

Review of Environmental Factors Addendum

Ryde to Pymble Pipeline Upgrade

Determination

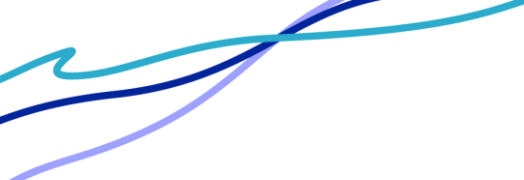
This Review of Environmental Factors Addendum (REFA) assesses potential environmental impacts of proposed changes for the Ryde to Pymble Pipeline Upgrade. The REFA was prepared under Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act), with Sydney Water both the proponent and determining authority.

The Sydney Water Project Manager is accountable for ensuring the proposed change is carried out as described in this REFA and the *Ryde to Pymble Pipeline Upgrade Review of Environmental Factors* (September 2025) (approved REF). Additional environmental impact assessments may be required if the scope of work or the work methods described in this REFA change significantly following determination.

Certification

I certify that I have reviewed and endorsed this REFA and, to the best of my knowledge, it is in accordance with the EP&A Act and the Environmental Planning and Assessment Regulation 2021 (EP&A Regulation). The proposed change has been considered against matters listed in section 171 and section 171A (Appendix A) and the guidelines approved under section 170 of the EP&A Regulation. The information it contains is neither false nor misleading.

Prepared by:	Reviewed and endorsed by:	Endorsed by:
Mitch Jones Environment, Sustainability and Approvals Manager McConnell Dowell & Gamuda Joint Venture Date: 03/08/2026	Prinya Khamphounvong Senior Environmental Scientist Sydney Water Date: 21/08/2026	Dean Dallwitz Project Director Sydney Water Date: 21/08/2026



Decision Statement

This Review of Environmental Factors Addendum (REFA) assesses the potential environmental impacts of proposed changes to vegetation impacts. The REFA was prepared under Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act), with Sydney Water both the proponent and determining authority.

The Sydney Water Project Manager is accountable for ensuring the proposed change is carried out as described in this REFA and the Ryde to Pymble Pipeline Upgrade (September 2025) (approved REF). Additional environmental impact assessments may be required if the scope of work or work methods described in this REFA change significantly following determination.

The main potential environmental impacts of the proposed change include impacts to biodiversity, amenity and non-Aboriginal heritage due to additional vegetation clearing in the existing construction corridor. There are no potential impacts from the proposed change during operation.

The proposed change will not be carried out in a declared area of outstanding biodiversity value and is not likely to significantly affect threatened species, populations or ecological communities, or their habitats. Therefore, a Species Impact Statement (SIS) and/or Biodiversity Development Assessment Report (BDAR) is not required.

Given the nature, scale and extent of impacts and implementation of the mitigation measures outlined in this REFA, the proposed change is unlikely to have a significant impact on the environment. Therefore, we do not require an Environmental Impact Statement (EIS) and the proposed change may proceed.

Determined by:

Elissa Howie


**A/Senior Manager
Environment and Heritage
Sydney Water
Date: 25 August 2026**

1 Proposed change description

Table 1-1 Proposed change need, objectives and consideration of alternatives

Aspect	Relevance to proposal
Approved REF	Review of Environmental Factors – Ryde to Pymble Pipeline Upgrade (September 2025)
Proposed change need and objectives	The proposed change is needed to safely construct the Ryde to Pymble Pipeline Upgrade project. This project is required to meet Sydney Water's commitment to water resilience within the Prospect Water System. The proposed change need and objectives are consistent with the approved REF.
Proposed change description and methodology	Proposed changes to vegetation impacts The proposed change involves removing additional vegetation in the construction corridor assessed in Section 2.2 of the approved REF. These changes are shown in Figures 1-13. The proposed change includes retaining 47 of the original 100 remnant trees assessed for removal under the approved REF. Additional tree removal is proposed, including 52 remnant trees, 22 planted native trees and 32 exotic trees. This takes the project total for proposed removed trees from 100 to 159 (see Table 4-2). The proposed change also includes additional tree pruning of 301 trees across the construction corridor. Flora and Fauna Assessment The ecological impacts associated with the proposed change were assessed by a suitably qualified ecologist through an updated Flora and Fauna Assessment (FFA). To maintain consistency with the approved REF, the assessment adopted the methodology used in the Biodiversity Assessment Report (Aurecon, 2025). This included: • assessing impacts to remnant trees • evaluating the potential effects of the additional vegetation impacts on ○ native vegetation ○ fauna habitat ○ threatened species ○ threatened ecological communities (TECs) and Matters of National Environmental Significance (MNES). The significance of these impacts was assessed in accordance with the <i>Biodiversity Conservation Act 2016</i> (NSW), including consideration of the Biodiversity Offsets Scheme (BOS), and the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act) to determine whether the proposed change would trigger any additional statutory obligations or approval requirements under either Act.

Arboricultural Assessment

An arboricultural assessment was undertaken by the project arborist and considered all trees (remnant, native planted and exotic) within and adjacent to the construction corridor.

The assessment evaluated each tree's theoretical Notional Root Zone (NRZ), Structural Root Zone (SRZ) and canopy to:

- determine the extent of potential construction impacts
- identify opportunities for tree retention
- determine where tree removal may be required to facilitate construction.

Where further investigation was required, targeted root mapping using non-destructive digging (NDD) was undertaken to verify the presence and location of structural roots. Additional root investigations will continue throughout construction. This will inform opportunities to avoid or minimise impacts through refinement of construction methodologies and confirm tree retention where practicable.

Additional proposed changes

In addition to the proposed change described above, project refinements have been identified through detailed design and constructability reviews. These refinements reduce the environmental impacts previously assessed in the approved REF. These refinements include:

- reducing the number of ancillary facilities, with the following compounds assessed in the approved REF no longer required (refer to Figure 14 to Figure 16):
 - Yeramba Park – 1 Acacia Close, Turramurra
 - Culloden Road – 211 Culloden Road, Macquarie Park
 - Potts Hill Reservoir – Lot 107 DP1153671
- reducing the footprint of the Kissing Point Road Retrieval Pit compound (refer to Figure 17), reducing impacts to native vegetation following consultation with Ku-ring-gai Council and local residents,
- removing approximately 900 metres (m) of open-trenched pipeline works between Monteith Street and Roland Avenue (Figure 14) following design optimisation. This refinement reduces construction, community and vegetation impacts. The review also considered trees previously assessed under the approved REF, resulting in 47 of the 100 remnant trees originally proposed for removal being retained
- moving the pipeline connection point from Roland Avenue to the corner of Monteith Street and Kissing Point Road.

These refinements demonstrate the ongoing application of the avoid and minimise hierarchy throughout detailed design and construction planning.

These proposed changes remove scope and reduce impacts from the approved REF, therefore are not assessed further in this document.

Justification for proposed change

The proposed change is needed to safely construct the project. Detailed design confirmed that more working space was required to safely undertake excavation, shoring, pipe installation, plant operation, access, material handling and restoration activities. Therefore, more trees within the construction corridor will be impacted than identified in the approved REF.

Design review

Opportunities to avoid and minimise impacts to trees through changes to the pipeline design and location were investigated. This included reviewing alternative pipeline alignments within the pipeline corridor. However, there were no opportunities for alignment refinement due to existing overhead and underground utilities within the construction corridor. Alternative pipeline corridors were considered and ruled out during the development of the approved REF and were not further considered in this REFA.

Constructability review (review of how the project can be built)

Given design changes were not feasible the project team reviewed:

- construction methodologies
- temporary work areas
- plant access arrangements
- excavation extents
- equipment selection.

Working areas were reviewed to minimise impacts to tree root zones and canopies wherever practicable. This review identified opportunities to further refine the construction footprint and construction methodology, including reducing the size of the Kissing Point Road retrieval site compound.

The constructability review also informed the development of a Tree Impact Validation Procedure. The procedure will be implemented during project delivery to ensure that all practical and feasible avoidance and minimisation measures have been investigated and documented before any tree is confirmed for removal. The review also identified opportunities to retain a further 47 trees that were previously assessed for removal in the approved REF. However, some additional vegetation impacts for the proposed change cannot be avoided.

The proposed change enables delivery of the approved project while remaining consistent with the proposal need, project objectives and environmental outcomes assessed in the approved REF.



Figure 1 - Location of proposed change and associated environmental constraints - Ku Ring Gai (1 of 4)

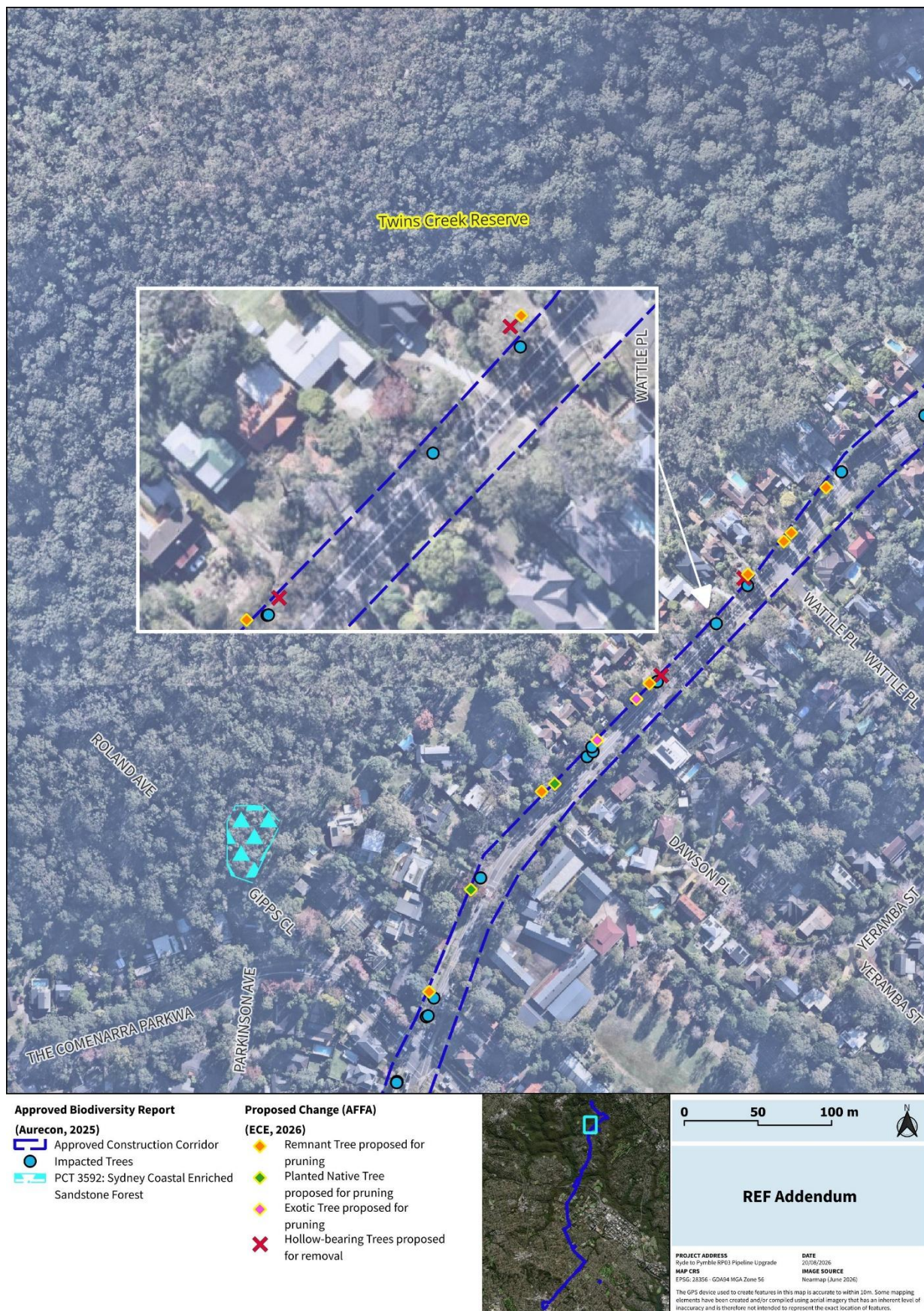


Figure 2 - Location of proposed change and associated environmental constraints - Ku Ring Gai (2 of 4)

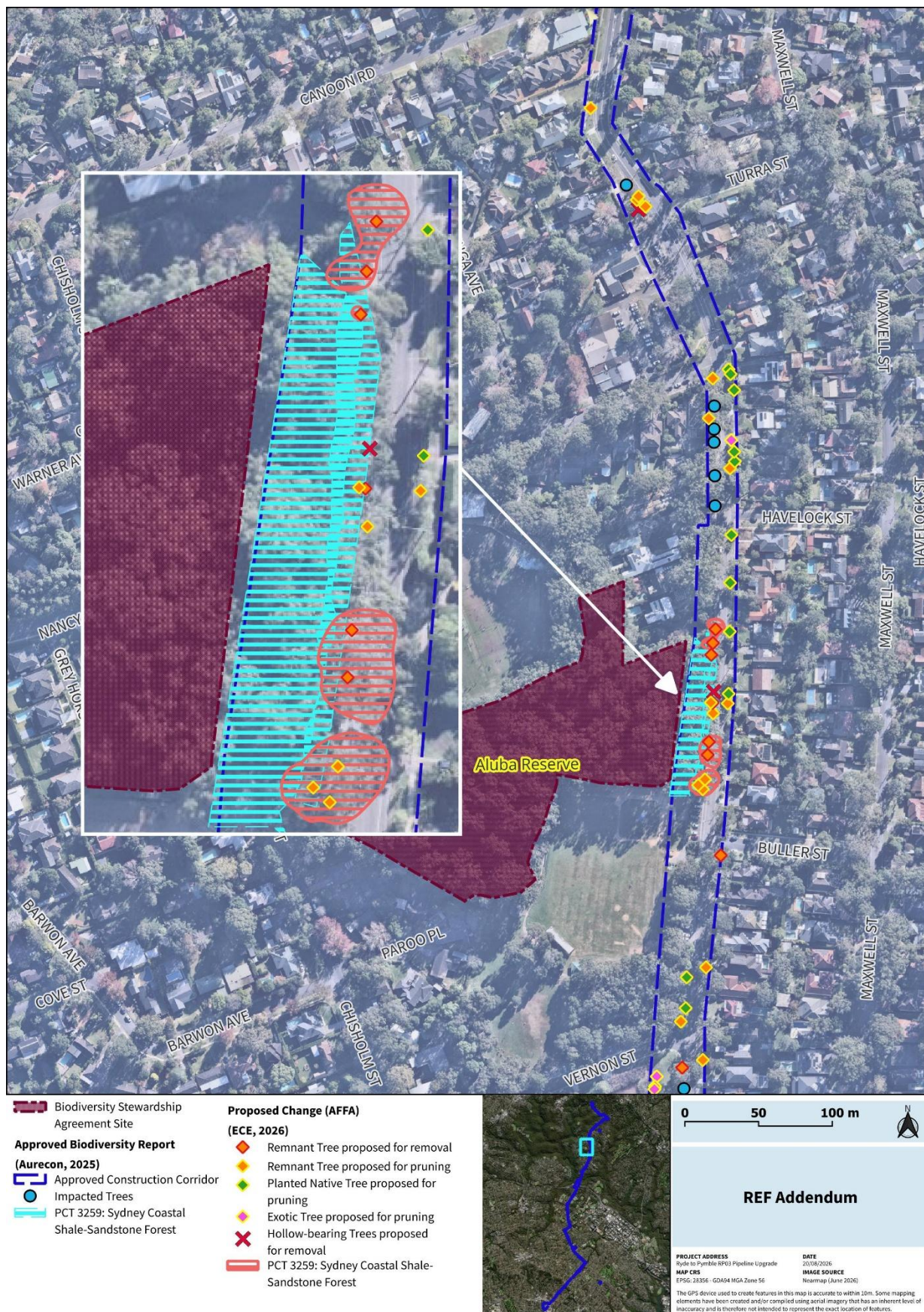


Figure 3 - Location of proposed change and associated environmental constraints - Ku Ring Gai (3 of 4)

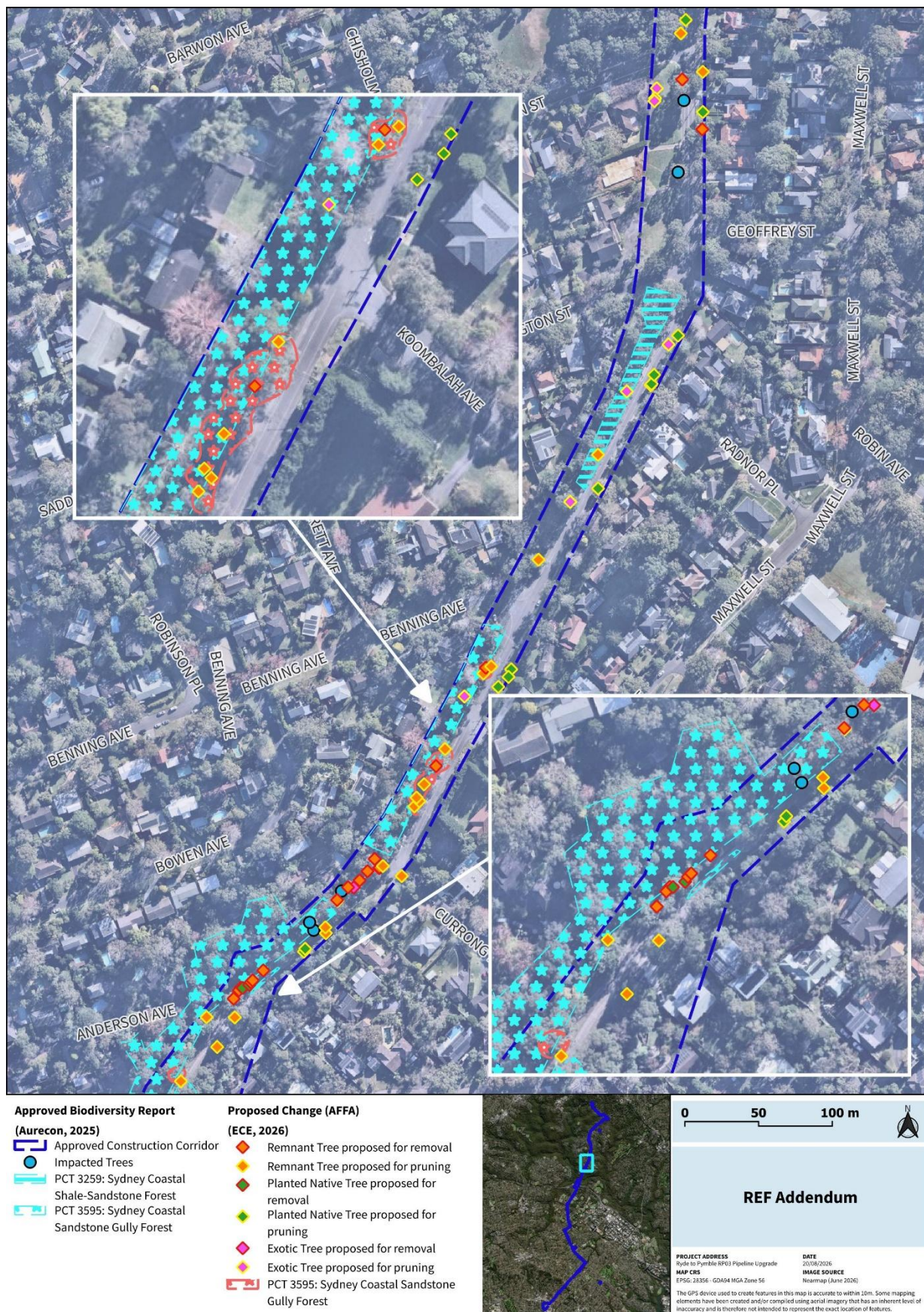


Figure 4 - Location of proposed change and associated environmental constraints - Ku Ring Gai (4 of 4)

