27 June 2024

ARTC REF# 3-0000-220-00-LT-00010-DH

Mr Mick Fallon
Team Leader, Freight Assessment and Management
Department of Planning, Housing and Infrastructure
4 Parramatta Square, 12 Darcy Street
Parramatta, NSW 2150

Dear Mick

Illabo to Stockinbingal (SSI-9604)
Additional and Appropriate Measures for Box Gum Woodland Impacts

We write in response to the Department's request for Australian Rail Track Corporation (ARTC) to propose additional and appropriate measures (A&AM) as part of the Inland Rail Illabo to Stockinbingal (I2S) project. The A&AM is to address potential serious and irreversible impacts (SAII) to the White Box Yellow Box Blakely's Red Gum Woodland and Derived Native Grassland Critically Endangered Ecological Community (CEEC) (referred to as the Box Gum Woodland CEEC or Threatened Ecological Community (TEC)) which arise through habitat clearing necessary for construction of the project.

This letter provides ARTC's A&AM proposal, prepared following consultation with the Department and the Biodiversity, Conservation and Science Directorate (BCS) of the NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW).

Please also refer to the following attachments:

- Technical Note: Box Gum Woodland – Gum Flat Rehabilitation Opportunity (IRDJV, June 2024)
- Figure 4.1 Potential Areas for Rehabilitation, extracted from the Technical Note. This figure illustrates the Rehabilitation Area Proposal.

Illabo to Stockinbingal

Inland Rail is an approximate 1,600 kilometre (km) freight rail network that will connect Melbourne and Brisbane via regional Victoria, New South Wales (NSW) and Queensland. Inland Rail will accommodate double-stacked freight trains up to 1,800 metres (m) long and 6.5 m high.

ARTC is seeking approval to construct a new rail corridor for the Inland Rail project that would connect Illabo and Stockinbingal in NSW (the I2S project). 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. This section of Inland Rail would be about 42.5 km in total, including 39 km of new single-track standard-gauge railway, and connecting to 3.5 km of existing rail at the northern and southern end of the section. The location of the proposal is shown in Figure 1.

