aquatic fauna being injured. This may include sediment controls to direct aquatic fauna towards suitable alternative habitat during the dewatering process.
- Obtaining and setting up pumping screens to ensure native aquatic fauna are not harmed during the pumping process or pest species are not transferred during the pumping operations.

To allow rapid fauna rescue, the pump inlet will be large enough to allow sediment to pass but would include the use of an appropriate mesh (no greater than five millimetres in diameter) to cover the pump but prevent macroinvertebrates, fish, tadpoles and frogs from being pumped out.

2.2.2 Aquatic fauna capture

The method for translocating as many native faunae living in the dam as possible will be directed by the Project Ecologist and subject to the specific conditions of any licences or permits. This may include a Section 37 Permit under the *Fisheries Management Act 1994*, where required. A work method statement will be submitted by the Project Ecologist prior to dewatering activities for review and approval as part of the dewatering EWMS. The general methodology used for aquatic capture may include but not be limited to the following. Also refer to the Fauna Rescue and Release Procedure (Appendix C of the BMSP).

- Trapping of native fauna – The use of floating traps to remove native turtles from the dams prior to dewatering, deployed by suitably experienced and licensed ecologist
- For the surrounding vegetation, manual searching of suitable cover such as hollows, fallen timber, burrows, discarded tins and aquatic vegetation etc.

- Dewatering over several days to allow native fauna to relocate. Measures to direct aquatic fauna away from dangerous areas (i.e. roads) and towards suitable alternative locations will be included
- Manually entering (where safe to do so) the partially dewatered dam and searching manually for remaining fauna

The dewatering schedule will allow time for fauna rescue, especially during the final 0.3– 0.5 metre water depth (to be advised by Project Ecologist). Fauna will be captured in one day, so pumps need to be of an adequate size and placed in an area free from mud and debris (e.g. inside excavator bucket or screened sump pit)

Fauna will be collected by hand nets during the final day of dewatering. This is most effective when the water is less than 0.3 metres deep. Larger fauna will be targeted first due to the rapid decrease of dissolved oxygen concentration as the water volume decreases. Following the dewatering of the pond, the base of the pond will be inspected for possible amphibians and other fauna in the mud surface.

Native fauna will be transferred to aerated holding containers (fish) or where possible transferred directly to the release area (reptiles/amphibians). It is preferable if frogs are released at night to disadvantage predators, however if this is not feasible, they should be released into dense pool/pond side vegetation. The holding tanks will be kept shaded to prevent harmful increases in temperature. Care will be taken as to not overcrowd water containers to limit the spread of diseases and predation. Frogs will be captured in aerated plastic bags (used as a glove) and kept as one per bag for release. Reptiles will be captured using gloves and placed in a plastic tub for transport

As the water level drops, the dam wall will be partially and progressively removed and stabilised to prevent refilling. A ramp will be graded as the wall is removed to allow any fauna in the bottom sediment to escape. This ramp will be left in place for two nights.

2.2.3 Relocation of aquatic fauna

The ecology team will nominate a suitable release site based on species and quantity of captured aquatic fauna.

Native fish are to be transported in aerated containers of dam water and gradually mixed with stream water to allow acclimatisation of fauna to the new environment. The host location will be large enough to accommodate additional fish, especially predatory eels.

Water from the receiving waterbody will be mixed slowly over 5 – 10 minutes with the tank water to allow fish to acclimatise to the new water quality.

Frogs will be released into dense aquatic and pond side vegetation to provide shelter against predators. Release will also preferably be undertaken after sunset.

All details of aquatic fauna captured and relocated will be recorded in a report after dam dewatering has occurred. Consent of the landholder will be required prior to the relocation into a dam or waterway outside of the Project boundary.

Relocation of fauna, including the determination of how and where release will occur, is provided in the Fauna Rescue and Release Procedure (Appendix C).

2.2.4 Methods to prevent injury to fauna

Methods to prevent injury to fauna are provided below.

- The use of gloves to limit the spread of disease.
- Working slowly and methodically through the waterway to limit trampling of aquatic fauna.

- Limit holding time in aerated containers to half an hour where feasible.
- One frog per bag to minimise disease spread and possible toxin impact of one species on another.
- Continually monitor holding tanks for sign of deterioration of health of aquatic fauna.
- Shading of holding containers.
- By having a release point nearby to minimise transportation time and stress to aquatic fauna.
- The water will be released slowly and a mesh (no greater than five millimetres in diameter) guard at the pump intake will limit intake of aquatic fauna.

Where a fish kill occurs in the vicinity of the works, DPI Fisheries and the Environment Protection Authority (EPA) will be notified immediately. In such cases, all works other than emergency response procedures will cease until the issue is rectified and approval given by DPI Fisheries and/or the Environment Protection Authority for the works to proceed.

2.2.5 Management of pest species

Exotic aquatic life may inhabit the dams. Any pest non-native species will be euthanized, by the Ecologist, who has been trained in humane methods for all aquatic non-native species.

To minimise the potential spread of pathogens, all personnel undertaking in-water work will ensure that decontamination processes are followed. Equipment that comes in contact with dam water or potentially contaminated sediments, such as boots and vehicle tyres, will be cleaned with an appropriate cleaning solution and/or disinfectant. Disposable gloves will be worn when handling aquatic flora and fauna.

2.3 Reuse and discharge of farm dam water

Water quality discharge criteria for reuse, for discharge to land and discharge to water are outlined in Appendix D of the SWMSP.

The reuse of farm dam water onsite or discharge of farm dam water to land or to water must be authorised by the JHG Environment Manager who will confirm whether the water is suitable for reuse or disposal in accordance with relevant Project requirements.

3 Records

Accurate records will be maintained substantiating all construction activities associated with the Project or relevant to the CoA, including measures taken to implement this Procedure.

3.1 Pre-dewatering report

A pre-dewatering report will be prepared by the Project ecologist which will include the following.

- Consultation with landowners to identify any fish species that may be present
- Presence of any fauna in habitats near the farm dam and their species
- Identify suitable translocation sites for each species
- Identify suitable methods of transport for each species.

3.2 Post-dewatering report

A post dewatering report will be prepared by the Project ecologist for each dam which undergoes dewatering which will include the following.

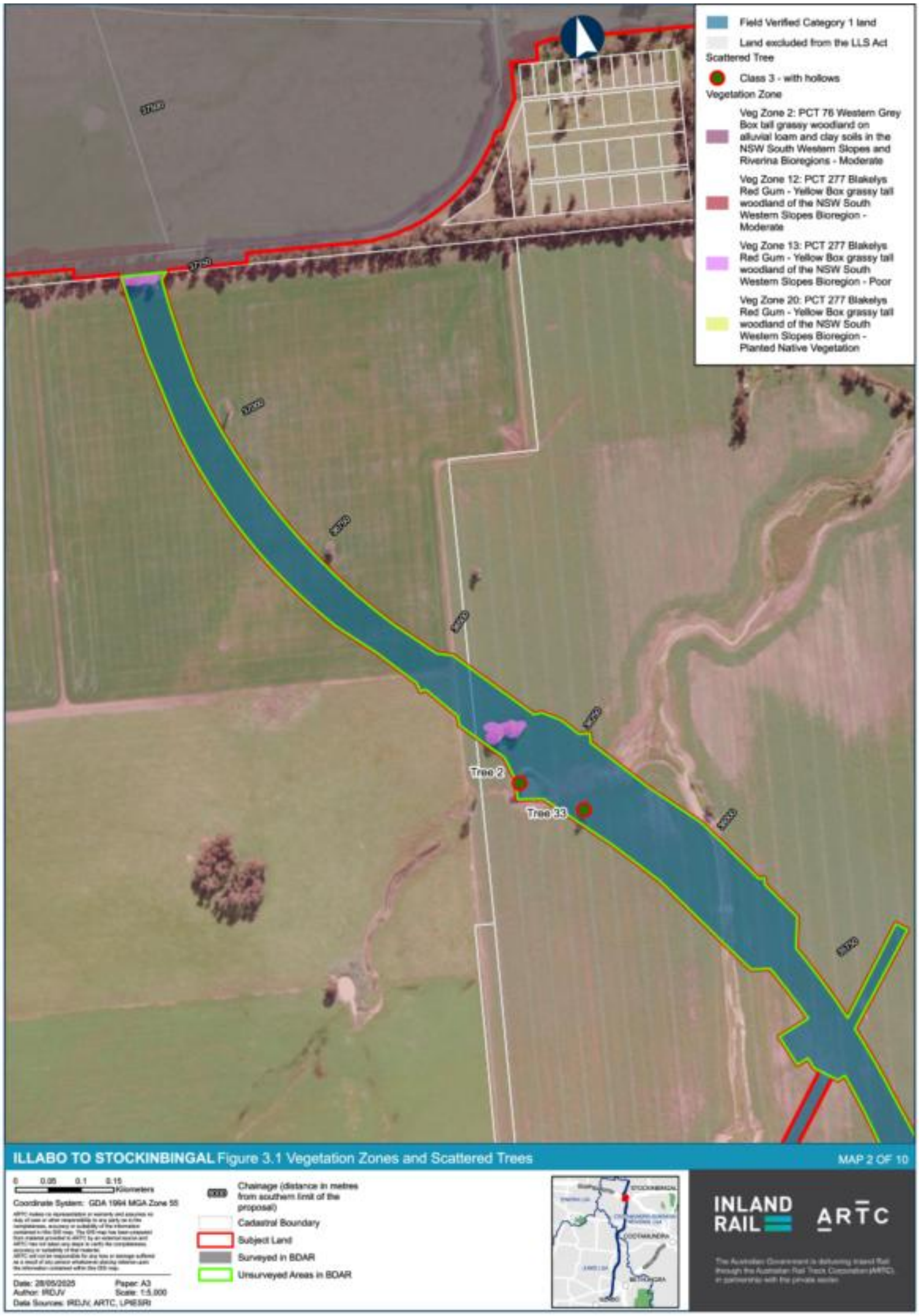
- Date and time of fauna capture
- Species captured
- Location of release for each species
- Date and time of release
- Details of personnel carrying out fauna capture and release and their qualifications and licenses to carry out the work.

– Unexpected and Incidental Finds Procedure

Appendix F Biodiversity Values along the Project Footprint

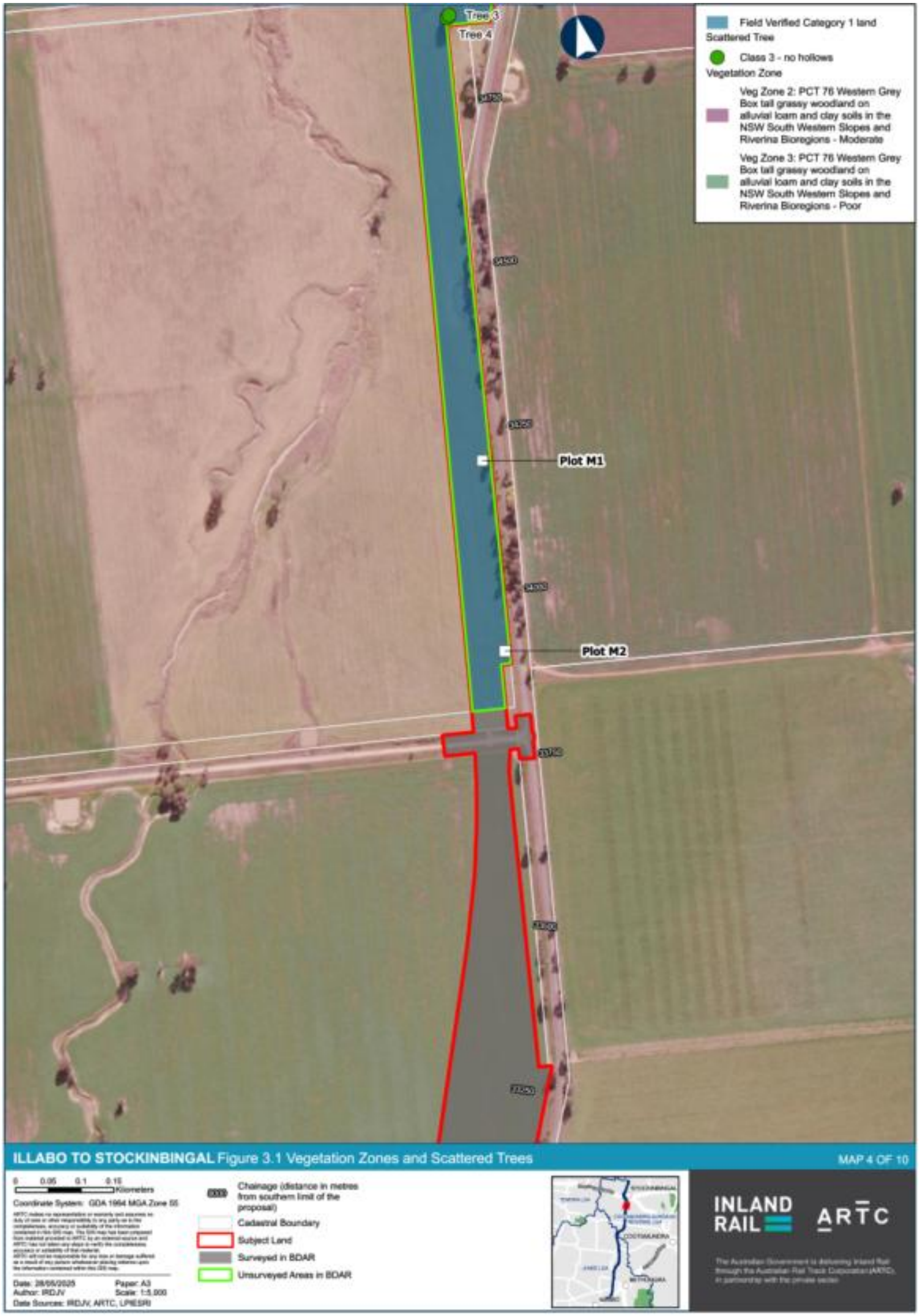
Vegetation Zones and Scattered Trees – Unsurveyed Lands Report

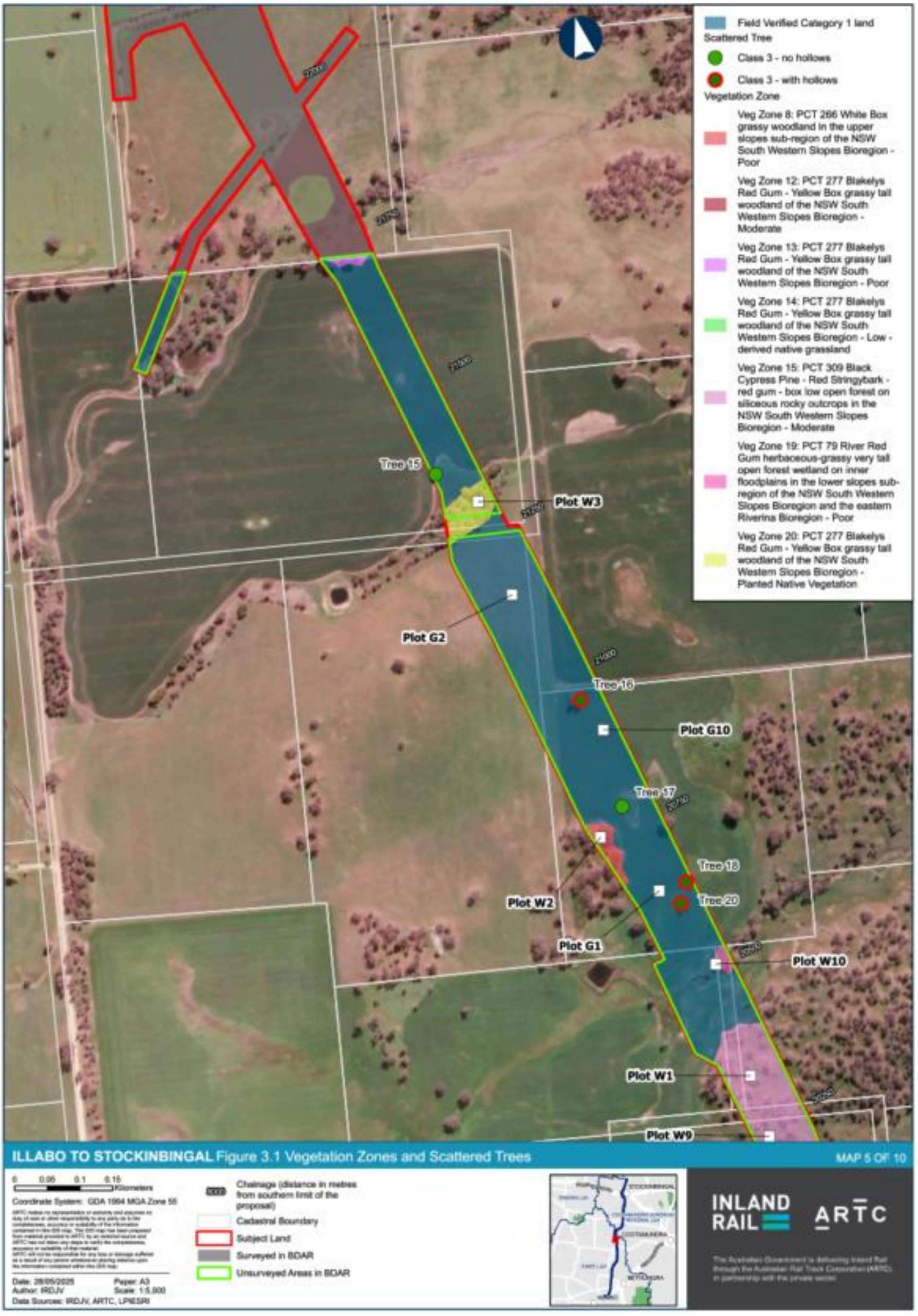


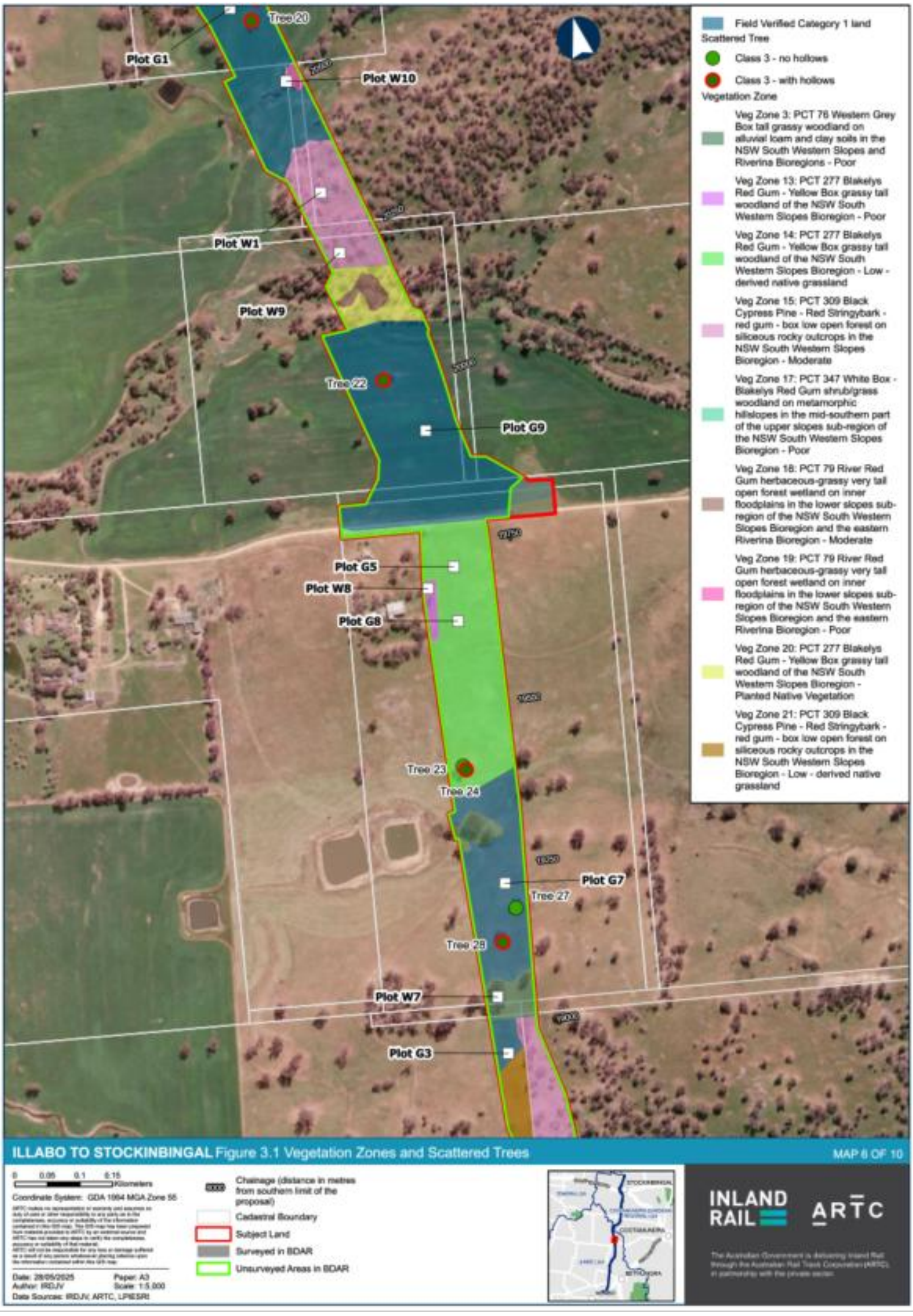

Field Verified Category 1 land
Land excluded from the LLS Act
Scattered Tree
Class 3 - with hollows
Vegetation Zone
Veg Zone 2: PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions - Moderate
Veg Zone 12: PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion - Moderate
Veg Zone 13: PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion - Poor
Veg Zone 20: PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion - Planted Native Vegetation
Tree 2
Tree 33
ILLABO TO STOCKINBINGAL Figure 3.1 Vegetation Zones and Scattered Trees
MAP 2 OF 10
0 0.05 0.1 0.15
Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Date: 28/05/2025
Paper: A3
Author: IRDJV
Scale: 1:5,000
Data Sources: IRDJV, ARTC, LPI/ESRI
Chainage (distance in metres from southern limit of the proposal)
Cadastral Boundary
Subject Land
Surveyed in BDAR
Unsurveyed Areas in BDAR
COOTAMUNDRA
STOCKINBINGAL
INLAND RAIL
ARTC

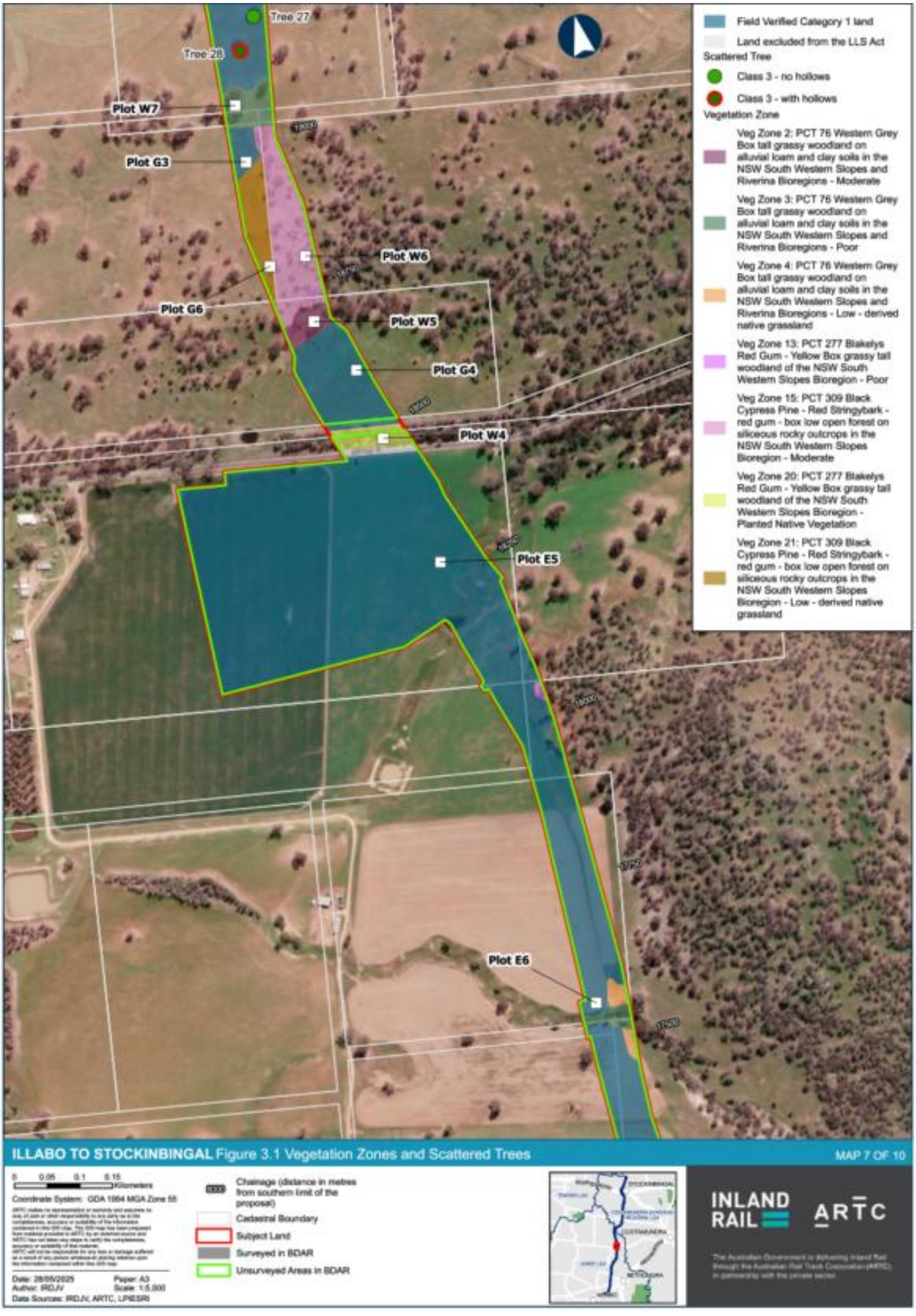

Field Verified Category 1 land
Scattered Tree
Class 3 - no hollows
Class 3 - with hollows
Vegetation Zone
Veg Zone 2: PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions - Moderate
Veg Zone 3: PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions - Poor
Veg Zone 13: PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion - Poor
Tree 2
Tree 33
Tree 3
Tree 4
ILLABO TO STOCKINBINGAL Figure 3.1 Vegetation Zones and Scattered Trees
MAP 3 OF 10
0 0.05 0.1 0.15
Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Date: 28/05/2025
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Chainage (distance in metres from southern limit of the proposal)
Cadastral Boundary
Subject Land
Surveyed in BDAR
Unsurveyed Areas in BDAR
INLAND RAIL
ARTC

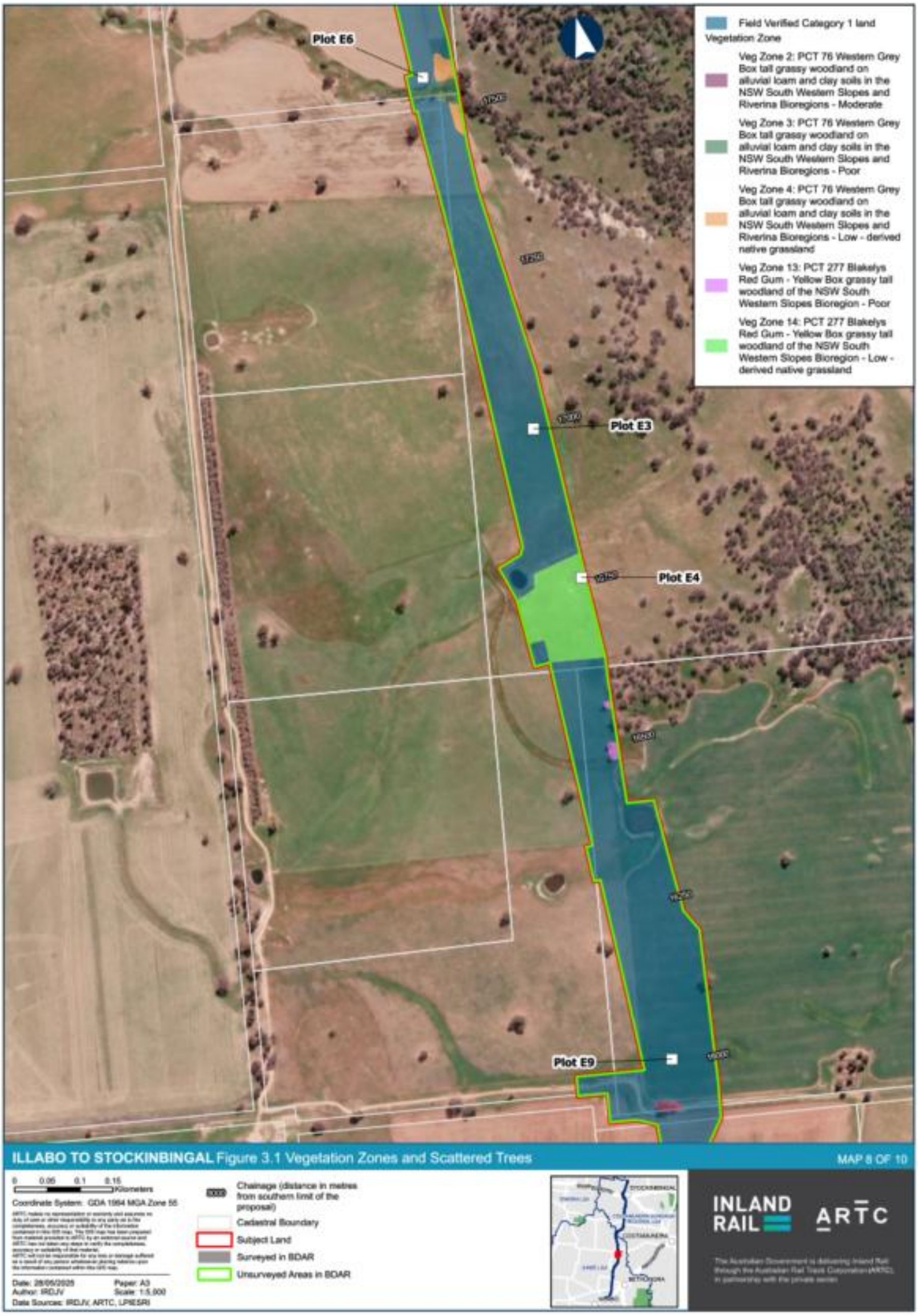

Field Verified Category 1 land
Scattered Tree
Class 3 - no hollows
Class 3 - with hollows
Vegetation Zone
Veg Zone 2: PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions - Moderate
Veg Zone 3: PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions - Poor
Veg Zone 13: PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion - Poor
Tree 2
Tree 33
Tree 3
Tree 4
ILLABO TO STOCKINBINGAL Figure 3.1 Vegetation Zones and Scattered Trees
MAP 3 OF 10
0 0.05 0.1 0.15
Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Date: 28/05/2025
Author: IRDJV
Paper: A3
Scale: 1:5,000
Data Sources: IRDJV, ARTC, LPI/ESRI
Chainage (distance in metres from southern limit of the proposal)
Cadastral Boundary
Subject Land
Surveyed in BDAR
Unsurveyed Areas in BDAR
INLAND RAIL
ARTC


Tree 3
Tree 4
Plot M1
Plot M2
Field Verified Category 1 land
Scattered Tree
Class 3 - no hollows
Vegetation Zone
Veg Zone 2: PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions - Moderate
Veg Zone 3: PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions - Poor
ILLABO TO STOCKINBINGAL Figure 3.1 Vegetation Zones and Scattered Trees
MAP 4 OF 10
0 0.05 0.1 0.15
Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Date: 28/05/2025
Paper: A3
Author: IRDJV
Scale: 1:5,000
Data Sources: IRDJV, ARTC, LPI/ESRI
Chainage (distance in metres from southern limit of the proposal)
Cadastral Boundary
Subject Land
Surveyed in BDAR
Unsurveyed Areas in BDAR
INLAND RAIL
ARTC