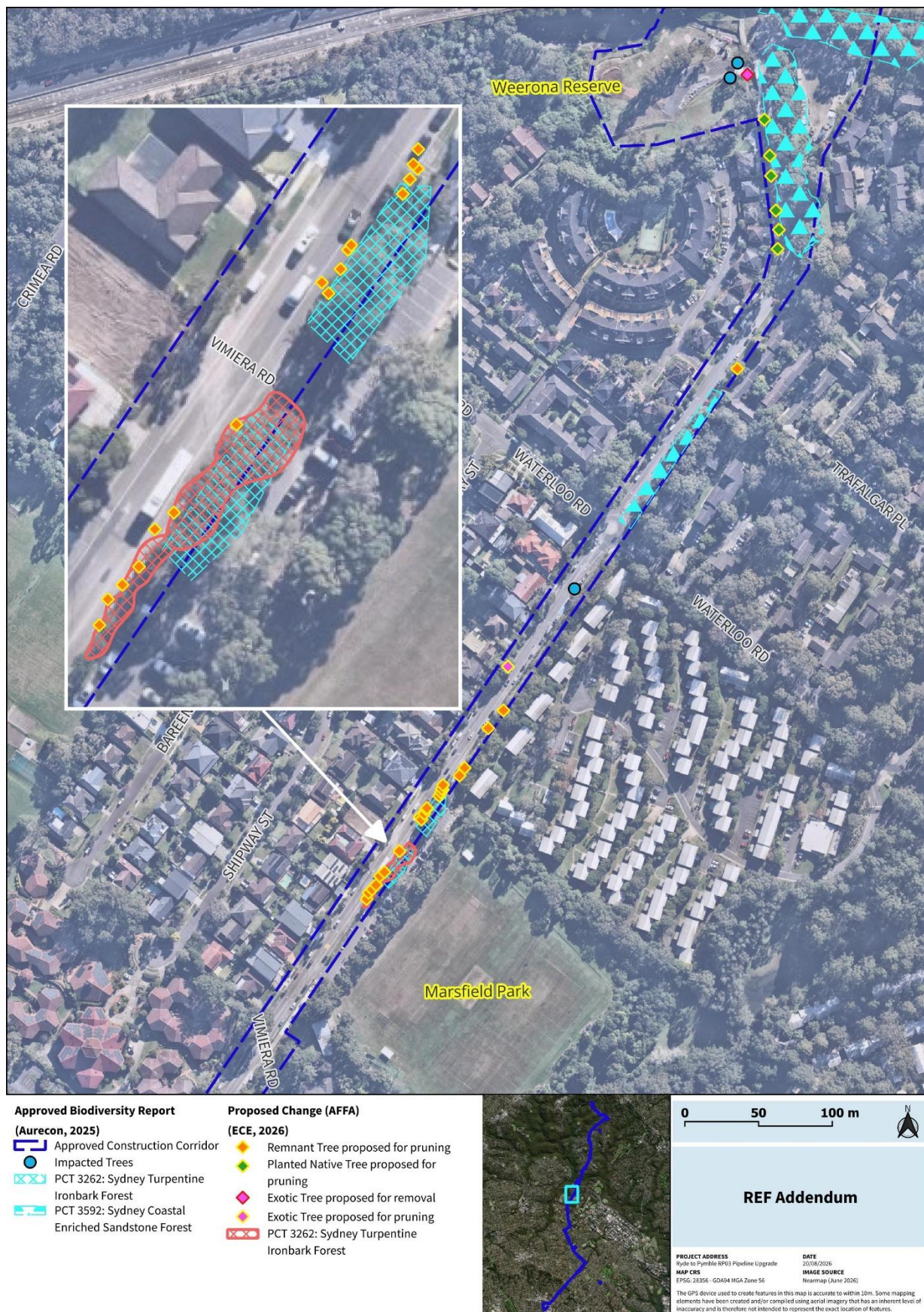


Figure 5 - Location of proposed change and associated environmental constraints - Ryde (1 of 9)



Figure 6 - Location of proposed change and associated environmental constraints - Ryde (2 of 9)

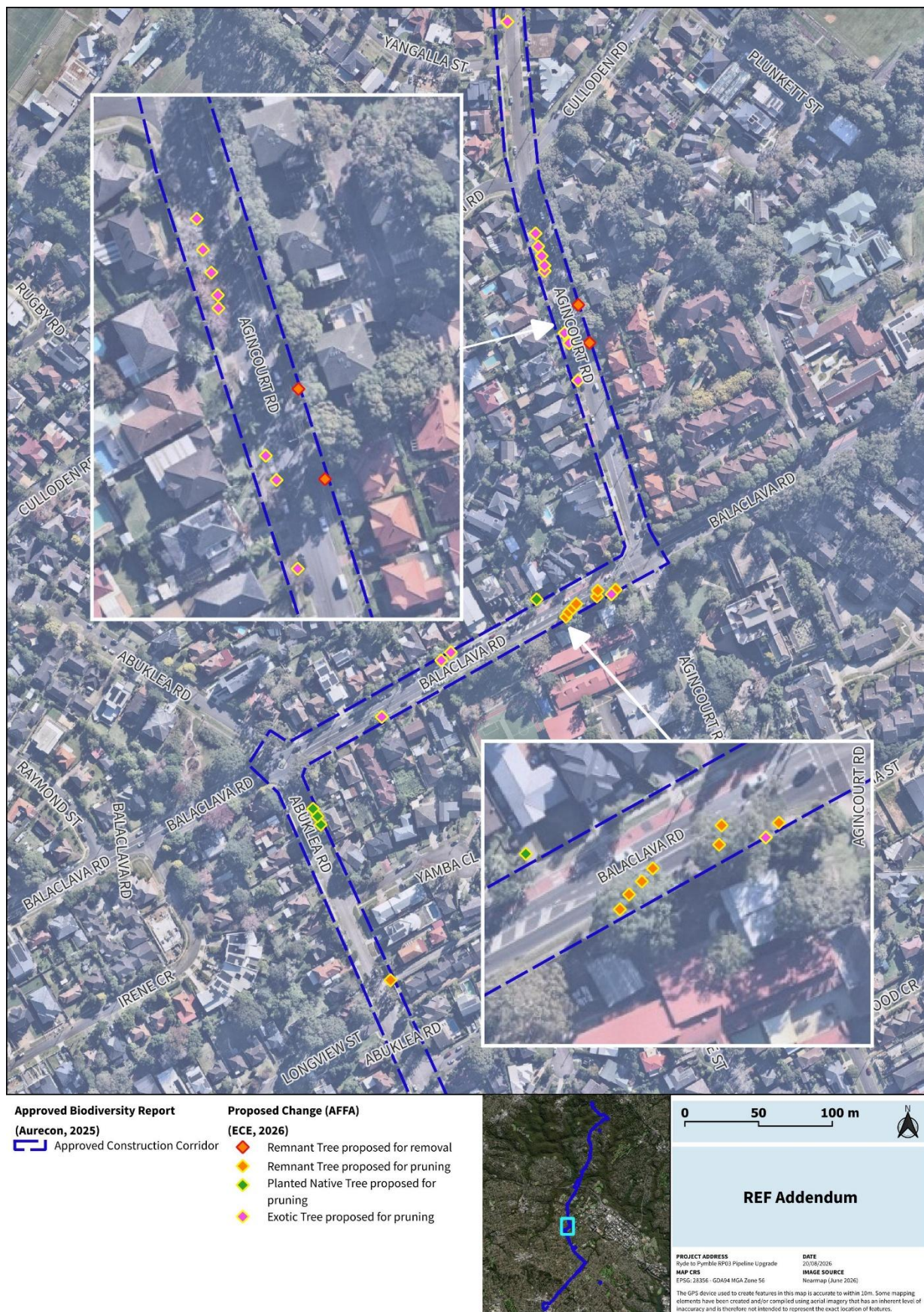


Figure 7 - Location of proposed change and associated environmental constraints - Ryde (3 of 9)

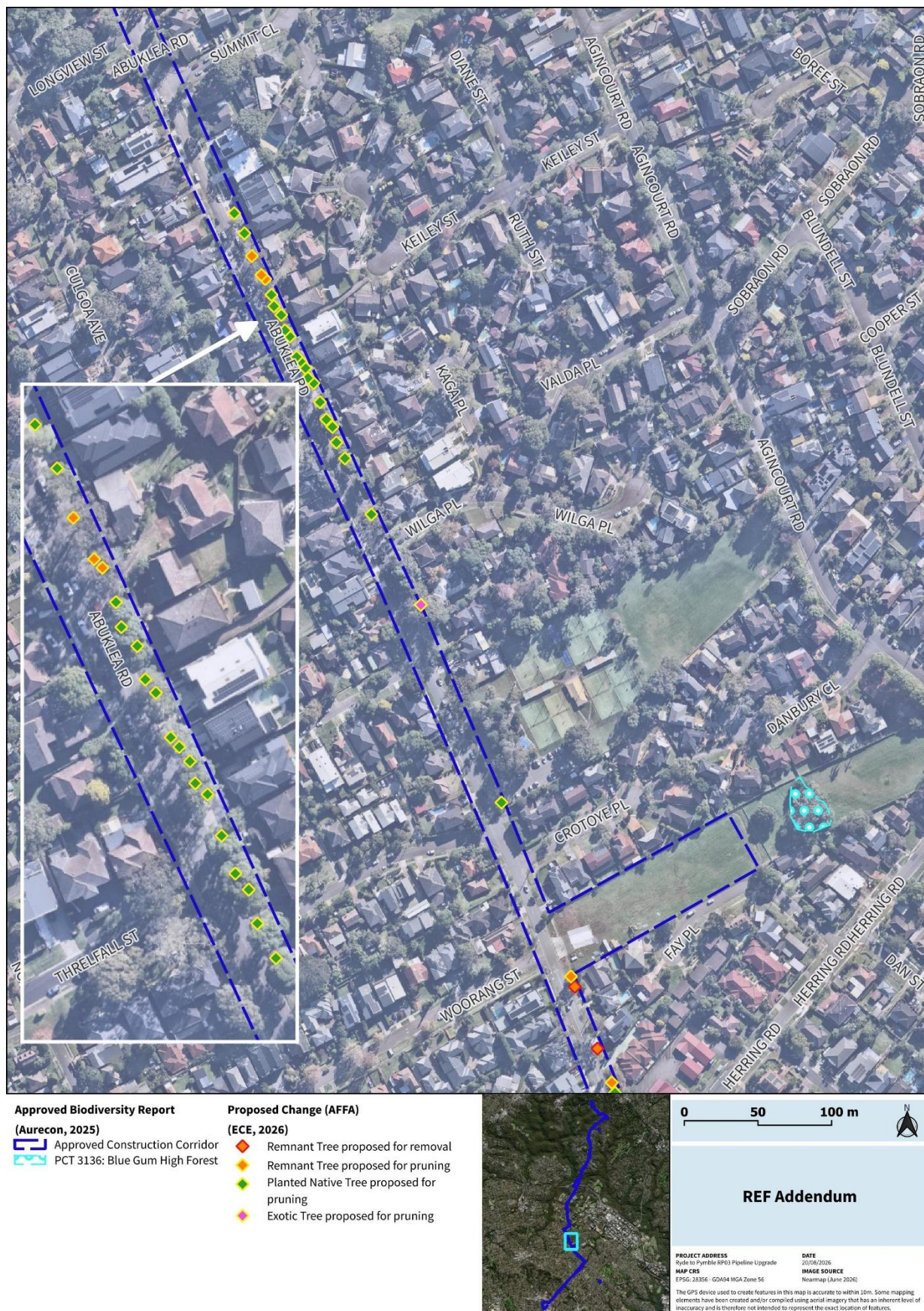


Figure 8 - Location of proposed change and associated environmental constraints - Ryde (4 of 9)

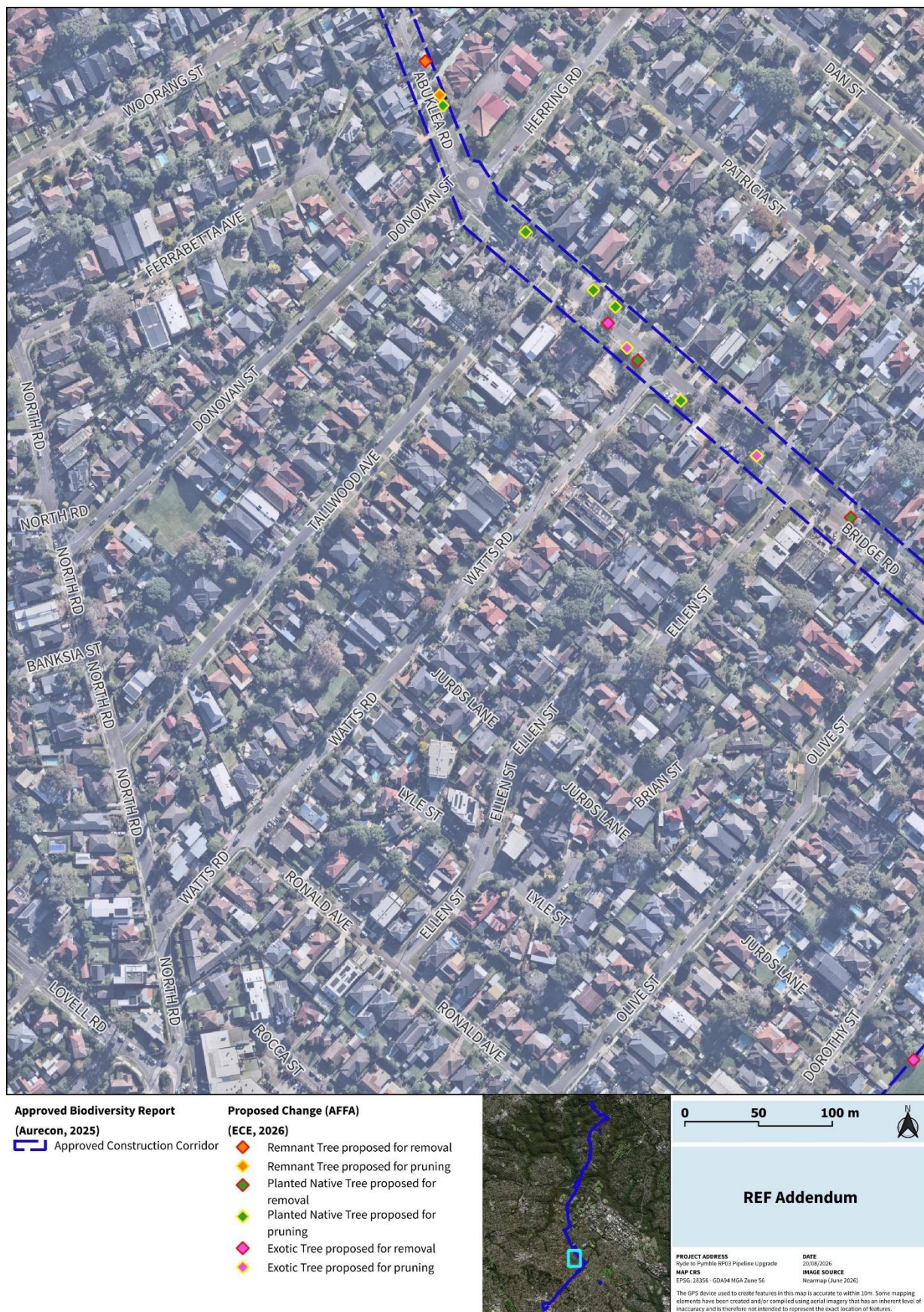


Figure 9 - Location of proposed change and associated environmental constraints - Ryde (5 of 9)



Figure 10 - Location of proposed change and associated environmental constraints - Ryde (6 of 9)

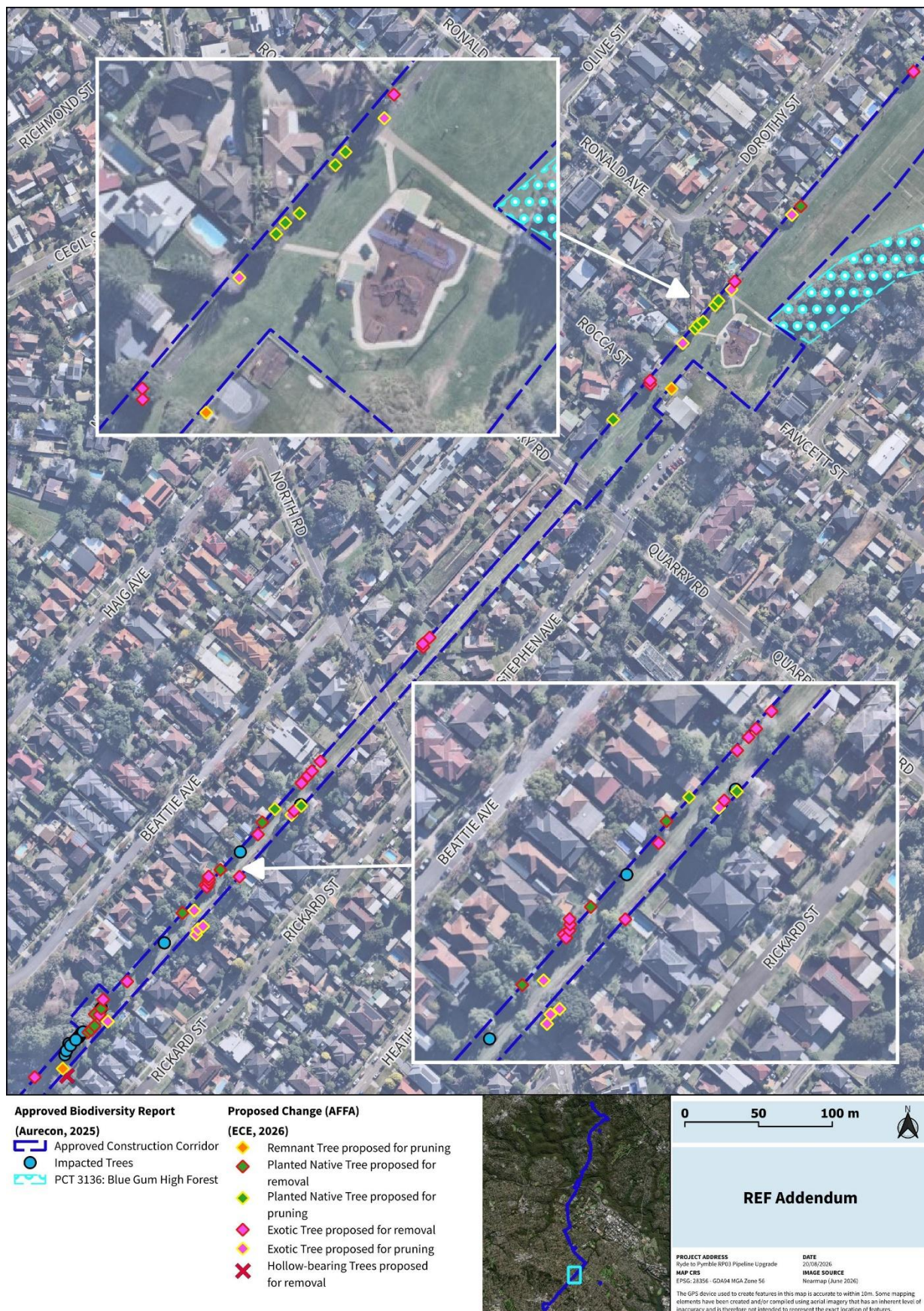


Figure 11 - Location of proposed change and associated environmental constraints - Ryde (7 of 9)

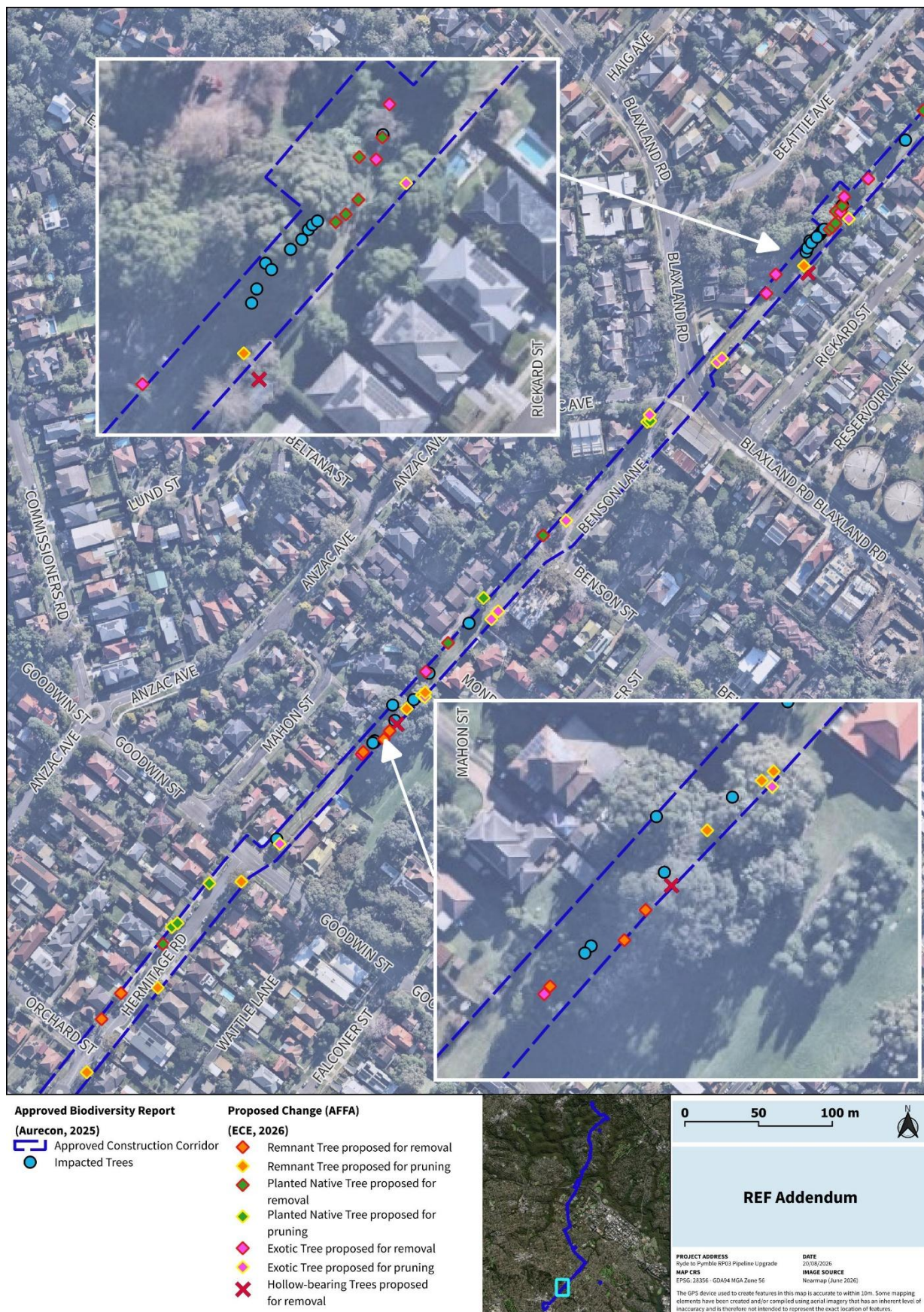


Figure 12 - Location of proposed change and associated environmental constraints - Ryde (8 of 9)



Figure 13 - Location of proposed change and associated environmental constraints - Ryde (9 of 9)



Figure 14 - Additional proposed changes - removal of open-trenched pipeline works between Monteith Street and Roland Avenue and removal of Yeramba compound