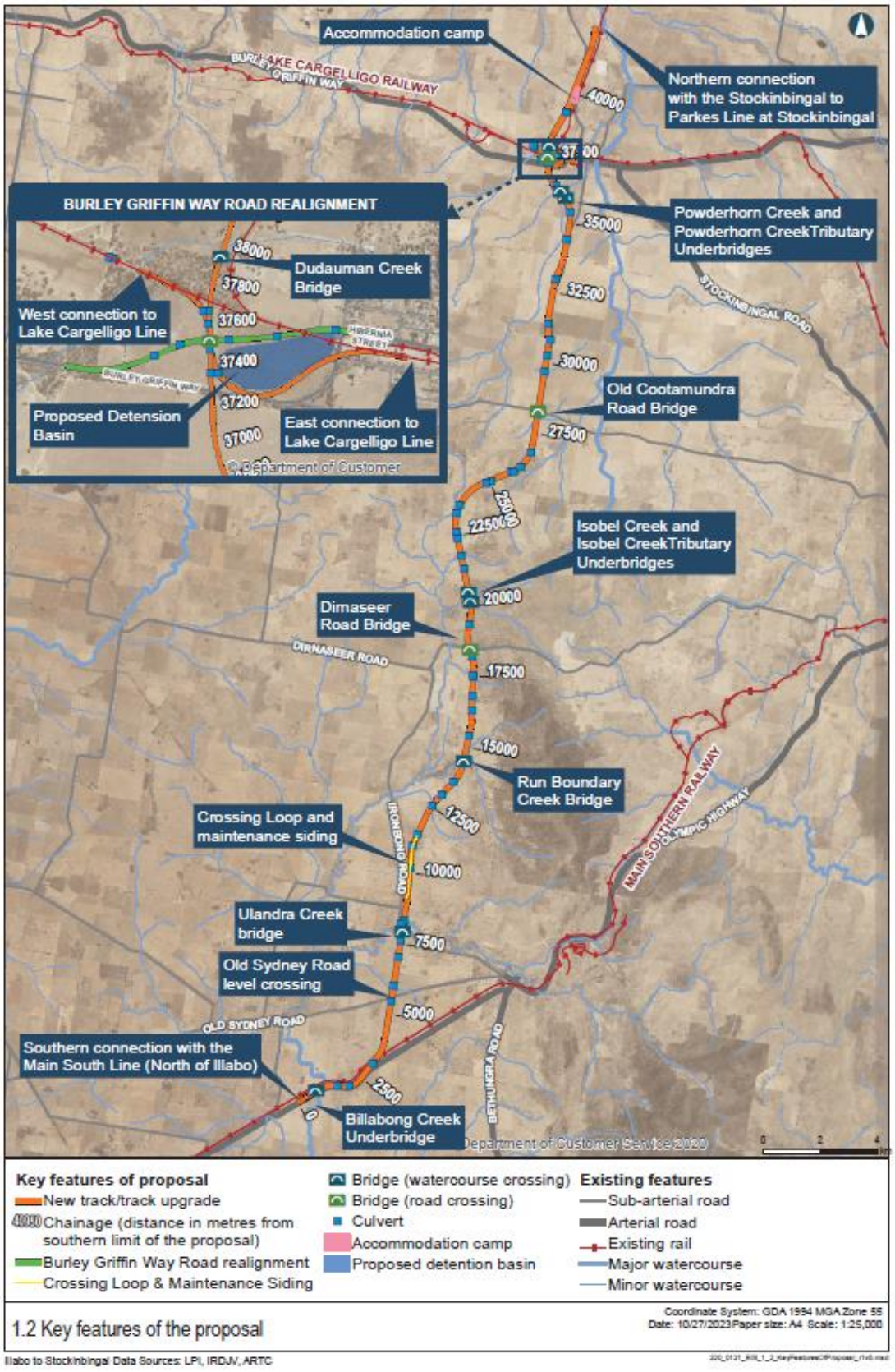

Figure 1: I2S EIS Figure 1.2 – Key features of the proposal

The I2S project has been declared State significant infrastructure (SSI) and critical State significant infrastructure (CSSI) under Division 5.2 of the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act). The proposal is subject to assessment and approval by the NSW Minister for Planning. The proposal is also a controlled action under the *Environment Protection and Biodiversity Conservation Act 1999* (Comm) (EPBC Act) and requires approval from the Commonwealth Minister for the Environment.

The CSSI assessment process has included the preparation of a Biodiversity Development Assessment Report (BDAR) to accompany the project's Environmental Impact Statement (EIS). The BDAR has analysed the impacts on biodiversity values and applied the requirements of the *Biodiversity Conservation Act 2017 (NSW)* (BC Act) as relevant to a CSSI project.

The project impacts, as presented in the EIS and BDAR, are based on the reference design for the project used to inform the CSSI application and assessment process. Through an iterative design and impact analysis approach, project development has sought to avoid and reduce impacts to biodiversity values to the greatest extent possible. Mitigation and management measures are presented in the EIS to further reduce and manage impacts during construction and to support rehabilitation of disturbed areas.

Box Gum Woodland landscape patterns and presence

The I2S proposal site is located within the South Western Slopes Bioregion, which is comprised of an extensive area of foothills and isolated ranges incorporating the lower inland slopes of the Great Dividing Range. The South Western Slopes Bioregion has been intensively cleared and cultivated, leaving mostly fragmented vegetation.

The project alignment traverses valleys formed in between the Bethungra ranges in the south east and the Combanging ranges to the north west. The landscape has been heavily fragmented due to agricultural practices (i.e. cropping and clearing for livestock). The existing connectivity is limited but includes riparian corridors associated with watercourses (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 subject land, centred on the nearby Bethungra and Ulandra range. Creeklines and associated riparian vegetation with the rivers and streams 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.

The Box-Gum CEEC identified within the study area persists as disjunct remnant patches of highly modified woodland scattered across a fragmented landscape. The majority of this community within the study area has been previously subjected to agricultural cropping or grazing pressures. These pressures within these areas have resulted in the groundcover being highly disturbed and limited to disturb tolerant native tussock grasses with few native herbs and forbs present. Areas of highest quality Box Gum Woodland were identified along road reserves and in areas where agricultural grazing has been excluded.

Project impacts to Box Gum Woodland and resulting offset requirements

The BDAR has identified the various ecosystems and ecological communities along the I2S project alignment. As outlined in the BDAR, the project impacts approximately 39.08 hectares of the Box Gum Woodland TEC. The project has an overall impact of approximately 77.17 hectares on native vegetation.