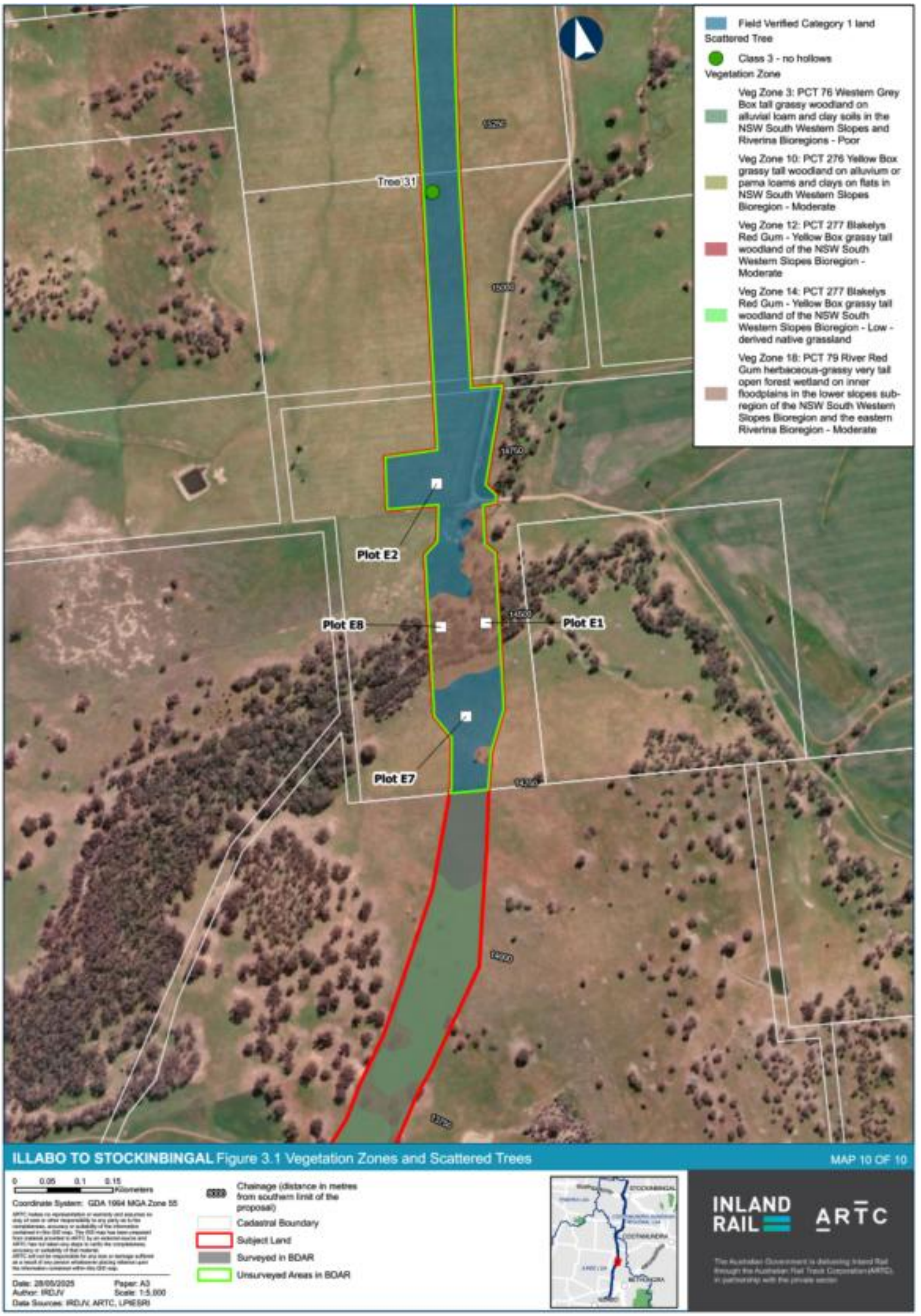

Field Verified Category 1 land
Scattered Tree
Class 3 - no hollows
Class 3 - with hollows
Vegetation Zone
Veg Zone 8: PCT 266 White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion - Poor
Veg Zone 12: PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion - Moderate
Veg Zone 13: PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion - Poor
Veg Zone 14: PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion - Low - derived native grassland
Veg Zone 15: PCT 309 Black Cypress Pine - Red Stringybark - red gum - box low open forest on siliceous rocky outcrops in the NSW South Western Slopes Bioregion - Moderate
Veg Zone 19: PCT 79 River Red Gum herbaceous-grassy very tall open forest wetland on inner floodplains in the lower slopes sub-region of the NSW South Western Slopes Bioregion and the eastern Riverina Bioregion - Poor
Veg Zone 20: PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion - Planted Native Vegetation
Tree 15
Plot W3
Plot G2
Tree 16
Plot G10
Tree 17
Tree 18
Tree 20
Plot W2
Plot G1
Plot W10
Plot W1
Plot W9
ILLABO TO STOCKINBINGAL Figure 3.1 Vegetation Zones and Scattered Trees
MAP 5 OF 10
0 0.05 0.1 0.15
Kilometers
Coordinate System: GDA 1994 MGA Zone 56
Date: 28/05/2025
Paper: A3
Author: IRDJV
Scale: 1:5,000
Data Sources: IRDJV, ARTC, LPI/ESRI
Chainage (distance in metres from southern limit of the proposal)
Cadastral Boundary
Subject Land
Surveyed in BDAR
Unsurveyed Areas in BDAR
INLAND RAIL
ARTC


Tree 20
Plot G1
Plot W10
Plot W1
Plot W9
Tree 22
Plot G9
Plot G5
Plot W8
Plot G8
Tree 23
Tree 24
Plot G7
Tree 27
Tree 28
Plot W7
Plot G3
Field Verified Category 1 land
Scattered Tree
Class 3 - no hollows
Class 3 - with hollows
Vegetation Zone
Veg Zone 3: PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions - Poor
Veg Zone 13: PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion - Poor
Veg Zone 14: PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion - Low - derived native grassland
Veg Zone 15: PCT 309 Black Cypress Pine - Red Stringybark - red gum - box low open forest on siliceous rocky outcrops in the NSW South Western Slopes Bioregion - Moderate
Veg Zone 17: PCT 347 White Box - Blakelys Red Gum shrub/grass woodland on metamorphic hillslopes in the mid-southern part of the upper slopes sub-region of the NSW South Western Slopes Bioregion - Poor
Veg Zone 18: PCT 79 River Red Gum herbaceous-grassy very tall open forest wetland on inner floodplains in the lower slopes sub-region of the NSW South Western Slopes Bioregion and the eastern Riverina Bioregion - Moderate
Veg Zone 19: PCT 79 River Red Gum herbaceous-grassy very tall open forest wetland on inner floodplains in the lower slopes sub-region of the NSW South Western Slopes Bioregion and the eastern Riverina Bioregion - Poor
Veg Zone 20: PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion - Planted Native Vegetation
Veg Zone 21: PCT 309 Black Cypress Pine - Red Stringybark - red gum - box low open forest on siliceous rocky outcrops in the NSW South Western Slopes Bioregion - Low - derived native grassland
ILLABO TO STOCKINBINGAL Figure 3.1 Vegetation Zones and Scattered Trees
MAP 6 OF 10
0 0.05 0.1 0.15 Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Date: 28/05/2025
Author: IRDJV
Paper: A3
Scale: 1:5,000
Data Sources: IRDJV, ARTC, LPI/ESRI
Chainage (distance in metres from southern limit of the proposal)
Cadastral Boundary
Subject Land
Surveyed in BDAR
Unsurveyed Areas in BDAR
INLAND RAIL
ARTC

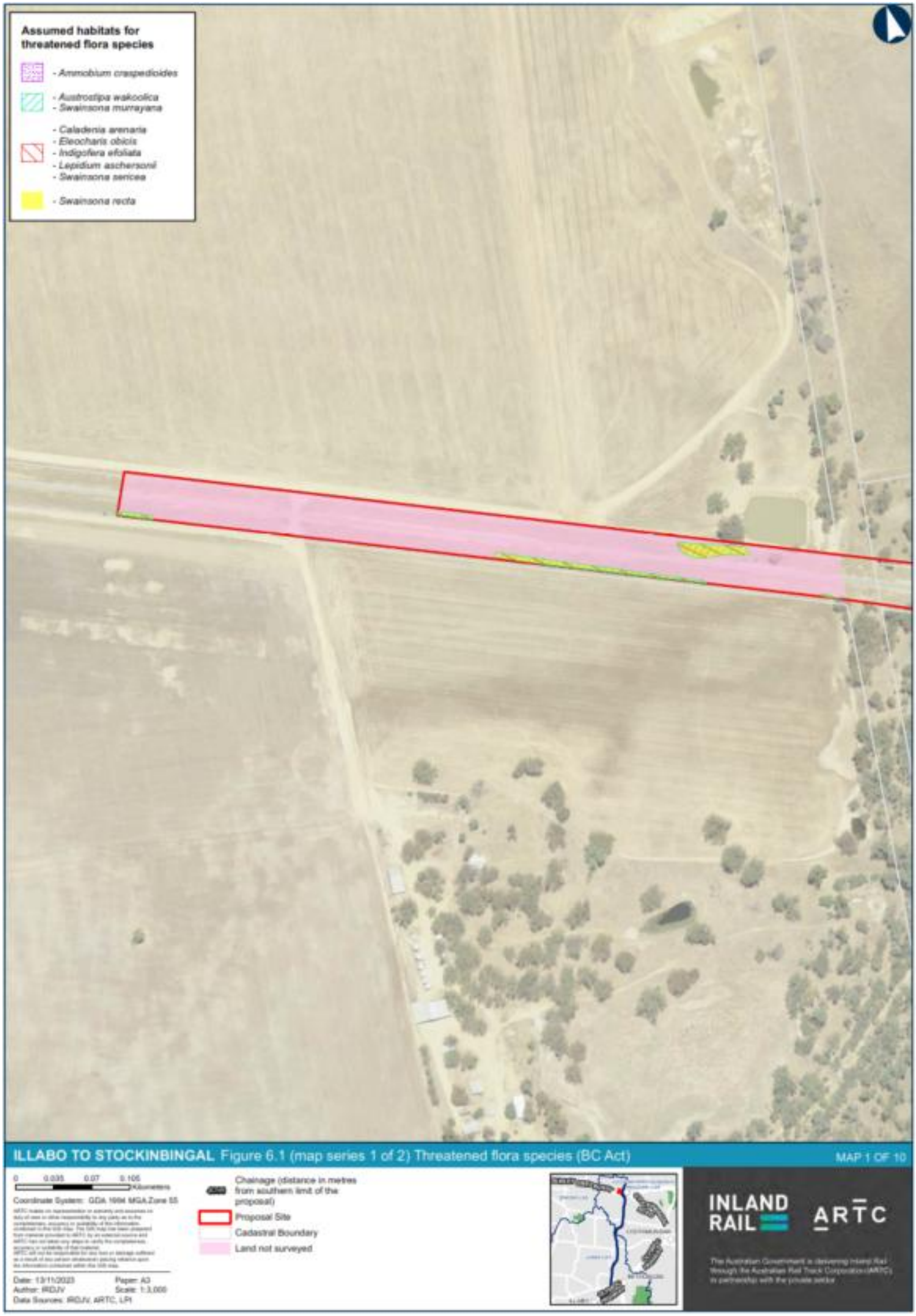

Tree 27
Tree 28
Plot W7
Plot G3
Plot W6
Plot G6
Plot W5
Plot G4
Plot W4
Plot E5
Plot E6
Field Verified Category 1 land
Land excluded from the LLS Act
Scattered Tree
Class 3 - no hollows
Class 3 - with hollows
Vegetation Zone
Veg Zone 2: PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions - Moderate
Veg Zone 3: PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions - Poor
Veg Zone 4: PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions - Low - derived native grassland
Veg Zone 13: PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion - Poor
Veg Zone 15: PCT 309 Black Cypress Pine - Red Stringybark - red gum - box low open forest on siliceous rocky outcrops in the NSW South Western Slopes Bioregion - Moderate
Veg Zone 20: PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion - Planted Native Vegetation
Veg Zone 21: PCT 309 Black Cypress Pine - Red Stringybark - red gum - box low open forest on siliceous rocky outcrops in the NSW South Western Slopes Bioregion - Low - derived native grassland
ILLABO TO STOCKINBINGAL Figure 3.1 Vegetation Zones and Scattered Trees
MAP 7 OF 10
0 0.05 0.1 0.15 Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Chainage (distance in metres from southern limit of the proposal)
Cadastral Boundary
Subject Land
Surveyed in BDAR
Unsurveyed Areas in BDAR
Date: 28/05/2025
Author: IRDJV
Paper: A3
Scale: 1:5,000
Data Sources: IRDJV, ARTC, LPI/ESRI
INLAND RAIL
ARTC


Plot E6
Plot E3
Plot E4
Plot E9
Field Verified Category 1 land Vegetation Zone
Veg Zone 2: PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions - Moderate
Veg Zone 3: PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions - Poor
Veg Zone 4: PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions - Low - derived native grassland
Veg Zone 13: PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion - Poor
Veg Zone 14: PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion - Low - derived native grassland
ILLABO TO STOCKINBINGAL Figure 3.1 Vegetation Zones and Scattered Trees
MAP 8 OF 10
0 0.05 0.1 0.15 Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Date: 28/05/2025
Author: IRDJV
Paper: A3
Scale: 1:5,000
Data Sources: IRDJV, ARTC, LPI/ESRI
Chainage (distance in metres from southern limit of the proposal)
Cadastral Boundary
Subject Land
Surveyed in BDAR
Unsurveyed Areas in BDAR
INLAND RAIL
ARTC

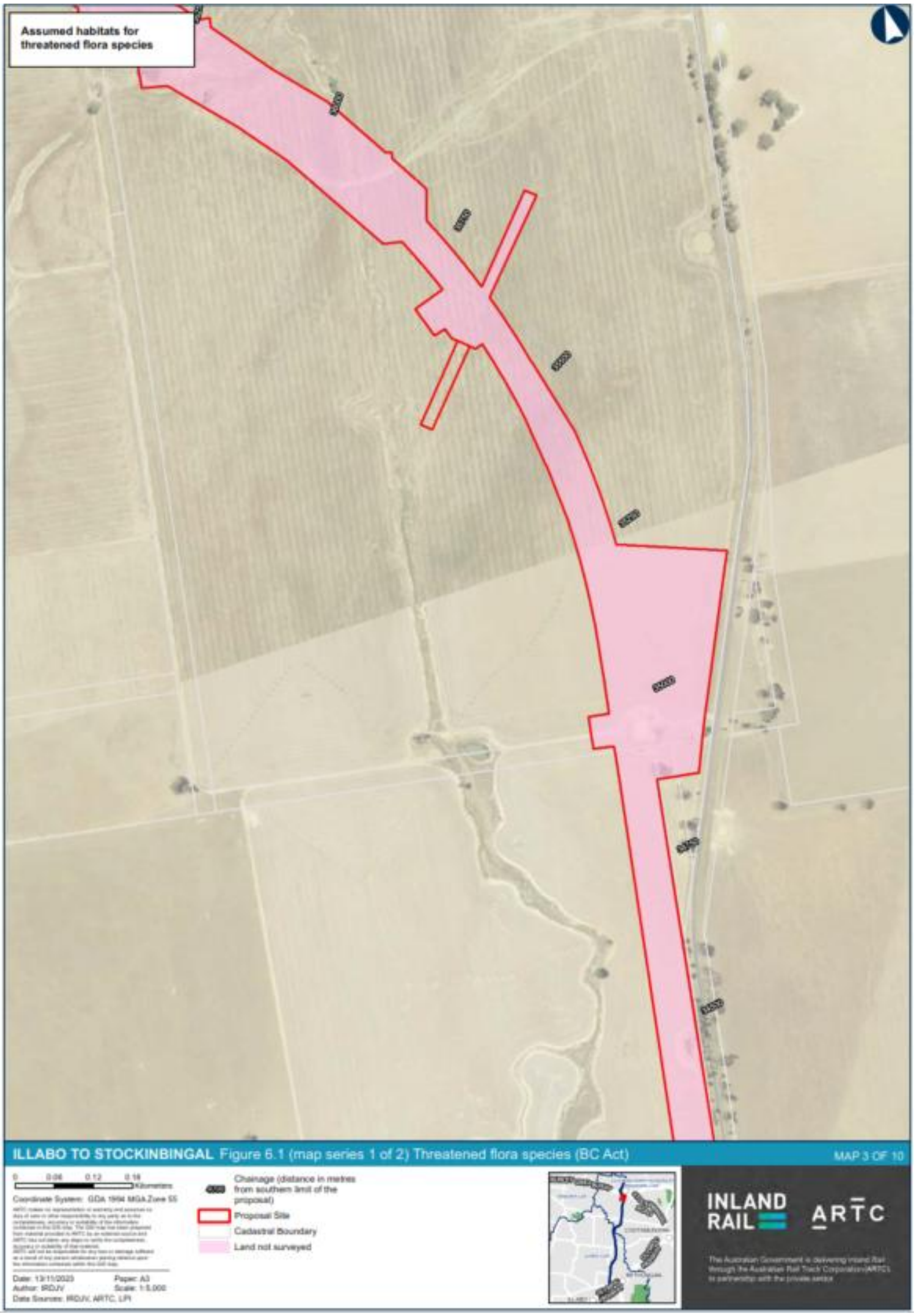

Field Verified Category 1 land
Scattered Tree
Class 3 - no hollows
Class 3 - with hollows
Vegetation Zone
Veg Zone 2: PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions - Moderate
Veg Zone 13: PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion - Poor
Plot E9
Tree 30
Tree 29
Tree 31
ILLABO TO STOCKINBINGAL Figure 3.1 Vegetation Zones and Scattered Trees
MAP 9 OF 10
0 0.05 0.1 0.15
Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Date: 28/05/2025
Paper: A3
Author: IRDJV
Scale: 1:5,000
Data Sources: IRDJV, ARTC, LPI/ESRI
Chainage (distance in metres from southern limit of the proposal)
Cadastral Boundary
Subject Land
Surveyed in BDAR
Unsurveyed Areas in BDAR
INLAND RAIL
ARTC


Field Verified Category 1 land
Scattered Tree
Class 3 - no hollows
Vegetation Zone
Veg Zone 3: PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions - Poor
Veg Zone 10: PCT 276 Yellow Box grassy tall woodland on alluvium or parna loams and clays on flats in NSW South Western Slopes Bioregion - Moderate
Veg Zone 12: PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion - Moderate
Veg Zone 14: PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion - Low - derived native grassland
Veg Zone 18: PCT 79 River Red Gum herbaceous-grassy very tall open forest wetland on inner floodplains in the lower slopes sub-region of the NSW South Western Slopes Bioregion and the eastern Riverina Bioregion - Moderate
Tree 31
Plot E2
Plot E8
Plot E1
Plot E7
ILLABO TO STOCKINBINGAL Figure 3.1 Vegetation Zones and Scattered Trees
MAP 10 OF 10
0 0.05 0.1 0.15
Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Chainage (distance in metres from southern limit of the proposal)
Cadastral Boundary
Subject Land
Surveyed in BDAR
Unsurveyed Areas in BDAR
Date: 28/05/2025
Paper: A3
Author: IRDJV
Scale: 1:5,000
Data Sources: IRDJV, ARTC, LPI/ESRI
INLAND RAIL
ARTC

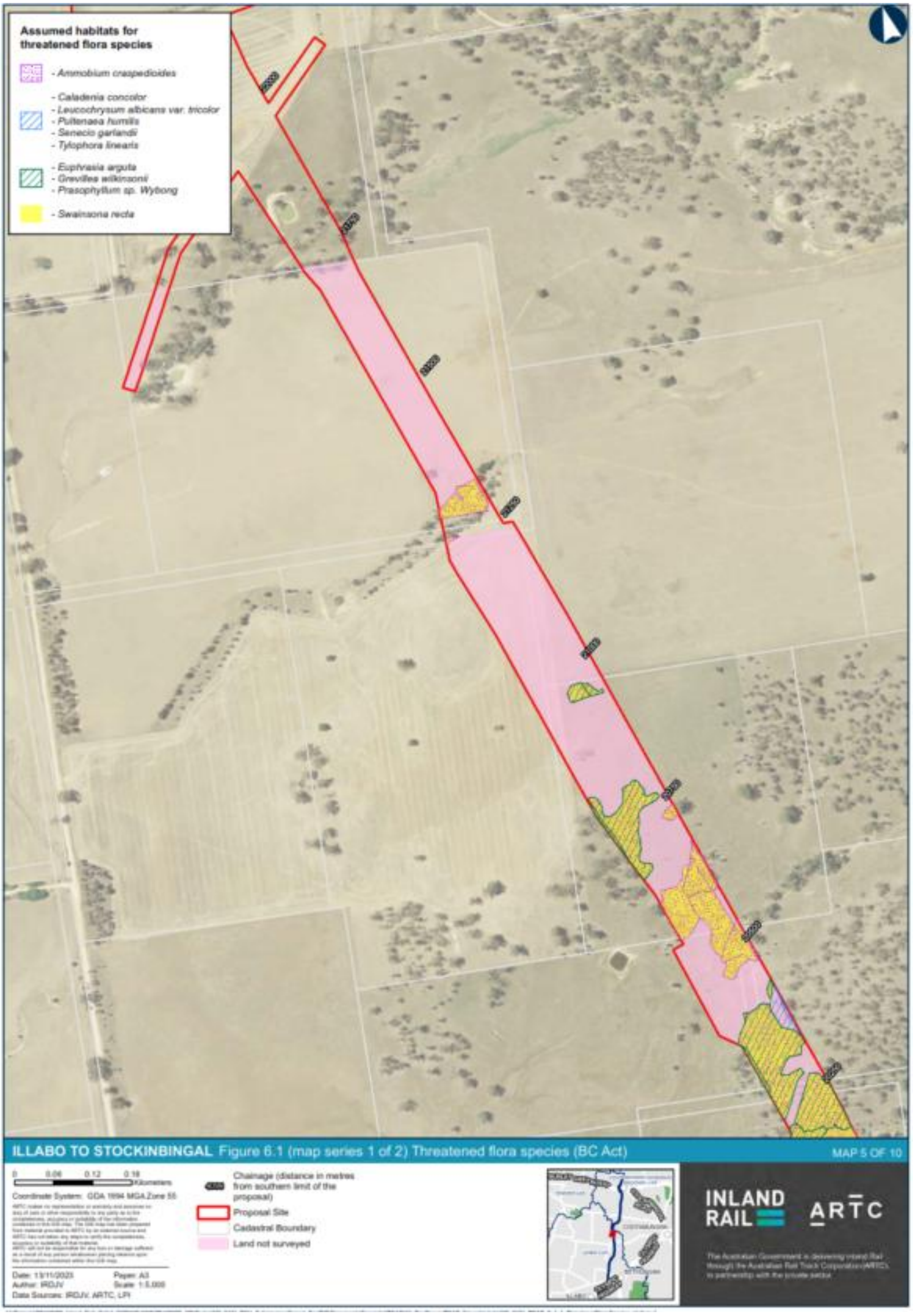
Threatened Flora Species Polygons – Revised BDAR

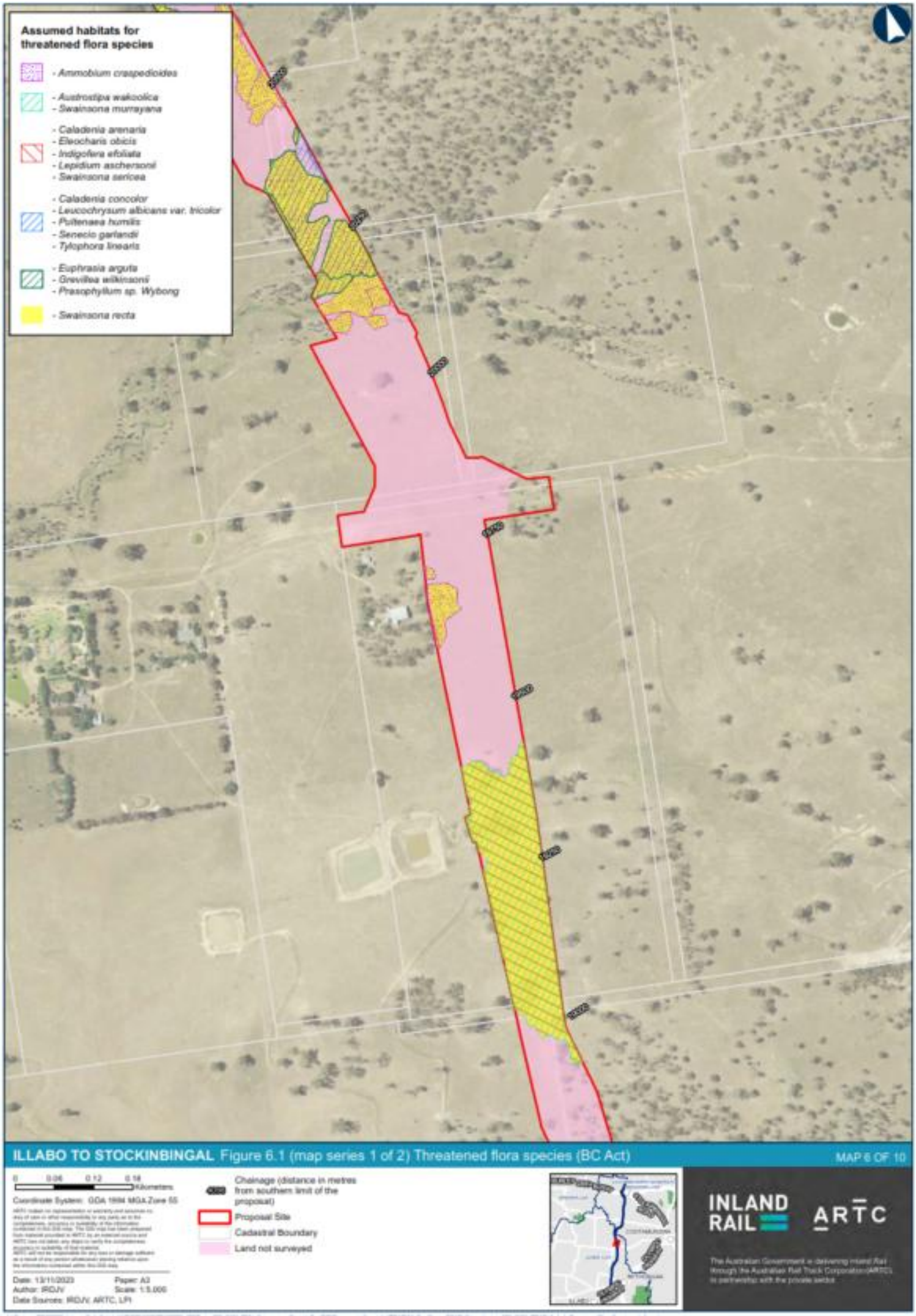


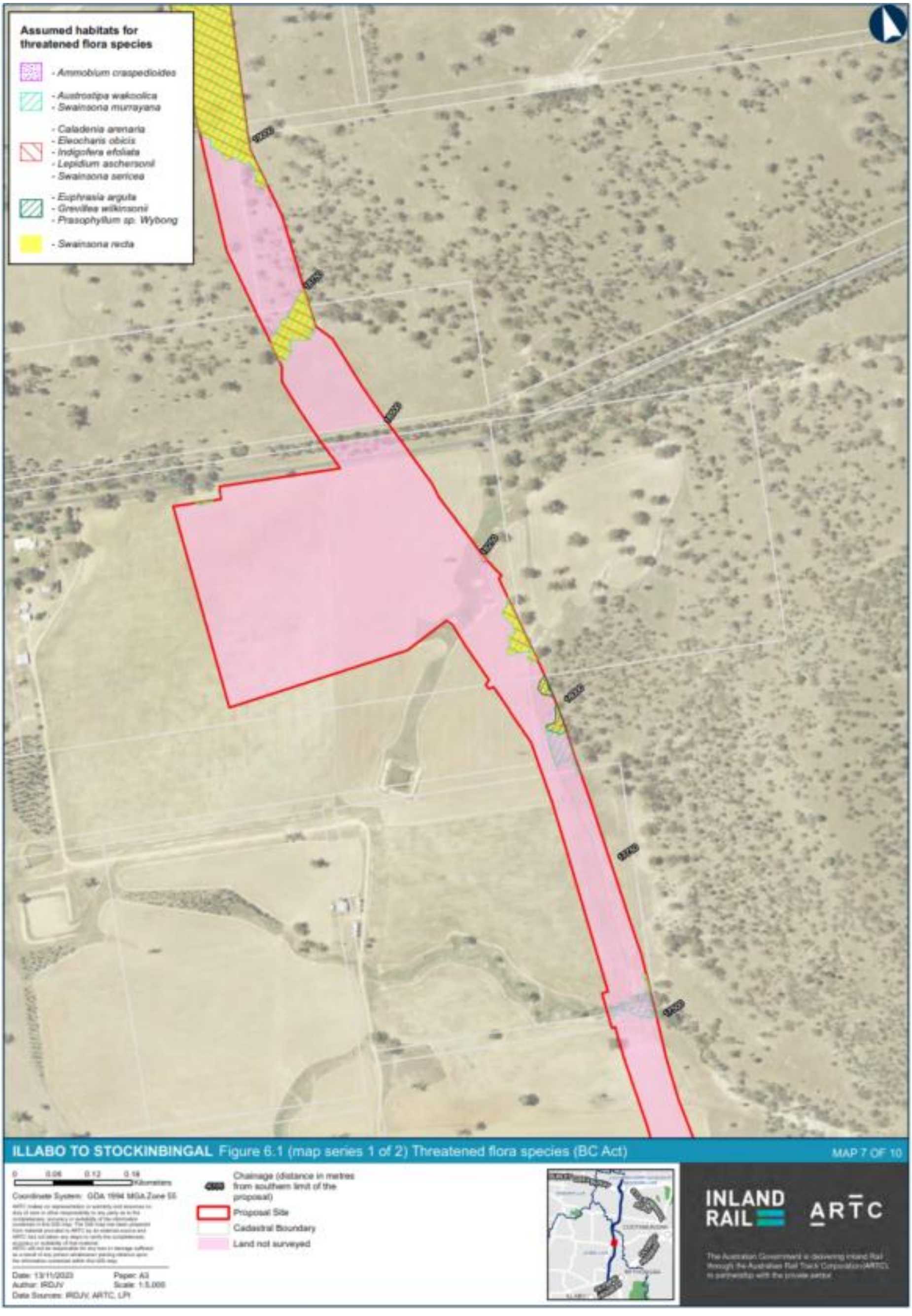

Assumed habitats for threatened flora species
ILLABO TO STOCKINBINGAL Figure 6.1 (map series 1 of 2) Threatened flora species (BC Act)
MAP 2 OF 10
Chainage (distance in metres from southern limit of the proposal)
Proposal Site
Cadastral Boundary
Land not surveyed
Coordinate System: GDA 1994 MGA Zone 55
Date: 13/11/2023
Paper: A3
Author: IRDJV
Scale: 1:5,000
Data Sources: IRDJV, ARTC, LPI
INLAND RAIL
ARTC

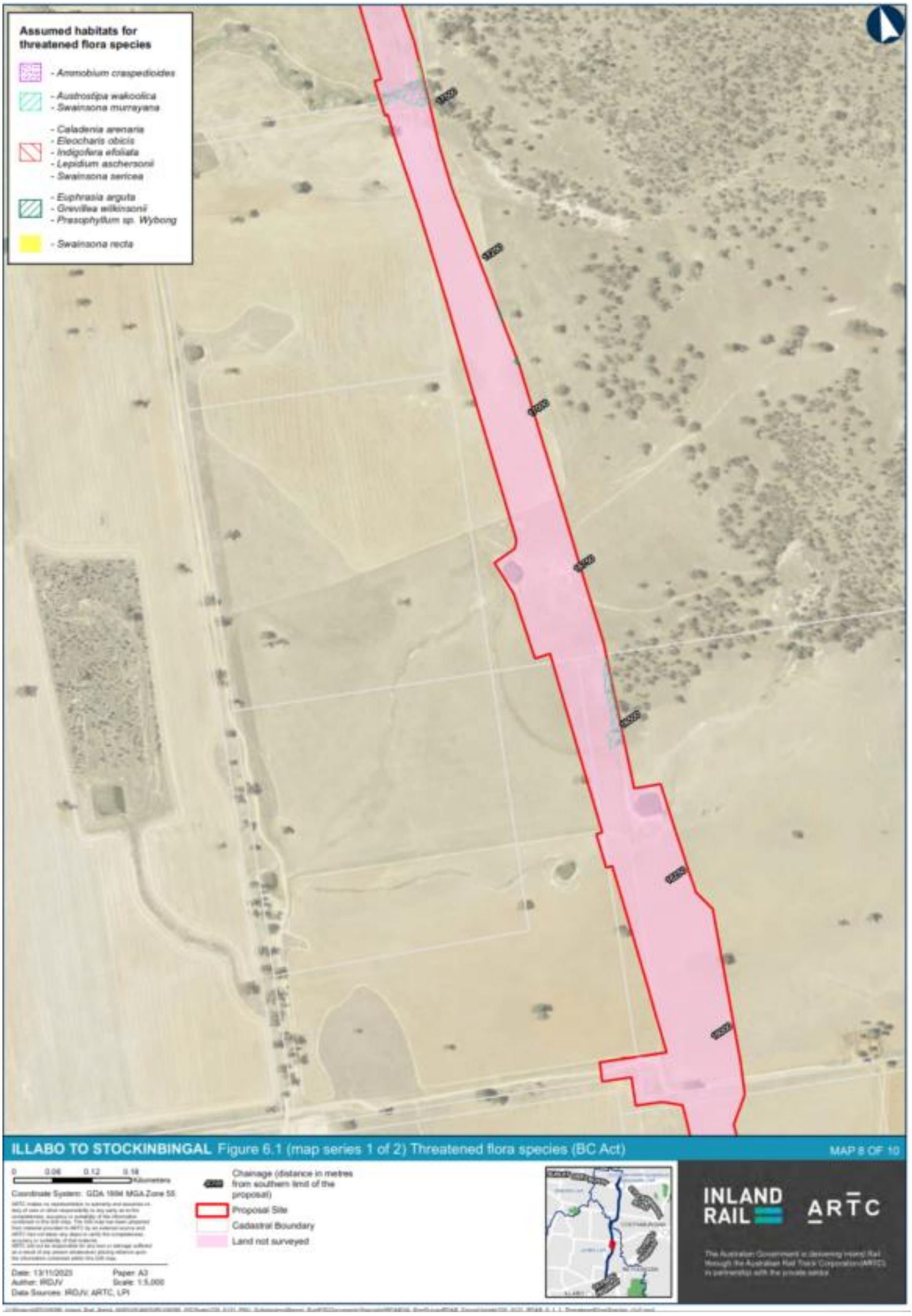

Assumed habitats for threatened flora species
ILLABO TO STOCKINBINGAL Figure 6.1 (map series 1 of 2) Threatened flora species (BC Act)
MAP 3 OF 10
0 0.06 0.12 0.18
Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Date: 13/11/2023
Paper: A3
Author: IRDJV
Scale: 1:5,000
Data Sources: IRDJV, ARTC, LPI
Chainage (distance in metres from southern limit of the proposal)
Proposal Site
Cadastral Boundary
Land not surveyed
INLAND RAIL
ARTC


Assumed habitats for threatened flora species
ILLABO TO STOCKINBINGAL Figure 6.1 (map series 1 of 2) Threatened flora species (BC Act)
MAP 4 OF 10
0 0.06 0.12 0.18
Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Date: 13/11/2023
Paper: A3
Author: IRDJV
Scale: 1:5,000
Data Sources: IRDJV, ARTC, LPI
Chainage (distance in metres from southern limit of the proposal)
Proposal Site
Cadastral Boundary
Land not surveyed
INLAND RAIL
ARTC