— Indicative construction compound

— Descoped section

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NearMap



Figure 15 - Additional proposed changes - removal of Culloden Road compound



— Indicative construction compound

— Descoped section

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 and Water
 NSW Spatial Services
 Australian Government Department of Environment
 NearMap



Figure 16 - Additional proposed changes - removal of Potts Hill Reservoir compound

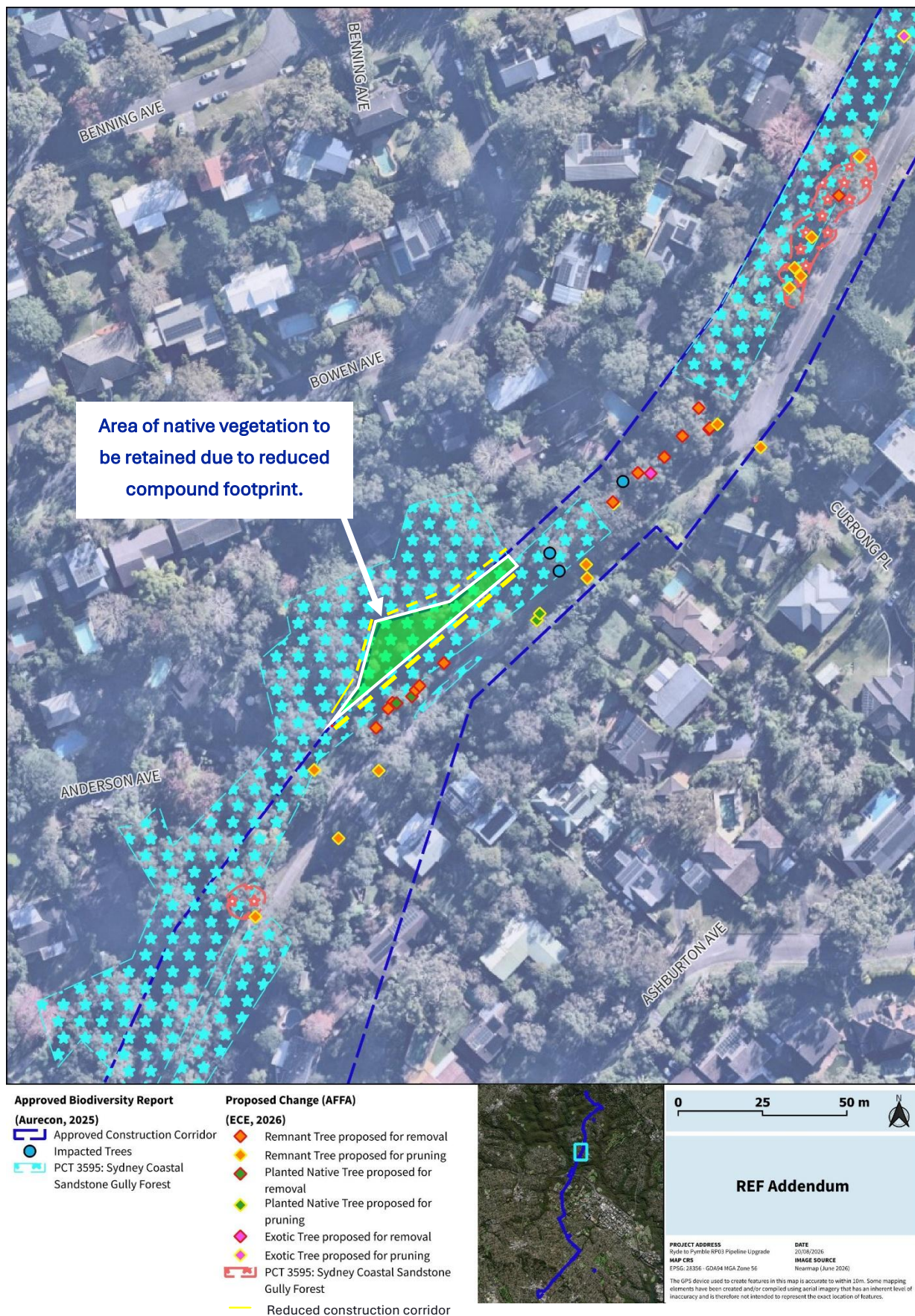


Figure 17 - Kissing Point Road Retrieval Pit Compound reduced footprint

2 Engagement

Consultation matters in addition to those considered in the approved REF are detailed below.

2.1 Engagement and stakeholder consultation

The approach to community and stakeholder consultation is guided by Sydney Water's community and stakeholder engagement guidelines and project Community and Stakeholder Engagement Plan (CSEP).

During the development of this REFA, community and stakeholder engagement was undertaken with relevant stakeholders, including the City of Ryde Council, Ku-ring-gai Council, nearby residents and affected landowners. Engagement outcomes have informed the project delivery methodology and the environmental assessment documented in this REFA.

On 29 June 2026, a community notification introducing the proposed change was distributed to over 4835 residents within 100 m of the construction corridor and advertised on the project webpage.

Communication and engagement about the proposed change included:

- mailed correspondence to over 4835 residents outlining proposed vegetation impacts, providing impact maps and a request for feedback
- two community information sessions across two Local Government Areas (LGAs):
 - Monday 6 July, Ryde Library with 5 attendees
 - Tuesday 7 July, Turramurra Community Hall with 43 attendees
- weekly interface meetings with both City of Ryde Council and Ku-ring-gai Council
- a site inspection at Kissing Point Road with Ku-ring-gai Council officers and a local Councillor on Tuesday 7 July
- several site-specific meetings with residents, including those located near the Kissing Point Road receival pit
- a site inspection at Kissing Point Road with the local State Member of Parliament on Monday 10 August
- development of a FAQ document to support the REFA which was published on the project website
- facilitating an open feedback period between 29 June and 19 July with 26 responses received from local residents.

In addition to the feedback period held during the development of the REFA, the Community & Stakeholder team remains contactable throughout project delivery to assist with ongoing enquiries and can be reached on:

Call: 1800 664 935

Email: rydepymblepipeline@sydneywater.com.au

Visit: www.sydneywater.com.au/ryde-to-pymble-pipeline

2.1.1 Response to community and stakeholder feedback

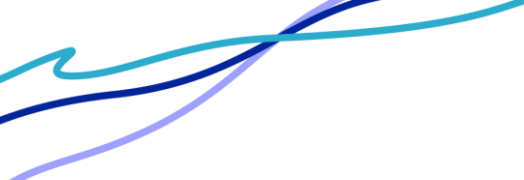
Feedback received from community members and stakeholders throughout the engagement process identified several key themes. These themes focused on environmental impacts, transparency of information, communication and engagement processes, construction methodology and requests for additional technical information. Key themes raised during the feedback period and how they have been considered and addressed has been outlined in Table 2-1. As part of the feedback period a total of 26 submissions were received, which were consistent with the themes identified above.

In response to feedback, the project team reviewed construction methodologies, traffic management considerations, compound arrangements and opportunities to further avoid or reduce environmental impacts where practicable.

Table 2-1 Key themes from community and stakeholder feedback

Key themes	Summary of feedback	How the feedback has been considered and addressed
Tree removal and biodiversity	Most feedback opposed the proposed removal and pruning of mature trees and requested greater avoidance of impacts, particularly Kissing Point Road, South Turramurra. Residents highlighted threatened ecological communities, wildlife habitat, canopy loss and neighbourhood character.	Additional trees were identified for potential removal to safely construct the pipeline, which initiated the need to develop the REFA. The consultation materials released in June 2026 to support the development of this REFA presented a conservative, worst-case estimate of potential tree impacts while investigations and design refinement were ongoing. While intended to provide transparency, this contributed to community concern and made it difficult to distinguish between potential and likely impacts. Investigations were undertaken and the design was refined to reduce impacts where practicable. This REFA assesses potential tree impacts after investigations and design refinement. Impacts to threatened ecological communities, wildlife habitat, canopy loss have been assessed through a Flora and Fauna Assessment (Appendix C) and discussed in Section 4 (Flora and Fauna) of this REFA. Potential amenity impacts are discussed in Section 4 (Social and Visual). Figure 1 to Figure 4 show impacts along Kissing Point Road, South Turramurra.
Transparency and information	Feedback requested information including supporting environmental studies, vegetation plans, arborist reports, quality-	The approved REF was published on the project website in December 2025. Supporting technical assessments were

Key themes	Summary of feedback	How the feedback has been considered and addressed
	assured maps and detailed design information.	published on the project website in July 2026. The REFA and supporting technical assessments will be published on the project website.
Engagement	Residents considered the feedback period and timing of community sessions insufficient and requested additional engagement and extensions to the feedback period. Residents wanted to know what engagement had been undertaken for the approved REF.	The feedback period for the proposed changes was extended until 19 July following feedback. Engagement undertaken for the approved REF is addressed in Section 4 of the approved REF and the community was notified on the project website.
Construction methodology	Feedback questioned why trenching was proposed in some areas instead of microtunnelling, HDD, pipe bursting or use of the existing pipeline corridor.	Trenchless construction methods and pipe bursting are unviable in narrow residential streets due to large shaft footprints, existing utilities, and prolonged road closures. Due to the progressive nature of open trench methodology, work areas advance in stages limiting the extent and duration of disruption experienced by the community. Trenchless technologies were selected for major crossings including the M2 Motorway, and Lane Cove National Park.
Traffic and access	Concerns included road closures, parking restrictions, pedestrian access and disruption during construction.	Traffic and access impacts for the construction of the pipeline was previously assessed in Section 5.8 of the approved REF and further addressed in Section 4 (Traffic and access) of this REFA.
Rehabilitation and vegetation offsetting	Residents sought commitments regarding replacement planting, restoration standards, offsets and long-term rehabilitation.	Rehabilitation and offsetting of impacted vegetation will occur in consultation with landowners, including local councils. The location and type of offset replanting has been discussed during the weekly meetings with Ryde City Council and Kuring-gai Council and will continue throughout project delivery. Offsets will be done in accordance with Sydney Water's Biodiversity Offset Guide. This is further discussed in Section 4 (Flora and Fauna) of this REFA.
Governance	Several submissions requested independent review, clarification of	The REFA was prepared by the McConnell Dowell and Gamuda Joint Venture and



Key themes	Summary of feedback	How the feedback has been considered and addressed
	statutory approvals and consultation with government agencies.	independently determined by Sydney Water (as the proponent and determining authority) under Division 5.1 of the <i>Environmental Planning and Assessment Act 1979</i> (EP&A Act). Sydney Water has also engaged an independent environmental representative to review the Tree Impact Validation Procedure. Consultation with government agencies under State Environmental Planning Policies and other legislation has been addressed in Section 2.2 of this REFA and Section 3.3 of the approved REF.
Positive feedback	One submission expressly supported the project and recognised the importance of maintaining reliable water infrastructure while preserving Sydney Water land for operational purposes.	Sydney Water recognises community concerns and continues to balance local impacts with broader community benefits.

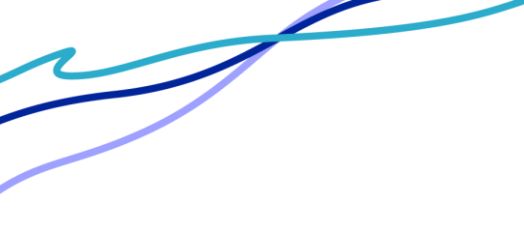
Feedback received reinforced the importance of protecting environmental values and minimising impacts on local communities. This informed the refinement of construction methodology, environmental management measures and restoration commitments, with a continued focus on avoiding impacts where possible, minimising unavoidable impacts and rehabilitating affected areas following construction.

While suggestions raised relating to relocating the pipeline or project alternatives could not be adopted, due to engineering, operational, safety, property and environmental constraints, all feedback was considered as part of the assessment of the proposed change. Engagement has helped shape the final project approach and will continue to inform ongoing engagement and mitigation measures throughout project delivery. Matters not directly related to the additional vegetation impacts were considered during detailed design and are addressed through the mitigation measures identified in the approved REF.

Following determination of the REFA, key stakeholders and affected residents will be notified of the outcome, including a summary of the consultation process. Further information about themes and actions taken to address community and stakeholder feedback will be made available on the project webpage.

Ongoing consultation will occur throughout delivery in accordance with the project's Community and Stakeholder Engagement Plan (CSEP). This will include engagement with impacted community members about upcoming works, property access, location of works, as well as what to expect during each stage of the project.

This REFA will be available on the [Sydney Water's Ryde to Pymble Pipeline Upgrade webpage](#).



2.2 Consultation required under State Environmental Planning Policies and other legislation

Sydney Water must consult with councils and other authorities for work in sensitive locations or where the work may impact other agencies' infrastructure or land. This is specified in the State Environmental Planning Policy (Transport and Infrastructure) 2021 (TISEPP).

Ryde City Council, Ku-ring-gai Council and NPWS were consulted in August and September 2025 during the development of the REF under section 2.10(1)(e) and section 2.10.(1)(f) and are still applicable for the REFA. Consultation with both councils is ongoing. The proposed change is not on land on, or adjacent to, land reserved under the *National Parks and Wildlife Act 1974* so no further consultation with NPWS has occurred as part of this REFA.

The proposed change has not triggered consultation with other government agencies. Further detail is provided in Appendix B.

3 Legislative requirements

This REFA has been assessed under Division 5.1 of the EP&A Act and Sydney Water can self-determine the proposed change. The following key environmental legislation (Table 3-1) is relevant to the proposed change.

Table 3-1 Consideration of key environmental legislation

Legislation	Relevance to proposed change
Biodiversity Conservation Act 2016 (BC Act)	A specialist ecology assessment (Appendix C) identified two TECs likely to be impacted. Vegetation affected by the proposed change contains habitat that could be used by three listed threatened fauna species. Tests of Significance (ToS) confirmed no significant impacts are expected to any threatened species or communities listed under the BC Act which is consistent with the approved REF. Preparation of a SIS or opting in to the NSW Biodiversity Offsets Scheme is not required.
Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)	The EPBC Act is the principal environmental law administered by the Commonwealth. It provides for the protection of matters of national environmental significance. Under the EPBC Act, an action that is likely to have a significant impact on a matter of national environmental significance must be referred to the Commonwealth Minister for the Environment and Water. An assessment using the significant impact guidelines for potential impacts to EPBC listed TECs and species confirmed that the proposed change is not likely to have a significant impact which is consistent with the approved REF.
Heritage Act 1977	The proposed change is not within the curtilage of a state listed heritage item protected under this Act. The updated Statement of Heritage Impact (SoHI) (Appendix D) confirmed that no further approval, permit or consultation is required under the Act.

4 Environmental assessment

Table 4-1 assesses the potential impacts of the proposed changes. Table 4-7 lists additional mitigation measures which will be incorporated into the contractor's CEMP.

Table 4-1 Review of environmental aspects

Aspect	Potential additional impacts
Topography, geology and soils	The proposed change is within the approved construction corridor assessed in the approved REF and does not require any additional excavation beyond that previously assessed. Tree removal activities will be limited to vegetation clearing, with stump removal undertaken by a suitably qualified arborist using methods that minimise disturbance to surrounding soils which will be reinstated following tree removal. Where required, nearby drainage lines will be protected before works start to minimise the potential for erosion and sediment transport. Standard erosion and sediment control measures identified in the approved REF will continue to be implemented during construction. With the implementation of the mitigation measures identified in the approved REF, potential impacts to topography, geology and soils associated with the proposed change are expected to be minor and consistent with those previously assessed.
Water and drainage	The proposed change would not directly impact watercourses, alter existing surface water drainage patterns, or adversely affect flood behaviour. Existing erosion and sediment control measures and drainage protection measures identified in the approved REF will continue to be implemented during construction. Potential impacts from the proposed change are expected to be minor and consistent with those previously assessed.
Flora and fauna	The proposed change would result in additional vegetation clearing within the approved construction corridor. Impacted trees An arboricultural assessment was undertaken by the project arborist and considered all trees (remnant, native planted and exotic) within and adjacent to the construction corridor. The proposed change is likely to directly impact trees where construction activities encroach into the root zone and/or canopy. Trees would be removed where impacts cannot be avoided or minimised and are expected to compromise the long-term health or structural integrity of a tree. Table 4-2 shows the total number of impacted trees identified for removal. Following site inspections undertaken by the project arborist during detailed design, additional information is now available regarding the extent of tree pruning required. While pruning was not quantified in the approved REF, the arboricultural assessment confirms about 301 trees require pruning. This includes pruning required under the approved REF and the proposed change (shown in Figure 2 to Figure 13). Of the 301 trees, 158 are remnant, 81 are planted

native and 62 are exotic. Proposed tree pruning will be undertaken by a qualified arborist in accordance with Australian Standard AS 4373 *Pruning of Amenity Trees* and limited to the minimum extent necessary.

Table 4-2 Total impacted trees

	Previously approved impacts	Proposed change			Change from Approved REF
	Approved REF	Newly retained	Proposed for removal	REFA Total	
Total proposed tree removals					
Total trees proposed for removal	100	-47	106	159	+59
Remnant trees	100	-47	52		(+5)
Planted native trees		-	22		(+22)
Exotic trees		-	32		(+32)

Biodiversity impact assessment

A FFA was undertaken by East Coast Ecology (July, 2026) to assess the biodiversity impacts associated with the additional vegetation impacts from the proposed change.

The proposed change has the potential to directly or indirectly impact flora and fauna through:

- native vegetation and TEC clearing and trimming
- clearing fauna habitat or habitat fragmentation.

Impacts to native vegetation

The proposed change results in a net increase of 5 remnant trees to be removed, which are part of native vegetation communities.

The proposed tree removal equates to additional impacts to native vegetation and TEC as shown in Table 4-3. In addition, minor pruning of TECs is required to facilitate the proposed change. These pruning impacts are not included in Table 4-3 because no removal of these communities is proposed.

Table 4-3 Native vegetation and TEC impact area

	Previously approved impacts (ha)	Proposed change (ha)	Cumulative area of habitat to be impacted (ha)
	Approved REF	REFA	Project Total
Native vegetation			
PCT 3262: Sydney Turpentine Ironbark Forest	0.029	-	0.029
PCT 3259: Sydney Coastal Shale-Sandstone Forest	0.199	0.041	0.240
PCT 3592: Sydney Coastal Enriched Sandstone Forest	0.300	-	0.300
PCT 3595: Sydney Coastal Sandstone Gully Forest	0.130	0.012	0.142
PCT Total	0.658	0.053	0.711
Threatened Ecological Community (TEC)			
EPBC Act/BC Act - Critically Endangered - Turpentine Ironbark Forest of the Sydney Basin Bioregion	0.026	-	0.026
BC Act- Endangered - Duffys Forest Ecological Community in the Sydney Basin Bioregion	0.035	0.041	0.076
TEC Total	0.061	0.041	0.102

Tests of Significance (ToS) for impacts to TECs were completed in accordance with section 7.3 of the BC Act. The ToS concluded that vegetation removed in the approved REF and proposed change is unlikely to have a significant impact. A SIS or BDAR is not required which is consistent with the approved REF. Similarly, the impacts to TECs were assessed in accordance with the EPBC Act Significant Impact Guidelines 1.1. The assessments concluded that the proposed change is unlikely to have a significant impact and a referral to the Commonwealth Minister for the Environment is not required, which is consistent with the approved REF. Refer to Appendix C for detail.

Impacts to flora and fauna

No threatened flora or fauna species were identified during the site assessment conducted for the Flora and Fauna Assessment (Appendix C). Potential impacts to threatened flora species remain consistent with the approved REF.

Table 4-4 shows the proposed change will remove up to an additional 6 hollow bearing trees which will be offset. Direct impacts from vegetation removal and pruning will result in the loss of potential habitat for threatened fauna species with a known or a moderate likelihood of occurrence in the construction corridor:

- Birds:
 - *Parvipsitta pusilla* (Little Lorikeet)
 - *Ninox strenua* (Powerful Owl)
- Frugivorous bats:
 - *Pteropus poliocephalus* (Grey-headed Flying-fox).

The result of Tests of Significance and Assessments of Significance determined no significant impacts to these species from the proposed change, consistent with the approved REF. Refer to Appendix C for detail.

Biobanking site

The proposed change involves removing vegetation near Biodiversity Stewardship Agreement (BSA) site (*Clive Evatt Reserve, Blackbutt Park, Sir David Martin Reserve, The Glade Reserve Biobanking Agreement*) (refer to Figure 3). No impacts to the BSA site are proposed. The impacted vegetation is on council land and separated from the BSA site by a fence. As such, no consultation with the Biodiversity Conservation Trust is required.

Biodiversity offsets

Vegetation impacts will be offset in accordance with Section 5 of the Sydney Water Biodiversity Offset Guide (SWEMS0019.13).

The offsetting strategy adopts a combination of native vegetation offsets and tree offsets and is considered appropriate given the methodologies used to identify remnant native vegetation and delineate Plant Community Types (PCTs).

The combined offsetting strategy therefore provides a means of accounting for biodiversity values across both native vegetation extent and tree-based habitat features, while remaining consistent with the intent and requirements of the Offset Guide.

Table 4-4 shows biodiversity offsets required for the proposed vegetation impacts. After the Tree Impact Validation Procedure is implemented, we expect less tree removal than currently proposed. The final offset requirements will be calculated after vegetation removal and verification of the actual number of trees removed.

The location, size and species of native trees planted as part of the biodiversity offset strategy will be chosen based off the offset location hierarchy outlined in Figure 18 and in consultation with affected landowners, including local residents whose properties are impacted by tree removal, and relevant local councils.