The engineering requirements for the railway dictate that curves in the alignment have relatively large radii, whilst gradients must be carefully managed. This dictates that as the rail corridor passes through the landscape, various areas of cut and fill are necessary. Larger patches of vegetation can be avoided where possible, though the constraints of alignment at times mean avoidance is not fully achievable.

While minimisation and reduction of impact has been possible, some clearing of the Box Gum Woodland TEC is necessary.

The Box Gum Woodland TEC is present as ribbons of remnant woodland vegetation in moderate condition, with broader areas of low condition derived native grassland (DNG). Given this, the project impacts variously on approximately 15.6 hectares moderate condition vegetation (comprising cohesive patches totalling approximately 12.8 hectares, patches along roadsides of around 2.4 hectares and more dispersed patches of paddock trees of about 0.4 hectares). Poorer quality areas comprise approximately 7.9 hectares and planted native vegetation approximately 2.8 hectares, with the remainder of the impact to low quality DNGs at approximately 12.8 hectares. These impacts apply to some 56 distinct patches, with many being smaller isolated patches that are not contiguous with other patches or corridors, whether Box Gum Woodland or other communities.

Table 1 Project impact by condition of Box Gum Woodland

PCT and condition	Total area of impact (ha)
PCT 266	
Moderate	2.88
Poor	4.77
Low - derived native grassland	6.55
Subtotal	*14.20*
PCT 276	
Moderate	0.87
Poor	0.62
Subtotal	*1.49*
PCT 277	
Moderate	11.70
Poor	2.23
Low - derived native grassland	6.23
Planted Native Vegetation	2.80
Subtotal	*22.96*
PCT 347	
Moderate	0.14
Poor	0.29
Subtotal	*0.43*
TOTAL IMPACT ON BOX GUM WOODLAND TEC	**39.08**

As analysed in the BDAR, the above impacts to vegetation extents give rise to ecosystem and species offset requirements for the residual impacts following the application of the avoid, minimise and mitigate hierarchy. In respect of the Box Gum Woodland habitat, the following offset credits must be retired.

Table 2 Offset credits related to Box Gum Woodland

PCT	Area (Ha)	Ecosystem Credits	Scattered Trees	Scattered Tree Credits
PCT 266	14.2	268	6	6
PCT 276	1.49	51	1	1
PCT 277	22.96	677	15	14
PCT 347	0.43	11	0	0
TOTAL		**1007**	**22**	**21**

Ecosystem credits are also applicable to other Plant Community Types (PCTs) within the project footprint, such that an overall total of 2020 ecosystem credits and an overall total of 62 scattered tree credits are required.

Additionally, species credits are necessary for impacts on threatened species habitats. For the project, these total 3,230 for fauna and 62,532 for flora (noting this includes assumed presence for some flora species due to inaccessible land).

Refer to the BDAR for further discussion on credit requirements.

Risk of serious and irreversible impacts

The purposes of the BC Act include, amongst other things, conservation at bioregional and State scales, and support for conservation and threat abatement action to slow the rate of biodiversity loss and conserve threatened species and ecological communities. Delivery of these purposes establishes the biodiversity offsets scheme which includes a framework to avoid, minimise and offset the impacts of proposed development, consistent scientific assessment and quantification methodologies, and a system for voluntary conservation of land (biodiversity stewardship agreements).

Within this structure lies the concept of serious and irreversible impacts (SAII), which is about protecting those threatened species and threatened ecological communities most at risk of extinction from potential development. Clause 6.7 of the *Biodiversity Conservation Regulation 2017* (NSW) provides four principles for determining whether a SAII may arise through a development:

> 6.7 Principles applicable to determination of "serious and irreversible impacts on biodiversity values" (section 6.5(1))
>
> (1) This clause applies for the purposes of determining whether an impact on diversity values is a serious and irreversible impact for the purposes of the biodiversity offsets scheme.
>
> (2) An impact is to be regarded as serious and irreversible if it is likely to contribute significantly to the risk of a threatened species or ecological community becoming extinct because—
>
> (a) it will cause a further decline of the species or ecological community that is currently observed, estimated, inferred or reasonably suspected to be in a rapid rate of decline, or
>
> (b) it will further reduce the population size of the species or ecological community that is currently observed, estimated, inferred or reasonably suspected to have a very small population size, or

(c) it is an impact on the habitat of the species or ecological community that is currently observed, estimated, inferred or reasonably suspected to have a very limited geographic distribution, or

(d) the impacted species or ecological community is unlikely to respond to measures to improve its habitat and vegetation integrity and therefore its members are not replaceable.