Assumed habitats for threatened flora species
- Ammobium craspedioides
- Caladenia concolor
- Leucochrysum albicans var. tricolor
- Pultenaea humilis
- Senecio garlandii
- Tylophora linearis
- Euphrasia arguta
- Grevillea wilkinsonii
- Prasophyllum sp. Wybong
- Swainsona recta
ILLABO TO STOCKINBINGAL Figure 6.1 (map series 1 of 2) Threatened flora species (BC Act)
MAP 5 OF 10
0 0.06 0.12 0.18
Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Date: 13/11/2023
Paper: A3
Author: IRDJV
Scale: 1:5,000
Data Sources: IRDJV, ARTC, LPI
Chainage (distance in metres from southern limit of the proposal)
Proposal Site
Cadastral Boundary
Land not surveyed
INLAND RAIL
ARTC


Assumed habitats for threatened flora species
- Ammobium craspedioides
- Austrostipa wakoolica
- Swainsona murrayana
- Caladenia arenaria
- Eleocharis obicis
- Indigofera efoliata
- Lepidium aschersonii
- Swainsona sericea
- Caladenia concolor
- Leucochrysum albicans var. tricolor
- Pultenaea humilis
- Senecio garlandii
- Tylophora linearis
- Euphrasia arguta
- Grevillea wilkinsonii
- Prasophyllum sp. Wybong
- Swainsona recta
ILLABO TO STOCKINBINGAL Figure 6.1 (map series 1 of 2) Threatened flora species (BC Act)
MAP 6 OF 10
0 0.06 0.12 0.18
Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Date: 13/11/2023
Paper: A3
Author: IRDJV
Scale: 1:5,000
Data Sources: IRDJV, ARTC, LPI
Chainage (distance in metres from southern limit of the proposal)
Proposal Site
Cadastral Boundary
Land not surveyed
INLAND RAIL
ARTC

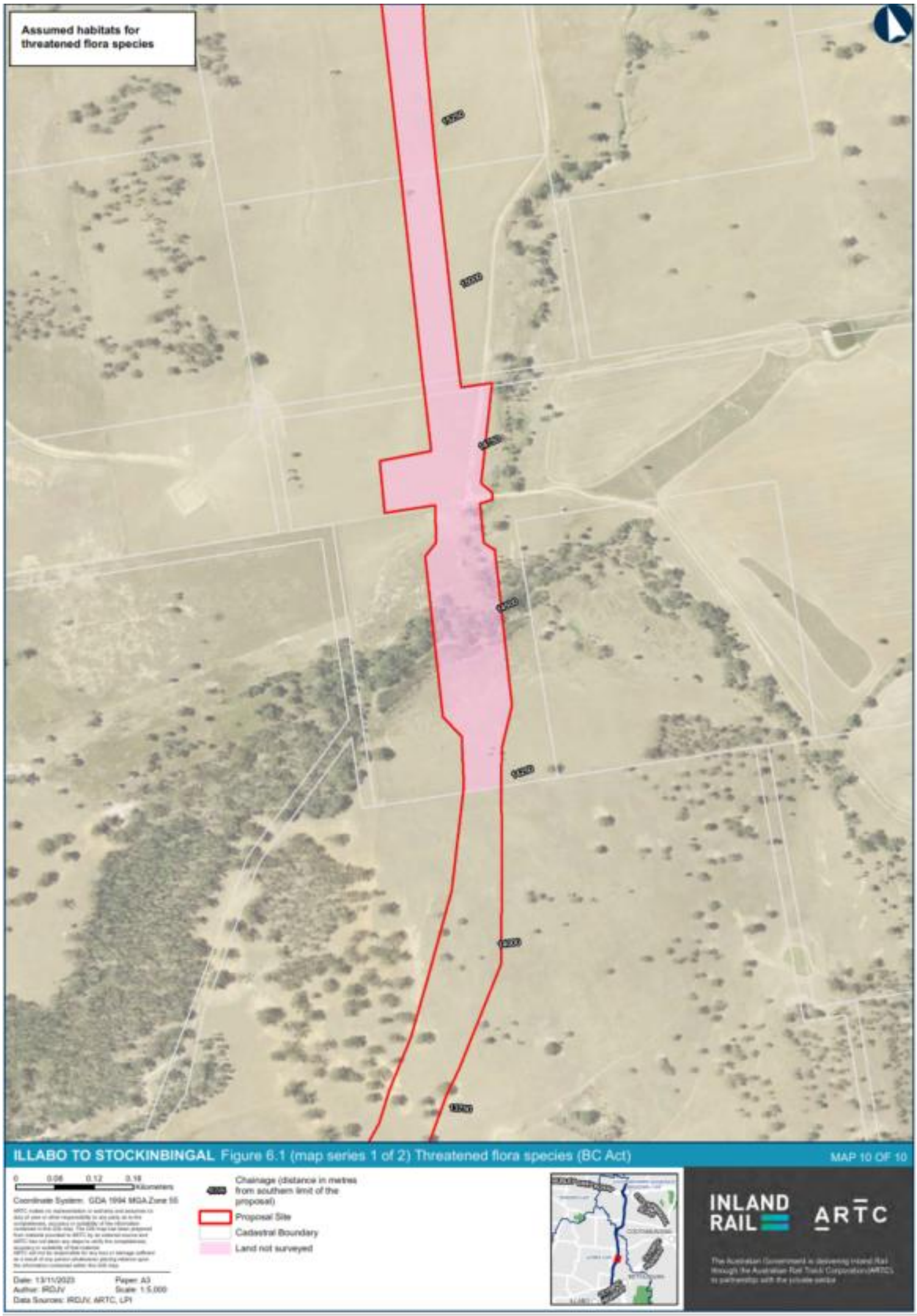

Assumed habitats for threatened flora species
- Ammobium craspedioides
- Austrostipa wakoolica
- Swainsona murrayana
- Caladenia arenaria
- Eleocharis obicis
- Indigofera efoliata
- Lepidium aschersonii
- Swainsona sericea
- Euphrasia arguta
- Grevillea wilkinsonii
- Prasophyllum sp. Wybong
- Swainsona recta
4500
4750
5000
5250
5500
ILLABO TO STOCKINBINGAL Figure 6.1 (map series 1 of 2) Threatened flora species (BC Act)
MAP 7 OF 10
0 0.06 0.12 0.18 Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Date: 13/11/2023
Paper: A3
Author: IRDJV
Scale: 1:5,000
Data Sources: IRDJV, ARTC, LPI
4500 Chainage (distance in metres from southern limit of the proposal)
Proposal Site
Cadastral Boundary
Land not surveyed
INLAND RAIL
ARTC


Assumed habitats for threatened flora species
- Ammobium craspedioides
- Austrostipa wakoolica
- Swainsona murrayana
- Caladenia arenaria
- Eleocharis obicis
- Indigofera efoliata
- Lepidium aschersonii
- Swainsona sericea
- Euphrasia arguta
- Grevillea wilkinsonii
- Prasophyllum sp. Wybong
- Swainsona recta
9300
9200
9100
9000
8900
8800
ILLABO TO STOCKINBINGAL Figure 6.1 (map series 1 of 2) Threatened flora species (BC Act)
MAP 8 OF 10
0 0.06 0.12 0.18
Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Date: 13/11/2025
Paper: A3
Author: IRD/JV
Scale: 1:5,000
Data Sources: IRD/JV, ARTC, LPI
Chainage (distance in metres from southern limit of the proposal)
Proposal Site
Cadastral Boundary
Land not surveyed
INLAND RAIL
ARTC

Updated Threatened Flora Species Polygons – Unsurveyed Land Report



Threatened Flora Species – Updated BDAR



Threatened Fauna Species – Updated BDAR

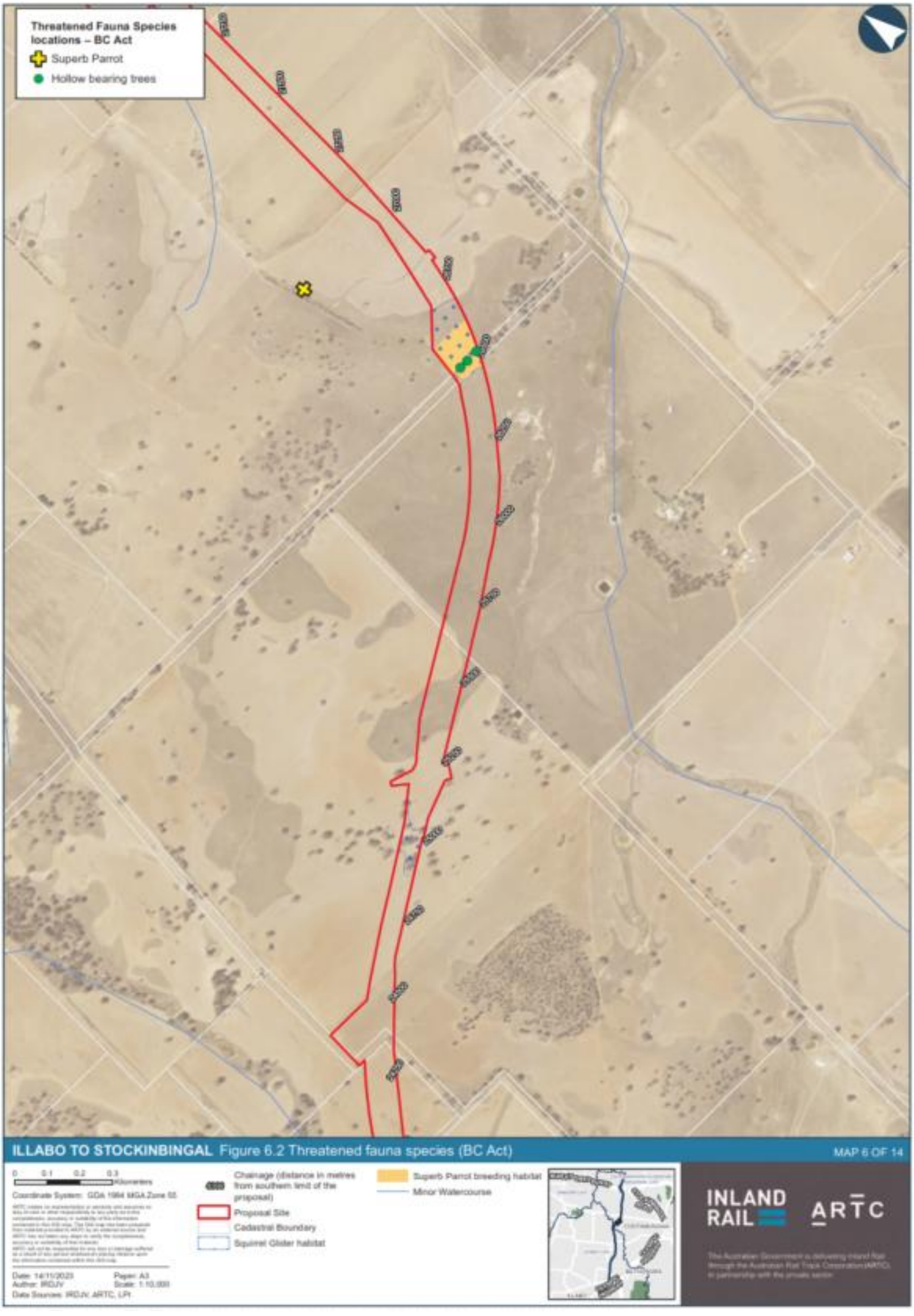


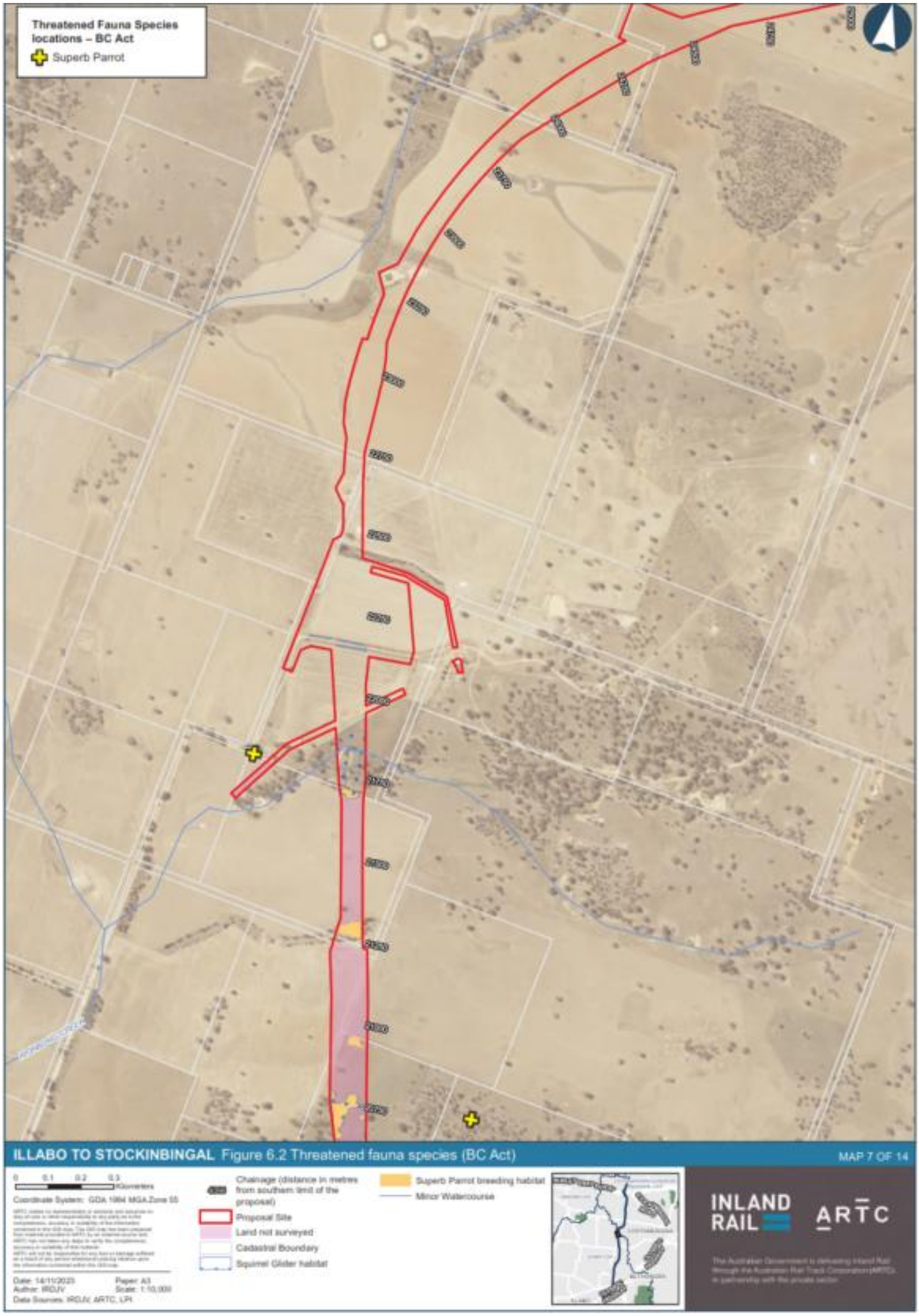

Threatened Fauna Species locations – BC Act
Grey-crowned Babbler
Little Eagle
Square-tailed Kite
Superb Parrot
Hollow bearing trees
ILLABO TO STOCKINBINGAL Figure 6.2 Threatened fauna species (BC Act)
MAP 2 OF 14
0 0.1 0.2 0.3 Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Date: 14/11/2022
Paper: A3
Author: IRDJV
Scale: 1:10,000
Data Sources: IRDJV, ARTC, LPI
Chainage (distance in metres from southern limit of the proposal)
Proposal Site
Land not surveyed
Cadastral Boundary
Large-footed Myotis habitat
Squirrel Glider habitat
Superb Parrot breeding habitat
Minor Watercourse
INLAND RAIL
ARTC

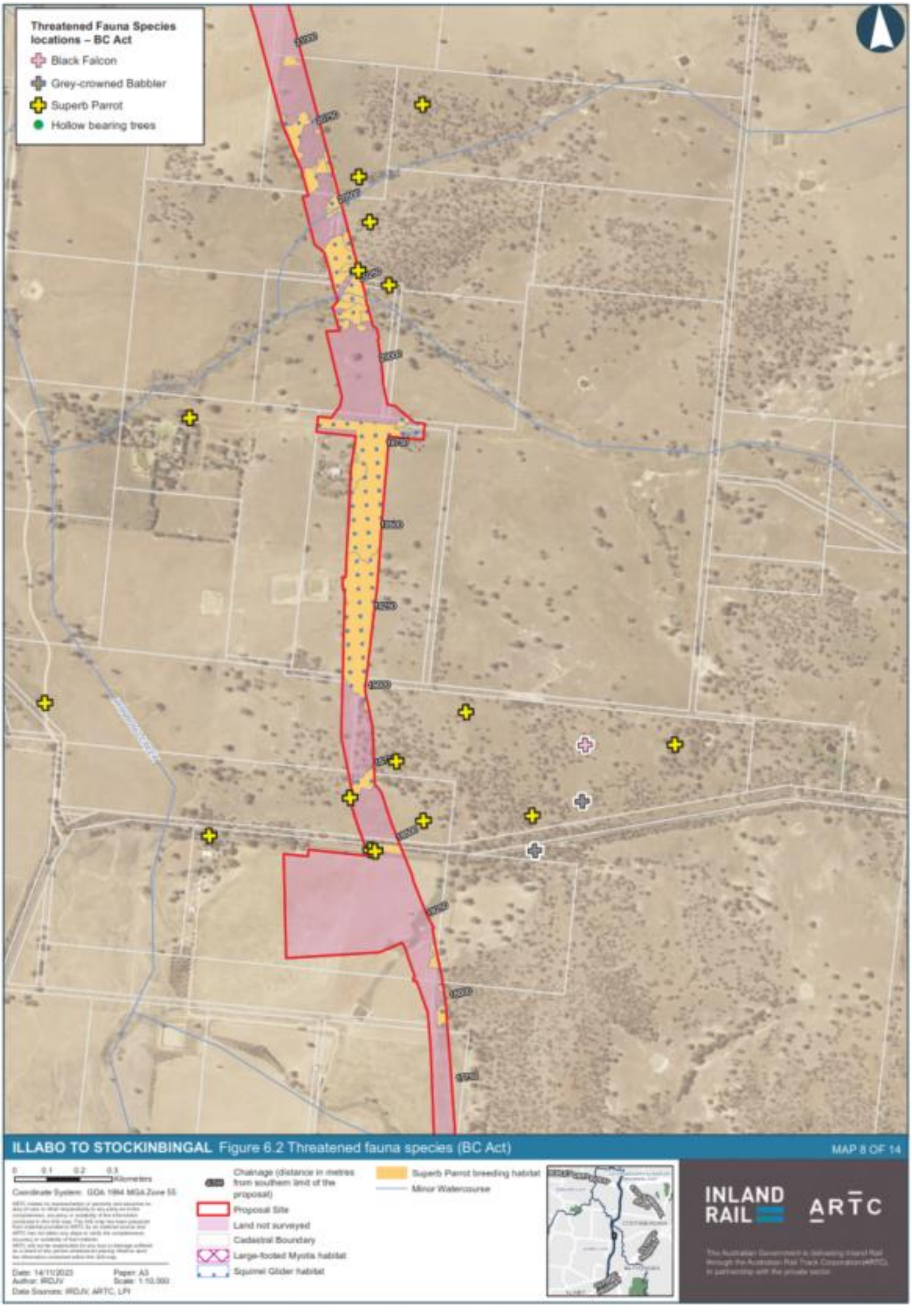

Threatened Fauna Species locations – BC Act
ILLABO TO STOCKINBINGAL Figure 6.2 Threatened fauna species (BC Act)
MAP 3 OF 14
Chainage (distance in metres from southern limit of the proposal)
Proposal Site
Land not surveyed
Cadastral Boundary
Squirrel Glider habitat
Superb Parrot breeding habitat
Major Watercourse
Minor Watercourse
Coordinate System: GDA 1994 MGA Zone 55
Date: 14/11/2023
Author: IRDJV
Paper: A3
Scale: 1:10,000
Data Sources: IRDJV, ARTC, LPI
INLAND RAIL
ARTC

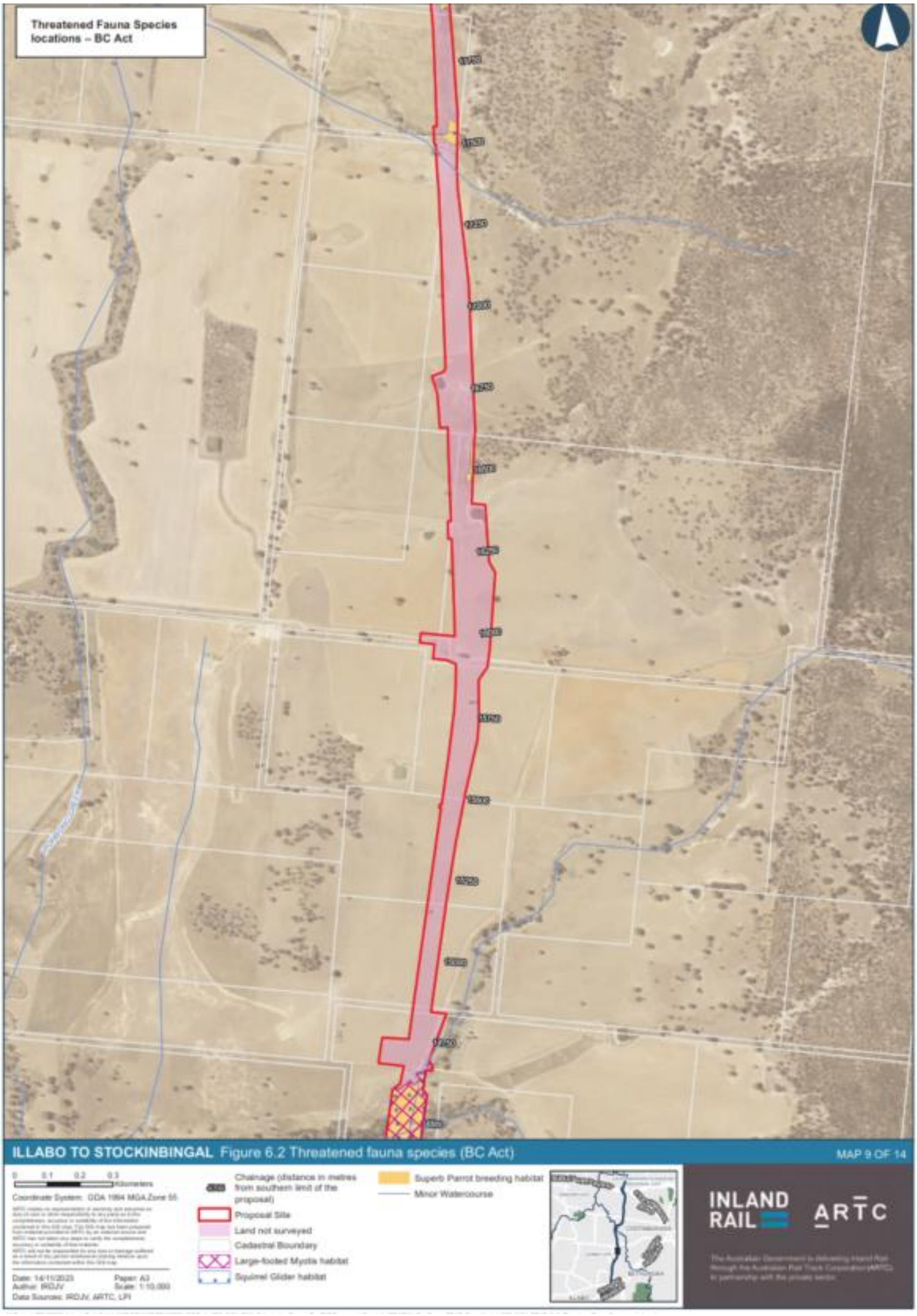

Threatened Fauna Species locations – BC Act
Spotted Harrier
Spotted Harrier - Nest (Confirmed)
Superb Parrot
ILLABO TO STOCKINBINGAL Figure 6.2 Threatened fauna species (BC Act)
MAP 4 OF 14
0 0.1 0.2 0.3 Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Date: 14/11/2023
Author: IRDJV
Paper: A3
Scale: 1:10,000
Data Sources: IRDJV, ARTC, LPI
Chainage (distance in metres from southern limit of the proposal)
Proposal Site
Land not surveyed
Cadastral Boundary
Squirrel Glider habitat
Superb Parrot breeding habitat
Minor Watercourse
INLAND RAIL
ARTC

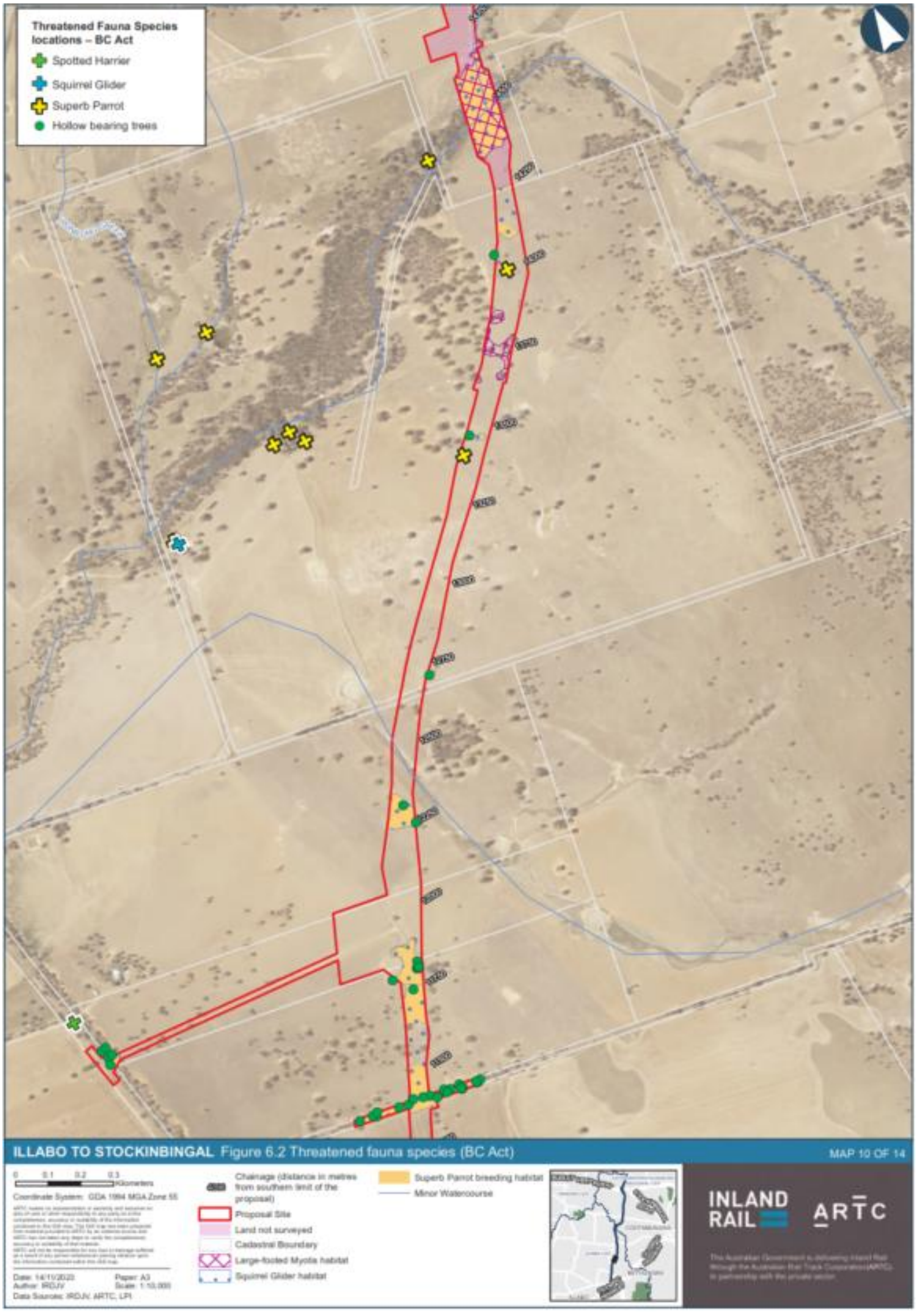

Threatened Fauna Species locations – BC Act
Superb Parrot
White-fronted Chat
Hollow bearing trees
ILLABO TO STOCKINBINGAL Figure 6.2 Threatened fauna species (BC Act)
MAP 5 OF 14
0 0.1 0.2 0.3 Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Date: 14/11/2020
Author: IRDJV
Paper: A3
Scale: 1:10,000
Data Sources: IRDJV, ARTC, LPI
Chainage (distance in metres from southern limit of the proposal)
Proposal Site
Cadastral Boundary
Superb Parrot breeding habitat
Minor Watercourse
INLAND RAIL
ARTC


Threatened Fauna Species locations – BC Act
Superb Parrot
Hollow bearing trees
ILLABO TO STOCKINBINGAL Figure 6.2 Threatened fauna species (BC Act)
MAP 6 OF 14
0 0.1 0.2 0.3 Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Date: 14/11/2023
Author: IRDJV
Paper: A3
Scale: 1:10,000
Data Sources: IRDJV, ARTC, LPI
Chainage (distance in metres from southern limit of the proposal)
Proposal Site
Cadastral Boundary
Squirrel Glider habitat
Superb Parrot breeding habitat
Minor Watercourse
INLAND RAIL
ARTC


Threatened Fauna Species locations – BC Act
Superb Parrot
ILLABO TO STOCKINBINGAL Figure 6.2 Threatened fauna species (BC Act)
MAP 7 OF 14
Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Chainage (distance in metres from southern limit of the proposal)
Proposal Site
Land not surveyed
Cadastral Boundary
Squirrel Glider habitat
Superb Parrot breeding habitat
Minor Watercourse
Date: 14/11/2025
Paper: A3
Author: IRDJV
Scale: 1:10,000
Data Sources: IRDJV, ARTC, LPI
INLAND RAIL
ARTC

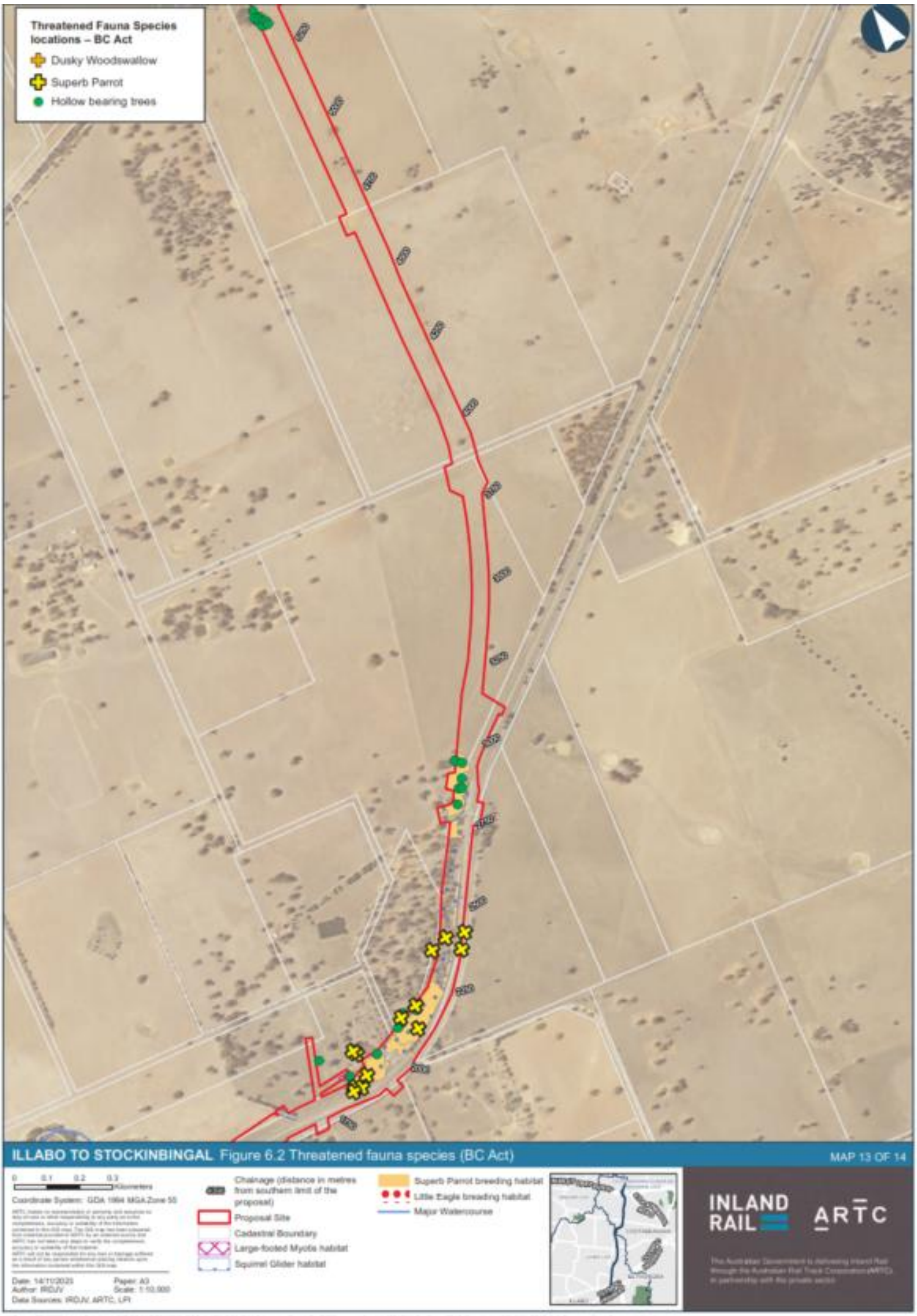

Threatened Fauna Species locations – BC Act
Black Falcon
Grey-crowned Babbler
Superb Parrot
Hollow bearing trees
ILLABO TO STOCKINBINGAL Figure 6.2 Threatened fauna species (BC Act)
MAP 8 OF 14
0 0.1 0.2 0.3 Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Date: 14/11/2023
Author: IRDJV
Paper: A3
Scale: 1:10,000
Data Sources: IRDJV, ARTC, LPI
Chainage (distance in metres from southern limit of the proposal)
Proposal Site
Land not surveyed
Cadastral Boundary
Large-footed Myotis habitat
Squirrel Glider habitat
Superb Parrot breeding habitat
Minor Watercourse
INLAND RAIL
ARTC