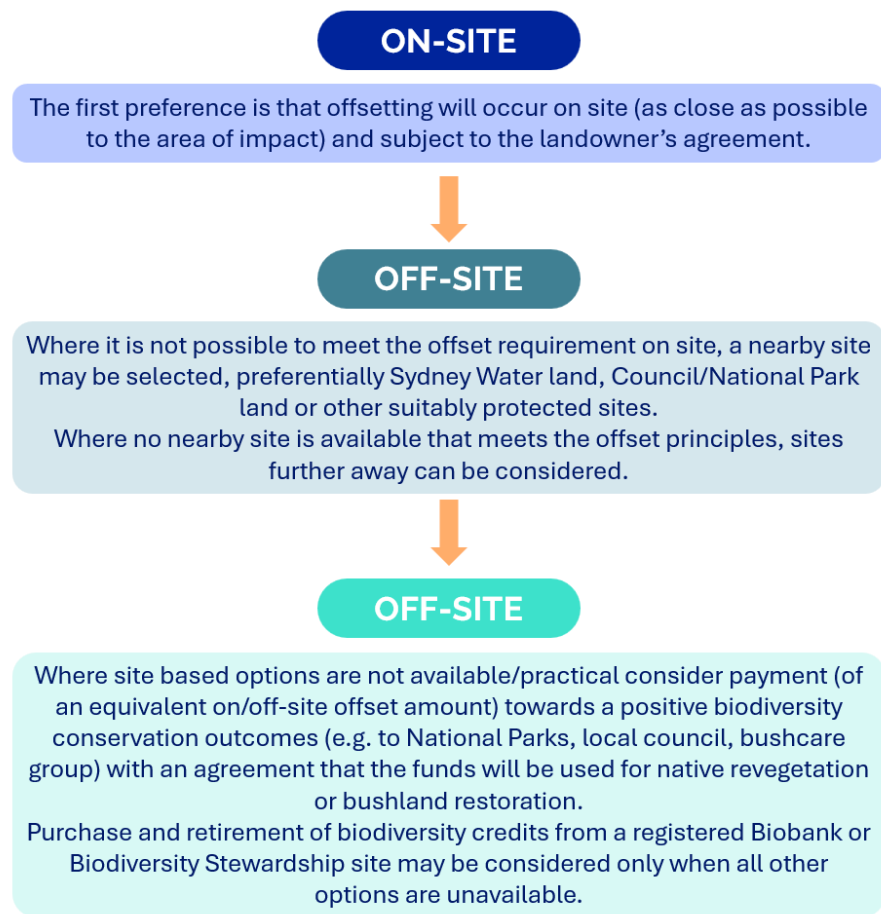


Figure 18 Offset location hierarchy

Consultation with affected stakeholders and councils will continue throughout construction to inform the implementation of the offset strategy. Discussion about biodiversity offset options has already been initiated in regular meetings with Ku-ring-gai and Ryde councils.

Table 4-4 Offsets required for the proposed change

	Previously approved impacts	Proposed change		Biodiversity offsets		
	Approved REF (ha)	REFA (ha)	Project Total (ha)	Proposed impact	Multiplier	Number
Threatened Ecological Communities (TEC)						
PCT 3262 (STIF)	0.026	-	0.026	Removal of native vegetation	3:1	0.306 ha
PCT 3259 (Duffys Forest)	0.035	0.041	0.076			
Total TEC Area	0.061	0.041	0.102			
Native Vegetation						
PCT 3262	0.029	-	0.029	Removal of native vegetation	2:1	1.422 ha
PCT 3259	0.199	0.041	0.240			
PCT 3592	0.300	-	0.300			
PCT 3595	0.130	0.012	0.142			
Total Non-TECs	0.658	0.053	0.711			
Habitat Values						
Hollow-bearing trees	11	6	17	Removal of habitat values	2:1	34 hollows
Total Hollow-bearing trees	11	6	17			
Locally Native Tree Count						
Remnant Native Trees	53	52	105	Removal of native vegetation	3:1	315 native trees
Total Locally Native Trees	53	52	105			
Non-Locally Native Tree Count						
Planted Native Trees	-	22	22	Removal of native vegetation	1:1	22 native trees
Total Non-Locally Native Trees	-	22	22			
Exotic Tree Count						
Exotic Trees	-	32	32	Removal of exotic vegetation	1:1	32 native trees
Total Exotic Tree count	-	32	32			

Measures to mitigate tree removal

In addition to the mitigation measures identified in the approved REF, a Tree Impact Validation Procedure was developed to provide an additional level of assessment and verification during project delivery. The purpose of the procedure is to ensure that all practical and feasible measures to avoid or minimise impacts to trees have been investigated, documented and implemented before any tree is confirmed for removal.

The procedure categorises each potentially impacted tree based on the nature and extent of the proposed impact and the level of further investigation required. See Table 4-5 for more detail.

Table 4-5 Tree Impact Validation Procedure categories

Category	Potential impact	Mitigation measure
RED Unavoidable impacts	Unavoidable works within the notional root zone (NRZ) or significant canopy conflict	• Tree removal required
ORANGE Additional assessment	Works within the root zone or likely significant canopy conflict	• Root mapping • Arborist supervision during works
YELLOW Potential to retain or prune	Works adjacent to the root zone or potential significant canopy conflict	• Root mapping • Arborist supervision during works
GREEN Prune only	Minor canopy conflict	• Arborist supervision during works • Tree Protection controls during works
BLUE Retain	Nil	• Tree Protection controls during works

Where further assessment is required, the following validation measures will be undertaken during construction to determine whether tree retention is feasible:

- onsite root mapping prior to trenching to verify the location of structural roots
- supervision or direction by a qualified arborist during works within the root zone to facilitate the retention of non-structural roots where practicable
- refinement of construction methodologies, where feasible, to avoid or minimise impacts to the Structural Root Zone (SRZ) and reduce canopy conflict.

As discussed above, proposed tree pruning will be undertaken by a qualified arborist in accordance with Australian Standard AS 4373 *Pruning of Amenity Trees* and limited to the minimum extent necessary.

All trees proposed for removal, including those previously identified in the approved REF, will be subject to an individual Tree Impact Validation Procedure. Removal will only be confirmed once all practicable and feasible avoidance and

Aspect

Potential additional impacts

minimisation measures have been assessed, documented and determined to be unsuitable.

Table 4-6 presents the preliminary validation procedure undertaken as part of this REFA which will be confirmed before tree removal.

Table 4-6 Tree Impact Validation Procedure outcome

Category		Number of trees
RED	Unavoidable impacts	38
ORANGE	Additional assessment	90
YELLOW	Potential to retain or prune	31
Total		159

With the implementation of the mitigation measures in the approved REF and this REFA, impacts to flora and fauna will be managed to avoid and minimise impacts as far practicable.

Heritage

Aboriginal heritage

An updated Aboriginal Heritage Information Management System (AHIMS) search was undertaken on 1 July 2026. This search identified two additional registered Aboriginal sites located about 1.6 kilometres from the proposed works.

The proposed change is in areas of high levels of disturbance due to road construction, existing water-related infrastructure, landscaping and utility installation. With the implementation of the mitigation measures identified in the approved REF, potential impacts to Aboriginal heritage are expected to remain minor and consistent with those previously assessed.

Non-Aboriginal heritage

An updated SoHI was prepared by Everick Heritage (July, 2026) to assess the potential heritage impacts associated with the proposed change.

The proposed change is in the curtilage of the locally listed heritage item, Ryde Pumping Station and site, which is listed on the *Ryde Local Environmental Plan 2014*. The proposed change is outside the NSW State Heritage Register curtilage and the Sydney Water Heritage and Conservation Register heritage curtilage

Aspect

Potential additional impacts

(s.170) (refer to Figure 13). The Ryde Pumping Station site is the only additional heritage site impacted by the proposed change.

In addition to the heritage significance of the pumping station as described in the approved REF, the Sydney Blue Gum trees contribute to its heritage value. These trees are notable vegetation remnants from pre-European farming and have been assessed as having a medium heritage significance. The proposed change will remove a group of trees assessed as having medium heritage significance as part of the heritage listed site. Their removal would result in adverse impacts on the heritage significance of the place through the loss of a group of significant endemic tree specimens.

However, when considered in the context of the overall heritage significance of the Ryde Pumping Station, the impact is assessed as being minor.

With the implementation of the mitigation measures identified in the approved REF, potential impacts to non-Aboriginal heritage are expected to be minor.

Noise and vibration

Noise

The proposed change would result in noise impacts associated with clearing and pruning trees.

While the proposed works may result in a minor increase in construction noise at some locations, the impacts would be temporary, localised and short-term in nature. Noise from vegetation impacts would occur prior to trenching works with the duration of tree clearing at any one location being limited and would progress sequentially along the alignment.

Tree clearing works would be undertaken during standard daytime construction hours only with noise impacts associated with these activities managed in accordance with the *Interim Construction Noise Guideline* (ICNG) (NSW EPA). The nature of the works and associated noise impacts are consistent with those assessed in the approved REF.

With the implementation of the mitigation measures identified in the approved REF, potential noise impacts from additional tree works are expected to be minor.

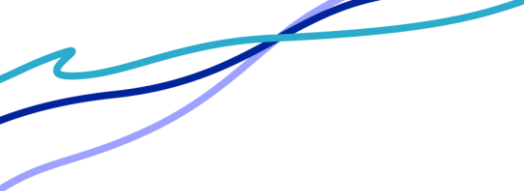
Vibration

The proposed change does not introduce new vibration-generating activities beyond those assessed in the approved REF. Accordingly, vibration impacts would remain consistent with those previously assessed and would continue to be managed through the mitigation measures identified in the approved REF.

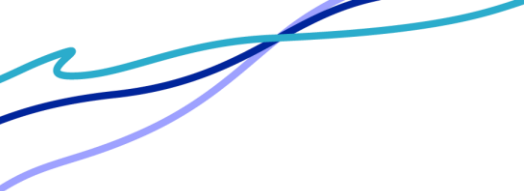
Air and energy

Air quality

The proposed change may result in temporary, localised impacts to air quality at the additional tree clearing and pruning locations. These impacts are associated with emissions from construction vehicles and equipment, and dust generation during tree removal and mulching activities. The additional air quality impacts would be short-term in nature and limited to the duration of vegetation clearing at each location.



Aspect	Potential additional impacts
	With the implementation of the mitigation measures identified in the approved REF, impacts to air quality associated with the proposed change are expected to be minor and consistent with the environmental outcomes assessed in the approved REF. Energy use The proposed change would not result in a material increase in energy consumption beyond that assessed in the approved REF, with the additional construction plant and equipment operating only for the duration of tree clearing activities at the newly identified locations.
Waste and hazardous materials	Waste The proposed change would result in the generation of additional green waste, including mulch and tree stumps, at the tree removal and pruning locations. Tree stumps would be removed and disposed of by the project in accordance with the waste management measures identified in the approved REF. Where practicable, opportunities for beneficial reuse of tree branches, logs, vegetation and mulch will be investigated, including reuse by organisations such as Taronga Zoo or local community groups. Left over mulch would be reused on-site for erosion and sediment control where needed or disposed appropriately. Hazardous materials The proposed change is not expected to result in any additional hazardous materials impacts beyond those assessed in the approved REF.
Traffic and access	Traffic The proposed change will involve workers and vehicles occupying areas slightly longer than those assessed in the approved REF. The proposed change would not alter the approved construction corridor, construction access arrangements or traffic management approach assessed in the approved REF. Traffic impacts associated with construction activities have been assessed in the approved REF and remain applicable to the proposed change. With the implementation of the mitigation measures identified in the approved REF, including the Traffic Management Plan and site-specific traffic controls where required, the additional traffic and access impacts associated with the proposed change are expected to be minor and consistent with the environmental outcomes assessed in the approved REF. Property access The proposed change may result in temporary, localised access impacts where tree removal/pruning is directly adjacent to driveways or access roads. Any access restrictions would be limited to the duration of vegetation clearing works and managed to maintain safe access for residents, businesses and road users wherever practicable.



Aspect	Potential additional impacts
	Where temporary impacts to property access are anticipated, affected residents and landowners will be consulted by the project's Community and Stakeholder team before work starts. Consultation will include advance notification of the proposed works, discussion of any temporary access arrangements and opportunities to minimise disruption where practicable. Additional access impacts associated with the proposed change are expected to be minor and consistent with the environmental outcomes assessed in the approved REF.
Social and visual	The potential social impacts of the proposed change relating to noise, vibration, traffic, air quality and access are addressed in the relevant sections above. The proposed change would result in additional, localised impacts to visual amenity associated with vegetation pruning and removal. Removing established vegetation would cause a reduction in landscape amenity and changes to the visual character of affected areas. This may influence the community's experience and sense of place during and following construction. Impacts associated with pruning would generally be short to medium term, while the removal of mature trees may result in long term changes to the visual character and landscape amenity of affected areas. The visual and associated social impacts from the proposed change will be minimised through the implementation of the Tree Impact Validation Procedure. This procedure will require further investigation of opportunities to retain trees and minimise pruning during construction. Where vegetation removal is unavoidable, replacement planting and biodiversity offset measures will be implemented in accordance with the approved REF and relevant project commitments. Onsite replacement planting in the same location will be prioritised where practicable, in consultation with affected landowners, to assist in restoring landscape amenity and maintaining the local character of affected areas over time. While the proposed change would result in localised adverse impacts to visual amenity and community experience, the project as a whole will provide a positive social outcome by improving the capacity and resilience of the water supply network. The Ryde to Pymble Pipeline Upgrade will restore the connection between the Prospect North and Ryde water supply systems, providing greater resilience and a contingency water supply to support the community and accommodate future population growth. The additional social and visual impacts associated with the proposed change can be managed through with existing mitigation measures identified in the approved REF and new mitigation measures proposed in the REFA. This includes opportunities to retain and minimise impacts to vegetation and replacement planting and biodiversity offsets.
Cumulative and future trends	Cumulative impacts A search of the NSW Department of Planning, Housing and Infrastructure major projects website in August 2026 was consistent with the search conducted in July 2025 for the approved REF. The search identified several projects in the Ryde and Ku-ring-gai LGAs including:

Aspect

Potential additional impacts

- several new school modifications, redevelopments and expansions
- industrial estates, business hubs, warehouse, distribution centres, data centres and resource recovery facilities
- residential developments.

During construction, the main potential cumulative impacts of the proposed change relate to biodiversity impacts which will be offset in accordance with the approved REF. As the proposed change is confined to the approved construction corridor and appropriate mitigation and offset measures will be implemented, the potential cumulative biodiversity impacts are expected to be low and consistent with those assessed in the approved REF.

Future trends

Climate change related future trends have been addressed in Section 5.10 of the approved REF.

The proposed change has the potential to contribute to future trends with short-term biodiversity impacts through the removal of additional native vegetation. However, these impacts will be mitigated through the implementation of the measures identified in the approved REF and offset in accordance with Sydney Water's Biodiversity Offset Guide (SWEMS0019.13).

With the implementation of the proposed mitigation measures, cumulative and future trends impacts can be adequately managed, and residual impacts are expected to be minor and consistent with the approved REF.

Table 4-7: Mitigation measures

Mitigation measure

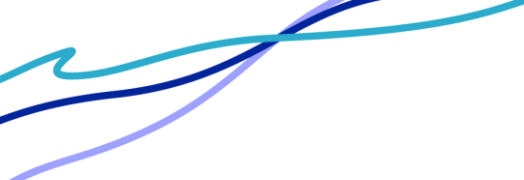
Flora and Fauna

Implement all mitigation measures from the approved REF.

Tree pruning will be undertaken by a qualified arborist in accordance with Australian Standard AS 4373 *Pruning of Amenity Trees* and limited to the minimum extent necessary.

Offset residual impacts to native vegetation and trees in accordance with the Biodiversity Offset Guideline (SWEMS0019.13). Maximum offset calculations are listed in Table 4-4. Offsets will be carried out in consultation with Ku-ring-gai Council, Ryde Council and affected landowners.

Implement the Tree Impact Validation Procedure through the contractor's CEMP. The Tree Impact Validation Procedure must assess, and document all practicable and feasible measures undertaken during project delivery to avoid or minimise impacts to trees. No tree removal to occur until all reasonable avoidance, minimisation and retention options have been investigated, documented and approved by Sydney Water's Project Manager (in consultation with Sydney Water's environment and community representatives).



5 Conclusion

Sydney Water has reviewed this REFA to assess the potential environmental impacts of additional vegetation impacts. The proposed change is required to support the delivery of the Ryde to Pymble Pipeline Upgrade, which forms part of Sydney Water's commitment to increasing the capacity and resilience of the Prospect Water System to meet future population growth and provide a contingency water supply between the Prospect North and Ryde water supply systems. The proposed change was required following detailed design, constructability reviews and refinement of construction methodologies. These identified additional vegetation impacts within the approved construction corridor that were not known during the concept design phase and preparation of the approved REF.

The main potential additional environmental impacts of the proposed change include impacts to biodiversity, amenity and non-Aboriginal heritage. Given the nature, scale and extent of impacts and implementation of the mitigation measures outlined in this REFA, the proposed change is unlikely to have a significant impact on the environment. Therefore, an environmental impact statement is not required.

Appendix A – Section 171 and 171A Checklist

Table A1 summarises Sydney Water’s consideration of the proposal change against the requirements of section 171 of the EP&A Regulation.

Table A1

Section 171 Checklist	REFA finding
Any environmental impact on a community	The proposed change would result in additional impacts to the community from noise and vibration, traffic, and visual amenity associated with the removal of native vegetation. These impacts will be managed in accordance with the mitigation measures in the approved REF and additional mitigation measures listed in Section 4. This will include further reducing the number of trees required to be removed and offsetting lost vegetation in consultation with landowners and local councils. During operation, no additional impacts are expected. There will be environmental improvements by supplying a resilient drinking water service to the community.
Any transformation of a locality	The proposed change will have localised impacts to visual amenity in the locality due to vegetation removal. Sydney Water will prioritise offset replanting in the impacted area in consultation with the affected landowners, local councils and in accordance with Sydney Water’s Biodiversity Offset Strategy.
Any environmental impact on the ecosystems of the locality	The proposed change will result in minor environmental impacts to ecosystems of the locality as additional vegetation clearing is required. These impacts will be further reduced through the introduction of the Tree Impact Validation Procedure during construction and through offsets in accordance with the Sydney Water Biodiversity Offset Guideline.
Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of the locality	The proposed change will have some localised impacts to aesthetic and environmental value of the locality due to vegetation removal, as outlined in earlier sections of this REF. No recreational or scientific impacts are expected. Rehabilitation and revegetation will take place following vegetation removal in areas that cannot be avoided. Offsets will be done in consultation with landowners and local councils.
Any effect upon a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or any other special value for present or future generations	There will be impacts to vegetation within a local heritage area that has been further assessed through the updated Statement of Heritage Impact (SoHI) (Appendix D). This is considered a minor adverse impact. Applying the recommended mitigation measures will ensure potential impacts to the heritage values are minor.

Section 171 Checklist

REFA finding

Any impact on the habitat of any protected animals (within the meaning of the *Biodiversity Conservation Act 2016*)

The proposed change will result in the removal of some habitat that could be used by protected animals. However, it will not result in a significant impact under the Biodiversity Conservation Act (refer to Appendix C). Mitigation measures, including biodiversity offsets have been identified to avoid or minimise impacts on habitat areas.

Any endangering of any species of animal or plant or other form of life, whether living on land, in water or in the air

The proposed change will not endanger any species. Assessments of significance concluded that the proposed change is unlikely to significantly impact TECs and threatened species (refer to Appendix C).

Any long-term effects on the environment

While there will be short to medium term impacts to the immediate locality following vegetation removal, these will be mitigated in the long-term through biodiversity offsets. The proposed change will not have any other long-term adverse effects on the environment. It will enable a long-term benefit by providing a reliable drinking water service to support predicted population growth.

Any degradation of the quality of the environment

There will be localised degradation of the social and ecological quality of the environment through additional vegetation removal. Vegetation removal has been minimised to help retain areas of higher quality vegetation and impacts will be further reduced through the introduction of the Tree Impact Validation Procedure during construction and through offsets in accordance with the Sydney Water Biodiversity Offset Guideline.

Any risk to the safety of the environment

The proposed change will not increase risk to the safety of the environment. The Tree Impact Validation Procedure would manage risk to the safety of the environment by considering the long-term health or structural integrity of a tree in decision-making. The proposed change is not expected to be impacted by, or impact, future trends such as flooding and bushfire.

Any reduction in the range of beneficial uses of the environment

There will be no reduction of beneficial uses as a result of the proposed change.

Any pollution of the environment

The proposed change will generate noise at some locations as a result of additional vegetation removal. These impacts would be temporary, localised and short-term in nature. Noise from vegetation impacts would occur prior to trenching works with the duration of tree clearing at any one location being limited and progressing sequentially along the alignment. Environmental mitigation measures in the approved REF will further mitigate potential impacts and no other pollution is expected.

Any environmental problems associated with the disposal of waste

Waste disposal will be in accordance with the environmental mitigation measures, and no environmental problems associated with the disposal of waste are expected.

Section 171 Checklist

REFA finding

Any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply

The proposed change will not increase demand on these resources.

Any cumulative environmental effect with other existing or likely future activities

The proposed change will have potential cumulative impacts with other projects in the area related to loss of biodiversity. However, impacted vegetation will be offsets in accordance with the Sydney Water Biodiversity Offset Guideline, including prioritising the replacement of the same impacted species were possible.

Any impact on coastal processes and coastal hazards, including those under projected climate change conditions

The proposed change will not have any impact on these factors.

Any applicable local strategic planning statements, regional strategic plans or district strategic plans made under the EP&A Act, Division 3.1

The proposed change does not affect any additional strategic plans above those previously assessed in the approved REF.

Any other relevant environmental factors.

The proposed change has been assessed against the factors listed above, and there are no other relevant environmental factors to consider.