(3) For the purpose of this clause, a decline of a species or ecological community is a continuing or projected decline in—

(a) an index of abundance appropriate to the taxon, or

(b) the geographic distribution and habitat quality of the species or ecological community.

The NSW Government has identified the Box Gum Woodland TEC is at risk of SAII in respect of items (2)(a) and (b). ARTC notes the potential effect of the I2S project on the TEC, compared to the remaining extent of the constituent PCTs and assumed historic clearing in light of criteria (2)(a) and (b) above.

The I2S Project design has, as noted above, sought to avoid and impacts to the TEC. The remaining impact of 39.08 hectares is presented below against the assumed remnant extent and proportion previously considered to be cleared of each PCT.

Table 3 Project impacts on Box Gum Woodland PCTs and associated Bio Net PCT Data

PCT	Project impact (ha)	Project distribution	Percent assumed cleared	Current remnant extent (ha)	Bio net comments
PCT 266	14.2	Occurs on rocky slopes with shallow skeletal soils associated with the foothills of Bethungra Range	94	50000	Miniscule White Box woodland remains with a native ground cover but White Box paddock trees are common mostly with a weedy ground cover.
PCT 276	1.49	Occurs on lower slopes and alluvial floodplain flats.	90	4000	Yellow Box woodland on flats would have been more restricted than similar box woodlands on slopes. Across the PCT's range, very little remains in good condition. These rich soil flats have been nearly totally cleared.
PCT 277	29.96	Occurs on lower slopes and gently undulating areas	94	30000	This community would have been one of the most widespread communities on the upper south western slopes and adjacent tablelands. Most mapping and surveys point to most of this community having been extensively cleared
PCT 347	0.43	Occurs on hillslopes and undulating terrain associated with the foot slopes and outcropping rocky slopes of the Bethungra Range.	63	4500	Coverage estimated only. Composition varies with landform and grazing activity.

Notes:
Refer to BioNet Plant Community Type data for notes regarding the accuracy and basis for the remnant and pre-European ranges of the PCTs, extent cleared and remaining and the method of these estimations. Comments column drawn from Bio Net data.

On-going threats to the Box Gum Woodland TEC exist through continued clearing due to agricultural practices and infrastructure provision, along with habitat degradation through the loss of ground storey plant communities from grazing practices and the infiltration of weed species into the DNG.

The Biodiversity Offsets Scheme recognises that there are some types of serious and irreversible impacts that the community expects will not occur except in certain circumstances. SSI, such as the I2S Project, is one of the exceptions. Section 7.16 of the BC Act requires the Minister for Planning, as the decision maker for SSI to form an opinion on whether a proposal is likely to have SAII on biodiversity values and, if so, to considers those impacts and determine whether any additional and appropriate measures will minimise those impacts if approval is to be granted.

A&AM proposal

To compensate for the project impacts to the Box Gum Woodland TEC in the landscape local to the project footprint, ARTC proposes the following measures:

- Establishment of conversation arrangements in perpetuity over a portion of Lot 3 DP591854 (960 Ironbong Road, Bethungra, known as 'Gum Flat');
- Registration of a Biodiversity Stewardship Site (BSS) upon the completion of a Biodiversity Stewardship Agreement (BSA) with the NSW Department of Climate Change, Energy, the Environment and Water. The BSA is to be prepared following Ministerial approval of the I2S CSSI;
- To undertake site management and rehabilitation of the BSS, comprising:
  - Box Gum Woodland rehabilitation and management within the site over an area equivalent to the impact area documented in the I2S BDAR, being approximately 39.08 hectares; and
  - A total site area in the order of approximately 123.1 hectares, to provide for broader landscape connectivity outcomes, conservation of habitat corridors including Grey Box Woodland, an EPBC listed TEC..
- Funding for the ongoing cost of land management, restoration and monitoring activities through the BSA. As additional and appropriate measures to reduce the risk of SAII affecting the Box Gum Woodland TEC, the BSA would be drafted to preclude trading of credits generated from the BSS.

Detail of the planned management and rehabilitation arrangements are provided in the attached technical note.

Proposal area

The proposed rehabilitation area is located within 'Gum Flat', 960 Ironbong Road, Bethungra (Lot 3 DP59184). The property is freehold and is owned by ARTC. The Illabo to Stockinbingal Rail Corridor will be excised from the lot, with the BSS to be retained in the non-railway corridor residual lot.