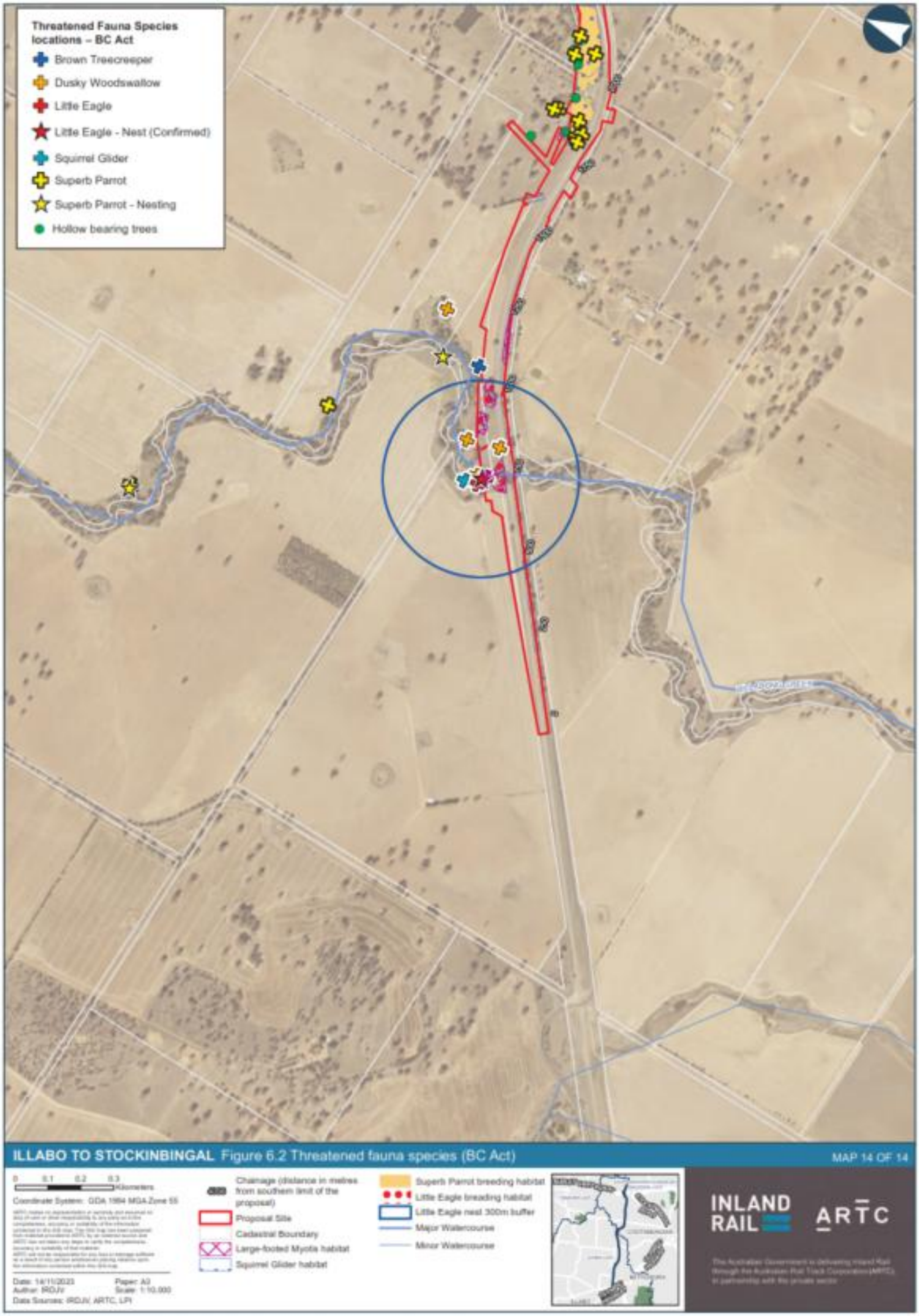

Threatened Fauna Species locations – BC Act
ILLABO TO STOCKINBINGAL Figure 6.2 Threatened fauna species (BC Act)
MAP 9 OF 14
0 0.1 0.2 0.3
Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Date: 14/11/2023
Paper: A3
Author: IRDJV
Scale: 1:10,000
Data Sources: IRDJV, ARTC, LPI
Chainage (distance in metres from southern limit of the proposal)
Proposal Site
Land not surveyed
Cadastral Boundary
Large-footed Myotis habitat
Squirrel Glider habitat
Superb Parrot breeding habitat
Minor Watercourse
INLAND RAIL
ARTC


Threatened Fauna Species locations – BC Act
Spotted Harrier
Squirrel Glider
Superb Parrot
Hollow bearing trees
ILLABO TO STOCKINBINGAL Figure 6.2 Threatened fauna species (BC Act)
MAP 10 OF 14
0 0.1 0.2 0.3 Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Date: 14/11/2023
Author: IRDJV
Paper: A3
Scale: 1:10,000
Data Sources: IRDJV, ARTC, LPI
Chainage (distance in metres from southern limit of the proposal)
Proposal Site
Land not surveyed
Cadastral Boundary
Large-footed Myotis habitat
Squirrel Glider habitat
Superb Parrot breeding habitat
Minor Watercourse
INLAND RAIL
ARTC


Threatened Fauna Species locations – BC Act
Brown Treecreeper
Little Eagle
Superb Parrot
Hollow bearing trees
ILLABO TO STOCKINBINGAL Figure 6.2 Threatened fauna species (BC Act)
MAP 11 OF 14
0 0.1 0.2 0.3 Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Date: 16/11/2023
Author: IRDJV
Paper: A3
Scale: 1:10,000
Data Sources: IRDJV, ARTC, LPI
Chainage (distance in metres from southern limit of the proposal)
Proposal Site
Cadastral Boundary
Large-footed Myotis habitat
Squirrel Glider habitat
Superb Parrot breeding habitat
Minor Watercourse
INLAND RAIL
ARTC


Threatened Fauna Species locations – BC Act
Brown Treecreeper
Little Eagle
Squirrel Glider
Superb Parrot
Hollow bearing trees
ILLABO TO STOCKINBINGAL Figure 6.2 Threatened fauna species (BC Act)
MAP 12 OF 14
0 0.1 0.2 0.3 Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Date: 14/11/2023
Author: IRDJV
Paper: A3
Scale: 1:10,000
Data Sources: IRDJV, ARTC, LPI
Chainage (distance in metres from southern limit of the proposal)
Proposal Site
Cadastral Boundary
Large-footed Myotis habitat
Squirrel Glider habitat
Superb Parrot breeding habitat
Minor Watercourse
INLAND RAIL
ARTC


Threatened Fauna Species locations – BC Act
Dusky Woodswallow
Superb Parrot
Hollow bearing trees
ILLABO TO STOCKINBINGAL Figure 6.2 Threatened fauna species (BC Act)
MAP 13 OF 14
0 0.1 0.2 0.3
Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Date: 14/11/2025
Paper: A3
Author: IRDJV
Scale: 1:10,000
Data Sources: IRDJV, ARTC, LPI
Chainage (distance in metres from southern limit of the proposal)
Proposal Site
Cadastral Boundary
Large-footed Myotis habitat
Squirrel Glider habitat
Superb Parrot breeding habitat
Little Eagle breeding habitat
Major Watercourse
INLAND RAIL
ARTC


Threatened Fauna Species locations – BC Act
Brown Treecreeper
Dusky Woodswallow
Little Eagle
Little Eagle - Nest (Confirmed)
Squirrel Glider
Superb Parrot
Superb Parrot - Nesting
Hollow bearing trees
ILLABO TO STOCKINBINGAL Figure 6.2 Threatened fauna species (BC Act)
MAP 14 OF 14
0 0.1 0.2 0.3 Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Date: 14/11/2023
Author: IRDJV
Paper: A3
Scale: 1:10,000
Data Sources: IRDJV, ARTC, LPI
Chainage (distance in metres from southern limit of the proposal)
Proposal Site
Cadastral Boundary
Large-footed Myotis habitat
Squirrel Glider habitat
Superb Parrot breeding habitat
Little Eagle breading habitat
Little Eagle nest 300m buffer
Major Watercourse
Minor Watercourse
INLAND RAIL
ARTC

Plant Community Types – Revised BDAR




Category 1 (BAM does not apply except for prescribed impacts)
Plant Community Types
PCT 266 White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
PCT 276 Yellow Box grassy tall woodland on alluvium or pama loams and clays on flats in NSW South Western Slopes Bioregion
PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PCT 75 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions
PCT 80 Western Grey Box - White Cypress Pine tall woodland on loam soil on alluvial plains of NSW South Western Slopes Bioregion and Riverina Bioregion
Miscellaneous Ecosystem
STOCKINBINGAL
ILLABO TO STOCKINBINGAL Figure 5.2 Plant Community Types
MAP 2 OF 14
0 0.1 0.2 0.3 Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Date: 13/11/2023
Paper: A3
Author: IRDJV
Scale: 1:10,000
Data Sources: IRDJV, ARTC, LPI
Chainage (distance in metres from southern limit of the proposal)
Vegetation integrity plot locations
Existing Rail
Land not surveyed
Proposal Site
INLAND RAIL
ARTC

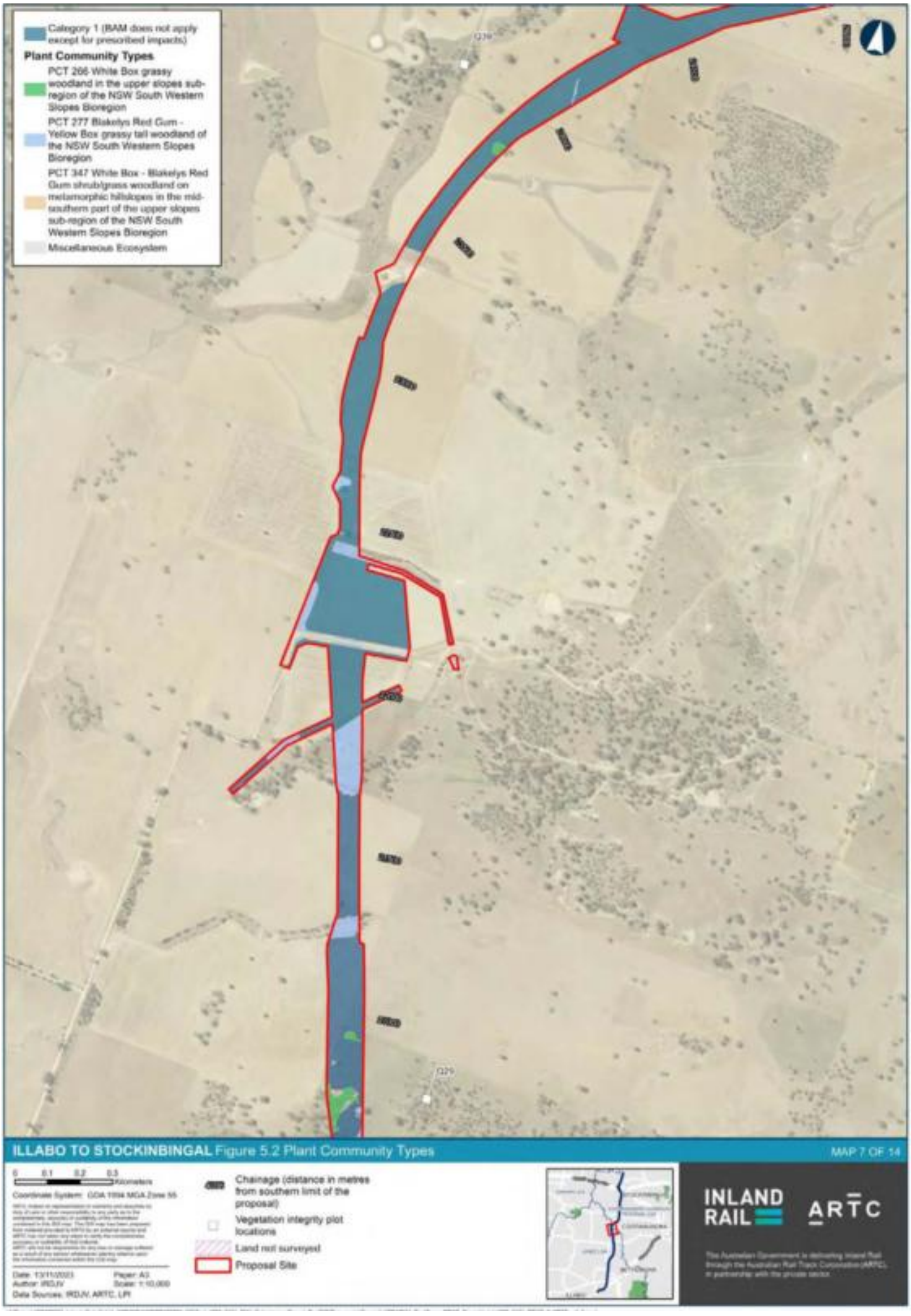

Category 1 (BAM does not apply except for prescribed impacts)
Plant Community Types
PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions
ILLABO TO STOCKINBINGAL Figure 5.2 Plant Community Types
MAP 3 OF 14
0 0.1 0.2 0.3 Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Chainage (distance in metres from southern limit of the proposal)
Land not surveyed
Proposal Site
Date: 13/11/2023
Paper: A3
Author: IRDJV
Scale: 1:10,000
Data Sources: IRDJV, ARTC, LPI
INLAND RAIL
ARTC

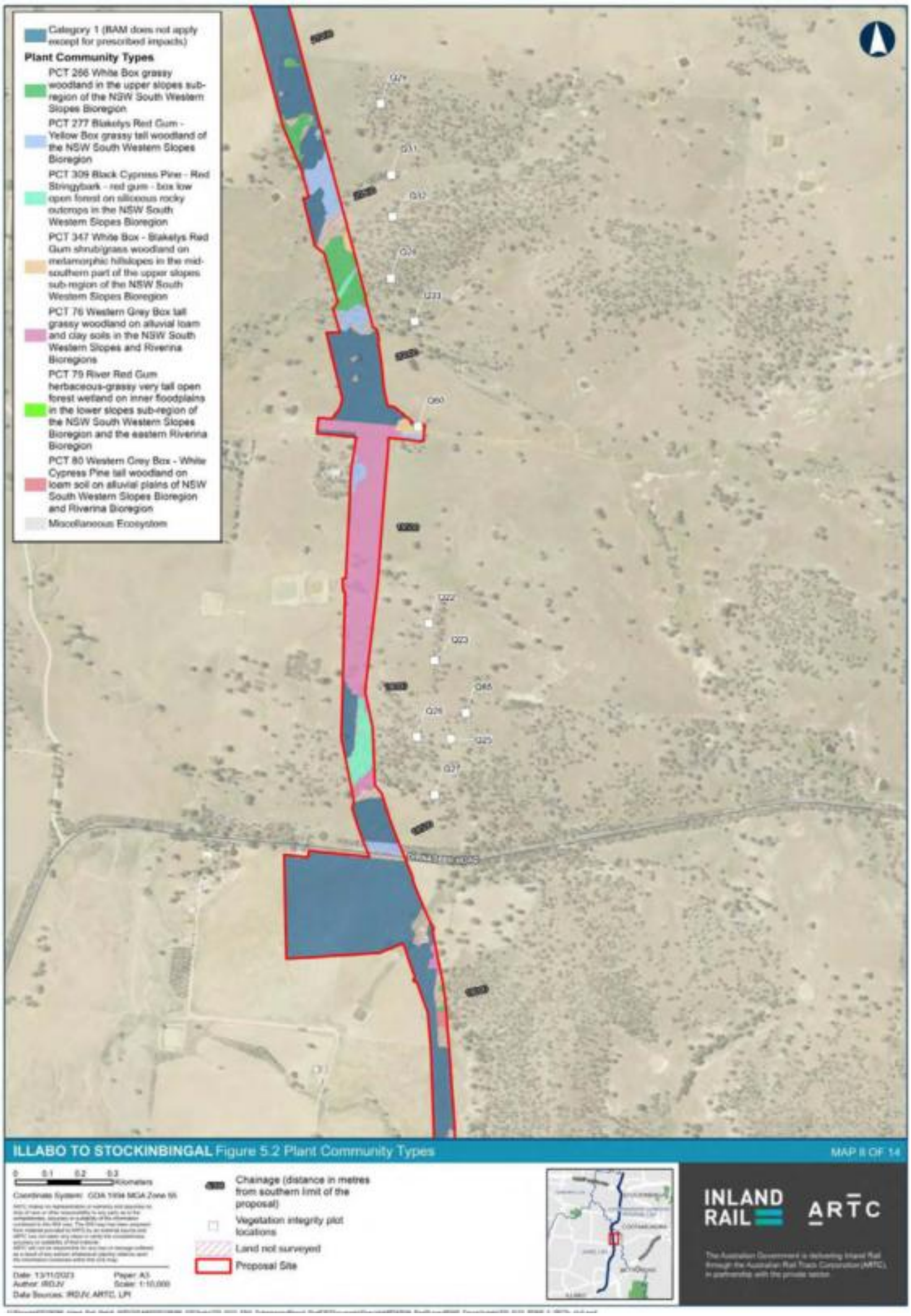


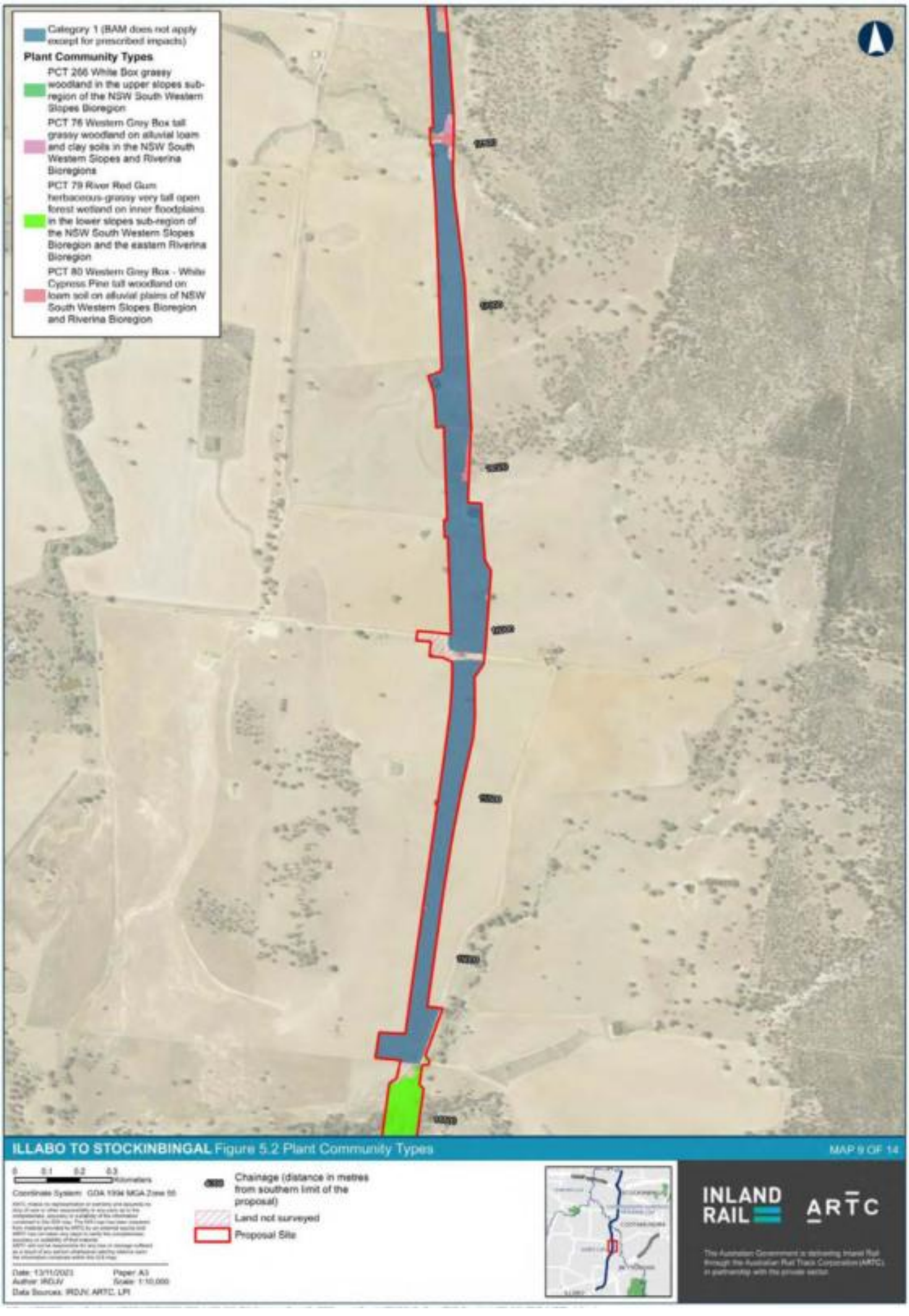
ILLABO TO STOCKINBINGAL Figure 5.2 Plant Community Types MAP 4 OF 14

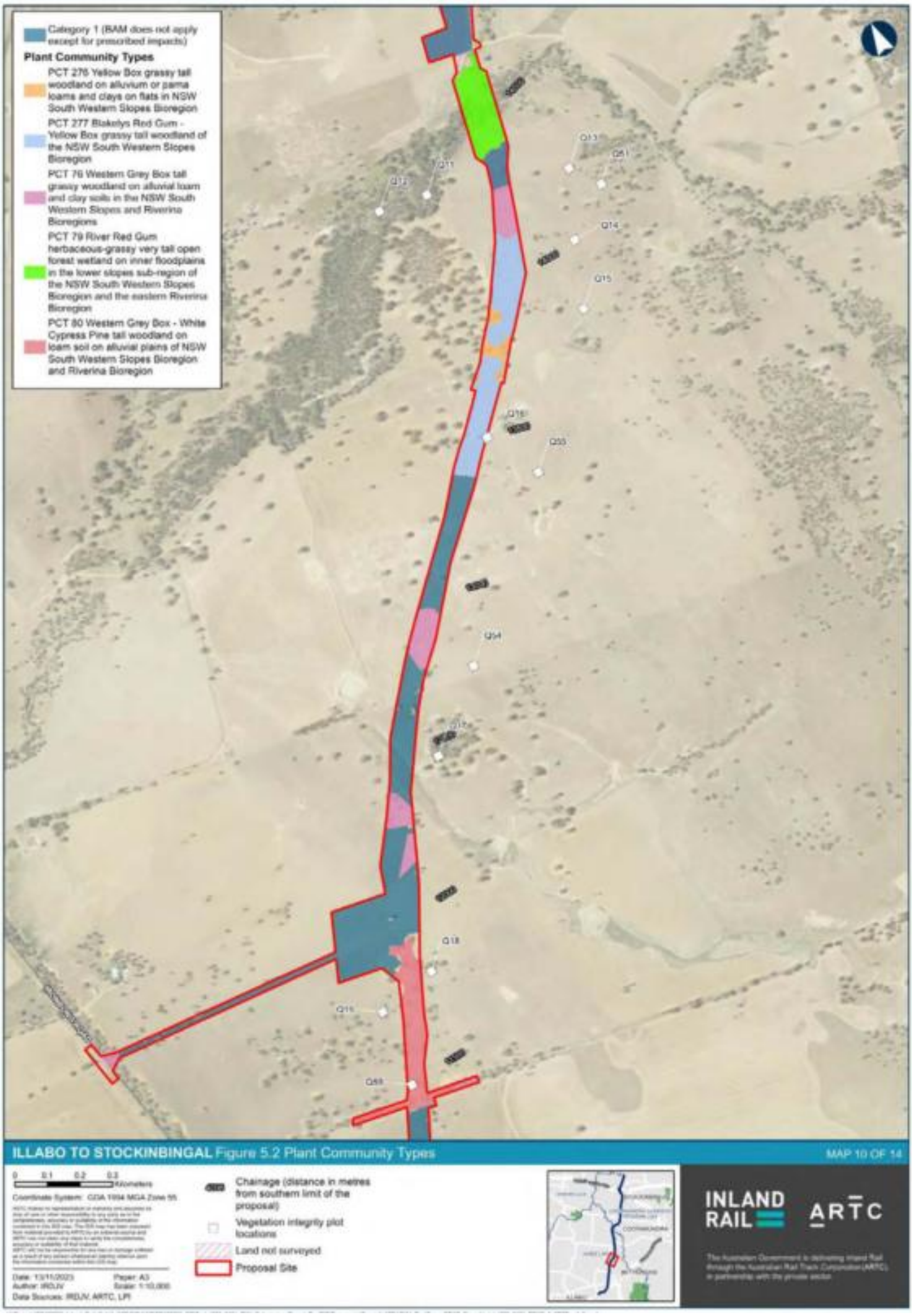

Category 1 (BAM does not apply except for prescribed impacts)
Plant Community Types
PCT 266 White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PCT 70 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions
Miscellaneous Ecosystem
Q34
ILLABO TO STOCKINBINGAL Figure 5.2 Plant Community Types
MAP 5 OF 14
0 0.1 0.2 0.3
Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Date: 13/11/2023
Author: IRDJV
Paper: A3
Scale: 1:10,000
Data Sources: IRDJV, ARTC, LPI
Chainage (distance in metres from southern limit of the proposal)
Vegetation integrity plot locations
Proposal Site
INLAND RAIL
ARTC

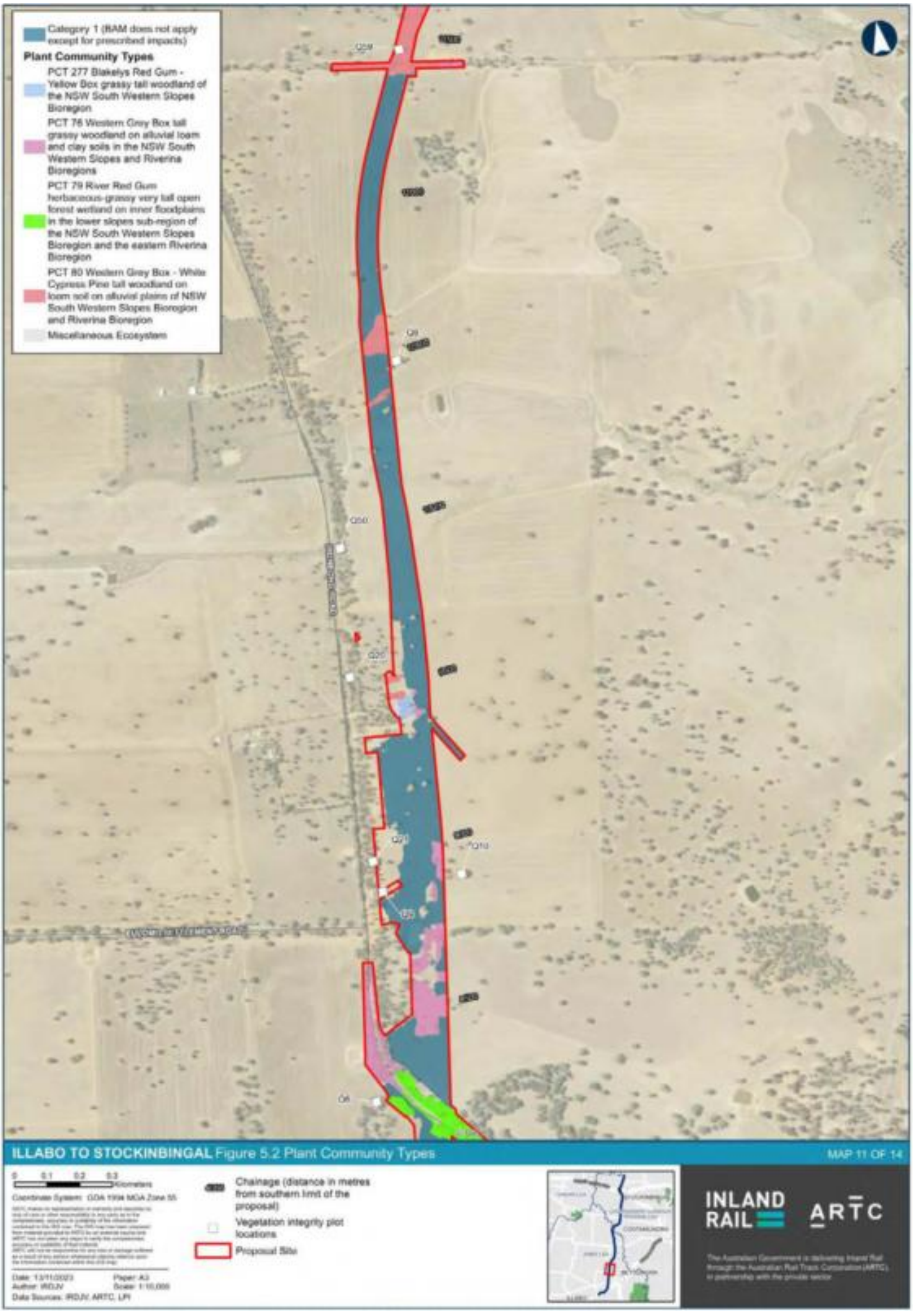

Category 1 (BAM does not apply except for prescribed impacts)
Plant Community Types
PCT 266 White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
Miscellaneous Ecosystem
Q44
Q43
Q41
Q42
Q40
ILLABO TO STOCKINBINGAL Figure 5.2 Plant Community Types
MAP 6 OF 14
0 0.1 0.2 0.3 Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Date: 13/11/2023
Paper: A3
Author: IRDJV
Scale: 1:10,000
Data Sources: IRDJV, ARTC, LPI
Chainage (distance in metres from southern limit of the proposal)
Vegetation integrity plot locations
Proposal Site
INLAND RAIL
ARTC


Category 1 (BAM does not apply except for prescribed impacts)
Plant Community Types
PCT 266 White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PCT 347 White Box - Blakelys Red Gum shrub/grass woodland on metamorphic hillslopes in the mid-southern part of the upper slopes sub-region of the NSW South Western Slopes Bioregion
Miscellaneous Ecosystem
Chainage (distance in metres from southern limit of the proposal)
Vegetation integrity plot locations
Land not surveyed
Proposal Site
ILLABO TO STOCKINBINGAL Figure 5.2 Plant Community Types
MAP 7 OF 14
INLAND RAIL
ARTC

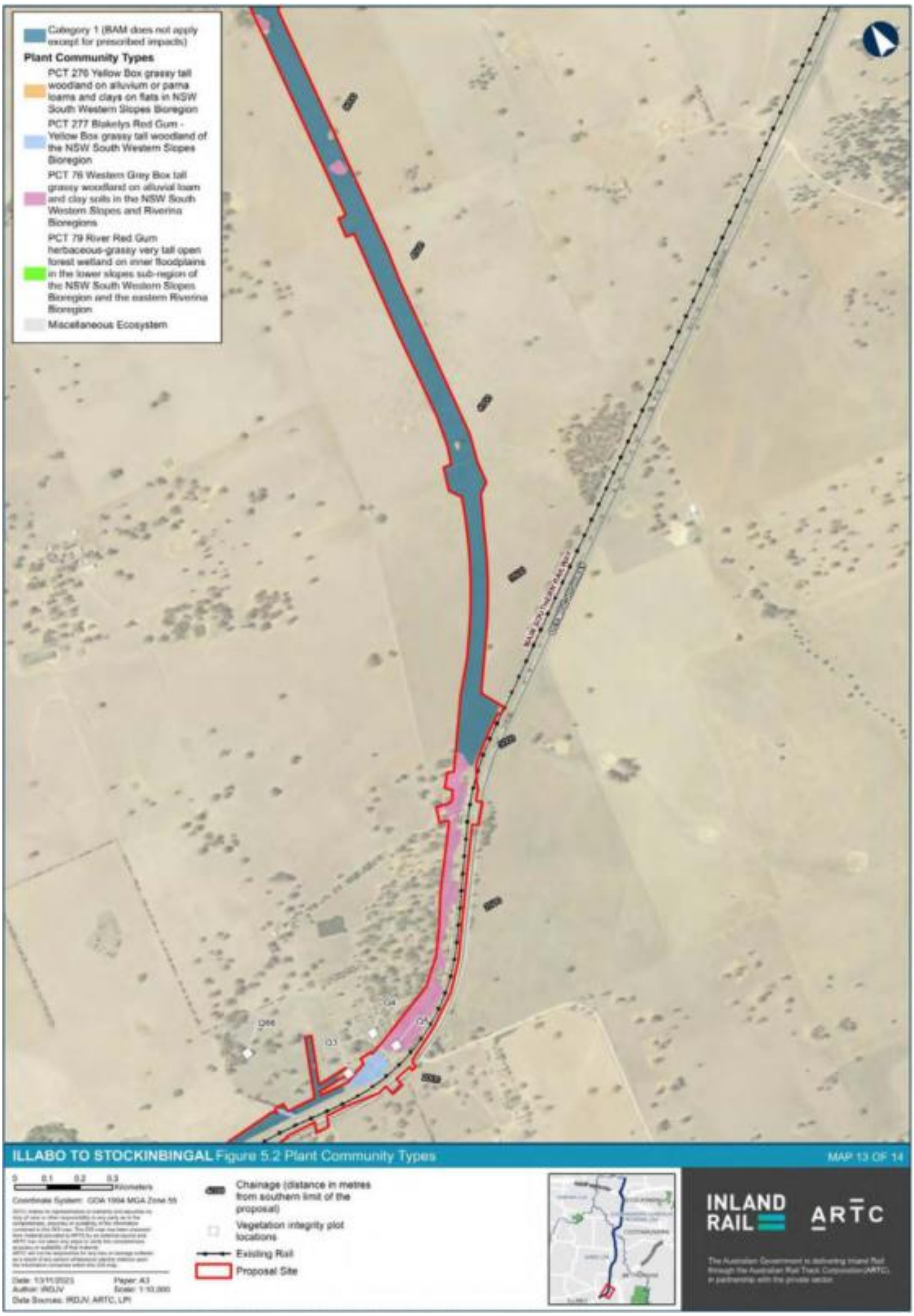

Category 1 (BAM does not apply except for prescribed impacts)
Plant Community Types
PCT 266 White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PCT 309 Black Cypress Pine - Red Stringybark - red gum - box low open forest on siliceous rocky outcrops in the NSW South Western Slopes Bioregion
PCT 347 White Box - Blakelys Red Gum shrub/grass woodland on metamorphic hillslopes in the mid-southern part of the upper slopes sub-region of the NSW South Western Slopes Bioregion
PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions
PCT 79 River Red Gum herbaceous-grassy very tall open forest wetland on inner floodplains in the lower slopes sub-region of the NSW South Western Slopes Bioregion and the eastern Riverina Bioregion
PCT 80 Western Grey Box - White Cypress Pine tall woodland on loam soil on alluvial plains of NSW South Western Slopes Bioregion and Riverina Bioregion
Miscellaneous Ecosystem
ILLABO TO STOCKINBINGAL Figure 5.2 Plant Community Types
MAP 8 OF 14
0 0.1 0.2 0.3 Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Date: 13/11/2023
Author: IRDJV
Paper: A3
Scale: 1:10,000
Data Sources: IRDJV, ARTC, LPI
Chainage (distance in metres from southern limit of the proposal)
Vegetation integrity plot locations
Land not surveyed
Proposal Site
INLAND RAIL
ARTC