Section 171A of the EP&A Regulation requires a determining authority to take into account the matters a consent authority must consider under Part 6.2 of the BCSEPP for a proposed change within a 'regulated catchment'. As the proposed change is within the Hawkesbury-Nepean and Sydney Harbour catchments, the requirements of Section 171A(1) are applicable. Impacts to water quality and quantity, aquatic ecology, recreational activities and works on flood liable land, recreation and public access will be negligible and are consistent with Table A2 in the approved REF.

Appendix B – Consideration of TISEPP consultation

TISEPP section	Yes	No
Section 2.10, council related infrastructure or services – consultation with council		
Will the work:		
Potentially have a substantial impact on stormwater management services provided by council?		X
Be likely to generate traffic that will strain the capacity of the road system in the LGA?		X
Connect to, and have a substantial impact on, the capacity of a council owned sewerage system?		X
Connect to, and use a substantial volume of water from a council owned water supply system?		X
Require temporary structures on, or enclose, a public space under council's control that will disrupt pedestrian or vehicular traffic that is not minor or inconsequential?		X
Excavate a road, or a footpath adjacent to a road, for which the council is the roads authority, that is not minor or inconsequential?		X
Section 2.11, local heritage – consultation with council		
Is the work likely to affect the heritage significance of a local heritage item, or of a heritage conservation area (not also a State heritage item) more than a minor or inconsequential amount?		X
Section 2.12, flood liable land – consultation with council		
Will the work be on flood liable land (land that is susceptible to flooding by the probable maximum flood event) and will works alter flood patterns other than to a minor extent?		X
Section 2.13, flood liable land – consultation with State Emergency Services		
Will the work be on flood liable land (land that is susceptible to flooding by the probable maximum flood event) and undertaken under a relevant provision*, but not the carrying out of minor alterations or additions to, or the demolition of, a building, emergency works or routine maintenance?		X
* (e) Div.14 (Public admin buildings), (g) Div.16 (Research/ monitoring stations), (i) Div.20 (Stormwater systems)?		
Section 2.14, development with impacts on certain land within the coastal zone – council consultation		
Is the work on land mapped as coastal vulnerability area and inconsistent with a certified coastal management program?		X

Section 2.15, consultation with public authorities other than councils

Will the proposed change be on land adjacent to land reserved under the *National Parks and Wildlife Act 1974* or land acquired under Part 11 of that Act? *If so, consult with DPE (NPWS).*

X

Will the proposed change be on land in Zone C1 National Parks and Nature Reserves or on a land use zone that is equivalent to that zone? *If so, consult with DPE (NPWS).*

X

Will the proposed change include a fixed or floating structure in or over navigable waters? *If so, consult TfNSW.*

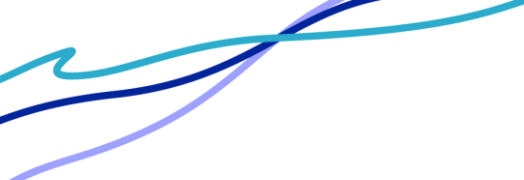
X

Will the proposed change be on land in a mine subsidence district within the meaning of the *Coal Mine Subsidence Compensation Act 2017*? *If so, consult with Subsidence Advisory NSW.*

X

Will the proposed change be on land in a Western City operational area specified in the *Western Parkland City Authority Act 2018*, Schedule 2 and have a capital investment value of \$30 million or more? *If so, consult the Western Parkland City Authority.*

X



Appendix C – Flora and Fauna Assessment



EAST COAST ECOLOGY

Addendum Flora and Fauna Assessment

Ryde to Pymble (RP03) Pipeline Upgrade

Prepared for Sydney Water c/- McConnel Dowell Gamuda JV

Report date August 2026

Document Control

Document information

Report title	Addendum Flora and Fauna Assessment
Site address	Ryde to Pymble (RP03) Pipeline Upgrade
Prepared for	Sydney Water c/- McConnel Dowell Gamuda JV
Prepared by	Samantha Everett
Report date	25 th of August 2026
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Final v1.0	25/08/2026	Samantha Everett (ECE)	-

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EXECUTIVE SUMMARY

This Addendum Flora and Fauna Assessment has been prepared by East Coast Ecology Pty Ltd on behalf of Sydney Water, c/- McConnel Dowell Gamuda Joint Venture. It supports an Addendum Review of Environmental Factors for the reinstatement of the existing RP03 watermain between the Ryde pumping station and Roland Avenue, Warrawee, spanning the City of Ryde and Ku-ring-gai local government areas (the Proposed Change). The activity is described in detail in the Review of Environmental Factors originally prepared by Sydney Water, supported by the Biodiversity Assessment Report prepared by Aurecon.

The Review of Environmental Factors assessed the removal of 100 trees (including 11 hollow-bearing trees); the extent of trees approved for pruning was not quantified. The revised assessment identifies a further 52 trees for removal and 90 for pruning, a disproportionate increase relative to the marginal rise in vegetation community impact area; this reflects the distinction between individual stem-level retention and community-scale disturbance extent, rather than reduced avoidance effort.

This assessment reviews the biodiversity impacts previously approved within the Approved Construction Corridor against the additional impacts arising from the Proposed Change, in accordance with the *Environmental Planning and Assessment Act 1979* (NSW) and the *Biodiversity Conservation Act 2016* (NSW).

The Proposed Change will impact three Plant Community Types. A field investigation consistent with Aurecon's methodology and existing mapping, determined that up to 0.053ha of Plant Community Types will require removal to facilitate the Proposed Change. Combined with the impacts previously approved under the Review of Environmental Factors, the cumulative Plant Community Type removal impact across all three communities will be up to 0.411ha (**Table E1**).

Table E1. Cumulative assessment of PCTs to be impacted as part of the Proposed Change against those approved in the Review of Environmental Factors (Sydney Water, 2026).

Native Vegetation Zones	Previously Approved Impacts (ha)	Proposed Change (ha)	Cumulative area of habitat to be impacted (ha)
	Aurecon, 2026	ECE, 2026	
PCT 3262: Sydney Turpentine Ironbark Forest	0.029	-	0.029
PCT 3259: Sydney Coastal Shale-Sandstone Forest	0.199	0.041	0.240
PCT 3595: Sydney Coastal Sandstone Gully Forest	0.130	0.012	0.142
Revised Totals	0.358	0.053	0.411
PCT Total Removal Area			0.411ha

The Proposed Change will require impacts to one Threatened Ecological Community, as detailed in **Table**

E2. Not all areas of Plant Community Type 3262 identified as part of the Proposed Change were allocated as the Threatened Ecological Community; Sydney Turpentine Ironbark Forest (STIF). This reflects the approach adopted by Aurecon in the original Biodiversity Assessment Report, which East Coast Ecology has maintained for consistency between the two assessments. Whilst 0.026ha of STIF is to be removed cumulatively, only 0.006ha is subject to additional pruning under the Proposed Change, with no additional removal of the Threatened Ecological Community proposed. As such, this pruning impact has not been included in the overall impact measurement to STIF. Further, no impacts to the Biodiversity Stewardship Agreement Site; Aluba Reserve, are required to facilitate the Proposed Change. Combined with the removal previously approved under the Review of Environmental Factors, this represents a cumulative Threatened Ecological Community removal area of 0.102ha. The test of significance under the BC Act and the assessment of significance under the EPBC Act for STIF concluded that the Proposed Change (and cumulative impact) is not likely to significantly impact the STIF community. Likewise, the test of significance under the BC Act concluded that the Proposed Change (and cumulative impact) is not likely to significantly impact Duffys Forest Ecological Community in the Sydney Basin Bioregion. As such, the Biodiversity Offset Scheme is not triggered as a result of the Proposed Change.

Table E2. Cumulative assessment of Threatened Ecological Communities to be impacted as part of the Proposed Change against those approved in the Review of Environmental Factors (Sydney Water, 2026).

TECs	Previously Approved Impacts (ha)	Proposed Change (ha)	Cumulative area of habitat to be impacted (ha)
	Aurecon, 2026	ECE, 2026	
Sydney Turpentine-Ironbark Forest in the Sydney Basin Bioregion (BC & EPBC Act)	0.026	-	0.026
Duffys Forest Ecological Community in the Sydney Basin Bioregion (BC Act)	0.035	0.041	0.076
Revised Totals	0.061	0.041	0.102
TEC Total Removal Area			0.102ha

The Proposed Change will require impacts (removal or pruning) to up to 339 trees. Combined with the impacts previously approved under the Review of Environmental Factors (Sydney Water, 2026), a cumulative total of 460 trees will be pruned or removed. An additional six hollow-bearing trees will be impacted to facilitate the Proposed Change, as detailed in **Table E3**.

Table E3. Cumulative Assessment of Trees, including hollow-bearing trees, to be impacted as part of the Proposed Change against those approved in the Review of Environmental Factors (Sydney Water, 2026).

Tree Impact Category	Previously Approved Impacts			Proposed Change			Cumulative number of trees to be impacted
	Pruning	Removal	Revised Total	Pruning	Removal	Revised Total	
Remnant Tree Impact	68*	53*	121	90	52	142	263
Planted Native Tree Impact	_ ^{**}	_ ^{**}	-	81	22	103	103
Exotic Tree Impact	_ ^{**}	_ ^{**}	-	62	32	94	94
Revised Tree Total	68	53	121	233	106	339	460
Total Tree Count							460 Trees
Hollow-bearing Trees	-	-	11	-	6	6	17
Revised Hollow-bearing Tree Total	-	-	11	-	6	6	17
Total Hollow-bearing Tree Count							17 Hollow-bearing Trees

* Since the REF was approved, Sydney Water reduced the construction footprint, resulting in the retention of 53 trees originally assessed for removal reducing the previously approved impact to 53 trees

** Planted trees (either native or exotic) were not collected due to time constraints and lack of ecological values which needed to be considered within the BAR (Sydney Water/ MDGJV 2026 pers comm.).

No threatened flora species were identified within the vegetation to be impacted by the Proposed Change. No threatened fauna species have been confirmed present; however, based on habitat constraints and proximity to historical records, three threatened species have been assumed to potentially utilise habitat within the impacted vegetation:

- *Parvipsitta pusilla* (Little Lorikeet)
- *Ninox strenua* (Powerful Owl), and
- *Pteropus poliocephalus* (Grey-headed Flying-fox).

Avoidance and minimisation of biodiversity impacts have been considered throughout the design and construction planning of the Proposed Change, these included:

- Conducting a review of the detailed design to investigate opportunities to avoid and minimise impacts to trees through changes to the pipeline design and location. This included reviewing alternative pipeline alignments with the pipeline corridor. However, there were no opportunities for alignment refinement due to existing overhead and underground utilities within the construction corridor. Alternative pipeline corridors were already considered during the development of the approved REF, and
- Investigating opportunities through a review of construction methodologies, temporary work areas, plant access, excavation extents and equipment requirements to reduce impacts to tree root zones and canopies and working areas to minimise impacts to tree root zones and canopies wherever practicable. This review identified opportunities to further refine the construction footprint and construction methodology, including reducing the size of the Kissing Point Road retrieval site compound. The constructability review also informed the development of a Tree Impact Validation Procedure. The procedure will be implemented during project delivery to ensure that all practical and feasible avoidance and minimisation measures have been investigated and documented before any tree is confirmed for removal. The review also identified opportunities to retain a further 47 trees that were previously assessed for removal in the approved REF. However, some additional vegetation impacts for the proposed change cannot be avoided.

Mitigation measures to address direct, indirect and prescribed impacts are provided in this assessment and remain consistent with those set out in Table 8-1 of the Biodiversity Assessment Report (Aurecon, 2026). The Proposed Change is not likely to result in a significant impact to any threatened species, population, ecological community, or Matter of National Environmental Significance listed under the *Environment Protection and Biodiversity Conservation Act 1999*. As such, a referral to the Australian Government Minister for the Environment is not required.

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GLOSSARY

Abbreviation	Definition
AFFA	Addendum Flora and Fauna Assessment
AREF	Addendum Review of Environmental Factors
asl	Above sea level
BAM	Biodiversity Assessment Method 2020
BAR	Biodiversity Assessment Report
BC Act	<i>Biodiversity Conservation Act 2016 (NSW)</i>
BDAR	Biodiversity Development Assessment Report
BGHF	Blue Gum High Forest
BOM	Bureau of Meteorology
BOS	Biodiversity Offset Scheme
CEEC	Critically Endangered Ecological Community
CEMP	Construction Environmental Management Plan
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DPI	Department of Primary Industries
DPIE	Department of Planning, Industry and Environment
Duffys Forest	Duffys Forest Ecological Community in the Sydney Basin Bioregion
ECE	East Coast Ecology
EEC	Endangered Ecological Community
EP&A Act	<i>Environmental Planning & Assessment Act 1979 (NSW)</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
FM Act	<i>Fisheries Management Act 1994</i>
ha	Hectares
KFH	Key Fish Habitat
km	Kilometres
LGA	Local Government Area
Locality	The same meaning when describing a local population of a species or local occurrence of an ecological community.
m	metres
mm	millimetres
MNES	Matters of National Environmental Significance
NSW	New South Wales
NSW DCCEEW	NSW Department of Climate Change, Energy, the Environment and Water
PCT	Plant Community Type

Abbreviation	Definition
PMST	Protected Matters Search Tool
Proposed Change	The land depicted in Figure 2 - Figure 14
REF	Review of Environmental Factors
SEPP	State Environmental Planning Policy
SIS	Species Impact Statement
STIF	Sydney Turpentine Ironbark Forest
TEC	Threatened Ecological Community

1. INTRODUCTION

1.1 The Project

The Proposed Change is part of the Ryde to Pymble Pipeline Upgrade project. This project is required to meet Sydney Water's commitment to water resilience within the Prospect Water System. The Prospect Water System is the largest and most central water supply system in the Greater Sydney Metropolitan area. The Prospect Water System includes the Prospect North and Ryde delivery systems, which currently service a population of approximately 1.6 million. Significant population growth is forecast within these systems, with the population expected to increase to approximately 2.1 million by 2031 and 2.4 million by 2056.

Water transfer and rebalancing between the Prospect North and Ryde systems has not been possible since 2014, following the decommissioning of the Ryde to Pymble 03 (RP03) water main due to its poor condition. This removed critical network redundancy and reduced interconnectivity between the two systems. The Prospect North system is forecast to exceed system capacity by the end of 2027, and, without RP03, the Ryde system cannot provide contingency supply to support Prospect North.

Strategic planning identified the opportunity to upgrade RP03 and return it to service to meet system planning objectives. Upgrading RP03 will increase the servicing capacity of the water delivery network and improve system resilience. The enhanced capacity of the Ryde system will also support forecast growth across Sydney's North Shore. The Ryde to Pymble Pipeline Upgrade is required to:

- Increase drinking water supply infrastructure to cater for forecast population growth, and
- Improve drinking water resilience by providing a contingency supply from the Ryde system.

The scope of works will require impacts to native vegetation.

1.2 Previous Assessments

In 2025, Aurecon prepared a Biodiversity Assessment Report (BAR) as part of the Ryde to Pymble Pipeline Upgrade: Review of Environmental Factors (REF) (Sydney Water, 2026). The BAR has since been finalised and reissued in 2026. The REF was prepared to satisfy Sydney Water's duties under s.5.5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) to "examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of that activity" and s.5.7 in making decisions on the likely significance of any environmental impacts.

1.3 The Proposed Change

The Proposed Change involves the removal of vegetation within the construction corridor that is in addition to what was assessed under the approved REF. The Proposed Change was assessed through detailed arboricultural and ecological investigations to determine the extent of potential impacts associated with the additional vegetation removal.

The arboricultural assessment was undertaken by the Project Arborist and considered all trees within and adjacent to the construction corridor. The assessment evaluated each tree's theoretical Notional Root Zone (NRZ), Structural Root Zone (SRZ) and canopy to determine the extent of potential construction

impacts, identify opportunities for tree retention, and determine where removal may be required to facilitate construction. Where further investigation was required, targeted root mapping using non-destructive digging (NDD) was undertaken to verify the presence and location of structural roots within the theoretical root zones and inform opportunities to avoid or minimise impacts during construction.

The ecological impacts associated with the Proposed Change were assessed by a suitably qualified ecologist through an addendum ecological assessment (this report). The assessment considered the potential impacts of the additional vegetation removal on native vegetation, fauna habitat, threatened species, threatened ecological communities (TECs) and Matters of National Environmental Significance (MNES). The significance of these impacts was assessed in accordance with the *Biodiversity Conservation Act 2016* (NSW) (BC Act), including consideration of the Biodiversity Offsets Scheme (BOS), and the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) to determine whether the Proposed Change would trigger any additional statutory obligations or approval requirements under either Act.

The Proposed Change is depicted in **Figure 2 - Figure 14**.

1.3.1 Justification for the Proposed Change

The Proposed Change to remove additional vegetation is required to facilitate the safe and practical construction of the Ryde to Pymble Pipeline Upgrade Project. The Proposed Change does not alter the project scope, alignment, construction corridor or project objectives. Following completion of detailed design, refinement of the construction methodology and constructability reviews undertaken by the delivery contractor and specialist subcontractors, it was identified that trees within the Approved Construction Corridor that were not previously assessed may be impacted during construction. These impacts were not identified during the concept design phase documented in the approved REF.

The refinement of the construction methodology identified the appropriate working space required to safely construct the pipeline and undertake excavation, shoring, pipe installation, plant operation, access, material handling and restoration activities. As a result, additional tree impacts may occur where construction activities encroach into tree protection zones, including excavation within the NRZ and / or SRZ of trees adjacent to the pipeline and impacts from major canopy pruning required to provide safe operating clearances for construction plant and equipment.

Where unavoidable impacts to a tree's root zone or canopy would compromise its long-term health or structural integrity, and those impacts cannot be reasonably avoided or minimised, the tree will require removal.

1.4 Scope of Assessment

East Coast Ecology Pty Ltd (ECE) was engaged to prepare an Addendum Flora and Fauna Assessment (AFFA), for the Proposed Change. This AFFA will inform the Addendum Review of Environmental Factors (AREF) being prepared to assess the Proposed Change. The AFFA will review the approved impacts to biodiversity within the Approved Construction Corridor against the impacts to biodiversity associated with the Proposed Change. The overarching objective of this assessment was to evaluate the ecological values that occur within the Proposed Change and identify how the proposal satisfies the relevant planning framework.

The full scope of the assessment included:

- Background research to determine the likelihood for New South Wales (NSW) and/ or Commonwealth threatened biota to occur within the Proposed Change during any point of their lifecycles
- Assess any potential impacts to species and/ or communities listed under the BC Act and the EPBC Act
- Establishing the likelihood of occurrence of any threatened entities (i.e. ecological communities and species) listed under the BC Act, the EPBC Act and the *Fisheries Management Act 1994* (FM Act)
- Identifying and mapping the distribution of vegetation communities within the Proposed Change
- Recording presence and the extent of any known or potential fauna habitat features such as nests, dreys, caves, crevices, culverts, pools, soaks, flowering trees, fruiting trees or hollow-bearing trees and provide recommendations for on-going management of these habitat features and any fauna present
- Recording presence and the extent of any priority weed infestations that require management by law
- Determining potential ecological impacts or risks that may result due to the Proposed Change, and
- Recommendation of any controls or additional actions to be taken to protect or improve environmental outcomes of the Proposed Change.

The section of the Approved Construction Corridor containing Rothwell Road has not been referenced in this AFFA, as no trees subject to assessment under the AFFA occur within this area. Accordingly, it has been excluded from the scope of the report.

This assessment does not re-evaluate the biodiversity values or impacts previously assessed within the Approved Construction Corridor, nor does it replicate the comprehensive BAR undertaken by Aurecon. It is intended to evaluate the biodiversity impacts specifically associated with the Proposed Change, including any changes to disturbance extent, vegetation impacts, tree impacts and offset requirements relative to those identified in the approved assessment. The methodologies adopted in the approved BAR (Aurecon, 2026) have been replicated within this assessment to the best of the author's ability.