The proposed extent is approximately 123.1 hectares, including approximately 45.7 hectares of Box Gum Woodland TEC, as shown on Figure 2.

As seen in the figure, the rehabilitation area will be delivered to the east and west of the railway corridor, with consistent management outcomes be prepared across the two areas. The rehabilitation area will comprise two Management Zones, delineated according to the existing condition and management actions required to manage the native vegetation in perpetuity:

- MZ 1 – Woodland
- MZ 2 – Derived Natural Grassland

The exact boundaries of the BSS and the management zones would be finalised during detailed preparation of the BSA application in consultation with the Nature Markets and Offsets (NMO) Division

within DCCEEW. Consequently, minor revisions are anticipated, but would be generally in accordance with the extent shown on the figure.

The proposed rehabilitation area, comprises the following Management Zones in Figure 2 below (refer also to Table 4.1 of the attachment). The Management Zones encompass the contiguous areas of remnant woodland on the site and areas of Box Gum Woodland DNG that abuts these woodland areas and vegetation corridors on adjacent landholdings.

Table 4 Proposed BSA Site TEC areas

MANAGEMENT ZONE	TECS AND OTHER PCTS	West rehabilitation area (ha)	East rehabilitation area (ha)	Total (ha)
MZ 1 – Woodland	Box Gum Woodland CEEC (PCT 276 and 277)	5.0	3.8	8.8
	Grey Box Woodland EEC (PCT 76)	9.5	0	9.5
	River Red Gum Woodland (PCT 79)	33.7	0	33.7
	White Box – Blakely's Red Gum White Cypress Pine shrubby woodland (PCT 346)	0	8.6	8.6
	Total	**48.2**	**12.4**	**60.6**
MZ 2 – Derived Natural Grassland	Box Gum Woodland CEEC (PCT 276 and 277)	16.9	20.0	36.9
	Grey Box Woodland EEC (PCT 76)	4.9	2.3	7.2
	River Red Gum Woodland (PCT 79)	6.6	0	6.6
	White Box – Blakely's Red Gum White Cypress Pine shrubby woodland (PCT 346)	0	11.8	11.8
	Total	**28.4**	**34.1**	**62.5**
GRAND TOTAL		**76.6**	**46.5**	**123.1**
TOTAL Box Gum Woodland CEEC (PCT 276 and 277)				**45.7**
TOTAL Grey Box Woodland EEC (PCT 76)				**16.7**
GRAND TOTAL TEC				**62.4**

The eastern area excludes a small area, of approximately 6900m^2, where the previous landowner undertook trial rehabilitation actions. This area will be included in the BSA, but is omitted from the area calculations above in order to avoid any consideration that previous public funding supported this restoration work (it is understood that the work was self funded).