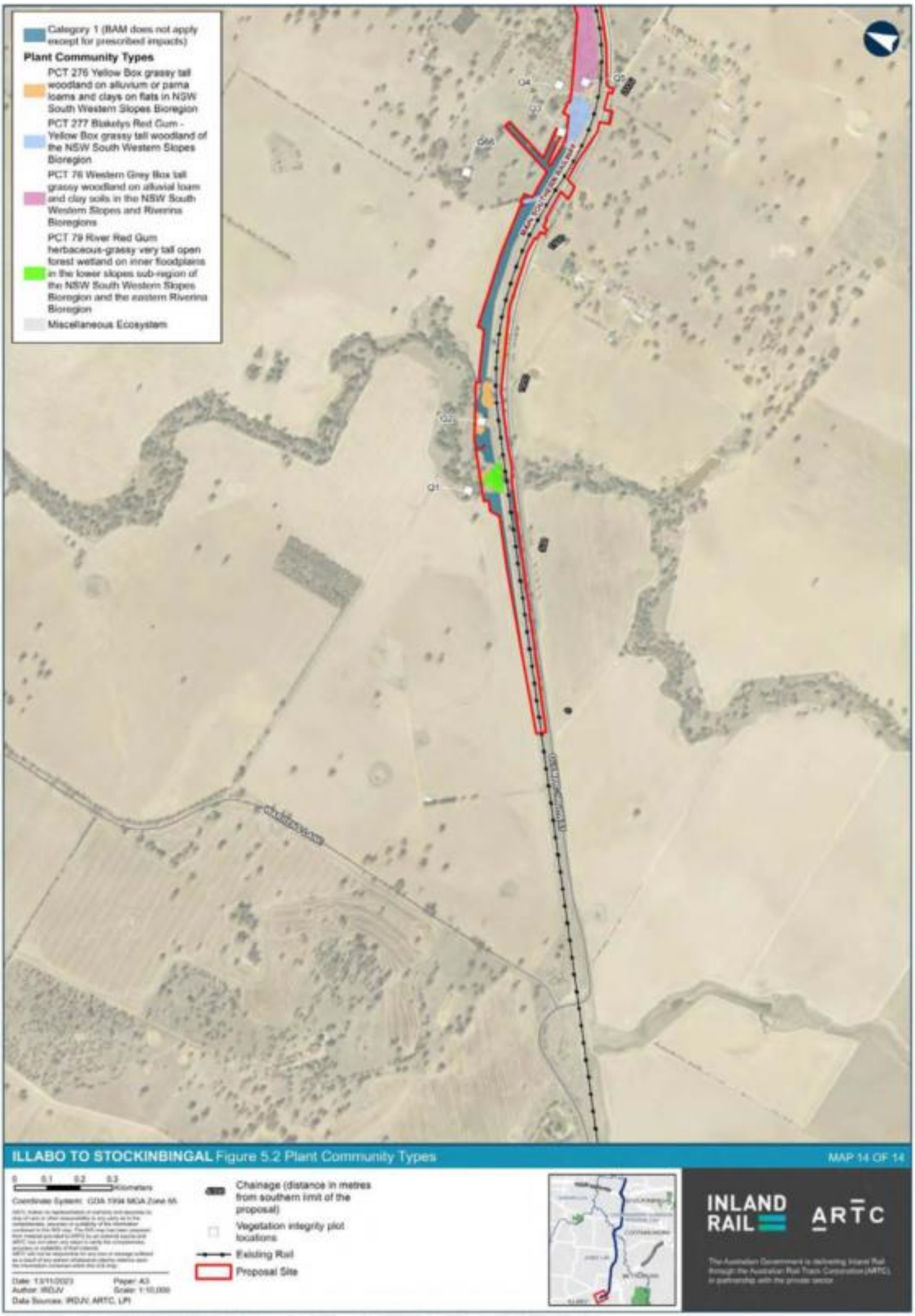

Category 1 (BAM does not apply except for prescribed impacts)
Plant Community Types
PCT 266 White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion
PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions
PCT 79 River Red Gum herbaceous-grassy very tall open forest wetland on inner floodplains in the lower slopes sub-region of the NSW South Western Slopes Bioregion and the eastern Riverina Bioregion
PCT 80 Western Grey Box - White Cypress Pine tall woodland on loam soil on alluvial plains of NSW South Western Slopes Bioregion and Riverina Bioregion
ILLABO TO STOCKINBINGAL Figure 5.2 Plant Community Types
MAP 9 OF 14
0 0.1 0.2 0.3 Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Date: 13/11/2023
Paper: A3
Author: IRDJV
Scale: 1:10,000
Data Sources: IRDJV, ARTC, LPI
Chainage (distance in metres from southern limit of the proposal)
Land not surveyed
Proposal Site
INLAND RAIL
ARTC


Category 1 (BAM does not apply except for prescribed impacts)
Plant Community Types
PCT 276 Yellow Box grassy tall woodland on alluvium or parna loams and clays on flats in NSW South Western Slopes Bioregion
PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions
PCT 79 River Red Gum herbaceous-grassy very tall open forest wetland on inner floodplains in the lower slopes sub-region of the NSW South Western Slopes Bioregion and the eastern Riverina Bioregion
PCT 80 Western Grey Box - White Cypress Pine tall woodland on loam soil on alluvial plains of NSW South Western Slopes Bioregion and Riverina Bioregion
Q13
Q11
Q12
Q51
Q14
Q15
Q55
Q54
Q18
Q16
Q17
Q59
ILLABO TO STOCKINBINGAL Figure 5.2 Plant Community Types
MAP 10 OF 14
0 0.1 0.2 0.3 Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Date: 13/11/2023
Paper: A3
Author: IRDJV
Scale: 1:10,000
Data Sources: IRDJV, ARTC, LPI
Chainage (distance in metres from southern limit of the proposal)
Vegetation integrity plot locations
Land not surveyed
Proposal Site
INLAND RAIL
ARTC


Category 1 (RAM does not apply except for prescribed impacts)
Plant Community Types
PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions
PCT 79 River Red Gum herbaceous-grassy very tall open forest wetland on inner floodplains in the lower slopes sub-region of the NSW South Western Slopes Bioregion and the eastern Riverina Bioregion
PCT 80 Western Grey Box - White Cypress Pine tall woodland on loam soil on alluvial plains of NSW South Western Slopes Bioregion and Riverina Bioregion
Miscellaneous Ecosystem
ILLABO TO STOCKINBINGAL Figure 5.2 Plant Community Types
MAP 11 OF 14
0 0.1 0.2 0.3 Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Date: 13/11/2023
Paper: A3
Author: IRDJV
Scale: 1:10,000
Data Sources: IRDJV, ARTC, LPI
Chainage (distance in metres from southern limit of the proposal)
Vegetation integrity plot locations
Proposal Site
INLAND RAIL
ARTC

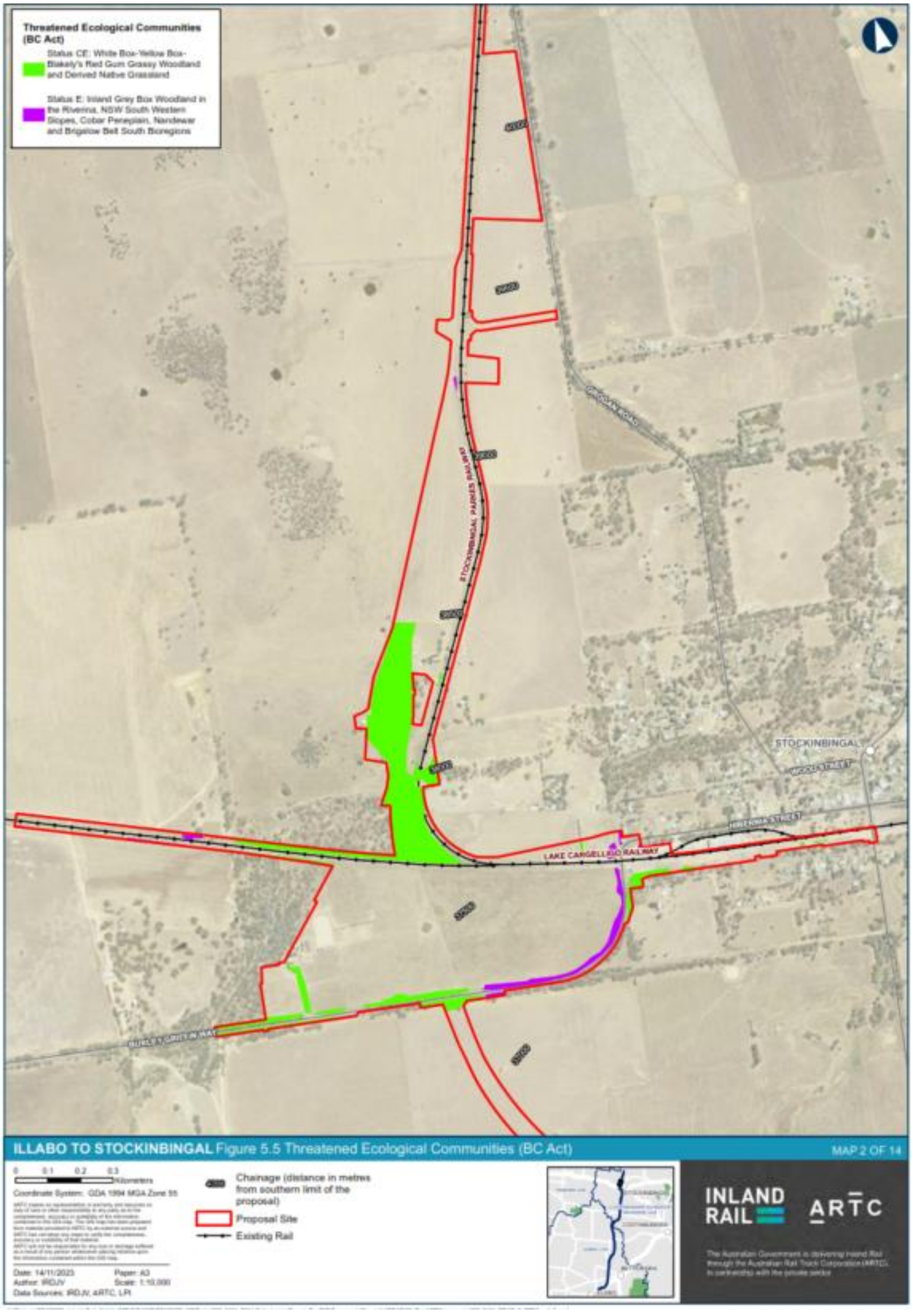

Category 1 (BAM does not apply except for prescribed impacts)
Plant Community Types
PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions
PCT 79 River Red Gum herbaceous-grassy very tall open forest wetland on inner floodplains in the lower slopes sub-region of the NSW South Western Slopes Bioregion and the eastern Riverina Bioregion
PCT 80 Western Grey Box - White Cypress Pine tall woodland on loam soil on alluvial plains of NSW South Western Slopes Bioregion and Riverina Bioregion
Miscellaneous Ecosystem
ILLABO TO STOCKINBINGAL Figure 5.2 Plant Community Types
MAP 12 OF 14
0 0.1 0.2 0.3 Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Date: 13/11/2023
Paper: A3
Author: IRDUV
Scale: 1:10,000
Data Sources: IRDUV, ARTC, LPI
Chainage (distance in metres from southern limit of the proposal)
Vegetation integrity plot locations
Proposal Site
INLAND RAIL
ARTC


Category 1 (BAM does not apply except for prescribed impacts)
Plant Community Types
PCT 276 Yellow Box grassy tall woodland on alluvium or parna loams and clays on flats in NSW South Western Slopes Bioregion
PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions
PCT 79 River Red Gum herbaceous-grassy very tall open forest wetland on inner floodplains in the lower slopes sub-region of the NSW South Western Slopes Bioregion and the eastern Riverina Bioregion
Miscellaneous Ecosystem
ILLABO TO STOCKINBINGAL Figure 5.2 Plant Community Types
MAP 13 OF 14
0 0.1 0.2 0.3
Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Date: 10/11/2025
Paper: A3
Author: IRDJV
Scale: 1:10,000
Data Sources: IRDJV, ARTC, LPI
Chainage (distance in metres from southern limit of the proposal)
Vegetation integrity plot locations
Existing Rail
Proposal Site
INLAND RAIL
ARTC


Category 1 (BAM does not apply except for prescribed impacts)
Plant Community Types
PCT 276 Yellow Box grassy tall woodland on alluvium or parna loams and clays on flats in NSW South Western Slopes Bioregion
PCT 277 Blakelys Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion
PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions
PCT 79 River Red Gum herbaceous-grassy very tall open forest wetland on inner floodplains in the lower slopes sub-region of the NSW South Western Slopes Bioregion and the eastern Riverina Bioregion
Miscellaneous Ecosystem
Chainage (distance in metres from southern limit of the proposal)
Vegetation integrity plot locations
Existing Rail
Proposal Site
ILLABO TO STOCKINBINGAL Figure 5.2 Plant Community Types
MAP 14 OF 14
INLAND RAIL
ARTC

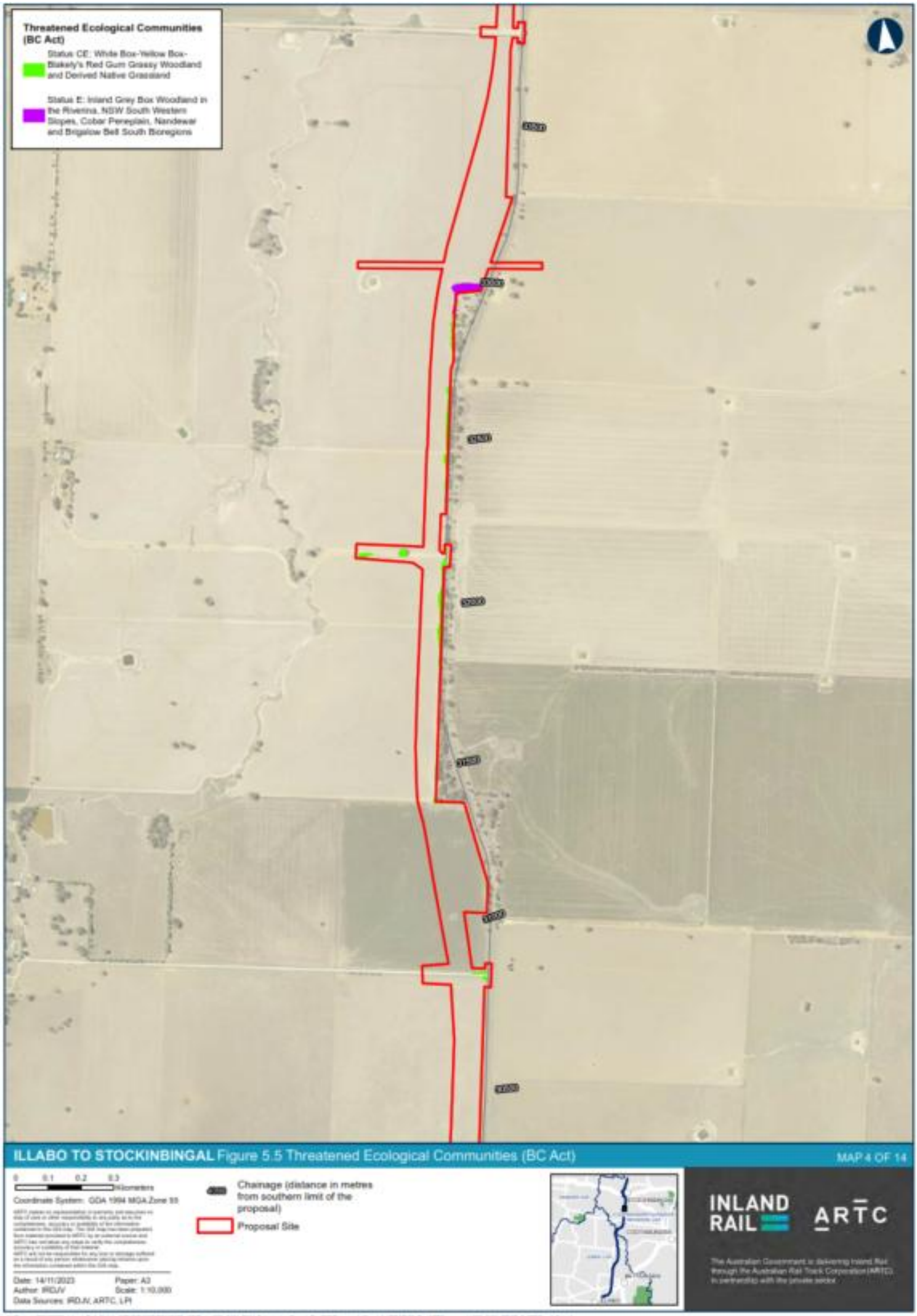
Threatened Ecological Communities – Revised BDAR

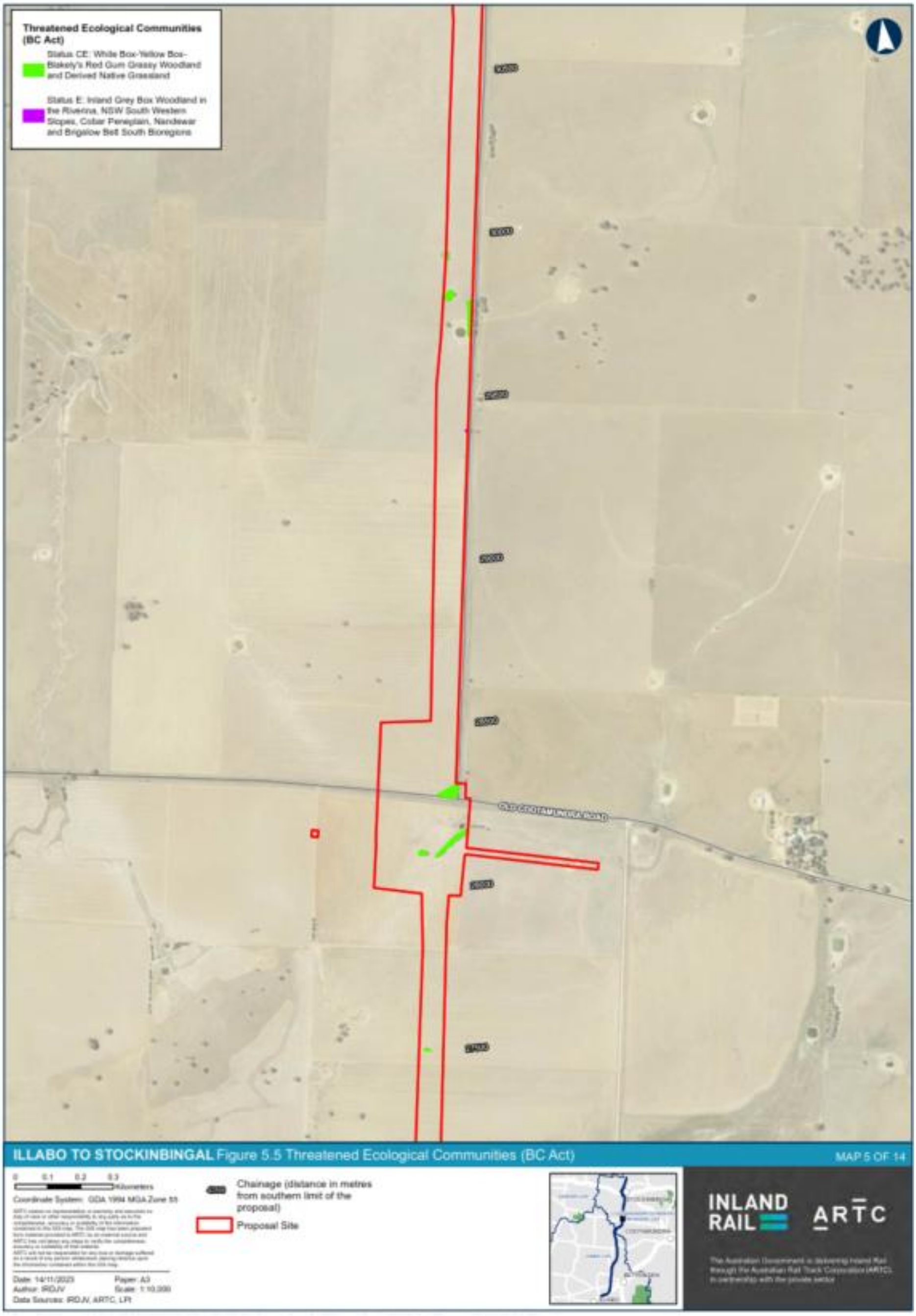


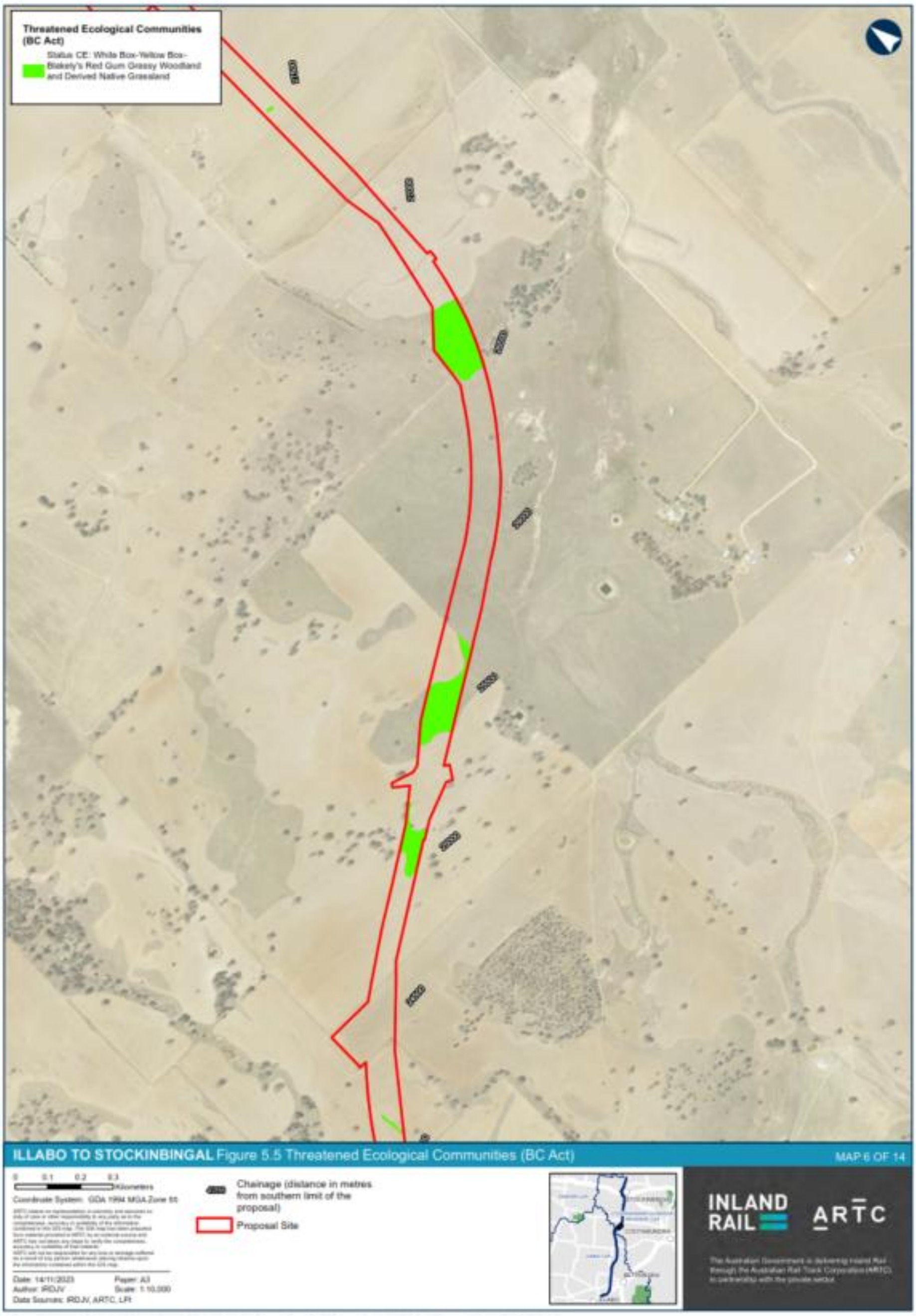


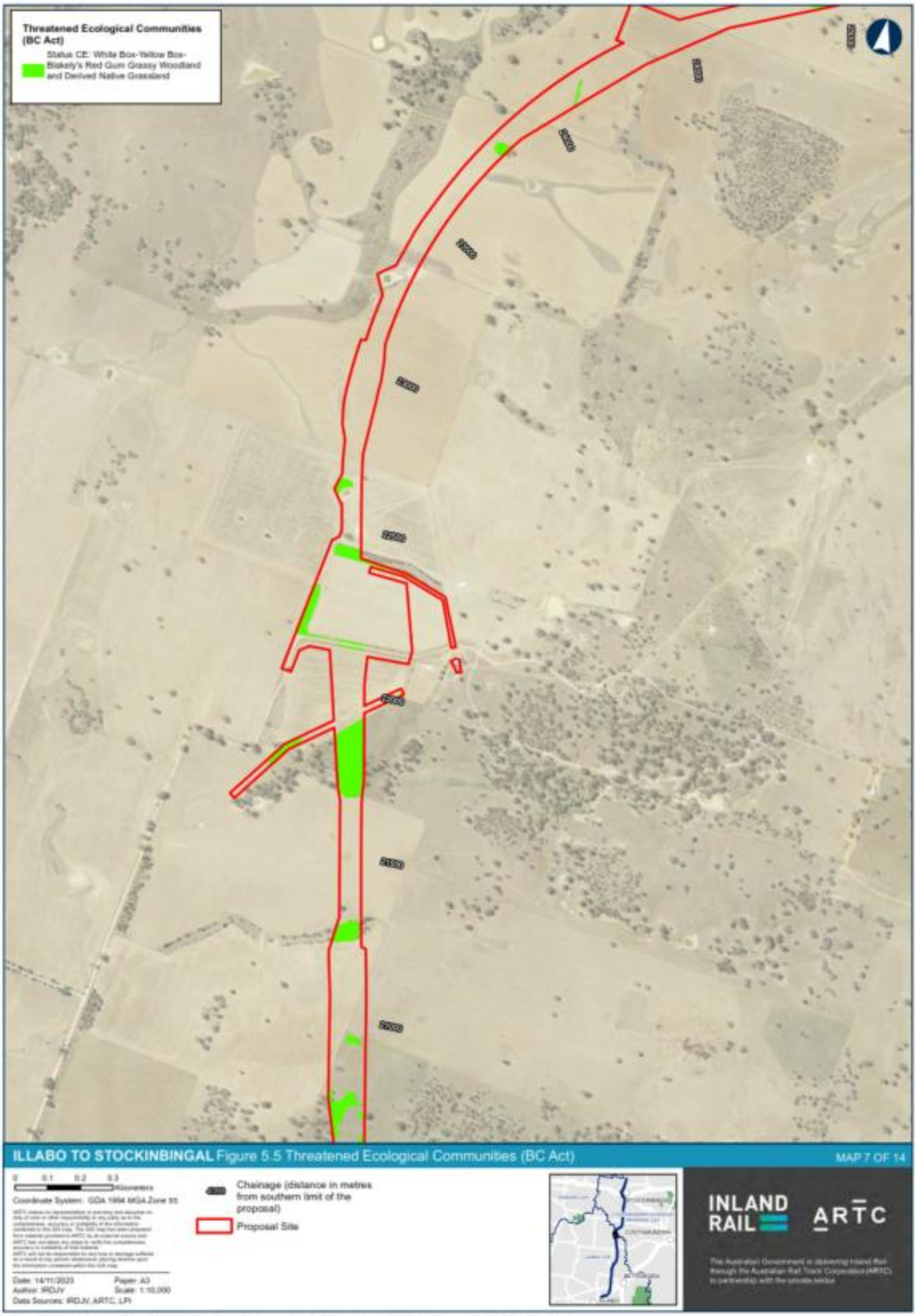
ILLABO TO STOCKINBINGAL Figure 5.5 Threatened Ecological Communities (BC Act) MAP 2 OF 14

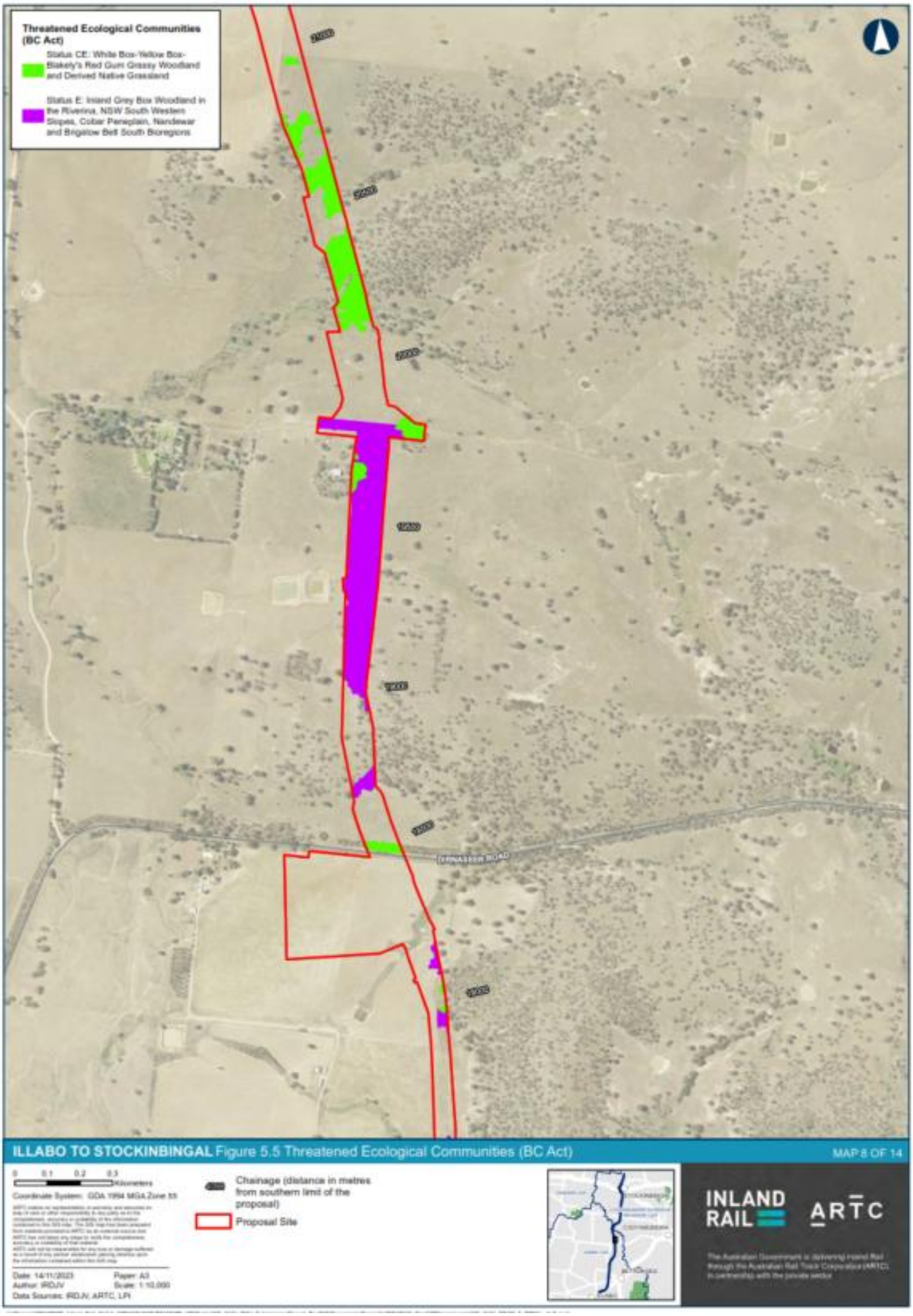

Threatened Ecological Communities (BC Act)
Status CE: White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland
Status E: Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions
ILLABO TO STOCKINBINGAL Figure 5.5 Threatened Ecological Communities (BC Act)
MAP 3 OF 14
0 0.1 0.2 0.3
Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Date: 14/11/2023
Paper: A3
Author: IRDJV
Scale: 1:10,000
Data Sources: IRDJV, ARTC, LPI
Chainage (distance in metres from southern limit of the proposal)
Proposal Site
INLAND RAIL
ARTC