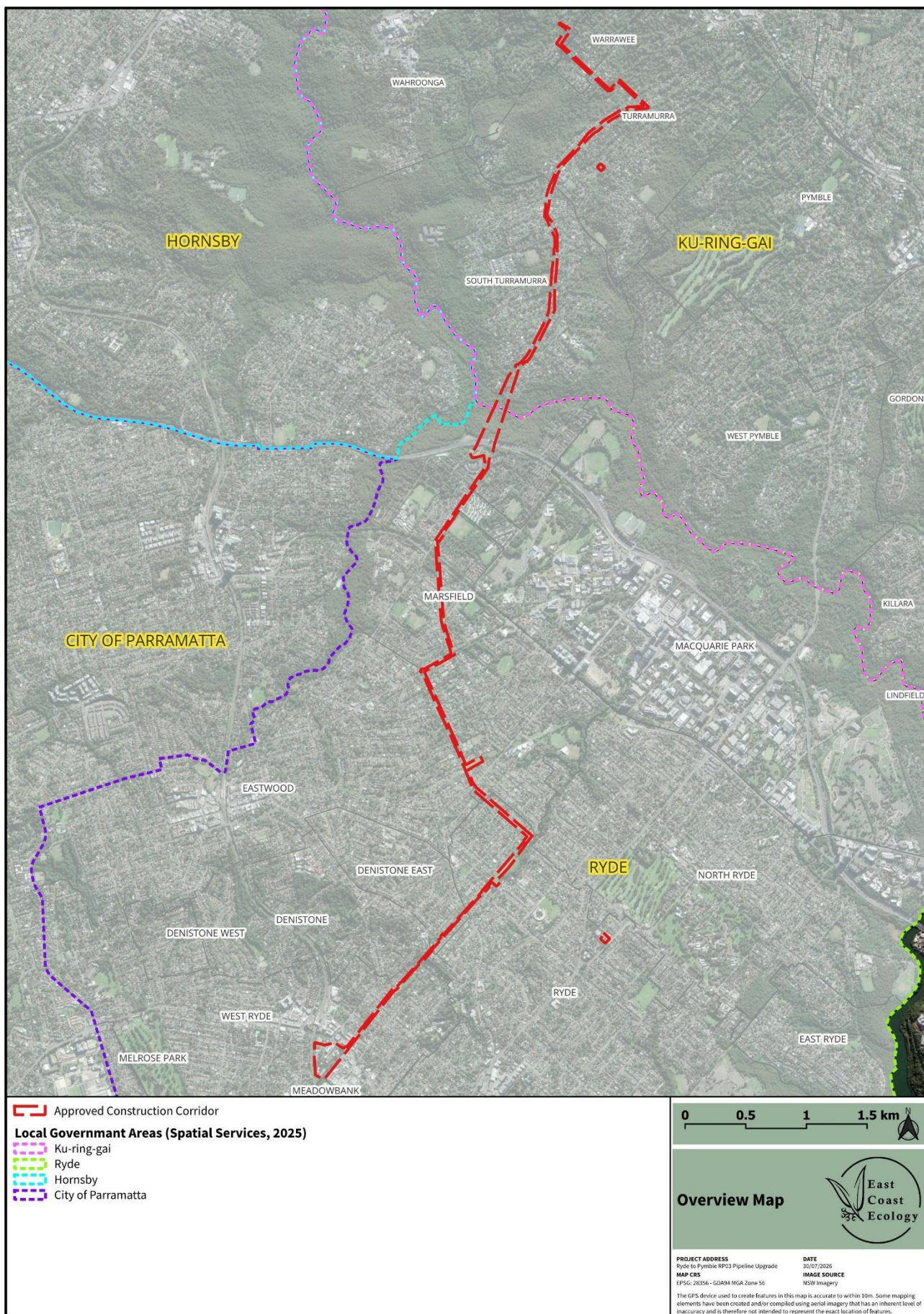


Figure 1. Overview of the Approved Construction Corridor.



Figure 2. The Approved Construction Corridor (Turramurra) 1/13.

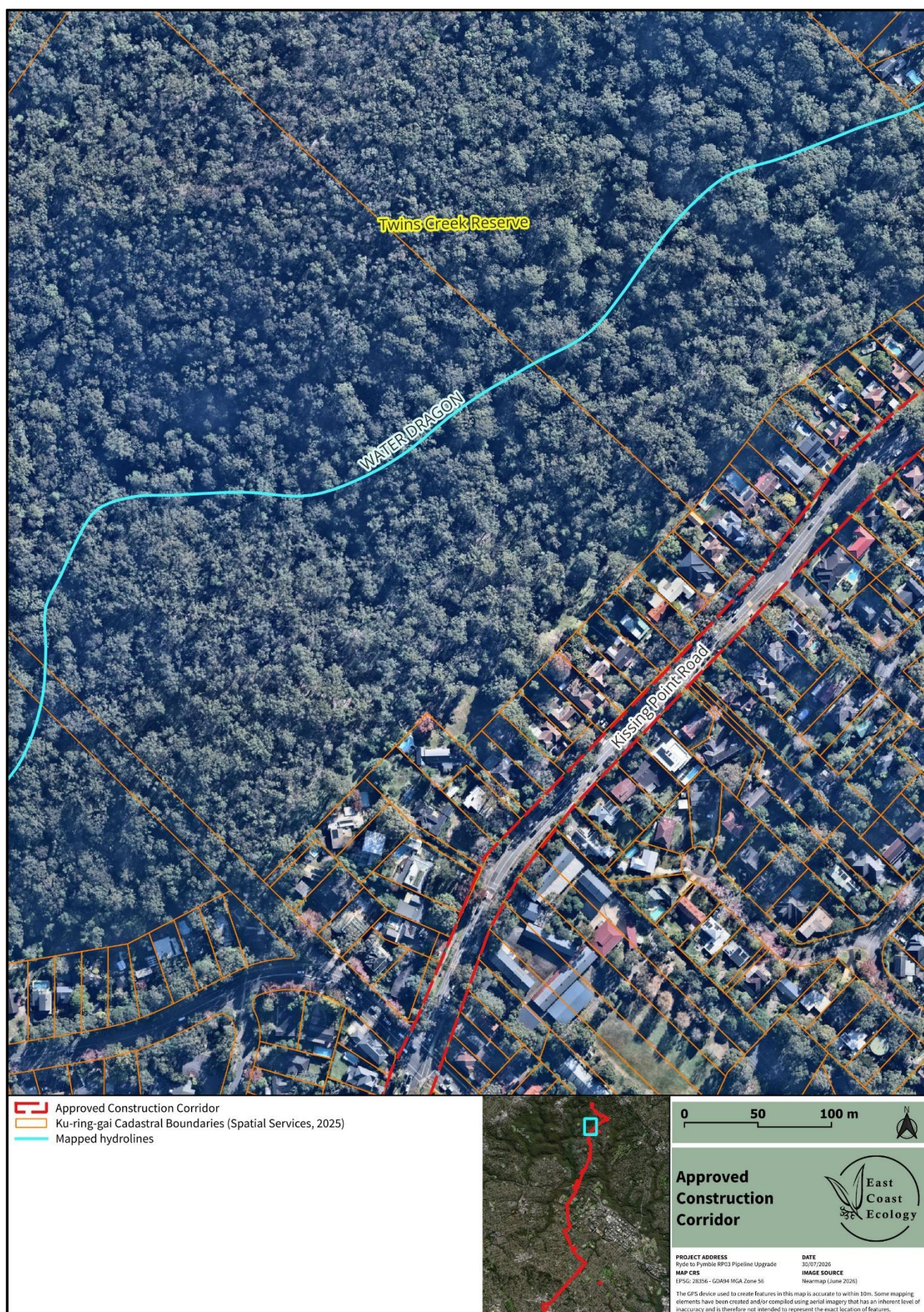


Figure 3. The Approved Construction Corridor (Turramurra) 2/13.



Figure 4. The Approved Construction Corridor (South Turrumurra) 3/13.

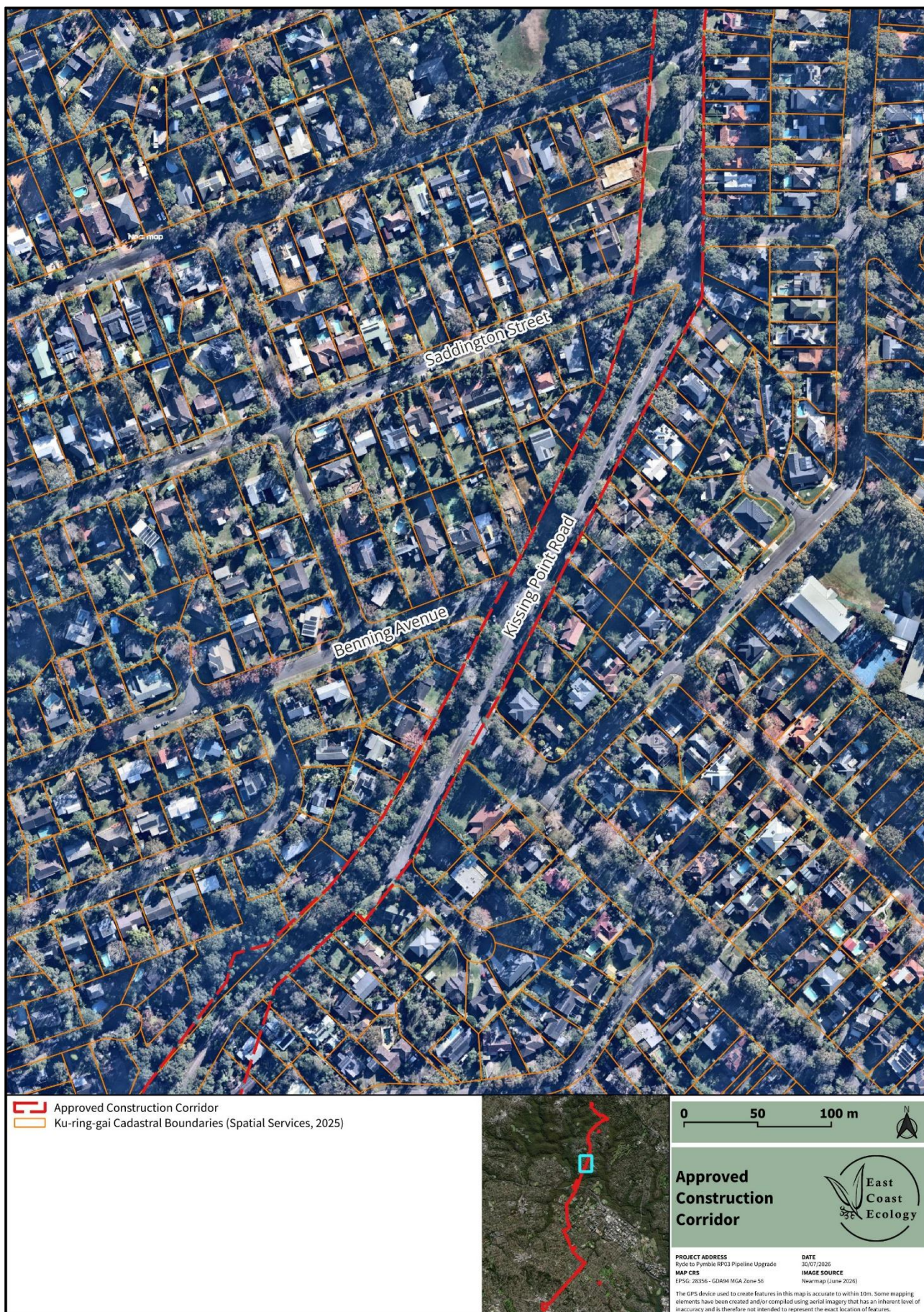


Figure 5. The Approved Construction Corridor (South Turrumurra) 4/13.



Figure 6. The Approved Construction Corridor (Marsfield & Macquarie Park) 5/13.



Figure 7. The Approved Construction Corridor (Marsfield) 6/13.



Figure 8. The Approved Construction Corridor (Marsfield) 7/13.



Figure 9. The Approved Construction Corridor (Eastwood & Marsfield) 8/13.

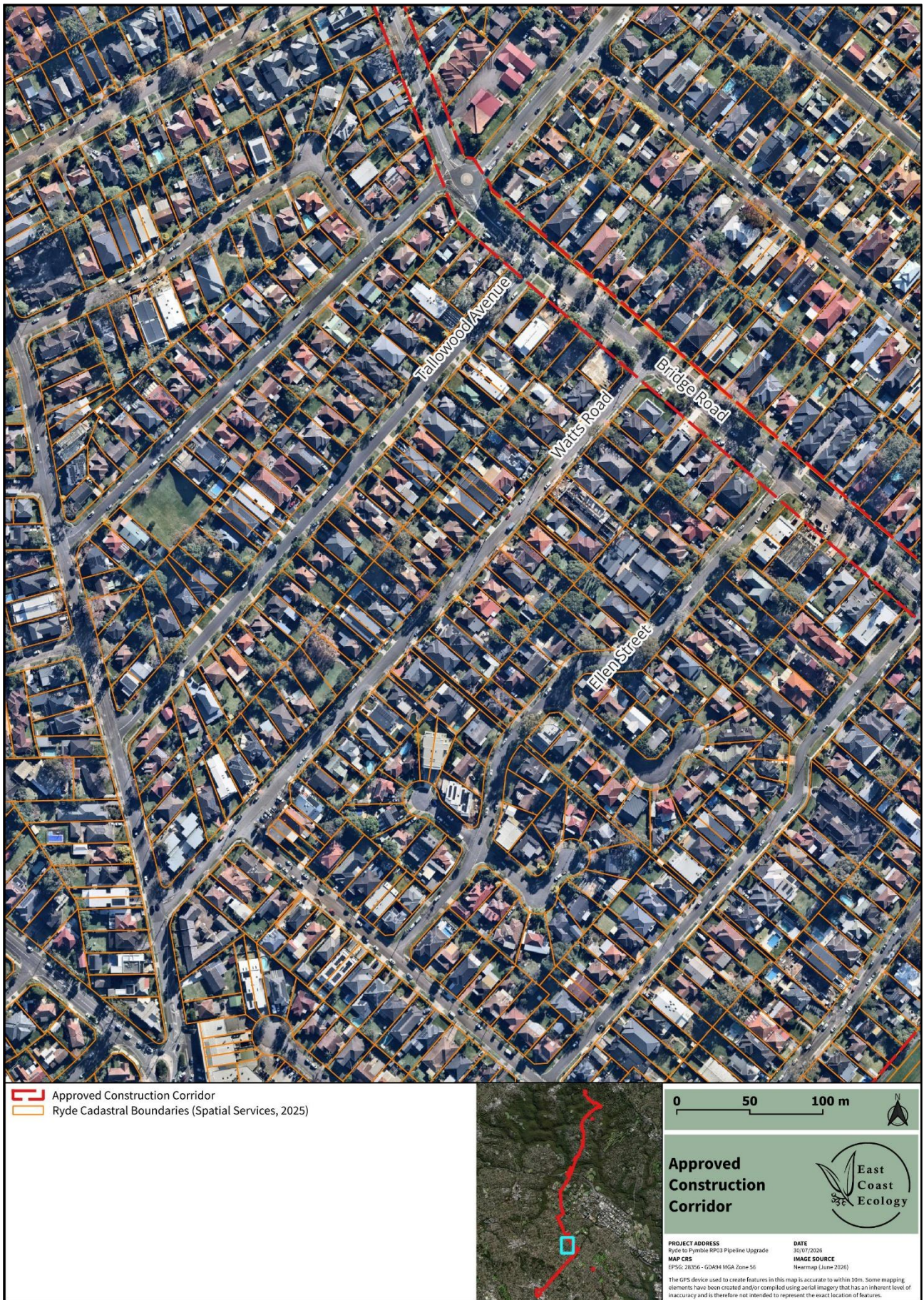


Figure 10. The Approved Construction Corridor (Eastwood & Ryde) 9/13.

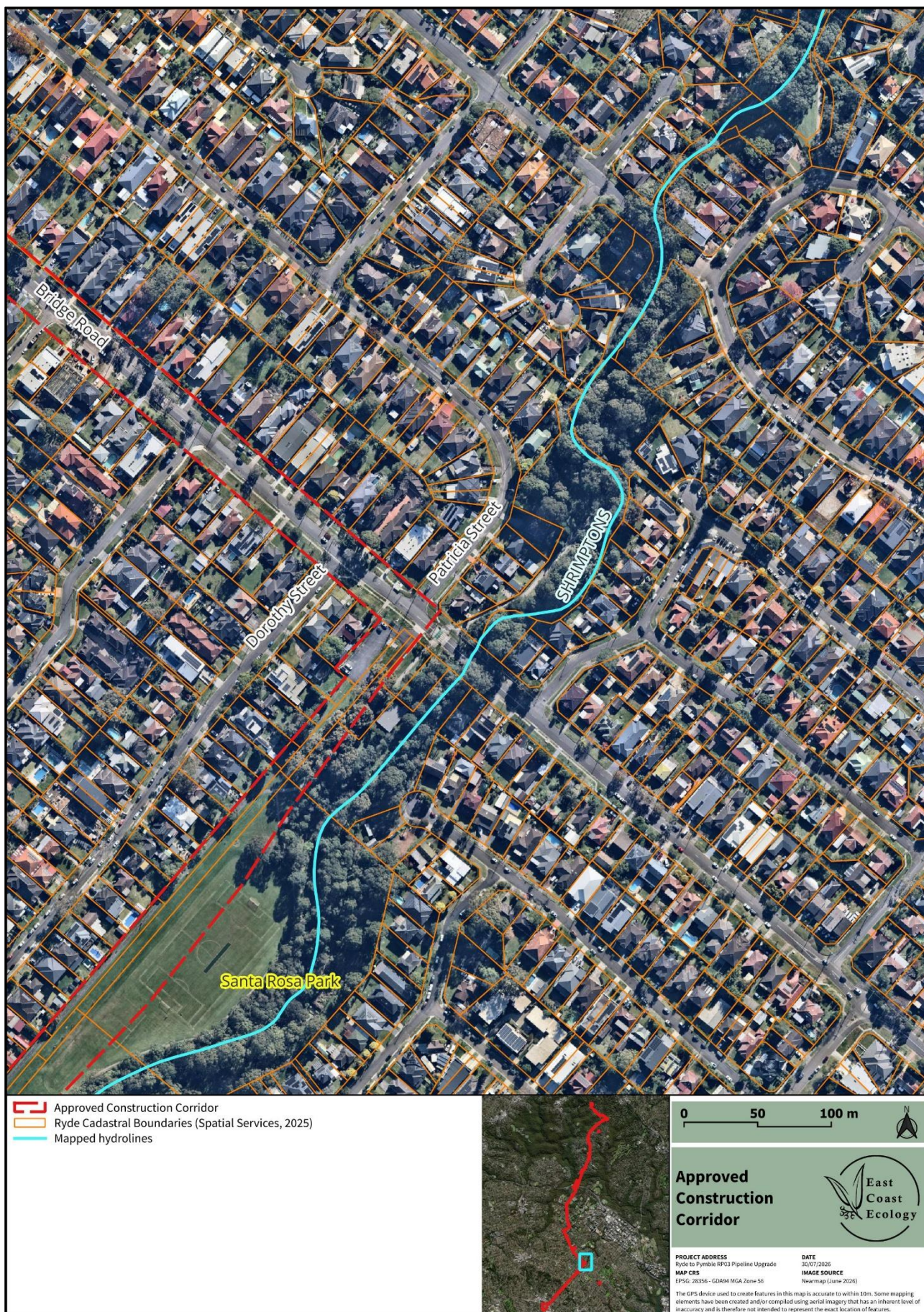


Figure 11. The Approved Construction Corridor (Ryde & North Ryde) 10/13.

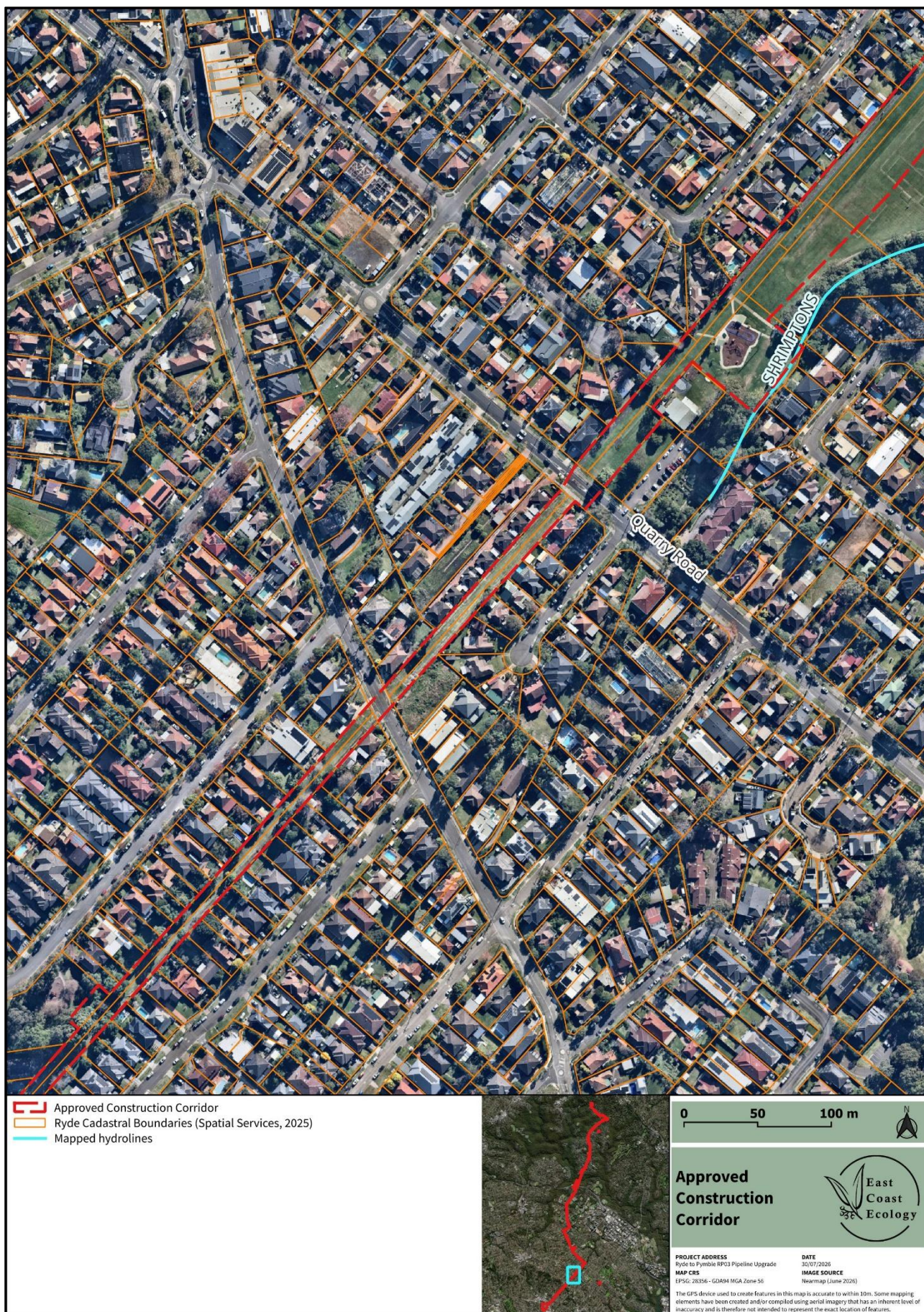


Figure 12. The Approved Construction Corridor (Denistone East & Ryde) 11/13.