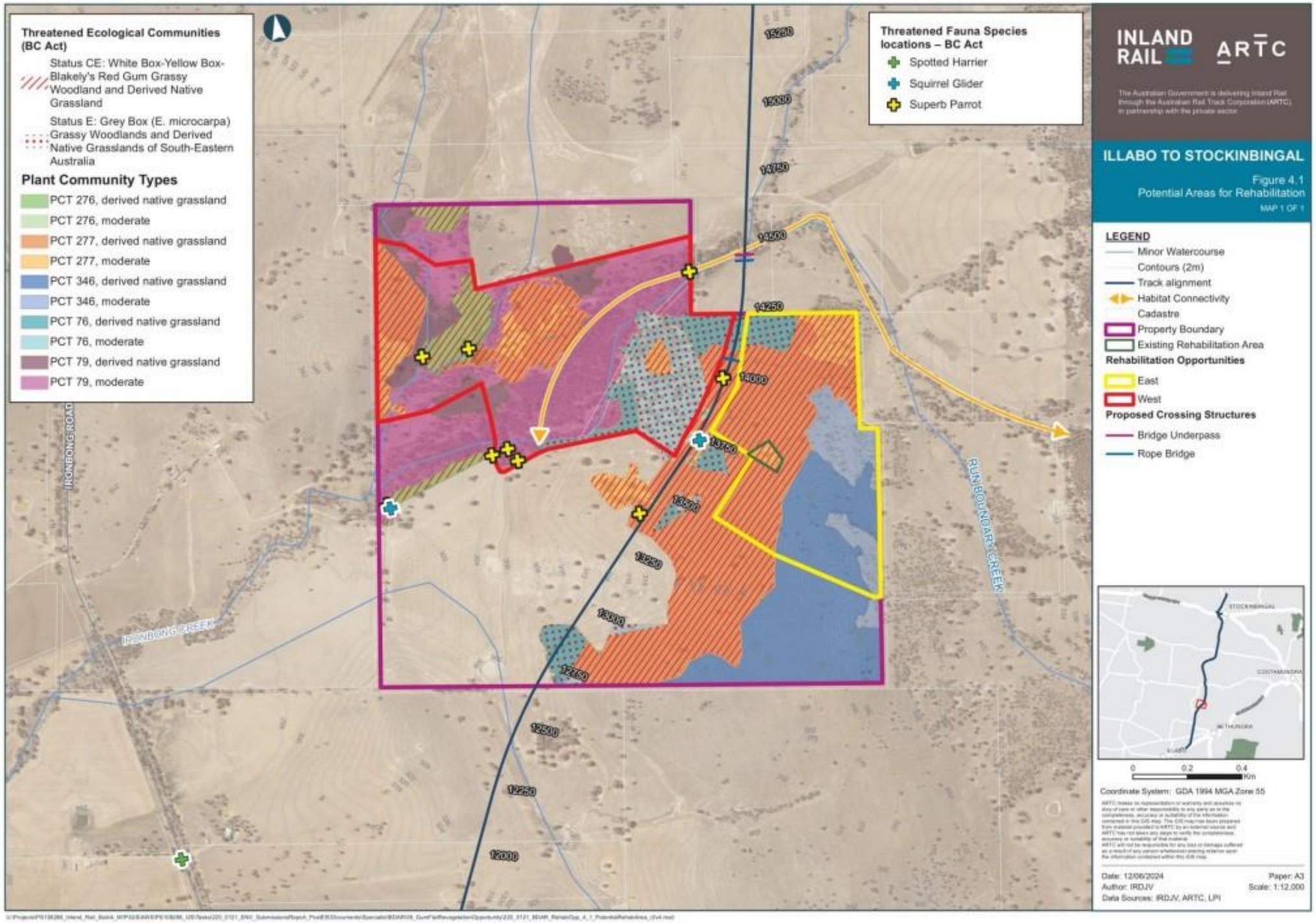

Figure 2: Proposed BSA extent and rehabilitation area

Ecosystem composition of the rehabilitation area

West of the railway line, the Box Gum Woodland TEC occurs as small patches and areas of DNG. This reflects historic clearing practices, the watercourse and landforms. Box Gum, in either woodland or DNG formation, is prevalent on the eastern area, which is the higher ground away from the creek line. The ecosystems transition between Box Gum and Grey Box through this area depending on landform. Far eastern areas include patches of PCT 346. Further east, on the adjacent property, vegetation corridors follow the watercourses, with other patches of woodland in proximity to the common property boundary. Table 5 summarises the vegetation composition of the proposed rehabilitation area.

Table 5 Proposed BSS PCT condition areas

	West rehabilitation area		East rehabilitation area		Total	
	Area (ha)	% of area	Area (ha)	% of area	Area (ha)	% of area
Box Gum Woodland						
Moderate	5	7%	3.8	8%	8.8	7%
Low - DNG	16.9	22%	20	43%	36.9	30%
Subtotal	*21.9*	*29%*	*23.8*	*51%*	*45.7*	*37%*
Other TECs & PCTs	54.7	71%	22.7	49%	77.4	63%
Total	76.6	100%	46.5	100%	123.1	100%

Compared with the project impact to approximately 15.6 hectares of moderate condition vegetation and approximately 23.5 hectares of DNG, poor and planted vegetation, the proposed rehabilitation area offers a good outcome given the degree of fragmentation of Box Gum Woodland in moderate condition across the landscape. The outcome will achieve, over time, a patch of approximately 45.7 hectares (as noted in the technical report, the separation of the patch by the railway corridor of less than 100m is not considered to be severance).

It is noted that the Gum Flat site includes two patches of Box Gum Woodland which are not included in the proposed BSS area. These locations are excluded as they are not contiguous with other areas of the BSS or existing remnant woodland. Accordingly, inclusion of these sites would result in isolated patches, contrary to the intent to conserve and enhance landscape connectivity. The overall balance of Box Gum Woodland to other TECs and PCTs within the proposed rehabilitation area is reflective of the landscape presence of the Box Gum Woodland TEC in comparison to other entities, whilst the moderate to DNG ratio is similarly consistent with the overall pattern of vegetation quality in the landscape.