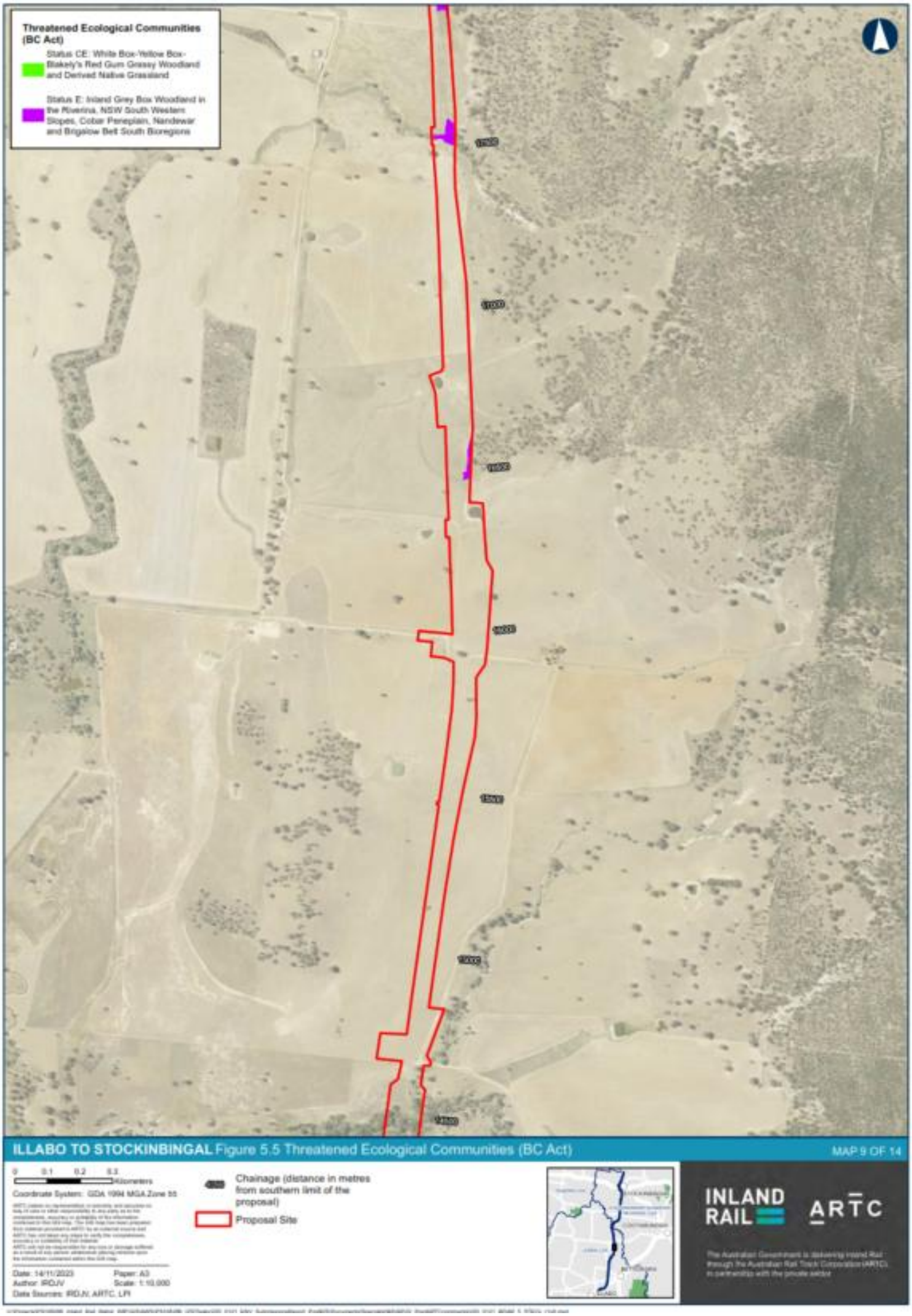

Threatened Ecological Communities (BC Act)
Status CE: White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland
Status E: Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions
ILLABO TO STOCKINBINGAL Figure 5.5 Threatened Ecological Communities (BC Act)
MAP 4 OF 14
0 0.1 0.2 0.3
Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Date: 14/11/2023
Paper: A3
Author: IRDJV
Scale: 1:10,000
Data Sources: IRDJV, ARTC, LPI
Chainage (distance in metres from southern limit of the proposal)
Proposal Site
INLAND RAIL
ARTC
The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation (ARTC) in partnership with the private sector

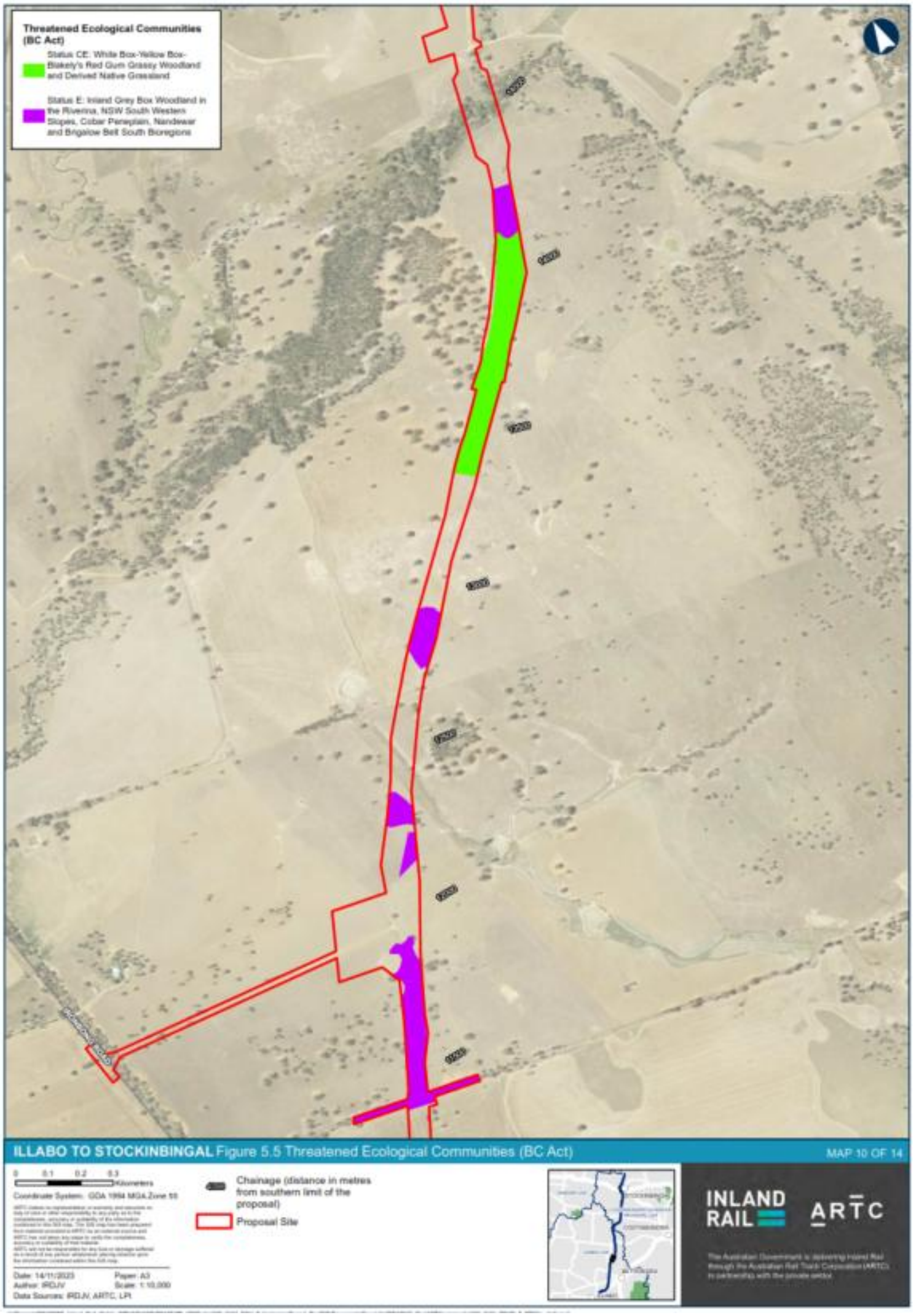

Threatened Ecological Communities (BC Act)
Status CE: White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland
Status E: Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions
OLD COOTAMUNDRA ROAD
ILLABO TO STOCKINBINGAL Figure 5.5 Threatened Ecological Communities (BC Act)
MAP 5 OF 14
0 0.1 0.2 0.3 Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Date: 14/11/2023
Author: IRDJV
Paper: A3
Scale: 1:10,000
Data Sources: IRDJV, ARTC, LPI
Chainage (distance in metres from southern limit of the proposal)
Proposal Site
INLAND RAIL
ARTC

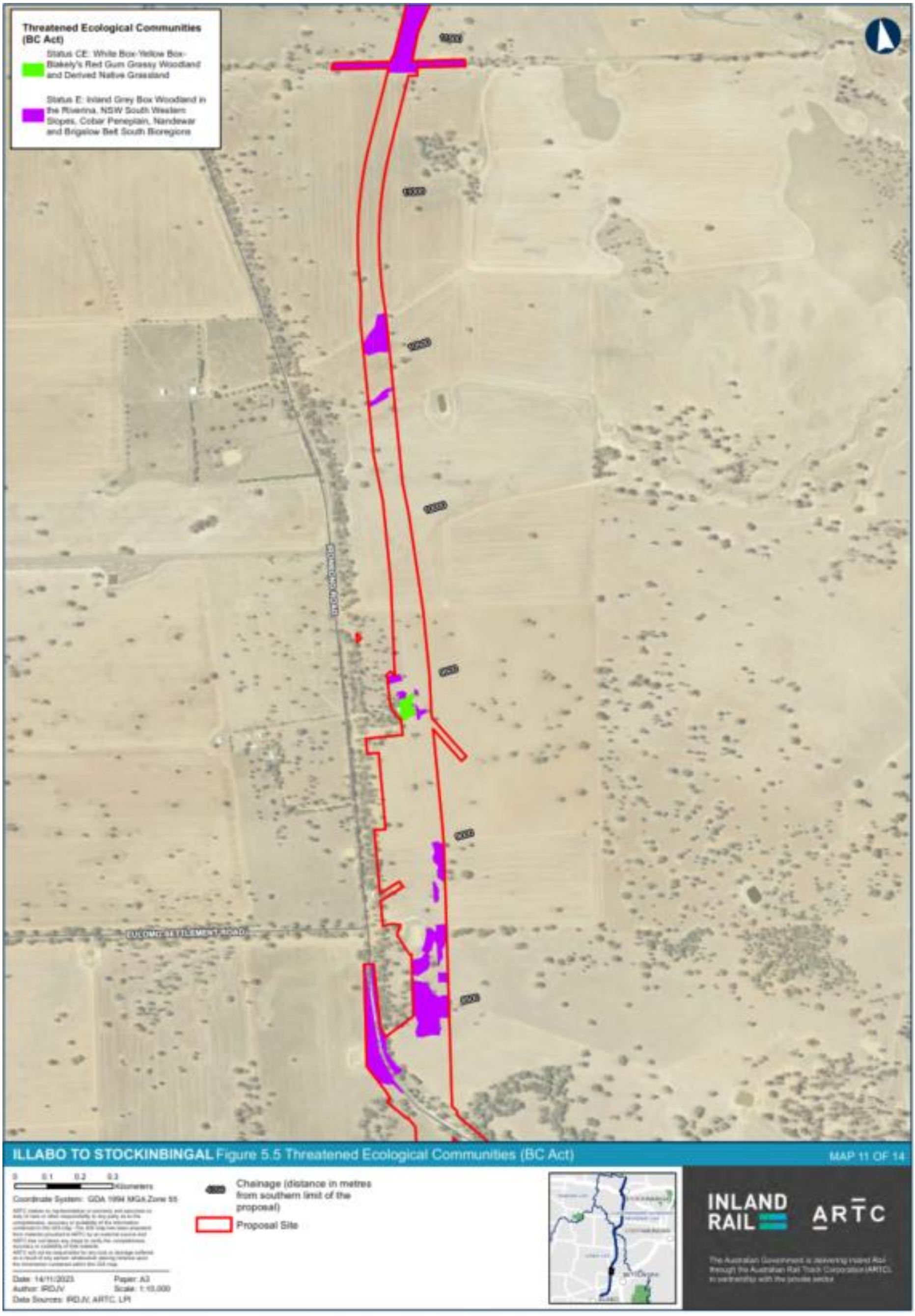

Threatened Ecological Communities (BC Act)
Status CE: White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland
ILLABO TO STOCKINBINGAL Figure 5.5 Threatened Ecological Communities (BC Act)
MAP 6 OF 14
0 0.1 0.2 0.3
Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Chainage (distance in metres from southern limit of the proposal)
Proposal Site
Date: 14/11/2023
Paper: A3
Author: IRDJV
Scale: 1:10,000
Data Sources: IRDJV, ARTC, LPI
INLAND RAIL
ARTC

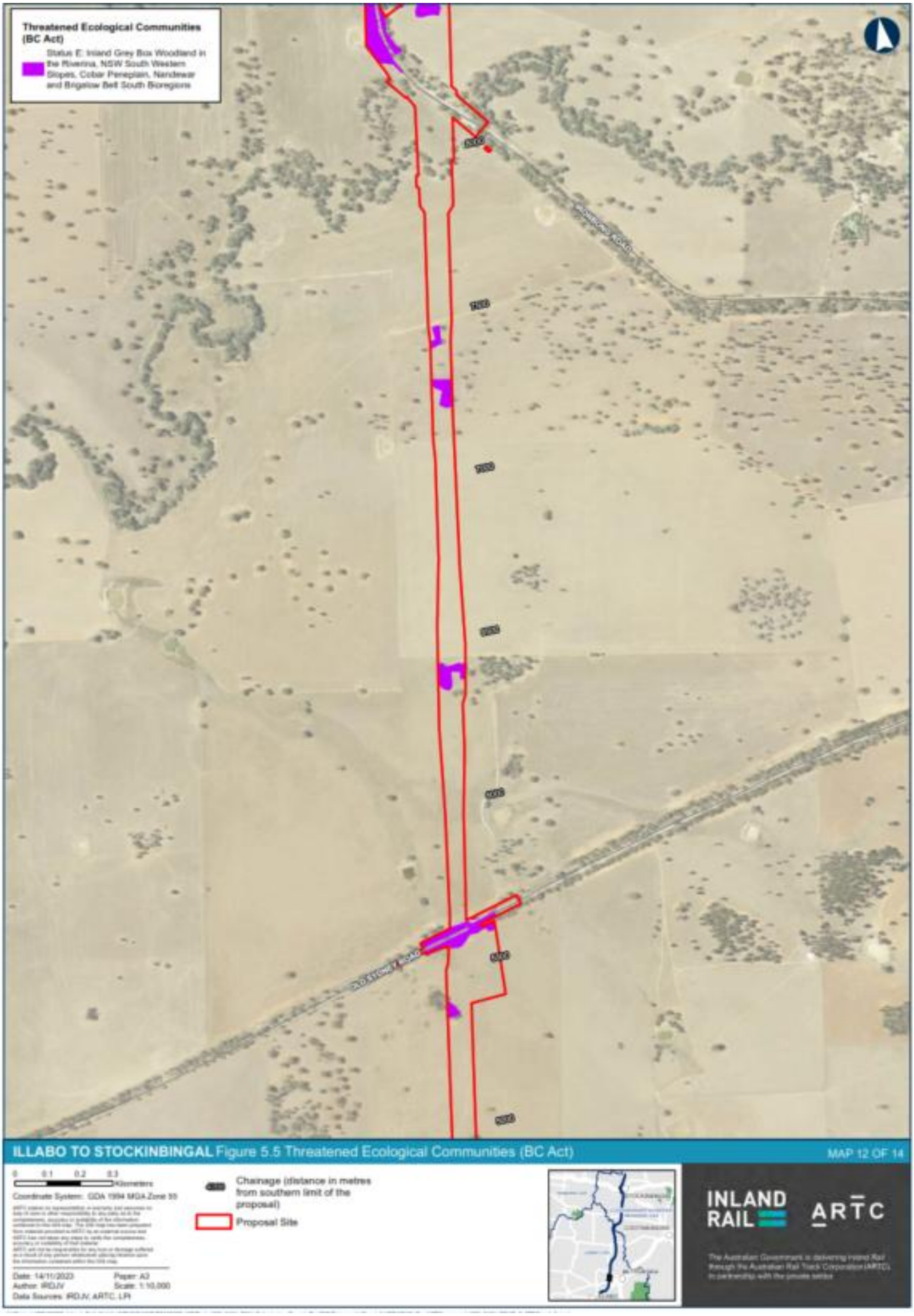

Threatened Ecological Communities (BC Act)
Status CE: White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland
ILLABO TO STOCKINBINGAL Figure 5.5 Threatened Ecological Communities (BC Act)
MAP 7 OF 14
0 0.1 0.2 0.3
Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Date: 14/11/2023
Paper: A3
Author: IRDJV
Scale: 1:10,000
Data Sources: IRDJV, ARTC, LPI
Chainage (distance in metres from southern limit of the proposal)
Proposal Site
INLAND RAIL
ARTC

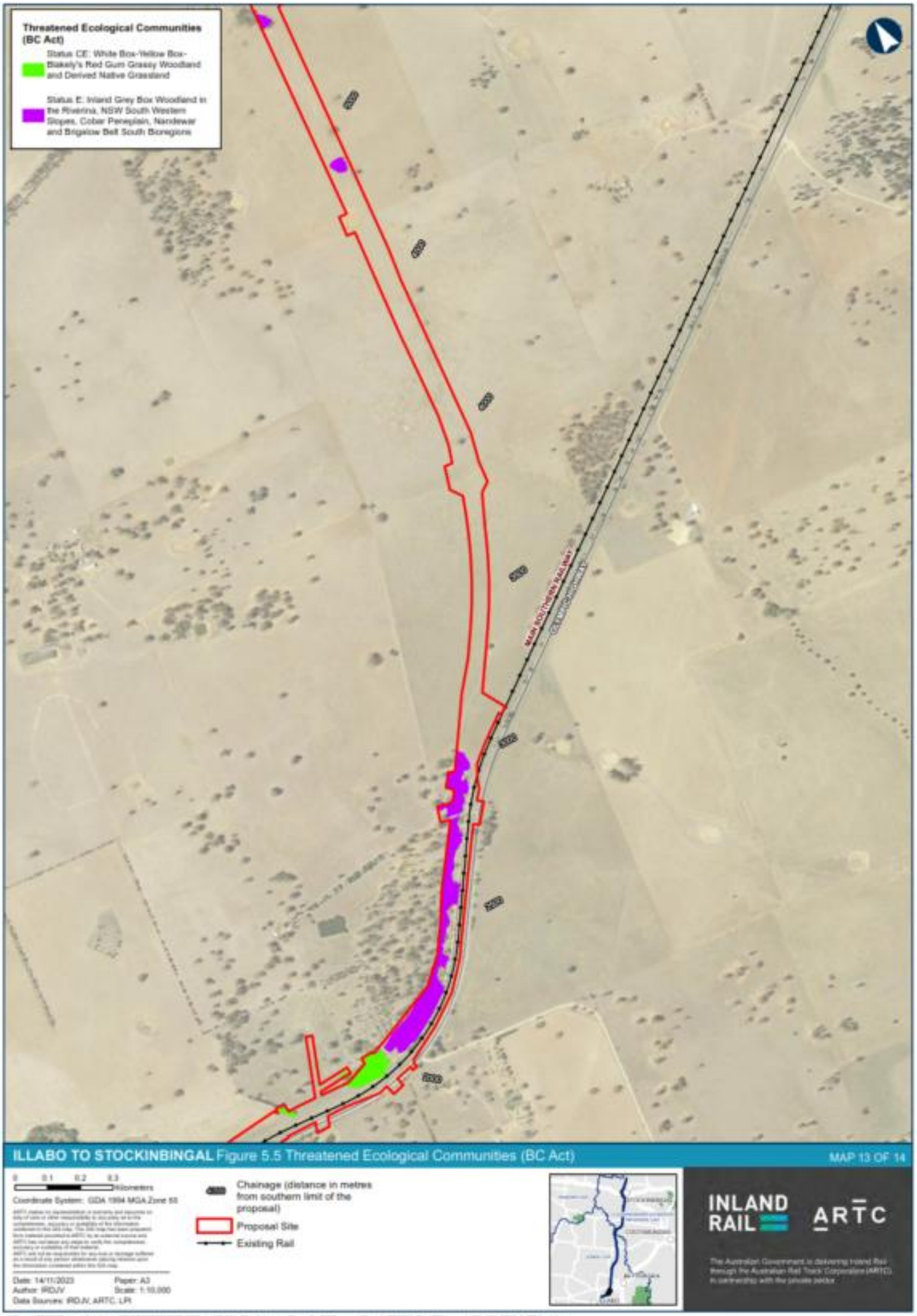

Threatened Ecological Communities (BC Act)
Status CE: White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland
Status E: Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions
ILLABO TO STOCKINBINGAL Figure 5.5 Threatened Ecological Communities (BC Act)
MAP 8 OF 14
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Coordinate System: GDA 1994 MGA Zone 55
Date: 14/11/2023
Paper: A3
Author: IRDJV
Scale: 1:10,000
Data Sources: IRDJV, ARTC, LPI
Chainage (distance in metres from southern limit of the proposal)
Proposal Site
INLAND RAIL
ARTC


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MAP 9 OF 14
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Date: 14/11/2023
Paper: A3
Author: IRDJV
Scale: 1:10,000
Data Sources: IRDJV, ARTC, LPI
Chainage (distance in metres from southern limit of the proposal)
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Data Sources: IRDJV, ARTC, LPI
Chainage (distance in metres from southern limit of the proposal)
Proposal Site
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ILLABO TO STOCKINBINGAL Figure 5.5 Threatened Ecological Communities (BC Act)
MAP 12 OF 14
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Paper: A3
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Data Sources: IRDJV, ARTC, LPI
Chainage (distance in metres from southern limit of the proposal)
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Status E: Inland Grey Box Woodland in the Riverina, NSW South Western Slopes, Cobar Peneplain, Nandewar and Brigalow Belt South Bioregions
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ILLABO TO STOCKINBINGAL Figure 5.5 Threatened Ecological Communities (BC Act)
MAP 13 OF 14
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Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Date: 14/11/2023
Paper: A3
Author: IRDJV
Scale: 1:10,000
Data Sources: IRDJV, ARTC, LPI
Chainage (distance in metres from southern limit of the proposal)
Proposal Site
Existing Rail
INLAND RAIL
ARTC


Threatened Ecological Communities (BC Act)
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MAP 14 OF 14
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Kilometers
Coordinate System: GDA 1994 MGA Zone 55
Date: 14/11/2023
Paper: A3
Author: IRDJV
Scale: 1:10,000
Data Sources: IRDJV, ARTC, LPI
Chainage (distance in metres from southern limit of the proposal)
Proposal Site
Existing Rail
INLAND RAIL
ARTC

Appendix G Ecologist Endorsement and CV

Daniel Lidbetter-JHG

From: Bianca Heinze <bianca.h@nghconsulting.com.au>
Sent: Wednesday, 18 June 2025 11:55 AM
To: Daniel Lidbetter-JHG; Scott Grunsell
Cc: Dominic Adshead
Subject: I2S BMP endorsement
Attachments: Bianca Heinze CV 2025.pdf

Hi Dan

I have reviewed the I2S BMP, including recent updates and I can confirm that the I2S BMP meets the conditions of consent for the project and that I will endorse the document on that basis.

Please find attached my CV.

Kind regards

Bianca Heinze
Technical Lead - Biodiversity

m: 0405 042 553 p: 02 6492 8333 (Ext 402)
e. bianca.h@nghconsulting.com.au
a. suite 11, 89-91 Auckland St, Bega, NSW 2550
w. nghconsulting.com.au | Our commitment to reconciliation
I work Tuesday to Thursday



Bianca Heinze | BAppSc (EnvMgt)

Technical Lead, NSW



Bianca Heinze is Technical Lead for the NSW Biodiversity team, working with the company since 2008. Bianca has a background in terrestrial ecology with survey planning and impact assessment experience for a range of small and large scale infrastructure, energy and residential projects mostly in New South Wales with additional experience in the Australian Capital Territory and Western Australia. Bianca provides technical input and guidance, senior review and leads wind farm monitoring projects, post-approval planning and pre-development phase assessments. Bianca has completed both components of NSW BAM training, has a good working understanding of the system and is working toward accreditation over 2025.

Focus areas

- Biodiversity Assessment Development Report survey planning, reporting, technical guidance and impact assessment
- Vertebrate fauna surveys
- Threatened species assessment

Professional associations and accreditations

- BirdLife Australia
- Working towards NSW BAM accreditation

Project experience

Renewable energy

Involvement in over 25 renewable energy assessments including:

Talbingo Battery Energy Storage System - Biodiversity project lead and contributing author

Armidale Battery Energy Storage System – Biodiversity project lead and contributing author

Yarrowyck Wind Farm, NSW – Biodiversity project lead and contributing author

Burrendong Wind Farm, NSW – advice on credit offset options

Saltbush Wind Farm, NSW – BDAR survey planning

Forbes Wind Farm, NSW – bird survey planning

Argoon Wind Farm, NSW – flora surveys and BAM plots

Winterbourne Wind Farm, NSW – survey planning, technical lead

Boco Rock Wind Farm, Nimmitabel, NSW Bird and Bat Management Plan – lead author, project coordinator 10 years

Darlington Point Solar Farm – technical input – Grassland Monitoring Plan

Wollar Solar Farm – technical input – Biodiversity Management Plan, Commonwealth Offset Strategy

Coppabella Wind Farm, NSW – lead author additional information

Rye Park Wind Farm – Targeted surveys and planning

Collector Wind Farm – Lead author BA, fauna surveys and planning

Silverton Wind Farm, Barrier Ranges, NSW Bird and Bat Risk Assessment – Field ecologist, lead author

Liverpool Range Wind Farm, Upper Hunter Valley, NSW Additional Information - Author, Senior Ecologist

Yass Valley (Coppabella) Wind Farm, Yass area, NSW – Biodiversity Assessment & supporting documentation - Field ecologist, Co-Author

Linear infrastructure

Involvement in numerous small and large scale linear infrastructure at proposal stage and post-approval planning (e.g. management plans) including:

Illabo to Stockinbingal Inland Rail – independent industry review of Biodiversity Management Plan

Snowy 2.0 Transmission Line – Operational Vegetation Management Plan, project lead and contributing author

Energy Connect construction services – Technical Lead, ecology

Snowy 2.0 Transmission Line – Bird & Bat Plan of Management – lead author

Narrabri to North Star Inland Rail project – survey planning, technical lead

Burley-Griffin Way (Transport for NSW), Yass to Griffith, NSW – co-author, senior ecologist**.** Major updates to Biodiversity Assessment report including impact assessment, threatened species assessments and GIS mapping.

Ellerton Drive Extension SIS (Queanbeyan Palerang Regional Council), Queanbeyan, NSW

The $86 million 4.6km extension provides an alternative route around Queanbeyan's CBD. Field Ecologist, Lead author Stage 1.

Government

Pambula Wetland Rehabilitation project Biodiversity Assessment project lead and contributing author

Merimbula Boardwalk upgrade BDAR contributing author

Bega Urban Land Release Planning Proposal: Biodiversity Report project lead & author

Molonglo River Reserve & Offset Areas Ecological Management Guidelines (ACT Government), Canberra, ACT

Guidelines prepared to inform land management and conversation in ACT Molonglo development area. **Contributing author.** Contributed to threatened fauna species descriptions, management recommendations and monitoring sections.

Molonglo Development Area Environmental Management Plans (ACT Government), Canberra, ACT

Molonglo Valley is a staged greenfield development in the ACT, which will accommodate around 55,000 residents by completion. **Lead author, ecology.** Providing environmental management plans for safeguarding threatened flora, fauna and ecological communities during Stage 1, including Pink-tailed Worm-lizard and Box-gum Woodland.

Land development

Involvement in numerous small and large scale land development proposals including:

Elements@Rosedale, Rosedale (Walker Corporation), Rosedale, NSW

Stage 1 has seen the construction of 57 residential allotments. **Lead author, GIS mapping.** Prepare Vegetation Management Plans and provide advice for construction activities.

Rosedale Farm, Rosedale (Armpell Civil Pty Ltd), Rosedale, NSW

An approved, staged development of up to 100 residential allotments. **Field ecologist, Lead author, GIS mapping.** Initial field surveys and lead author for Biodiversity Assessment for Stage 1 (now Stage 2) north of Saltwater Creek. Subsequent preparation of Vegetation Management Plans and advice for construction activities.

Appendix H Connectivity Strategy

Appendix I Unexpected and Incidental Finds Procedure

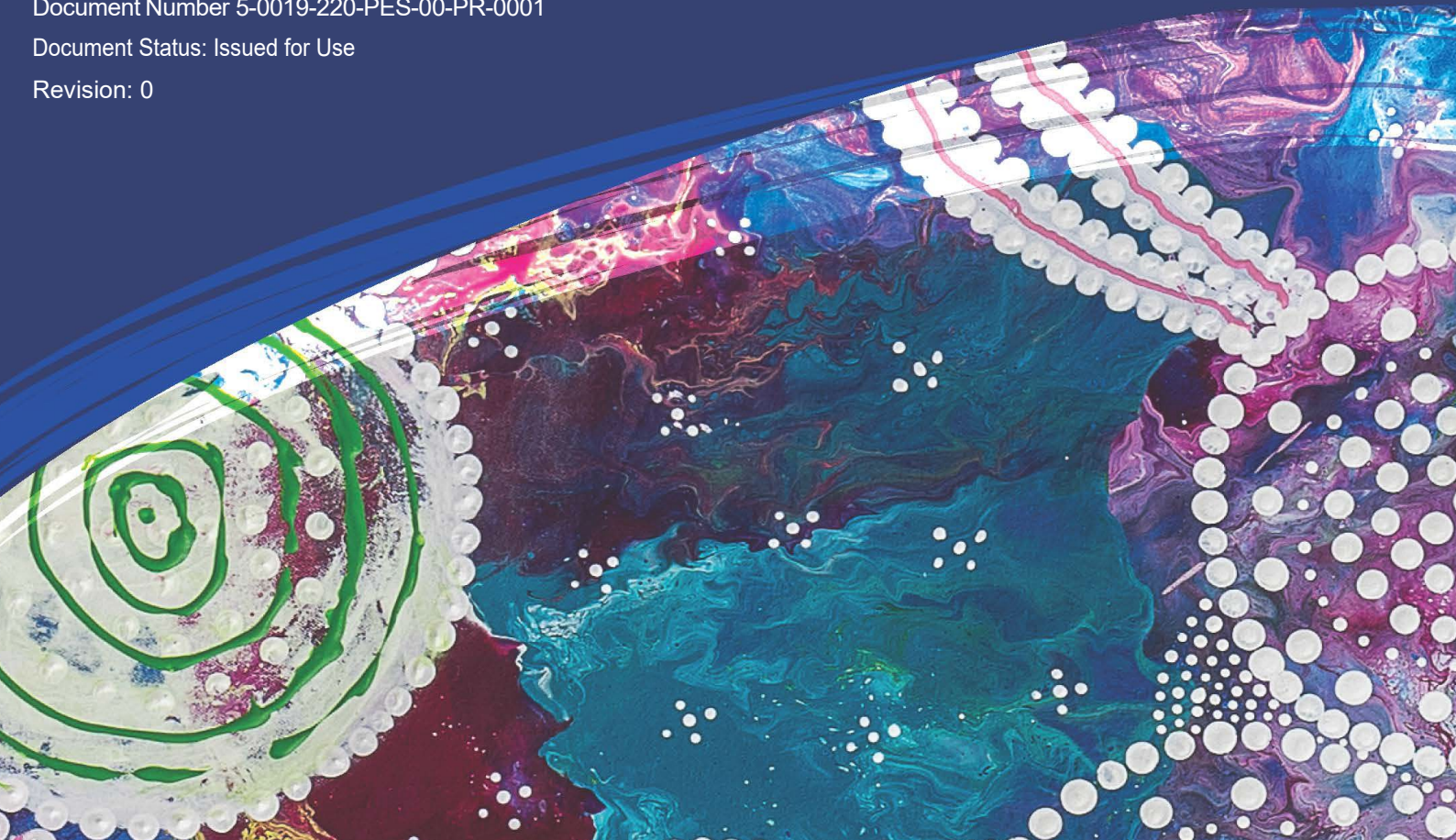


JOHN HOLLAND

INLAND RAIL
ILLABO TO STOCKINBINGAL PROJECT

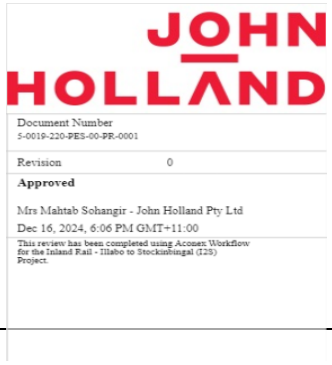
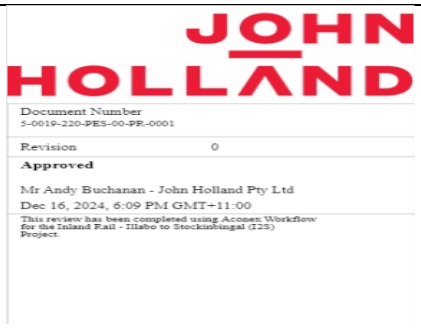
Unexpected and Incidental Finds Protocol

Document Number 5-0019-220-PES-00-PR-0001
Document Status: Issued for Use
Revision: 0



Document Control

Document Tite	Unexpected and Incidental Finds Protocols and Procedure
IRPL Document No.	5-0019-220-PES-00-PR-0001
Document Owner	Hugh Goymour

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Revision A		
Company name	Apical Environmental Consultants	
Specialists	Scott Grunsell, Planning Approval Specialist	
Revision B		
Company name(s)	Intiapac and NGH Consulting	
Approvals Specialist	Lahnie Cooper, Environment and Compliance Specialist	
Heritage Specialist	Matthew Barber, Technical Director	
Contamination Specialist	Nicola Smith, Technical Lead Environmental Management	
Ecology Specialist	Jane Love, Technical Lead Environmental Management	
Document Owner	Hugh Goymour	
	REVIEWED BY	**APPROVED BY**
Name	Mahtab Sohangir	Andy Buchanan
Title	Environment & Sustainability Manager	Project Manager
Signature **Date**		

Review and endorsement by site auditor	
Endorsed By	Julie Evans
Date	3/12/2024

Revision History

REVISION	DATE ISSUED	DESCRIPTION
A	25/10/2024	Issued for Review
B	3/12/2024	Issued for Review
C	13/12/2024	Issued for Review
D	16/12/2024	Issued for Review
0	16/12/2024	Issued for Use

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Appendix B - Unexpected Finds Procedure – Heritage and Human Remains
Appendix C - Unexpected Finds Procedure – Contamination
Appendix D – Interim Audit Advice

1.0 Revisions and Distribution

1.1 Revisions

Draft issues of this document are identified as Revision A, B, C etc. Following acceptance by the document approver, the first finalised revision will be Revision 0. Subsequent revisions will have an increase of “1” in the revision number (1, 2, 3 etc.).