Figure 13. The Approved Construction Corridor (Denistone & West Ryde) 12/13.

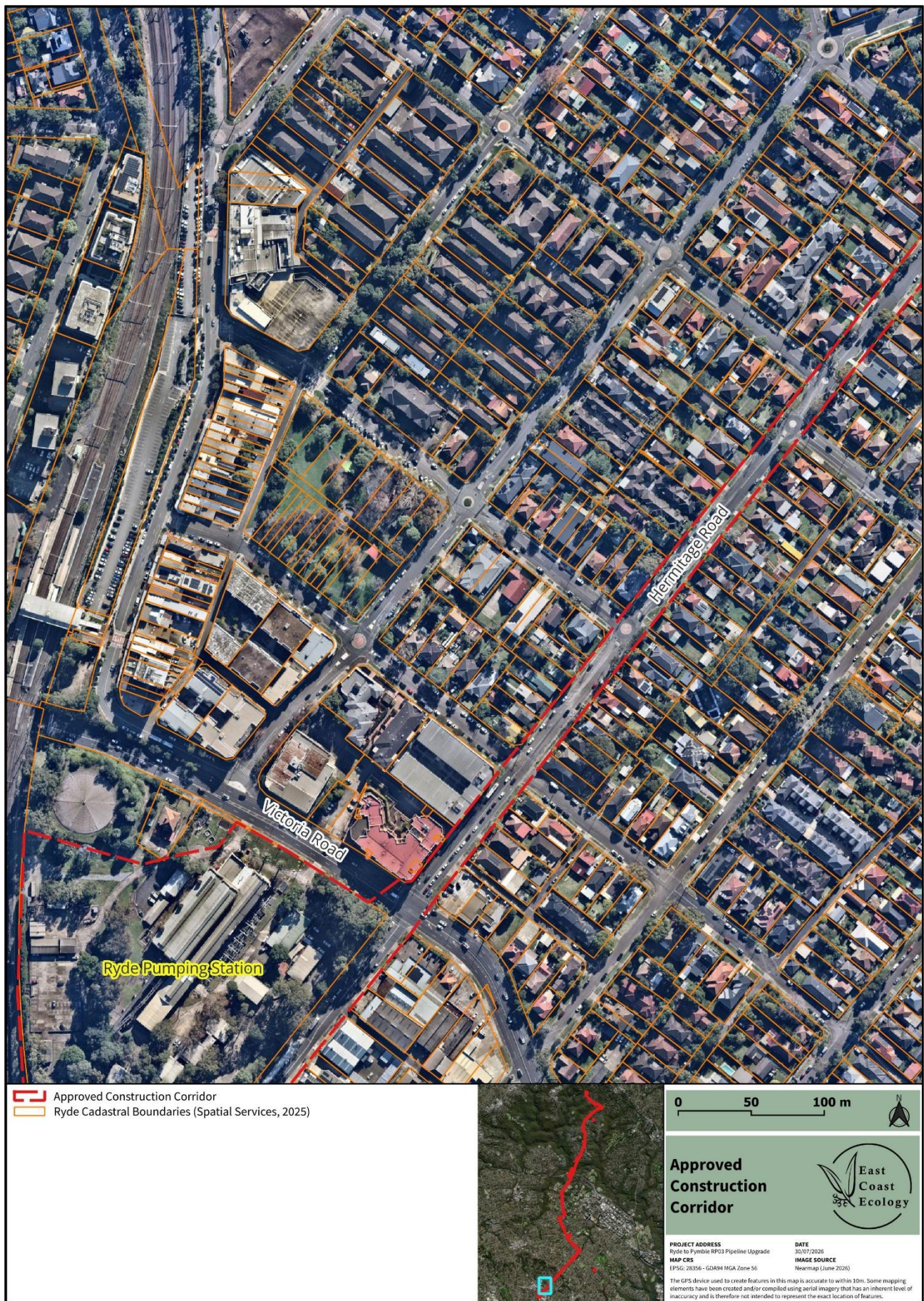


Figure 14. The Approved Construction Corridor (West Ryde) 13/13.

2. LEGISLATIVE CONTEXT

2.1 *Environment Protection and Biodiversity Conservation Act 1999 (Cth)*

The Commonwealth EPBC Act provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places which are considered Matters of National Environmental Significance (MNES). The EPBC Act identifies eight MNES:

1. World Heritage properties
2. National Heritage places
3. Wetlands of international importance (those listed under the Ramsar Convention)
4. Listed threatened species and communities
5. Migratory species listed under international agreements
6. Great Barrier Reef Marine Park
7. Commonwealth marine areas, and
8. Nuclear actions.

The Protected Matters Search Tool (PMST) identified the following as potentially occurring within the Proposed Change (or within the area):

- 12 Threatened Ecological Communities
- 111 threatened species, and
- 59 Migratory species.

One EPBC Act listed threatened ecological community (TEC) was identified by the BAR (Aurecon, 2026):

- Turpentine-Ironbark Forest of the Sydney Basin Bioregion (Critically Endangered).

Several EPBC Act listed threatened and migratory species have the potential to utilise the habitat provided by the Proposed Change. The Proposed Change will not result in a ‘significant impact’ to any MNES and a referral to the Commonwealth Minister for the Environment and Water will not be required.

2.2 *Environmental Planning and Assessment Act 1979 (NSW)*

The *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act) establishes the system of environmental planning and assessment in NSW. The EP&A Act is the principal planning legislation for NSW, providing a framework for the overall environmental planning and assessment of development proposals. The EP&A Act places a duty on the determining authority to adequately address a range of environmental matters including maintenance of biodiversity and the likely impact to threatened species, populations or ecological communities (under the BC Act).

An REF has been prepared to satisfy Sydney Water’s duties under s.5.5 of the EP&A Act to “examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of that activity” and s.5.5 in making decisions on the likely significance of any environmental impacts. This AFFA forms part of an REF addendum being prepared for the Ryde to Pymble (RP03) Pipeline Upgrade and assesses the biodiversity impacts of the Proposed Change to meet the requirements of the EP&A Act.

2.3 *Biodiversity Conservation Act 2016 (NSW)*

The BC Act (NSW) seeks to conserve biological diversity and promote ecologically sustainable development, to prevent extinction and promote recovery of threatened species, populations and ecological communities and to protect areas of outstanding biodiversity value.

Several BC Act listed threatened species and TECs are known to occur or have the potential to occur within the Proposed Change. The BC Act requires that the significance of the impact on threatened species, populations and threatened ecological communities is assessed using the test listed in Section 7.3 of the BC Act. Where a significant impact is likely to occur, a Species Impact Statement (SIS) must be prepared in accordance with the Environment Agency Head's requirements, or a Biodiversity Development Assessment Report (BDAR) must be prepared by an accredited assessor in accordance with the Biodiversity Assessment Method (BAM) (DPIE, 2020a).

Two BC Act listed TECs were identified by the BAR (Aurecon, 2026):

- Duffys Forest Ecological Community in the Sydney Basin Bioregion (Endangered), and
- Sydney Turpentine-Ironbark Forest in the Sydney Basin Bioregion (Critically Endangered).

No BC Act listed species were identified within the Proposed Change. The Proposed Change will not result in a 'significant impact' on any threatened entities and therefore the Biodiversity Offset Scheme is not triggered (**Appendix B**). As such, an SIS or a BDAR is not required. The Proposed Change is not located within any Areas of Outstanding Biodiversity Value.

2.4 *Biosecurity Act 2015 (NSW)*

The *Biosecurity Act 2015* (NSW) provides a framework for the prevention, elimination and minimisation of biosecurity risks posed by an activity as a matter of biosecurity. As defined in Part 3, section 23 of this Act, any non-conformance by an individual is defined as guilty of an offence. Five priority weeds for the Greater Sydney region (DPI, 2026c) were identified within the Proposed Change:

- *Rubus fruticosus* species aggregate (Blackberry)
- *Asparagus aethiopicus* (Ground Asparagus)
- *Senecio madagascariensis* (Fireweed)
- *Lantana camara* (Lantana), and
- *Tradescantia fluminensis* (Trad).

Priority weeds must be managed in accordance with the *Biosecurity Act 2015* (NSW).

2.5 *Water Management Act 2000 (NSW)*

The main objective of the *Water Management Act 2000* (NSW) (WM Act) is to manage NSW water in a sustainable and integrated manner that will benefit today's generations without compromising future generations' ability to meet their needs. Section 91E of the Act establishes an approval regime for controlled activities within waterfront land. However, Part 4, Division 2, Clause 64 of the Water Management (General) Regulation 2025 provides an exemption for public authorities in relation to all controlled activities on waterfront land. Therefore, approval under the WM Act is not required.

2.6 Fisheries Management Act 1994 (NSW)

The FM Act aims to conserve, develop and share the fishery resources of NSW for the benefit of present and future generations including conserving fish stocks and key fish habitats and promoting ecologically sustainable development.

Key Fish Habitat (KFH) is mapped within the Lane Cove River within the Approved Construction Corridor; however, it lies approximately 330m south-west of the Proposed Change (**Figure 15**). The Proposed Change does not require works in KFH, nor did marine vegetation protected under the FM Act occur within the Proposed Change. As such, the Proposed Change would not impact upon KFH.

2.7 State Environmental Planning Policies

2.7.1 State Environmental Planning Policy (Resilience and Hazards) 2021

The State Environmental Planning Policy (Resilience and Hazards) 2021 (Resilience and Hazards SEPP) commenced on the 1st of March 2022 and replaces the following former SEPPs:

- State Environmental Planning Policy (Coastal Management) 2018
- State Environmental Planning Policy 33 – Hazardous and Offensive Development, and
- State Environmental Planning Policy 55 – Remediation of Land.

Chapter 2 (Coastal management) of the Resilience and Hazards SEPP aims to manage development in the coastal zone in a manner consistent with the objectives of the *Coastal Management Act 2016*, including the management objectives for each coastal management area.

The Proposed Change is not located within the coastal zone, nor does it intersect with any areas mapped as Littoral Rainforest, Coastal Wetlands or their respective proximity zones. No further assessment under this SEPP is required.

3. METHODOLOGY

3.1 Desktop Review

A thorough literature review of local information relevant to the Proposed Change was undertaken. Searches using NSW Wildlife Atlas (BioNet) (NSW DCCEEW, 2026a) and the Commonwealth Protected Matters Search Tool (PMST) (DCCEEW, 2026) were conducted to identify all current threatened flora and fauna, as well as migratory fauna records, within a 5km radius of the Proposed Change. These data were used to assist in establishing the presence or likelihood of any ecological values as occurring on or adjacent to the Proposed Change. Soil landscape and geological mapping, as well as existing vegetation mapping, were examined to assist in determining whether any threatened flora or ecological communities could be present.

The following technical resources were utilised in the preparation of this report:

- State and Commonwealth datasets:
 - EPBC Protected Matters Search Tool (DCCEEW, 2026)
 - NSW BioNet. The website of the Atlas of NSW Wildlife (NSW DCCEEW, 2026a)
 - NSW BioNet. Threatened Biodiversity Data Collection (NSW DCCEEW, 2026b)
 - NSW BioNet. Vegetation Classification System (NSW DCCEEW, 2026c)
 - NSW Government Spatial Services: Search and Discovery - Historical, Aerial and Satellite Imagery (Spatial Services, 2026a)
 - NSW Government Spatial Services: Six Maps Clip & Ship (Spatial Services, 2026b)
 - BAM Important Habitat Maps
 - Key Fish Habitat Maps – Hawkesbury-Nepean (DPI, 2026b)
- Vegetation and soil mapping:
 - The NSW State Vegetation Type Map (NSW DCCEEW, 2026d)
 - eSPADE v2.2.0 (NSW DCCEEW, 2026e)
- NSW State guidelines:
 - Surveying threatened plants and their habitats - NSW survey guide for the Biodiversity Assessment Method (DPIE, 2020b)
 - Threatened Species Survey and Assessment: Guidelines for developments and activities. Working Draft (DEC, 2004)
- Project Specific Documentation:
 - Review of Environmental Factors – Ryde to Pymble Pipeline Upgrade (Sydney Water, 2026)
 - Biodiversity Assessment Report – RP03 (Aurecon, 2026)

Species from the BioNet online search tool were used to produce a list of threatened species, populations and communities that are likely to occur within the Proposed Change.

3.2 Ecological Site Assessment

Site assessments were undertaken by ECE during June - July 2026 (**Table 1**). During the site assessments, the following activities were undertaken:

- Identification of the vegetation communities present within the Proposed Change, with a focus on identifying any TECs
- Recording a list of flora species encountered within the Proposed Change, with a focus on species diagnostic of TECs and priority weeds
- Identification of the habitat of any threatened and regionally significant fauna including:
 - Tree hollows (habitat for threatened forest owls, parrots and mammals)
 - Caves and crevices (habitat for threatened reptiles and mammals)
 - Termite mounds (habitat for threatened reptiles)
 - Soaks (habitat for threatened frogs)
 - Wetlands and drainage lines (habitat for threatened fish, frogs and water birds)
 - Fruiting and flowering trees (food for threatened birds and mammals)
 - Trees and shrubs supporting nest structures (habitat for threatened birds and arboreal mammals)
 - Logs, bark and debris (habitat for threatened frogs, reptiles and snails).
- Identification of the locations of notable fauna habitat such as important nesting, roosting or foraging microhabitats, and
- Assessment of the connectivity and quality of the vegetation within the Proposed Change and surrounding area.

3.3 Native Vegetation and Threatened Ecological Communities Methods

3.3.1 Review of Existing Information

A review of the State Vegetation Type Map (NSW DCCEEW, 2026d) as well as information and databases provided in the BioNet Vegetation Classification System (NSW DCCEEW, 2026c), was used to assist in the identification of PCTs within and surrounding the Proposed Change. This assessment adopts all PCTs and TECs as identified and classified by Aurecon in the approved BAR (Aurecon, 2026), ensuring consistency with the existing vegetation mapping and community classifications.

3.3.1.1 Remnant Trees

At the direction of Sydney Water, a remnant tree count was undertaken adopting the methodology established by Aurecon, in order to ensure methodological consistency with the approved BAR (Aurecon, 2026). Accordingly, this assessment does not apply an independently derived definition of remnant vegetation, but rather adopts Aurecon's definition in full, whereby remnant vegetation is described as "patches or areas of native vegetation that have survived clearing, disturbance, or land use change and remain as original or near-original ecological communities within a landscape." Consistent with Aurecon's findings, areas of remnant native bushland were identified as occurring primarily within the northern sections of the alignment, including Twin Creeks Reserve, Kissing Point Road, David Martin Reserve, and Agincourt Road, Marsfield, the latter supporting a recognised conservation area of STIF, a nationally listed TEC.

3.3.1.2 Planted Native Vegetation and Exotic Vegetation

Consistent with the approach established by Aurecon, standalone trees identified as either exotic species or planted native trees were excluded from the remnant tree count. Planted native vegetation was distinguished from remnant vegetation in accordance with Aurecon's characterisation of the planted conditional state, which occurs as scattered trees established in a linear alignment, with a canopy dominated by *Lophostemon confertus*, *Callistemon viminalis*, *Syzygium luehmannii*, *Syzygium francisii*, *Melaleuca quinquenervia*, *Brachychiton acerifolius*, *Tristaniopsis laurina*, *Melaleuca bracteata*, *Dysoxylum mollissimum* subsp. *molle*, *Banksia integrifolia*, *Grevillea robusta*, *Ficus benjamina*, *Stenocarpus sinuatus*, *Syzygium australe*, *Elaeocarpus reticulatus*, *Eucalyptus microcorys*, *Toona ciliata*, and *Eucalyptus sideroxylon*. Trees consistent with this planted assemblage were therefore classified as planted native vegetation rather than remnant vegetation, in strict accordance with Aurecon's established methodology.

3.3.1.3 Total Impact Calculations of Native Vegetation

Areas of native vegetation quantified in hectares (i.e. vegetation community and TEC extent) that were subject to pruning only were excluded from all quantified impact totals presented herein, as pruning does not constitute vegetation removal and therefore does not represent a direct loss of native vegetation extent. This exclusion applies only to vegetation impacts measured on an aerial (ha) basis and does not extend to standalone trees. The exclusion of pruned vegetation area from the ha-based totals was undertaken at the direction of Sydney Water and MDGJV, consistent with their offset policy, under which impact quantification and offset requirements were calculated.

3.3.2 Field Surveys

The extent of native vegetation within the Proposed Change was determined through a field assessment with the aid of a GPS-enabled tablet.

3.4 Threatened Flora Survey Methods

3.4.1 Review of Existing Information

Threatened flora with potential to occur within the Proposed Change and immediate surrounds were identified following review of BioNet and the PMST. Soil mapping (NSW DCCEEW, 2026e) and topography (Google Earth) were also used to provide further context on habitat constraints for threatened flora. The assessment process adopted by Aurecon in the preparation of the BAR has also been applied in the preparation of this AFFA, ensuring methodological consistency across both assessments.

3.4.2 Field Surveys

To determine whether any threatened flora or their habitats were present, a survey was undertaken throughout the Proposed Change and in areas of native vegetation, using parallel field traverses in accordance with the 'Surveying threatened plants and their habitats - NSW survey guide for the Biodiversity Assessment Method' (DPIE, 2020b) in suitable habitat.

3.5 Threatened Fauna Survey Methods

3.5.1 Review of Existing Information

Threatened fauna with potential to occur within the Proposed Change and immediate surrounds were identified following review of BioNet and the PMST. Soil mapping (NSW DCCEEW, 2026e) and topography (Google Earth) were also used to provide further context on habitat constraints for threatened fauna. The assessment process adopted by Aurecon in the preparation of the BAR has also been applied in the preparation of this AFFA, ensuring methodological consistency across both assessments.

3.5.2 Habitat Constraints

A field survey was undertaken to identify any habitat constraints (e.g. waterbodies, rocky areas, tree hollows), including microhabitat, present within the Proposed Change and immediate surrounds. Potential habitat constraints within the broader area (500m buffer) were assessed using Google Earth, historical aerial imagery (Spatial Services, 2026a), soil landscape mapping (NSW DCCEEW, 2026e) and recent vegetation mapping (NSW DCCEEW, 2026d).

3.5.3 Field Surveys

No targeted surveys were undertaken. To determine whether any threatened fauna species were present, habitat constraints were targeted during the site assessment.

3.5.4 Permits and Licences

The biodiversity assessment was conducted under the terms of ECEs Scientific Licence issued by the NSW Department of Planning and Environment (SL102667). Fauna survey was conducted under approval RVF22/2367 from the NSW Animal Care and Ethics Committee.

3.6 Weather Conditions

Weather conditions recorded at the most central weather station (Sydney Olympic Park AWS (station 066212)) in the lead up and during the field survey are outlined in **Table 1** (BOM, 2026).

Table 1. Weather conditions taken from the most central weather station (station 066212) in the lead up and during the field survey (BOM, 2026).

Timing/activities	Date	Day	Temperature (°C)		Rainfall (mm)
			Min	Max	
Lead up to the field survey	11/06/2026	Thursday	13.7	21.7	1.2
	12/06/2026	Friday	14.8	21.3	0.0
	13/06/2026	Saturday	12.2	24.4	0.0
	14/06/2026	Sunday	14.5	22.9	0.0
	15/06/2026	Monday	14.0	19.7	4.0
	16/06/2026	Tuesday	10.0	22.3	0.2
	17/06/2026	Wednesday	12.4	20.6	0.0

Timing/activities	Date	Day	Temperature (°C)		Rainfall (mm)
			Min	Max	
Vegetation Mapping & Habitat Survey	18/06/2026	Thursday	10.4	20.9	0.0
Vegetation Mapping & Habitat Survey	19/06/2026	Friday	13.2	21.8	0.0
Lead up to the field survey	26/06/2026	Friday	11.1	14.7	5.0
	27/06/2026	Saturday	8.8	16.6	1.0
	28/06/2026	Sunday	9.9	17.6	1.0
	29/06/2026	Monday	10.4	19.7	5.4
	30/06/2026	Tuesday	8.5	17.5	0.0
	01/07/2026	Wednesday	10.8	21.5	1.0
	02/07/2026	Thursday	13.8	22.6	2.0
Vegetation Mapping & Habitat Survey	03/07/2026	Friday	10.5	20.2	0.0
Vegetation Mapping & Habitat Survey	07/07/2026	Tuesday	9.9	*	1.6

* - Data unavailable.

3.7 Study Limitations

The Proposed Change could only be accessed from public areas or within the Approved Construction Corridor, therefore trees rooted in private properties were assessed from a distance due to access restrictions. All PCT and TEC mapping determined within the approved BAR was adopted for the purposes of this AFFA, and any validation of the results of the approved BAR is beyond the scope of this assessment.

This study was not intended to provide a complete inventory of all flora and fauna species with potential to occur within the Proposed Change. The timing of the survey may not have coincided with emergence times of some species of flora and fauna, such as seasonally flowering herbs, seasonal migratory fauna or nocturnal fauna. To account for those species that could not be identified during the site assessment, detailed habitat assessments were combined with desktop research and local ecological knowledge to establish an accurate prediction of the potential for such species to occur within the Proposed Change.

4. SITE CONTEXT

4.1 Landscape Features

4.1.1 IBRA Bioregion and subregion

The Proposed Change occurs within the 'Pittwater' and 'Cumberland' Biogeographic Regionalisation for Australia (IBRA) Subregions, within the Sydney Basin IBRA Bioregion (**Figure 15**).

4.1.2 Rivers, streams, estuaries and wetlands

No mapped watercourses intersect the Proposed Change (**Figure 15**). Several first-order watercourses occur nearby to various extents of the Proposed Change, the closest being Shrimptons Creek, which lies >50m from the Proposed Change.