Rehabilitation and Management Activities

The attached technical note provides detail on the management practices to be undertaken and the ecosystem rehabilitation potential that is achievable on the site. These actions will increase vegetation integrity and threatened species habitat. Further details and implementation programs would be developed in and provided in the future Biodiversity Stewardship Site Assessment Report (BSSAR) and BSA in consultation with the NMO Division.

Specific management activities would be tailored to the two management zones and the condition of vegetation present across the areas. Actions are outlined in the technical note, and would include:

- Grazing management, through stock exclusion and fencing arrangements;
- Native vegetation management within grassland areas, including:
  - An initial goal for the revegetation is to improve connectivity between patches of Box-Gum Woodland TEC, with corridors having a minimum of 30m wide to account for any edge effect;
  - Planting of canopy species that are representative of the identified PCT and have low likelihoods of regenerating naturally in the short-term;
  - Prioritisation of planting in DNG areas of PCT 277 to reconnect remaining patches; and
  - Monitoring of natural regrowth of ground cover vegetation and targeted planting as necessary;
  - Native vegetation management within woodland areas would focus on natural regeneration, monitoring of ground cover vegetation and targeted ground cover planting;
- Weed and pest animal control;
- Fire management, where appropriate; and
- On-going monitoring with adaptive management arrangements.

The supporting technical note outlines preliminary restoration targets which have been identified to ensure that rehabilitated areas has the best opportunity to reach their associated PCT benchmarks. Strategic revegetation will be the main restoration method used to reach these benchmarks for tree cover and abundance. Species for planting would be consistent with specific PCT and be consistent with PCT description in NSW Vegetation Database. Seed source for selected species will be established from site collection on the target property and from associated communities within the vicinity of the site.

Strategic outcomes to address SAII risks

ARTC considers these additional and appropriate measures provide a firm and deliverable conservation outcome that minimise the impact to the Box Gum Woodland TEC that could occur as a consequence of the construction of the I2S project.

Impacts to the TEC arise, as discussed above, from edge effects, severance and fragmentation arising from on-going rural activities and infrastructure works. Whilst these impacts are not limited to the local area surrounding the I2S project footprint, the I2S landscape is a key range for the TEC given the disposition of the TEC across the Western Slopes.

The preservation and rehabilitation of vegetation on the site, with the substantial proportion of Box Gum Woodland in the rehabilitation area, will provide a large, coherent patch of vegetation of approximately 45.7 hectares with broad connectivity into the landscape. The scale of the community, as part of the ultimate approximately 123.1 hectares woodland patch, would over time maintain and protect the mix of communities and limit the influence of edge effects on habitat integrity. This large patch should be seen in contrast to the existing fragmented and isolated presence of Box Gum Woodland through the I2S landscape.

The resulting larger patch would supplement the vegetation of the Bethungra Range, with a substantial habitat area associated with both the riparian areas and the foothills of the range. Within the site,

rehabilitation and protection would increase connectivity in the landscape along and from Run Boundary Creek and connect with the more extensive vegetation of the Bethungra Range.

- Increasing the scale and integrity of patches of TECs and sustaining connectivity between them;
- Expanding Box Gum Woodland of moderate condition on the site almost sixfold, from approximately 6.8 hectares to approximately 45.7 hectares, which would likely form one of the largest patches of Box Gum Woodland across the I2S landscape area;
- The ability to revegetate both canopy vegetation that is generally otherwise present only as paddock trees, along with understorey regrowth to diversify floristic communities.
- Consequentially, increasing connectivity for flora and fauna including threatened species known to occur within the site (Superb Parrot and Squirrel Glider).
- Providing for protection and management of existing Red Gum Woodland adjacent to Run Boundary Creek.
- Establishment of a wider corridor connection than currently present along Run Boundary Creek and to the vegetation to the east of the site. Corridor width would increase from 30m at its current narrowest point to over 500m.

Next Steps

We trust this information provides the Department and the Minister with sufficient detail on the measures intended to reduce the potential impact of the project on the Box Gum Woodland TEC.

If you wish to discuss any of the above further, please contact Wayne Window on 0447 553 401 or at wwindow@inlandrail.com.au.

Yours sincerely

James Kennedy
Delivery Director – Albury to Parkes (A2P)