1.2 Distribution

The controlled master version of this document is available for distribution as appropriate and maintained on the document management system being used on the project. All circulated hard copies of this document are deemed to be uncontrolled.

Distributions

Client’s Representative	Conrad Strachan - IRPL
Project Director	Rob Pitt - JHG
Project Manager	Andy Buchanan - JHG
Quality & Completions Manager (Project Quality Representative)	Shane Aberdeen - JHG
Environmental Manager	Hugh Goymour - JHG
Environmental Representative	Ricardo Prieto-Curiel – Wolfpeak
Environmental Representative	Derek Low– Wolfpeak
Environmental Representative	Steven Fermio– Wolfpeak

Disclaimer

The controlled master version of this document is available for distribution as appropriate and maintained on the document management system being used for the Project, available to all Project personnel. All circulated hard copies of this document are deemed to be uncontrolled.

2.0 Definitions / Abbreviations

Table 2-1: Definitions and Abbreviations

Term/Abbreviation	Definition
Aboriginal object	Any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction and includes Aboriginal remains as per the *National Parks and Wildlife Act 1974* Examples: - Stone tool artefacts - Axe grinding grooves - Pigment or engraved rock art - Burial sites - Scarred trees
ACM	Asbestos Containing Material
ARTC	Australian Rail Track Corporation
ASS	Acid Sulphate Soils
BAM	Biodiversity Assessment Method
BC Act	*Biodiversity Conservation Act 2016*
CEMP	Construction Environmental Management Plan
CA Act	*Coroner's Act 2009*
CoA	Conditions of Approval
CSSI	Critical State Significant Infrastructure
DPHI	Department of Planning Housing and Infrastructure
Environmental Assessment Documentation	• Inland Rail – Illabo to Stockinbingal Environmental Impact Statement (ARTC 2022) • Illabo to Stockinbingal Project Response to Submissions (ARTC 2023) • Response to Submissions – Appendix E - Biodiversity Development Assessment Report version 12 (IRDJV, June 2024) • I2S – Mitigation Measures (Inland Rail, April 2024) • Illabo to Stockinbingal (SSI-9604) Additional and Appropriate Measures for Box Gum Woodland Impacts (Inland Rail, June 2024) • Technical and Approvals Consultancy Services: Illabo to Stockinbingal – Box Gum Woodland Gum Flat Rehabilitation Opportunity (IRDJV, June 2024)
EPA	NSW Environment Protection Authority
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
ER	Environmental Representative
Heritage Act	*Heritage Act 1977*
HNSW	Heritage NSW
Human remains	Human remains may be identified as either Aboriginal objects or non-Aboriginal relics, depending on the individual's ancestry and the burial context. Remains are considered to be archaeological when it is suspected that they date back 100 years or more.
IRPL	Inland Rail Pty Ltd
I2S	Illabo to Stockinbingal
JH	John Holland
LALC	Local Aboriginal Land Council

Term/Abbreviation	Definition
LGA	Local Government Area
LIW	Low Impact Works Work defined as low impact includes: (a) survey works including carrying out general alignment surveys, installing survey controls (including installation of global positioning system (GPS)), installing repeater stations, carrying out surveys of existing and future utilities and building and road dilapidation surveys; (b) investigations including investigative drilling, contamination investigations and excavation; (c) installation of mitigation measures including erosion and sediment controls, temporary exclusion fencing for sensitive areas and acoustic treatments; (d) property acquisition adjustment work including installation of property fencing; (e) archaeological testing under the Code of practice for archaeological investigation of Aboriginal objects in NSW (Department of Environment Climate Change and Water, 2010) or archaeological monitoring undertaken in association with Low Impact work to ensure that there is no impact on heritage items; (f) archaeological and cultural salvage undertaken in accordance with a strategy or salvage operation required by the conditions of this approval; (g) maintenance work to existing buildings and structures as required to facilitate the carrying out of the CSSI; and (h) other activities determined by the ER to have minimal environmental impact which may include relocation and connection of utilities, establishment of minor ancillary facilities in accordance with Condition C9 construction of minor access roads (other than access roads' connection to the road network), temporary relocation of pedestrian paths and the provision of property access. (i) Site establishment work approved under a Site Establishment Management Plan in accordance with Condition C5. Despite the above, the following works are not Low Impact Work: (i) where heritage items, or threatened species or their habitat, or threatened ecological communities (within the meaning of the Biodiversity Conservation Act 2016), are adversely affected or potentially adversely affected by any low impact work as defined in (a) to (n) above, that work is construction, unless otherwise determined by the Planning Secretary in consultation with Heritage NSW, EHG BCS or DPI Fisheries (in the case of impact upon fish, aquatic invertebrates or marine vegetation); and (ii) any Work undertaken outside the hours specified in Condition E1 that exceeds noise management and vibration levels as identified in Condition E3 (b). *Notes:* *1. Early stages of Work are not necessarily low impact work.* *2. Low Impact work is not Construction as defined by this approval.* *3. The low impact work described in this definition becomes Construction with the approval of a CEMP. Where low impact work has already commenced, this is considered to remain as low impact work and is managed in accordance with the framework under which it commenced.*
Non-Aboriginal heritage items	"Any deposit, artefact, object or material evidence that relates to the settlement of the area that comprises NSW, not being Aboriginal settlement; and is of State or local heritage significance" as defined by the *Heritage Act*. Items may include: - Archaeological relics - Other historic items (i.e., works, structures, buildings, or movable objects).
NPW Act	*National Parks and Wildlife Act 1974*

Term/Abbreviation	Definition
NSW	New South Wales
PCBs	Polychlorinated biphenyls
POEO Act	*Protection of the Environment Operations Act 1997*
Protocol	This Unexpected and Incidental Finds Protocol
RAP	Registered Aboriginal Party
Relics	Relics are archaeological items of local or state significance in NSW, reflecting past domestic, industrial, or agricultural activities. Examples include bottles, pottery, and building materials.
TEC	Threatened Ecological Communities
UEMM	Updated Environmental Management Measures
Unexpected Heritage Find	An Aboriginal or non-Aboriginal object, relic, feature, or place discovered (or suspected to be present) during the carrying out of the CSSI of heritage significance which was not identified in the documents listed in CoA A1. An unexpected heritage find can include human remains if they are deemed to be historical.
Work	Any physical work for the purpose of the CSSI including construction and low impact work, but not including operational maintenance work.

3.0 Introduction

3.1 Background

Inland Rail is an approximate 1,600 kilometres (km) freight rail network that will connect Melbourne and Brisbane via regional Victoria, New South Wales (NSW) and Queensland. Comprising 12 sections, a staged approach is being undertaken to deliver Inland Rail.

The Australian Rail Track Corporation (ARTC), with Inland Rail Pty Ltd (IRPL) as its subsidiary for the Inland Rail project, received infrastructure approval for the Illabo to Stockinbingal (I2S) section of Inland Rail in September 2024. The approval for I2S (the Project) was granted by the Minister for Planning and Public Spaces under section 5.19 of the NSW Environmental Planning and Assessment Act 1979 (EP&A Act).

The Project is located in south-western New South Wales (NSW) in the Riverina region (Figure 1.1). Illabo is a small town of approximately 132 people (Australian Bureau of Statistics, 2021) located at the southern end of the alignment, 16 kilometres (km) north-east of Junee in the Junee Local Government Area (LGA). Stockinbingal is a town of approximately 347 people (Australian Bureau of Statistics, 2021) is situated at the northern end of the project, approximately 20 km north-west of Cootamundra in the Cootamundra–Gundagai Regional LGA. The major towns surrounding the project are Wagga Wagga, about 50 km to the south, Young to the north-east and Cootamundra to the east.

The Project comprises a new rail corridor that would connect Illabo to Stockinbingal. The alignment branches out from the existing rail line north-east of Illabo and travels north to join the Stockinbingal–Parkes Line west of Stockinbingal. The route will travel primarily through undeveloped land predominantly used for agriculture. The project includes modifications to the tie-in points at Illabo and Stockinbingal to allow for trains to safely enter and exit the Illabo to Stockinbingal section of Inland Rail. The alignment also crosses several local and private roads, watercourses and privately owned properties. Additionally, no major towns are located within the project site between Illabo and Stockinbingal.

The Project will include a total extent of approximately 42.5 km, including 39 km of new, greenfield railway which will incorporate the following key features:

- Connection to other rail lines, including Stockinbingal to Parkes line, Lake Cargelligo line, and Main Southern Railway
- One crossing loop and maintenance siding
- Level crossings and stock crossings
- Bridges over rivers and other watercourses, floodplains, and roads
- Upgrades of around 3.5 km of existing track for the tie-in works to the existing Main South Line at Illabo
- New track to maintain Lake Cargelligo line connection either side of the proposal
- Realignment and road-over rail bridge for a section of the Burley Griffin Way at Stockinbingal

- Realignment of Ironbong Road to allow for safe sight lines at the new active level crossing
- Ancillary infrastructure to support the proposal, inclusive of signalling and communications, drainage, drainage control areas, signage and fencing, and services and utilities
- Construction infrastructure, including ancillary facilities, and a temporary workforce accommodation facility.

The Project will also include upgrades to approximately 3 km of existing track associated with tie-in works and construction of an additional 1.7 km of new track to maintain the existing rail network connections. Road upgrade works will also be undertaken to re-align approximately 1.4 km of Burley Griffin Way to provide a road-over-rail bridge at Stockinbingal. Re-alignment of Ironbong Road will also be completed to allow for safe sight lines. A temporary workforce accommodation camp will also be constructed to house the workforce for the duration of works. Key features of the Project are shown on Figure 1.2.

This Unexpected and Incidental Finds Protocol (Protocol) details the actions to be taken should any unexpected or incidental finds occur relating to:

- Threatened species or threatened ecological communities (TEC)
- Contamination hazards or contaminated land
- Aboriginal Cultural Heritage and non-Aboriginal Heritage and human remains.

The Protocol also details the response procedures, reporting and notification requirements in the case of unexpected and incidental finds.

This Unexpected and Incidental Finds Protocol (Protocol) applies to all works, including low impact works (LIW).

3.2 Scope

This Protocol is applicable to any physical work for the purpose of the Critical State Significant Infrastructure (CSSI), including construction and LIW, but not including operational maintenance work. This Protocol should be read in conjunction with the Construction Environmental Management Plan (CEMP) and relevant Sub-Plans. This Protocol outlines how John Holland (JH) proposes to manage unexpected and incidental finds, related to the following aspects, during works associated with the I2S Project:

- Threatened species and threatened ecological communities
- Contamination, hazards and contaminated land
- Aboriginal cultural heritage
- Non-Aboriginal heritage
- Human remains.

The Protocol outlines procedures for stopping work near unexpected or incidental finds to prevent further impact, along with steps for notifying relevant stakeholders and state agencies in writing through an established notification pathway.

The existence of this Protocol does not replace the need to prepare Environmental Work Method Statements and/or Safe Work Method Statements where required in accordance with other documents e.g. CEMP. This document is not intended to provide management controls required to protect human safety or meet health and safety industry requirements.

This document has been prepared by suitably qualified persons (in each discipline associated with the Unexpected Finds Protocol). These suitably qualified persons (SQE's) have over 5 years' experience in each field for similar projects to that of I2S (contamination, ecology, non-Aboriginal Heritage and Aboriginal Heritage) and hold the relevant qualifications required to act as SQE's in the preparation and endorsement of this document.

3.3 Purpose

This Protocol has been developed in accordance with Condition of Approval (CoA) A17, the Unexpected Heritage Finds and Human Remains Procedure prepared under CoA E143 (Appendix B) and the Unexpected Finds Procedure for Contamination under CoA E161 (Appendix C). This Protocol will be implemented in the event of an unexpected find relating to biodiversity, heritage (both Aboriginal and non-Aboriginal), human remains and contamination. An unexpected find is considered when an item relating to any of these aspects is uncovered that has not been previously identified within site investigations undertaken as part of the Environmental Assessment Documentation listed under CoA A1.

In the event of an unexpected or incidental find, specialist consultants, and relevant technical specialists, will be engaged to advise on the management and potential assessment of the unexpected find identified during work. Response procedures for unexpected finds are provided in Appendix A, B and C.

This Protocol and associated procedures will be implemented for the duration of all LIW and construction work associated with the I2S Project.

3.4 Objectives

The key objective of this Protocol is to provide a framework outlining appropriate environmental response procedures to be implemented during LIW and construction activities. These procedures will be implemented to minimise risks associated with unexpected and incidental finds relating to threatened species or threatened ecological communities (TEC), contamination, hazards or contaminated land, Aboriginal Cultural Heritage, non-Aboriginal Heritage and suspected human remains.

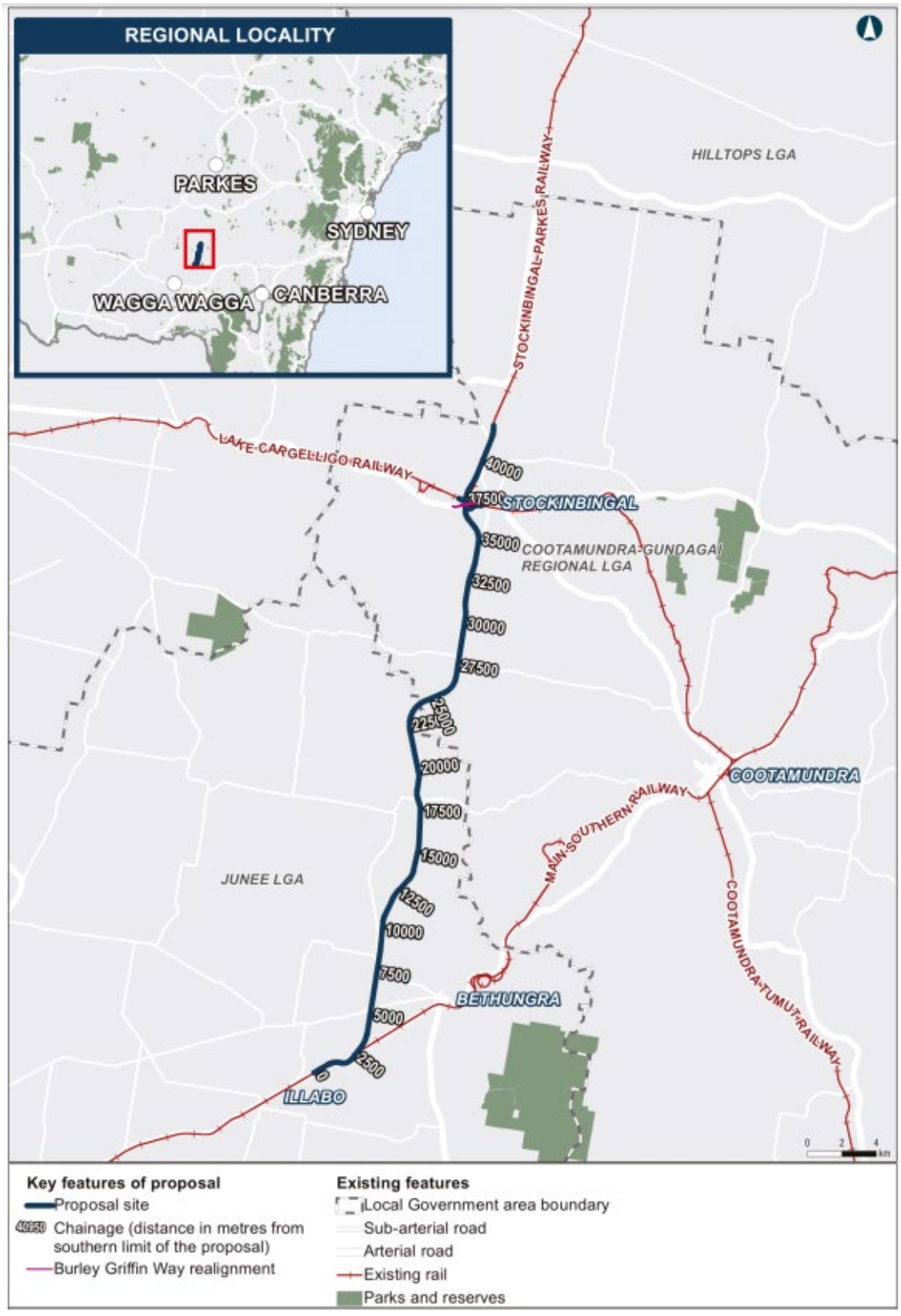


Figure 1.1 Project Locality. ***From Illabo to Stockinbingal EIS, Chapter 1***

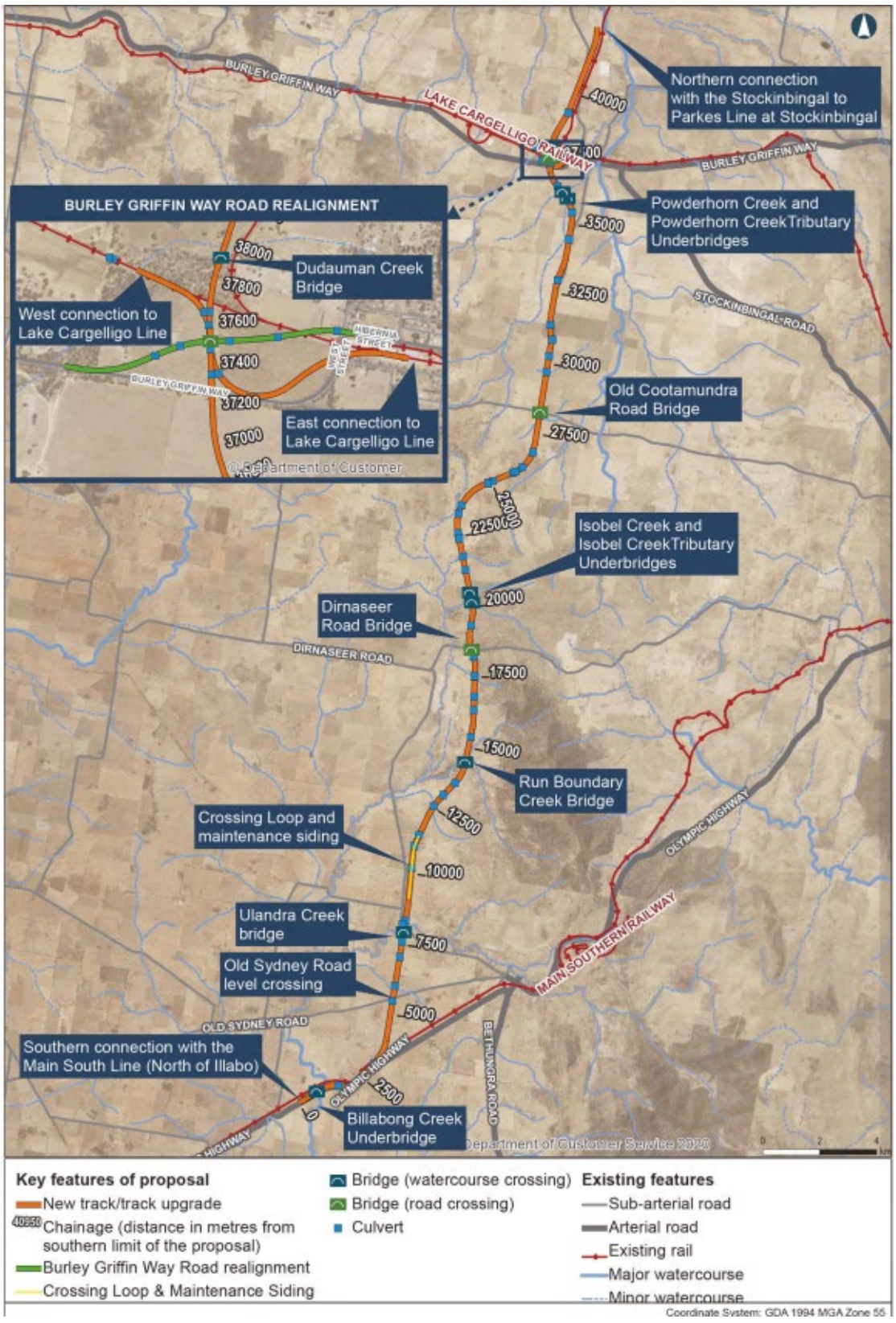


Figure 1.2 Key features of proposal. From Illabo to Stockinbingal EIS, Chapter 1

3.5 Relevant Legislation and Guidelines

Table 3-1 lists the principal legislation, regulation, plans, policies, guidelines, specifications, and Australian Standards that apply to this Protocol for the I2S Project.

Table 3-1: Relevant Legislation and Guidelines

Legislation	***Commonwealth Legislation*** • *Environment Protection and Biodiversity Conservation Act 1999* ***NSW Legislation*** • *Biodiversity Conservation Act 2016* • *Fisheries Management Act 1994* • *National Parks and Wildlife Act 1974* • *Biosecurity Act 2015* • *Protection of the Environment Operations Act 1997* • Protection of the Environment Operations (General) Regulation 2022 • Protection of the Environment Operations (Waste) Regulation 2014 • *State Environmental Planning Policy (Resilience and Hazards) 2021* • *Contaminated Land Management Act 1997* • Contaminated Land Management Regulation 2022 • *Heritage Act 1977* • Heritage Regulation 2012
Guidelines and Specifications	• Due Diligence Code of Practice (DECCW 2010) • Biodiversity Guidelines (Protecting and Managing Biodiversity on RTA Projects) • National Environmental Protection Measure (Assessment of Site Contamination) 1999 (as amended 2013) (National Environment Protection Council 2013) • Waste Classification Guidelines (NSW EPA 2014) • Guidelines for Consultants Reporting on Contaminated Land (NSW EPA, 2020) • Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997 (NSW EPA 2015) • Guidelines for the NSW Site Auditor Scheme, 3rd Edition (NSW EPA 2017) • Guideline for the Management of Contamination (Roads and Maritime Services 2013c) • Environment Protection Authority: Sampling design part 1 - application, Contaminated Land Guidelines (NSW EPA, 2022) • Environment Protection Authority: Sampling design part 2 - interpretation, Contaminated Land Guidelines (NSW EPA, 2022) • Preparing Environmental Management Plans for Contaminated Land (NSW EPA, 2022) • Guidelines for biological survey and mapped data (Commonwealth of Australia, 2018) • Biodiversity Assessment Method (BAM) (DPE 2020) • Skeletal Remains Guidelines for the Management of Human Skeletal Remains under the *Heritage Act 1977* (NSW Heritage Office, 1997) • Assessing Significance for Historical Archaeological Sites and 'Relics' (Heritage Branch of the Department of Planning, 2009) • *Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (OEH 2011)* • *Code of Practice for Archaeological Investigations of Aboriginal Objects in New South Wales (DECCW 2010)* • *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (DECCW 2010)*

3.6 Conditions of Approval

Table 3-2: Relevant CoAs (SSI-9406)

CoA No.	Commitment	Section Reference
A17	Prior to the commencement of low impact work, an Unexpected and Incidental Finds Protocol must be developed for: a) threatened species and threatened ecological communities; b) contamination, hazards and contaminated land; c) Aboriginal Cultural Heritage; and d) non-Aboriginal Heritage. The Unexpected and Incidental Finds Protocol must include procedures for: (i) all Work in the associated location to stop to prevent further impact; and (ii) notifying the Planning Secretary and relevant state agencies in writing. Work must not recommence until the relevant state agencies have been consulted and any required approvals have been obtained. The Unexpected and Incidental Finds Protocol must be made publicly available prior to low impact work commencing and must be implemented during low impact work	This Protocol Appendix A Appendix B Appendix C
E143	An Unexpected Heritage Finds and Human Remains Procedure must be prepared to manage unexpected heritage finds in accordance with any guidelines and standards prepared by Heritage NSW and submitted to the Planning Secretary for information before the commencement of Work.	Appendix B
E144	The Unexpected Heritage Finds and Human Remains Procedure, as submitted to the Planning Secretary, must be implemented for the duration of Work. *Note: Human remains that are found unexpectedly during the carrying out of Work may be under the jurisdiction of the NSW State Coroner and must be reported to the NSW Police immediately.*	Appendix B
E161	An Unexpected Finds Procedure for Contamination must: a) be prepared prior to the commencement of Work and must be followed should unexpected contamination or asbestos (or suspected contamination) be excavated or otherwise discovered b) include details of who will be responsible for implementing the unexpected finds procedure and the roles and responsibilities of all parties involved c) be reviewed by the Site Auditor and interim audit advice or a Section B Site Audit Statement provided certifying that the Unexpected Finds Procedure is appropriate d) be provided to the Planning Secretary and the EPA upon request with a copy of the interim audit advice or Section B Site Audit Statement attached e) be implemented throughout work.	Appendix C

3.7 Updated Environmental Mitigation Measures

Table 3-3: Relevant Updated Environmental Mitigation Measures

UEMM No.	Issue	Mitigation Measure	Section Reference
AH-11	Unexpected Finds	An unexpected finds procedure would be developed and included in the Aboriginal cultural heritage management plan to provide a consistent method for managing any unexpected Aboriginal heritage items discovered during construction, including potential heritage items or objects and a flow chart of the procedure on the findings of skeletal remains.	Appendix B
NAH-4	Unexpected finds including human skeletal remains	An unexpected finds procedure would be developed as part of the CEMP to provide a consistent method for managing any unexpected heritage or archaeological items and unexpected human skeletal remains. Non-Aboriginal awareness training (mitigation measure NAH-3) is to include a flow chart of the procedure on the findings of skeletal remains.	Appendix B
SC-7	Contamination Management	A contaminated land and hazardous materials management plan would be prepared and implemented as part of the CEMP. The plan would include but not be limited to: - procedures for incident management and managing unexpected contamination finds (an unexpected finds protocol).	Appendix C

4.0 Implementation

4.1 Training and Inductions

All site personnel (including sub-contractors) will be inducted on the potential for unexpected and incidental finds occurring, or likelihood of occurrence, within the project area and the required process under this Protocol. Training will include inductions, toolbox talks, pre-starts and targeted awareness training as required.

The project induction will include the following mandatory topics:

- How to identify suspected heritage relics and objects, including both Aboriginal and non-Aboriginal materials
- How to identify potential contamination
- How to identify threatened biodiversity
- Provide guidance on how to appropriately respond to unexpected finds
- Guidance on how personnel are to apply the Protocol on how to appropriately manage human remains, including notification and response procedures.

4.2 Roles and Responsibilities

An outline of responsibilities for site personnel relating to unexpected and incidental finds is included in Table 4-1.

Table 4-1: Roles and Responsibilities

Role	Responsibility
Project Manager (JHG)	• Manage project construction and site activities in line with this Protocol • Report environmental matters to the Project Director • Allocate appropriate contractor resources to meet environmental requirements • Plan and schedule construction while ensuring compliance with regulatory legislation and Protocol • Ensure site personnel are informed of changes to this Protocol e.g. via toolboxes and pre-starts • Notify ARTC/IRPL of incidents that have occurred including near misses • Notify the relevant regulatory agencies where JHG has hold the licence and permit
Environmental and Sustainability Manager	• Assisting Site Supervisor with the implementation of this Protocol • Liaise with specialist consultants and ARTC/IRPL (as directed by Project Manager) • Notify Site Supervisor and or Project Manager of incidents as required

	• Complete incident investigation and reporting (where required) • Updates to this Protocol and management plans (where required) and any changes are communicated to the Project Team.
Site Supervisors (JHG)	• Oversee on-site project management and control • Ensure that the Protocol and procedures are communicated to all site personnel under their management and are being fully implemented on site e.g. via attendance to site inductions, toolboxes and pre-starts • Ensure site personnel are informed of changes to this Protocol e.g. via toolboxes and pre-starts • Stop work as required • Delineate the area • Contact Environmental Manager and Project Manager • Manage access into and out of the site
Environmental Representative (ER)	• Provide environmental advice to the Project management team to assist them with achieving compliance with this Protocol • Undertake regular site inspections to ensure activities are adhering to this Protocol • As considered necessary, recommend to the Proponent any improvements that may be made to work practices to avoid or minimise adverse impacts to the environment and to the community • Monitor the implementation of the Unexpected Finds Protocol to ensure implementation is undertaken in accordance with the terms of the approval
Specialist consultants – Ecologist, Archaeologist, Contaminated Land Expert.	• Advise on the nature of any find, including whether it should be considered “unexpected” in terms of the Planning Approval • Indicate the required exclusion area or “no-go” zone for any nearby works • Advise on any controls that should be put in place to manage the find and the likely impact from the proposed work • Develop any required management plan (or equivalent) for the management of any unexpected find. • Call on other technical specialists as required to assist in any identification and management of the unexpected find. • Assist in the completion of any required notifications in consultation with the Project Environment Team

	• Notify RAPs and LALC's in the event of an unexpected find associated with Aboriginal Heritage or suspected Aboriginal remains.
Site Auditor (Contamination)	• A Site Auditor(s) is to oversee the management of contamination issues. • The Site Auditor is to review all documentation relevant to contamination, including previous site audits, and provide a written opinion on the contamination risk and the appropriateness of the reports and any proposed management measures of the site, including (but not limited to): • the management and monitoring plans in Conditions C12 and C17, where relevant, including any updates or amendments to those plans; • Sampling and Analysis Quality Plan in Condition E154; • Detailed Site Investigation Report(s) in Condition E155; • Remedial Action Plans in Condition E156; • Unexpected Finds Procedure for Contamination in Condition E161; and • Post-remediation validation reports.
Construction Personnel	• Complete an environmental induction before accessing the site • Comply with legislative requirements • Stop work in the event of an unexpected find • Report all unexpected finds or human remains, environmental incidents or potential hazards to area supervisor • Follow environmental plans, protocols and procedures
ARTC / IRPL	• Make notifications to the Planning Secretary under the terms of the MCoA A34 and A35. • Notify and liaise between relevant government agencies in the event that an impact has occurred or is likely to occur in relation to the unexpected find. • Provide written approval to recommence work (as required) • IRPL will need to report any unexpected find identified in accordance with ARTC /IRPL Approvals. • Where an event occurs within the ARTC rail corridor and JHG is operating under the ARTC EPL the event must be reported to both ARTC and IRPL
UGL Regional Link (CRN)	• Where an event occurs within the UGL Regional Link rail corridor and JHG is operating under the UGL Regional Link EPL the event must be reported to both UGL Regional Link and IRPL

4.3 Emergency Contacts

A list of key emergency contacts is provided in Table 4-2.

Table 4-2: Emergency Contacts

Emergency Contact	Contact Details	When to contact
Environment Protection Authority (EPA)	131 555	In the event of confirmed contamination
Department of Planning, Housing and Infrastructure	1300 305 695	In the event of an environmental incident resulting in environmental contamination or harm
Department of Climate Change, Energy, the Environment and Water (Cth)	1800 920 528	In the event of a discovery of actual or potential impacts to Commonwealth listed threatened communities or species.
Biodiversity Conservation Science Division	1300 992 688	In the event of confirmed threatened species and/or TEC
SafeWork NSW	131 050	In the event of confirmed contamination
RSPCA / WIRES	1300 094 737	To report injury to wildlife
Heritage NSW	(02) 9873 8500	In the event of confirmed heritage item or suspected human remains
NSW Enviro Line	131 555	In the event of unexpected finds or suspected heritage finds or human remains
NSW Police	(02) 6922 2599 (Wagga Wagga District Command) 000 (emergency only)	In the event of suspected human remains

4.4 Review

This Protocol will be reviewed as needed in response to an unexpected find, audit finding, incident or near miss.

Appendix A - Unexpected Finds Procedure - Biodiversity

Introduction

This procedure describes how to manage unexpected finds associated with threatened flora species, fauna species and/or Threatened Ecological Community (TEC) during works. This procedure has been prepared to meet the requirements of the Conditions of Approval, particularly CoA A17.

This Procedure is applicable to any physical work for the purpose of the CSSI including construction and low impact work (LIW) but not including operational maintenance work, and will support the Construction Environmental Management Plan (CEMP) and relevant Sub-Plan.

Relevant Legislation and Guidelines

Legislation and guidelines relevant to this procedure are detailed in Section 3.5.

Reporting

A record of the unexpected finds will be maintained by the Contractor and will include the following details as a minimum:

- Date, time, and location of unexpected find
- Details of discovery site (GPS points, description of vegetation, soil types, microhabitat and/or any other features present)
- Photographs of items observed
- Details regarding assessment by the Environmental and Sustainability Manager (and advice from suitably qualified ecologist or specialist)
- Actions undertaken before work recommenced
- Relevant sign off on approval to recommence works.

If an Unexpected Find is also an incident as defined the MCoA, all Incident Notification and Reporting must follow SSI -9406 CoA A34 & A35 and EPBC 2018/8233 CoA 35 & 36 (where required) including the requirements set out in Appendix A of the Infrastructure Approval SSI-9406.

Unexpected Finds Procedure- Biodiversity

In the event an unexpected, threatened flora or fauna species or TEC is encountered during works, the procedure outlined below must be followed.

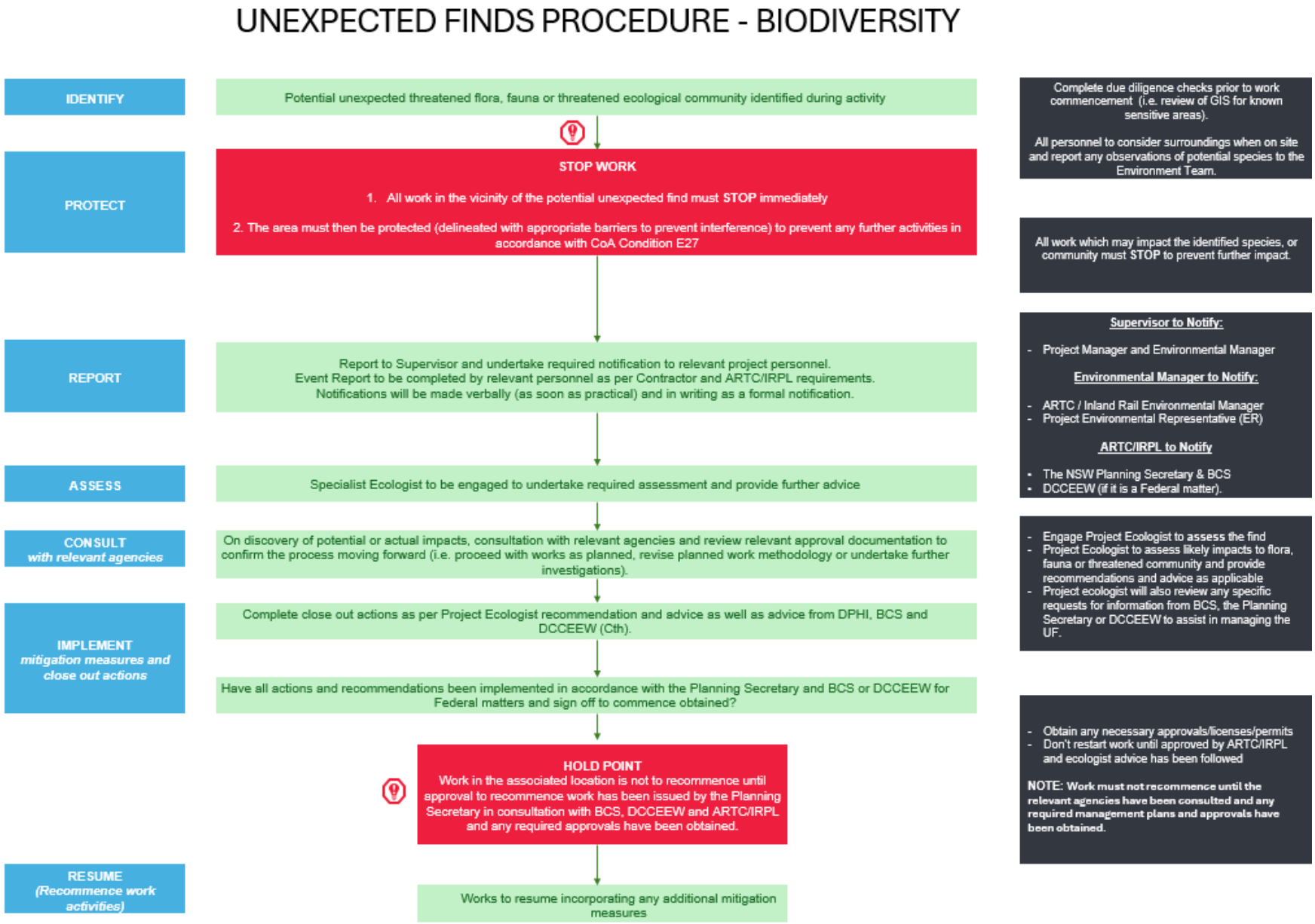


Figure A1: Unexpected Finds Procedure, Biodiversity

JOHN HOLLAND

UNEXPECTED FINDS

Behind the Dunny Door Series

WHAT IS IT

An unexpected find is the discovery of any previously unidentified or otherwise unforeseen item during planning such as threatened flora, fauna or Threatened Ecological Communities, whilst completing activities.

WHY ARE THEY IMPORTANT

- Harmful to your health or others
- Harmful to the environment
- Culturally significant
- A potential crime scene
- Regulated / Legally Protected

IF YOU MAKE AN UNEXPECTED FIND

STOP WORK

- Don't touch or move it
- Alert supervisor and the Environmental / Safety Team
- Refrain from work until instructed by team
- Implement suitable risk controls to deliniate find

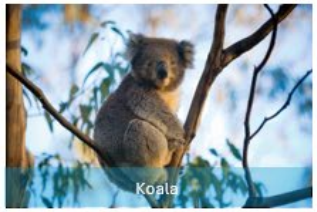
IF YOU BELIEVE YOU HAVE MADE AN UNEXPECTED FIND, PLEASE TELL YOUR SUPERVISOR/LEADING HAND IMMEDIATELY

EXAMPLES OF THREATENED SPECIES THAT MAY BE ENCOUNTERED:


Grey-headed Flying Fox


Regent Honeyeater


Swift Parrot


Koala


Spotted-tail Quoll


Corben's Long-eared Bat


Crimson Spider Orchid


Pink-tailed Worm Lizard


Tarengo Leek Orchid


Yellow-box (TEC)


White box (TEC)


Blakey's Red-gum (TEC)


Western Grey-box (TEC)

Figure A2: Unexpected Finds, Biodiversity

Appendix B - Unexpected Finds Procedure – Heritage and Human Remains

Introduction

This procedure describes how to manage unexpected encounters associated with both Aboriginal and non-Aboriginal heritage items, as well as suspected human remains, during works. This procedure has been prepared to meet the requirements of the CoA, specifically CoA A17, E143 and E144 and environmental mitigation measures AH-11 and NAH-4.

This Procedure is applicable to any physical work for the purpose of the CSSI including construction and low impact work (LIW) but not including operational maintenance work and will support the Construction Environmental Management Plan (CEMP) and relevant Sub-Plan.

In accordance with section 3.2 and CoA C23(f), this document has been prepared by suitably qualified person with over 20 years' experience in the field of Aboriginal and Non-Aboriginal Heritage. These person/s have experience on similar projects to that of I2S and hold the relevant qualifications (Bachelor of Archaeology and Pre-History, with Honours) required to act as SQE's in the making and endorsement of this document.

Relevant Legislation and Guidelines

Legislation and guidelines relevant to this procedure are detailed in Section 3.5.

Reporting

A record of the unexpected finds will be maintained by the Contractor (in accordance with Appendix A of the SSI- 9406) and will include the following details:

- Date, time, location, written description and photographic evidence of the unexpected find
- Details regarding assessment by the Environment and Sustainability Manager (and advice from suitably qualified heritage specialist and/or archaeologist)
- Actions undertaken before work recommenced
- Relevant sign off on approval to recommence works.

If an Unexpected Find is also an incident as defined the MCoA, all Incident Notification and Reporting must follow CoA A34 and A35 including the requirements set out in Appendix A of the Infrastructure Approval SSI-9406.

Unexpected Finds Procedure – Heritage and Human Remains

Figure B1 below provides an overview of the procedure to be implemented in the event that any newly observed cultural material or suspected human remains are identified during the LIW and construction phases of the project. Figures B2 and B3 provide a detailed breakdown of steps to be undertaken in the event a potential Heritage items or suspected human remains are uncovered during work.

The recording of the item(s) and any proposed mitigation measures must be completed by a heritage specialist with participation of the Registered Aboriginal Party (RAP) and/or Local Aboriginal Land Council (LALC) representatives and Heritage NSW (where appropriate). Avoidance of newly identified Aboriginal objects is always the preferred heritage outcome where feasible. Mitigation measures will be employed to ensure that impacts are avoided or where it can be reasonably demonstrated that avoidance is not possible that mitigation measures will be put in place to reduce impacts as much as possible. All sites that cannot be avoided must be assessed for their archaeological significance prior to impacts in accordance with best practice heritage guidelines.

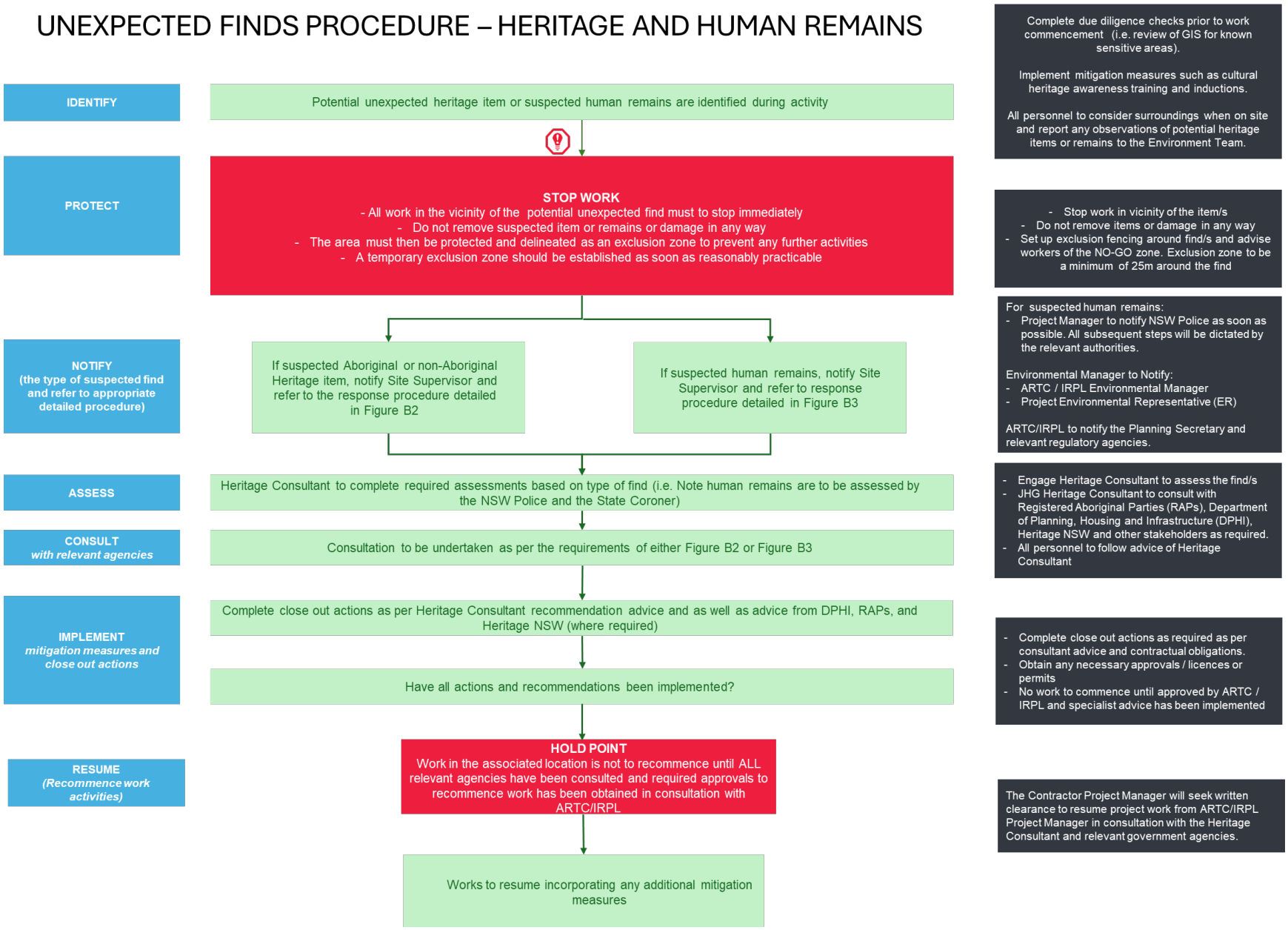


Figure B1 Unexpected Finds Procedure – Heritage and Human Remains

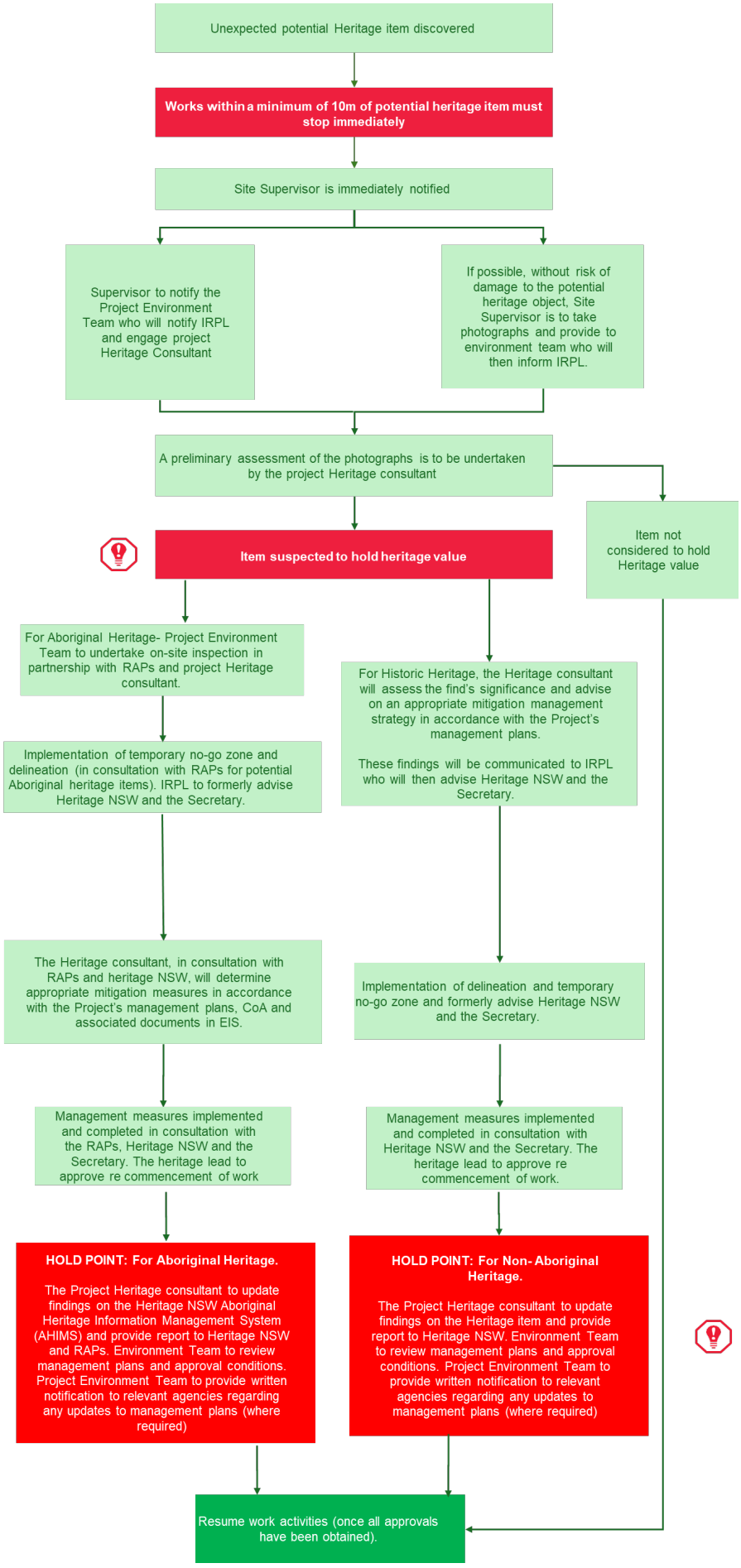


Figure B2 Unexpected Finds Procedure – Heritage Item

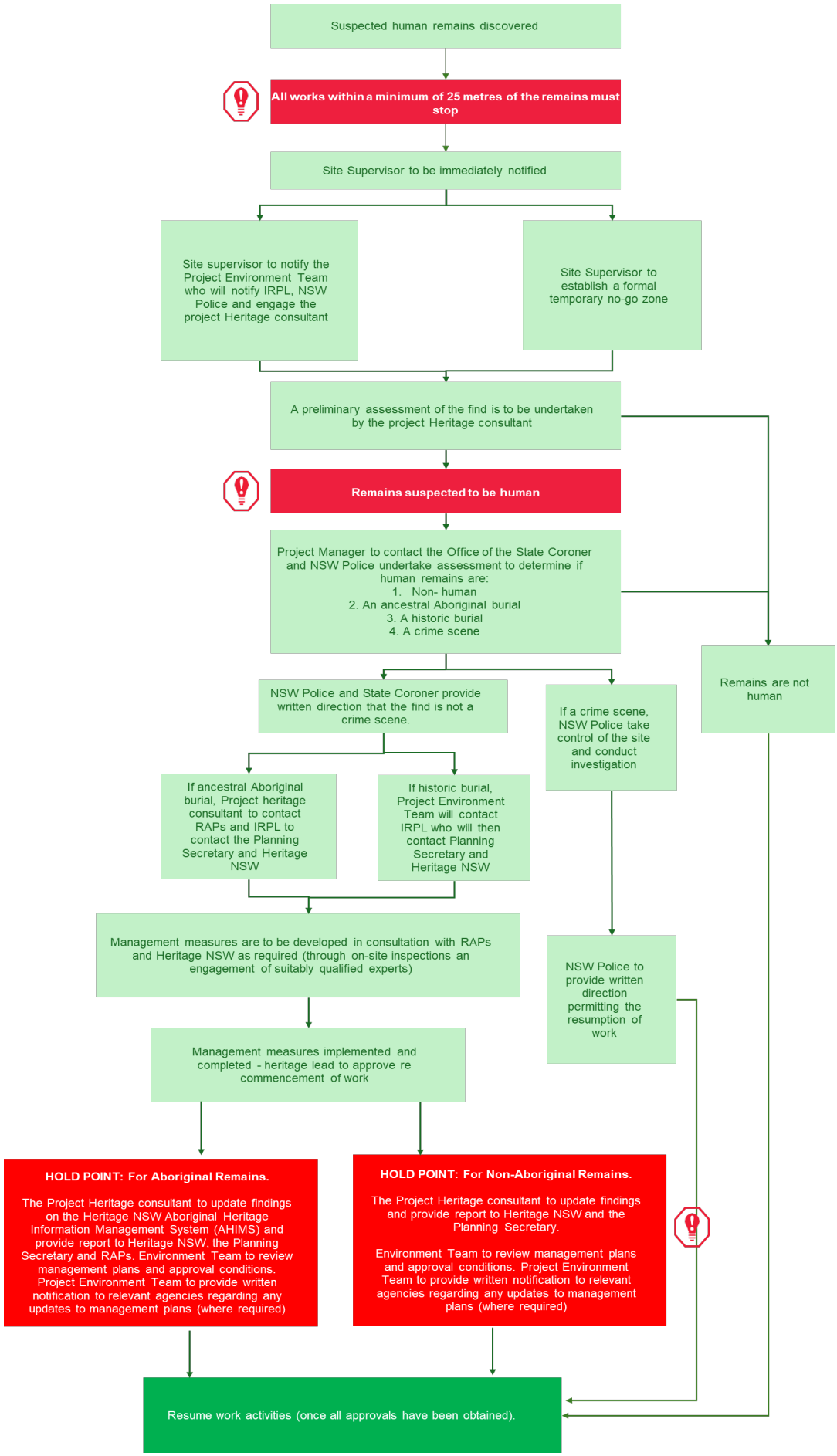


Figure B3 Unexpected Finds Procedure – Human Remains



Figure B4: Unexpected Finds, Heritage

Appendix C - Unexpected Finds Procedure – Contamination

Introduction

This procedure describes how to manage unexpected encounters of land that contains (or is suspected of containing) substances that are actually (or potentially) hazardous to health or the environment.

Contaminants may include:

- Hydrocarbons
- Per- and polyfluoroalkyl substances (PFAS)
- Polycyclic aromatic hydrocarbons (PAHs)
- Polychlorinated biphenyls (PCBs)
- Pesticides
- Heavy metals such as lead, arsenic, cadmium and mercury
- Asbestos containing material (ACM)
- Biologically pathogenic materials and waste
- Acid sulphate soils (ASS).

This procedure has been prepared to meet the requirements of the CoA, specifically CoA A17 and E161 and environmental mitigation measure SC-7.

This Procedure is applicable to any physical work for the purpose of the CSSI including construction and low impact work (LIW) but not including operational maintenance work, and will support the Construction Environmental Management Plan (CEMP) and relevant Sub-Plan.

Relevant Legislation and Guidelines

Legislation and guidelines relevant to this procedure are detailed in Section 3.5.

Reporting

A record of the unexpected contamination finds will be maintained by the Contractor and will include the following details as a minimum:

- Date, time, location and photographic evidence of unexpected find, including depth
- Details regarding assessment by Environment Manager (and advice from suitably qualified contamination specialist)
- Where remediation of the contamination is recommended by the contamination specialist and supported by the contaminated site auditor, details on the remediation will be captured and reported in accordance with the *Contaminated Land management Act* and Conditions E151-160.
- All waste will be tracked in accordance with the *Protection of the Environment Operations Act 1997 (POEO Act)* and Condition E165-166. Transport and disposal undertaken in accordance with the Protection of the Environment Operations (Waste) Regulation 2005

and the Waste Classification Guidelines (EPA 2014). All contractors transporting waste from the site must be licenced to transport the identified type of waste and must only dispose of the waste at a facility that is licenced to accept the waste classification and volume.

If an Unexpected Find is also an incident as defined the MCoA, all Unexpected Find is also an incident as defined the MCoA, all Incident Notification and Reporting must follow CoA A34 and A35 including the requirements set out in Appendix A of the Infrastructure Approval SSI-9406.

Unexpected Finds Procedure – Contamination, Hazards and Contaminated Land

In the event an unexpected contamination find is encountered during works, the procedure outlined below must be followed. The Unexpected Finds Procedure for Contamination, Hazards and Contaminated Land (see Appendix C) must be included and implemented throughout works and construction.

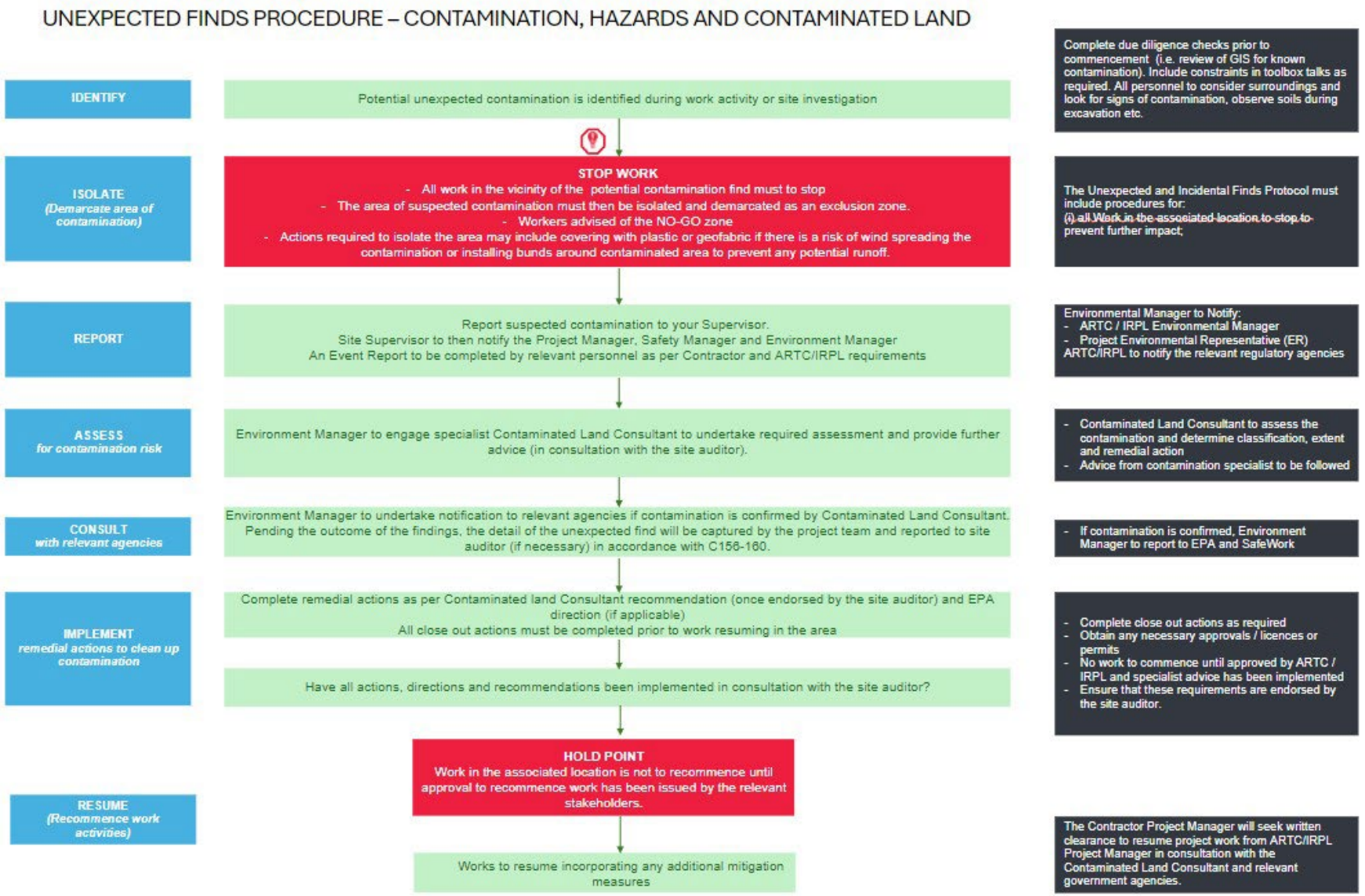


Figure C1: Unexpected Finds Procedure, Contaminated Land

JOHN HOLLAND

UNEXPECTED FINDS

Behind the Dunny Door Series

WHAT IS IT

An unexpected find is the discovery of any previously unidentified or otherwise unforeseen item during planning, such as contamination

WHY ARE THEY IMPORTANT



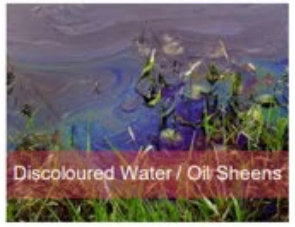
IF YOU MAKE AN UNEXPECTED FIND



IF YOU BELIEVE YOU HAVE MADE AN UNEXPECTED FIND, PLEASE TELL YOUR SUPERVISOR/LEADING HAND IMMEDIATELY

EXAMPLES OF CONTAMINATION THAT MAY BE ENCOUNTERED:















Unexpected finds can include but not limited to as being:

- Distinctively different to other soils on-site – both in texture, colour, smell and moisture content
- Underground tanks and structures (e.g. former fuel tanks)
- Appear to be concentrated to a localised area (i.e. waste burial pits)
- Stained, oil soaked or containing a petroleum sheen.
- Includes other products such as batteries etc.
- May contain offensive odours, including sulphur-based leachate impacts or sewerage, including acid sulfate soils
- Buried building products and debris/waste or other anthropogenic materials
- May contain potential asbestos containing materials
- May contain buried animal carcasses or evidence of decomposition including potential remains.

Figure C2: Unexpected Finds, Contamination

Appendix D - Interim Audit Advice

3 December 2024

John Holland Pty Ltd
Level 5, 15 Bourke Road
Mascot, NSW, 2020

Ref: E081

Attention: Hugh Goymour

Sent via Email: Hugh.Goymour@jhg.com.au

Dear Hugh,

Re: Interim Audit Advice – Illabo to Stockinbingal (I2S) Inland Rail Unexpected Finds Procedure for Contamination

Introduction

I have been engaged by John Holland Pty Ltd to conduct a site audit of the above site in accordance with the NSW Contaminated Land Management Act 1997.

The Illabo to Stockinbingal Inland Rail Project (I2S) is a new section of rail corridor (42.5km) connecting Illabo to Stockinbingal in NSW. The project forms part of the national Inland Rail program to deliver a direct interstate freight rail corridor between Melbourne and Brisbane via central -west NSW and Toowoomba Qld.

The I2S includes installation of 39km of new single track, removal of redundant sections of track and upgrade of existing track for tie-in points to the existing rail at Illabo and Stockinbingal, a crossing loop and maintenance siding of around 2.2 km long and track turn-outs at eight locations.

The project is state significant infrastructure (SSI-9406) and has been assessed under section 5.13 of the Environmental Planning and Assessment Act 1979 (EP&A Act), requiring an environmental impact statement[1] (EIS). Approval was issued by the Minister for Planning and Public Spaces on 4 September 2024 subject to conditions of which Conditions E151-161 relate to contamination.

The conditions of approval (E161) require an unexpected finds procedure for contamination (UFPfC) to be prepared and implemented prior to commencement of work. The condition also states that the UFPfC must be reviewed and approved by a site auditor.

This interim audit advice letter (IAA) has been prepared to provide my written opinion on the appropriateness of an unexpected finds procedure for contamination (UFPfC).

Scope

I have been provided with the following document:

- I2S | Unexpected and Incidental Finds Protocols and Procedures. Environmental Management Document 5-0019-220-PES-00-PR-0001. Inland Rail I2S Project/John Holland.

The Unexpected and Incidental Finds Protocol has been developed to detail actions to be taken should unexpected or incidental finds occur in relation to (1) threatened species or threatened ecological communities, (2) contaminated hazards or contaminated land, and (3) aboriginal cultural heritage and non-aboriginal heritage and human remains.

[1] Illabo to Stockinbingal Environmental Impact Statement (EIS) (ARTC/Inland Rail). Dated 29 August 2022.

Envirocene Pty Ltd
ABN: 82 621 176 163 • ACN: 621 176 163

Level 2, 29 Kiora Road, Miranda NSW 2228
P: 0402 142050 • E: jevans@envirocene.com.au
www.envirocene.com.au

It is reasonable and practical to combine the various unexpected finds procedures into one document, however, my review and conclusions documented in this IAA apply only to aspects of the document relating to contamination, referred to as the UFPfC, included as Appendix C to the above document.

The UFPfC was reviewed in conjunction with the following:

- EIS Technical Paper 14 – Contaminated Land Assessment. Ref: 2-0001-220-EEC-00-RP-0003.
- EIS Chapter 20: Soils and Contamination.
- I2S Mitigation Measures (April 2024)
- Conditions of Approval for Inland Rail – Illabo to Stockinbingal SSI-9406.

Summary of the UFPfC

The UFPfC provides examples of indicators of contamination that may typically be encountered that may not have been identified during the contaminated land assessment. These include:

- Distinctively different to other soils on-site – both in texture, colour, smell and moisture content
- Underground tanks and structures (e.g. former fuel tanks)
- Appear to be concentrated to a localised area (i.e. waste burial pits)
- Stained, oil soaked or containing a petroleum sheen.
- Other products such as batteries etc.
- May contain offensive odours, including sulphur-based leachate impacts or sewage, including acid sulfate soils
- Buried building products and debris/waste or other anthropogenic materials
- May contain potential asbestos containing materials
- May contain buried animal carcasses or evidence of decomposition including potential remains.

The UFPfC instructions are to

1. Stop work.
2. Cordon off the area.
3. Engage contaminated land consultant to deal with the relevant issue (in consultation with the site auditor).
4. Complete remedial actions as recommended by environmental consultant (and as endorsed by site auditor).

The UFPfC also lists requirements for managing waste encountered during unexpected finds management.

The overarching *Unexpected and Incidental Finds Protocols and Procedures* identifies roles and responsibilities for implementation of the UFPfC and of particular note is the requirement for site supervisors to "*ensure that the Protocol and procedures are communicated to all site personnel under their management and are being fully implemented on site e.g. via attendance to site inductions, toolboxes and pre-starts*."

The UFPfC will be implemented for the duration of the low impact works and by inclusion in the CEMP for construction.

Auditor Opinion

An unexpected finds protocol is a relatively straightforward set of instructions that set out the actions to be undertaken under certain circumstances. In this case, the UFPfC forms an integral part of both the low impact work and the construction (by inclusion in the CEMP), and is based on observations of contamination such as visible ACM, underground tanks, staining/odours etc.. If properly executed, it should lead to the appropriate management of unexpected finds of contamination. The key to successful implementation is ensuring on-site staff are trained in identifying these issues and are aware of the UFPfC.

The project site is predominantly greenfield although some low to moderate potential areas of environmental concern (AEC) have been identified along the project site. These areas will be subject to investigation (Item SC-4 of the Mitigation Measures) and the UFPfC does not supersede the requirement for site investigations within these AEC, rather it will complement the site investigation process and once investigations are complete, will continue to be implemented during construction by inclusion in the CEMP.

Conclusion

I confirm that I have reviewed the UFPfC and in the context of the I2S project, find this to be appropriate.

* * *

Consistent with the NSW EPA requirement for staged 'signoff' of sites that are the subject of progressive assessment, remediation, and validation, I advise that:

- This advice letter does not constitute a Site Audit Report or Site Audit Statement and does not pre-empt the conclusions that will be made at the conclusion of the site audit process.
- At the completion of the audit, I will provide a Site Audit Statement and supporting documentation.
- This interim audit advice will be documented in the Site Audit Report.

Yours faithfully,
Envirocene Pty Ltd



Julie Evans
NSW EPA Accredited Site Auditor 1003