4.1.3 Topography, Geology and Soils

The Proposed Change varies in elevation, ranging between 16m - 131m above sea level (asl), and occurs across the following soil landscapes (NSW DCCEEW, 2026e):

- Hawkesbury: characterised by Hawkesbury sandstone consisting of medium to coarse-grained quartz sandstone with minor shale and laminite lenses amidst the slopes and ridges of the Macdonald Ranges, Hornsby Plateau and Hawkesbury Valleys
- Lucas Heights: characterised by interbedded shale, laminite and fine to medium grained quartz sandstone forming ridge and plateau surfaces on Mittagong Formation
- GyMEA: characterised by Hawkesbury Sandstone, which is a medium to coarse-grained quartz sandstone with minor shale and laminite lenses, which occurs extensively throughout the Hornsby Plateau and along the foreshores of Sydney Harbour and the Parramatta and Georges Rivers
- Glenorie: characterised by undulating to rolling low hills on Wianamatta Group shales; comprised of laminite and dark grey shale and shale, calcareous claystone, laminite, fine to medium grained lithic-quartz sandstone, and
- West Pennant Hills: characterised by rolling to steep sideslopes on Wianamatta Group shales and shale colluvium, also comprised of laminite and dark grey shale and shale, calcareous claystone, laminite, fine to medium grained lithic-quartz sandstone.

4.1.4 Karst, Caves, Crevices, Cliffs, Rocks or Other of Geological Features of Significance

The Proposed Change did not contain any areas of geological significance (karsts, caves, cliffs and crevices). The Proposed Change and surrounding areas (500m buffer) are not mapped as either occurring on acid sulfate soils or as having high risk/ probability of exhibiting occurrence of acid sulfate soils.

4.1.5 Areas of Outstanding Biodiversity Value

No Areas of Outstanding Biodiversity Value occur within the Proposed Change or surrounding area.

4.1.6 NSW (Mitchell) Landscapes

Mitchell Landscapes (Mitchell, 2002) groups ecosystems into meso-ecosystems representing larger natural entities based on topography and geology. The naming of ecosystems and meso-ecosystems was standardised so that each name provided location information and a meaningful descriptive landscape term. The Proposed Change occurs within the ‘Pennant Hills Ridges’ and ‘Port Jackson Basin’ Mitchell Landscape Ecosystem (**Figure 15**).

4.1.6.1 Pennant Hills Ridges

Rolling to moderately steep hills on horizontal Triassic shales and siltstones. General elevation 10 to 90m, local relief 60m. Deep red texture-contrast soils on narrow hillcrests, red and brown to yellow texture-contrast soils on slopes becoming slightly harsher in drainage lines. Tall open forest of Sydney Blue gum (*Eucalyptus saligna*), Turpentine (*Syncarpia glomulifera*), Blackbutt (*Eucalyptus pilularis*), White Stringybark (*Eucalyptus globoidea*), Grey Ironbark (*Eucalyptus paniculata*), Forest Oak (*Allocasuarina torulosa*) and Rough-barked Apple (*Angophora floribunda*). Rainforest elements in protected moist gully heads with Sweet Pittosporum (*Pittosporum undulatum*), Cheese Tree (*Glochidion ferdinandi*), Sandpaper Fig (*Ficus coronata*) and Black Wattle (*Callicoma serratifolia*).

4.1.6.2 Port Jackson Basin

Deep elongated harbour with steep cliffed margins on horizontal Triassic quartz sandstone. Small pocket beaches and more extensive Quaternary estuary fill of muddy sand at the head of most tributary streams. General elevation 0 to 80m, local relief 10 to 50m. Sandstone slopes and cliffs have patches of uniform or gradational sandy soil on narrow benches and within joint crevices that support forest and woodland of Sydney Peppermint (*Eucalyptus piperita*), Smooth-barked Apple (*Angophora costata*), Red Bloodwood (*Corymbia gummifera*) and Blackbutt (*Eucalyptus pilularis*). Sheltered gullies contain some Turpentine (*Syncarpia glomulifera*), Coachwood (*Ceratopetalum apetalum*) and Water Gum (*Tristaniopsis laurina*). Estuarine sands were originally dominated by saltmarsh but have been taken over by Grey Mangrove (*Avicennia marina*) in the past century.

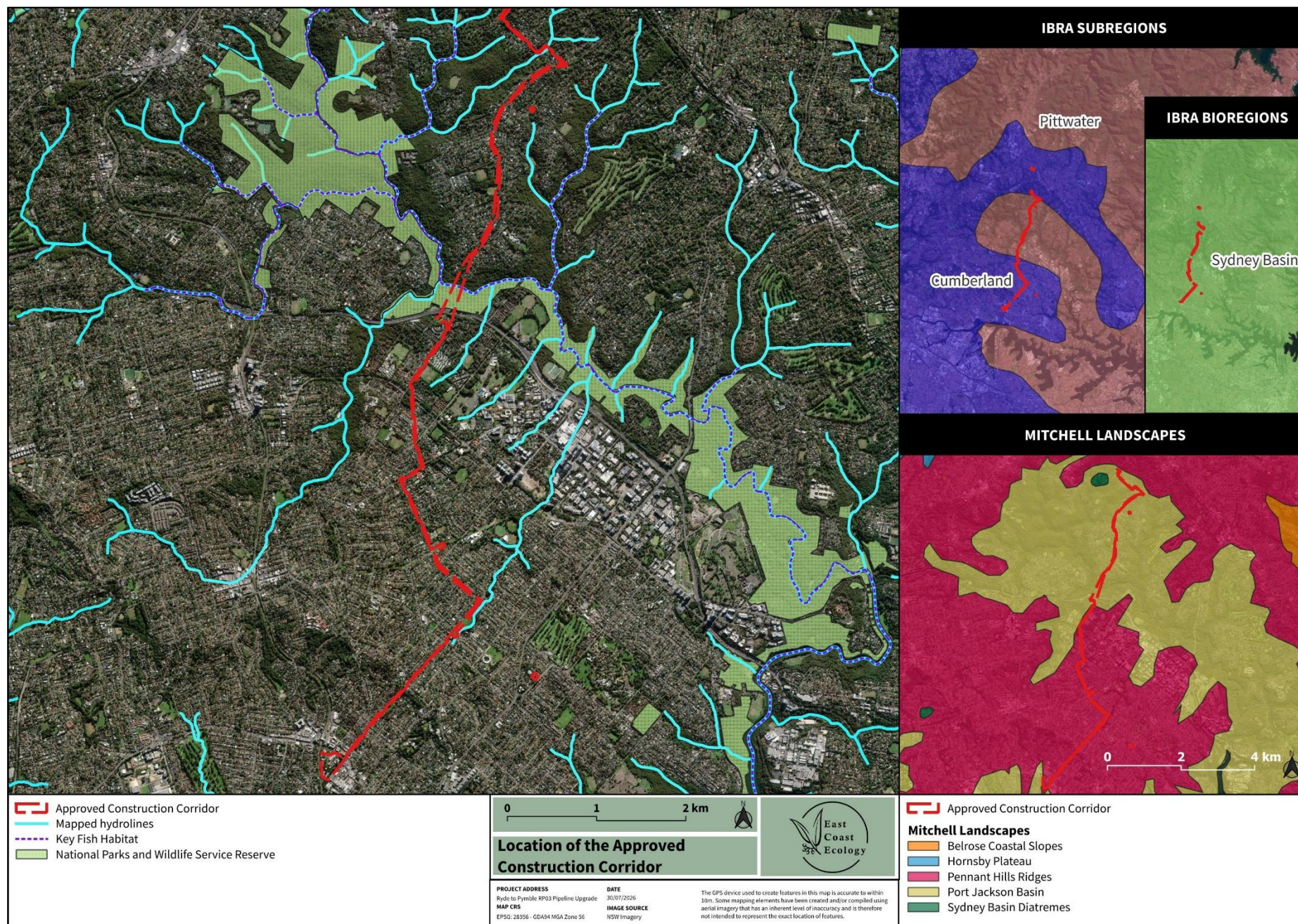


Figure 15. The location of the Approved Construction Corridor within the broader context.

5. RESULTS: NATIVE VEGETATION

5.1 Historical Mapping and Modelling

5.1.1 The State Vegetation Type Map

The State Vegetation Type Map (NSW DCCEEW, 2026d) indicated the presence of eight PCTs within and/ or in proximity to the Proposed Change :

- PCT 3136: Blue Gum High Forest
- PCT 3176: Sydney Enriched Sandstone Moist Forest
- PCT 3259: Sydney Coastal Shale-Sandstone Forest
- PCT 3262: Sydney Turpentine Ironbark Forest
- PCT 3586: Northern Sydney Scribbly Gum Woodland
- PCT 3592: Sydney Coastal Enriched Sandstone Forest
- PCT 3593: Sydney Coastal Sandstone Bloodwood Shrub Forest, and
- PCT 3595: Sydney Coastal Sandstone Gully Forest.

Of these, the following PCTs are associated with the below TECs:

- PCT 3136:
 - BC Act listed: Blue Gum High Forest in the Sydney Basin Bioregion (Critically Endangered Ecological Community (CEEC))
 - EPBC Act listed; Blue Gum High Forest of the Sydney Basin Bioregion (CEEC)
- PCT 3136 & 3176:
 - BC Act listed: Hygrocybeae Community of Lane Cove Bushland Park in the Sydney Basin Bioregion (CEEC)
- PCT 3259 & 3593:
 - BC Act listed: Duffys Forest Ecological Community in the Sydney Basin Bioregion (Endangered Ecological Community (EEC))
- PCT 3262:
 - BC Act listed: Sydney Turpentine-Ironbark Forest in the Sydney Basin Bioregion (CEEC), and
 - EPBC Act listed: Turpentine-Ironbark Forest of the Sydney Basin Bioregion (CEEC).

The State Vegetation Type Map is presented in **Figure 16 - Figure 28**.

5.1.2 Mapped Vegetation Communities from the Approved REF & BAR

The BAR (Aurecon, 2026) identified the following four PCTs within the Approved Construction Corridor:

- PCT 3262: Sydney Turpentine Ironbark Forest
- PCT 3259: Sydney Coastal Shale-Sandstone Forest
- PCT 3595: Sydney Coastal Sandstone Gully Forest, and
- PCT 3592: Sydney Coastal Enriched Sandstone Forest.

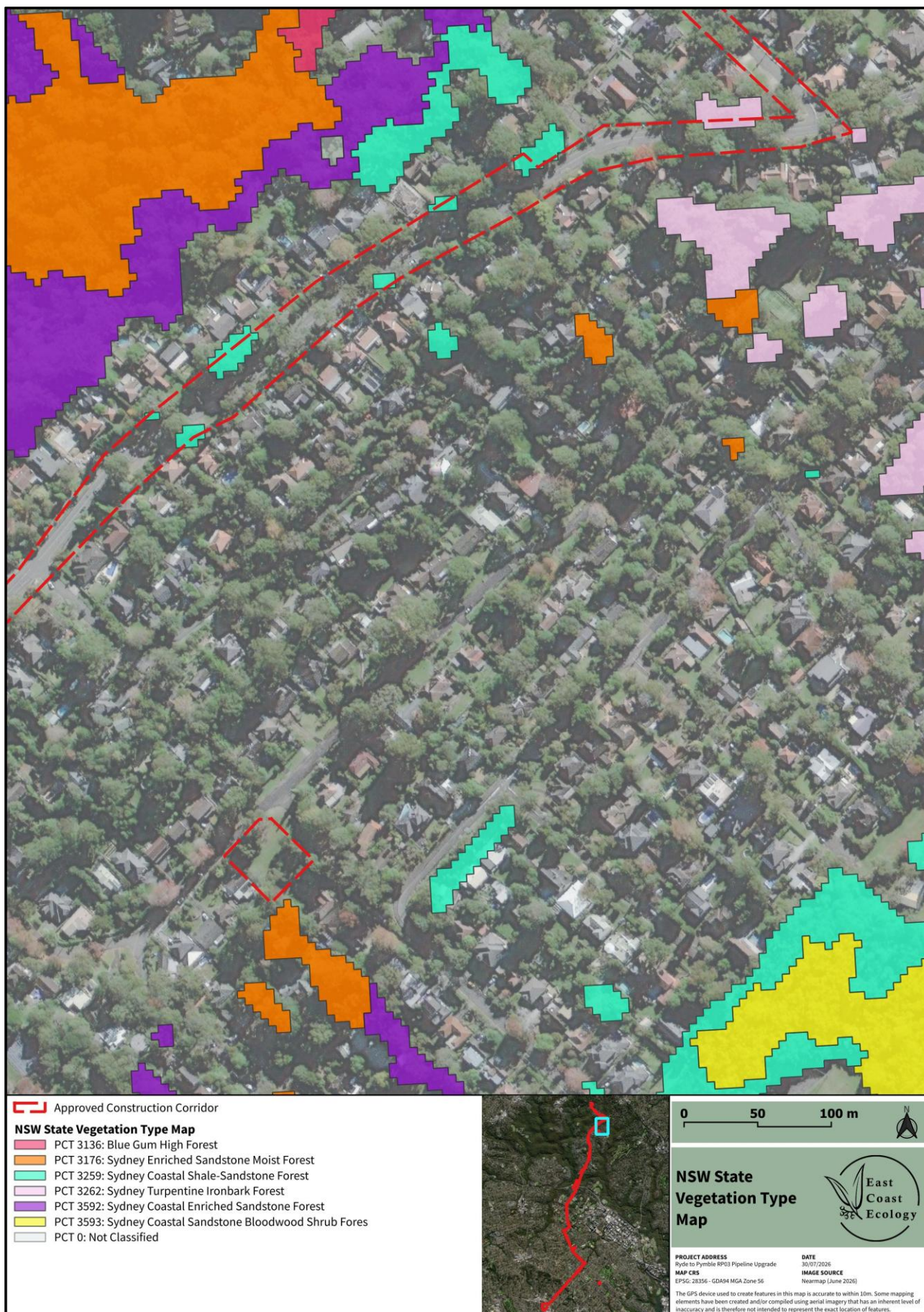


Figure 16. NSW State Vegetation Type Map (Turramurra) 1/13.

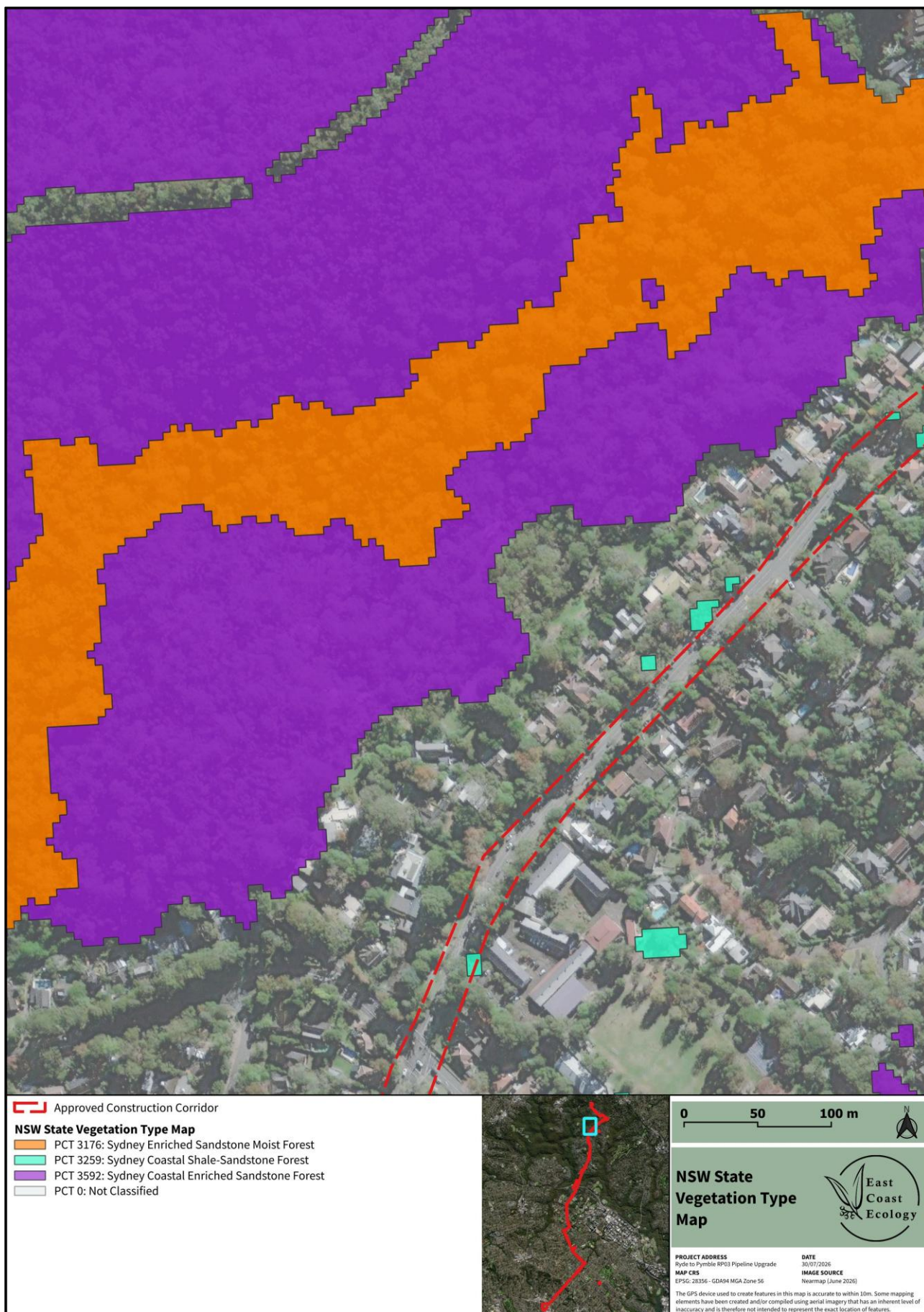


Figure 17. NSW State Vegetation Type Map (Turramurra) 2/13.

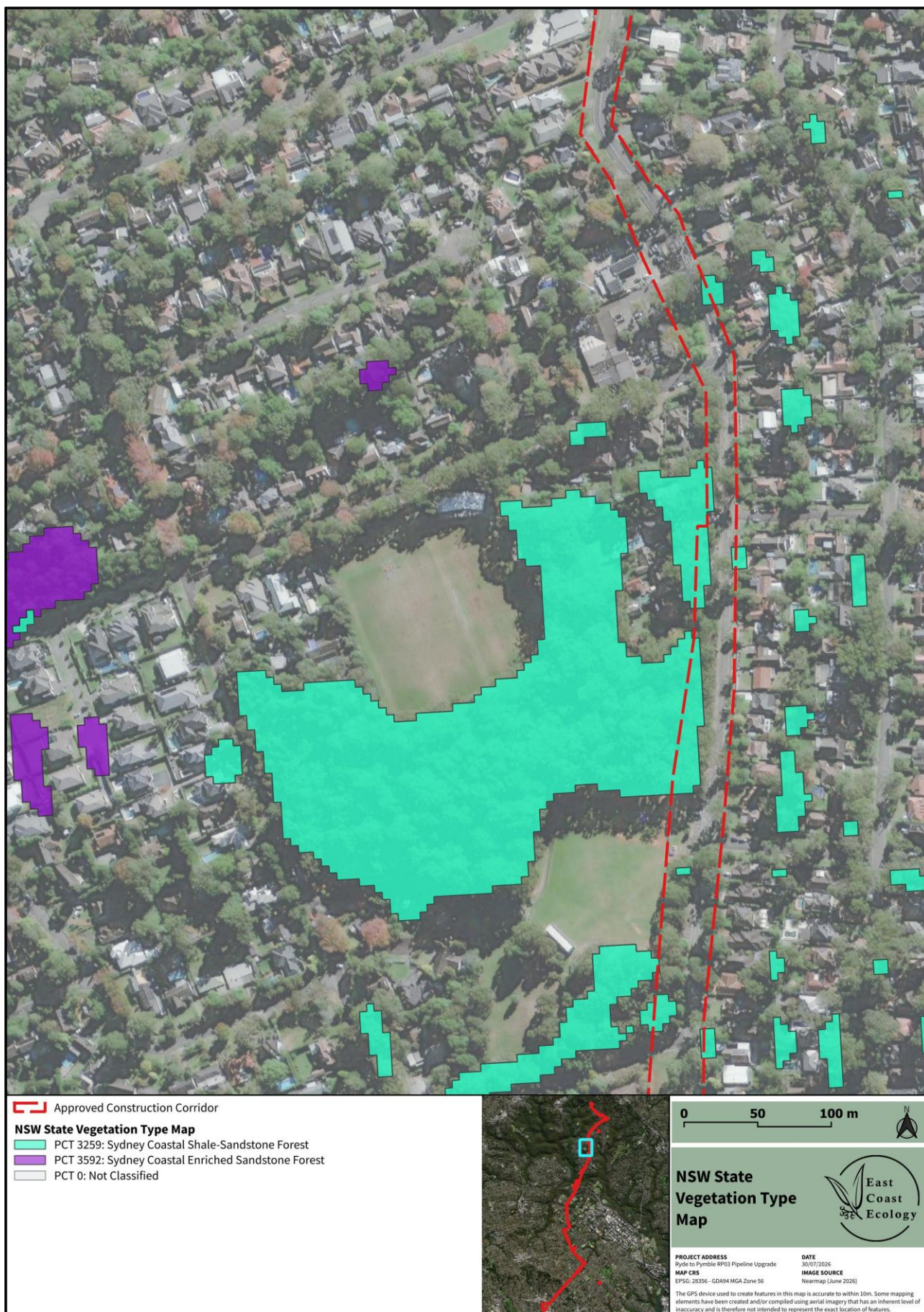


Figure 18. NSW State Vegetation Type Map (South Turramurra) 3/13.



Figure 19. NSW State Vegetation Type Map (South Turramurra) 4/13.

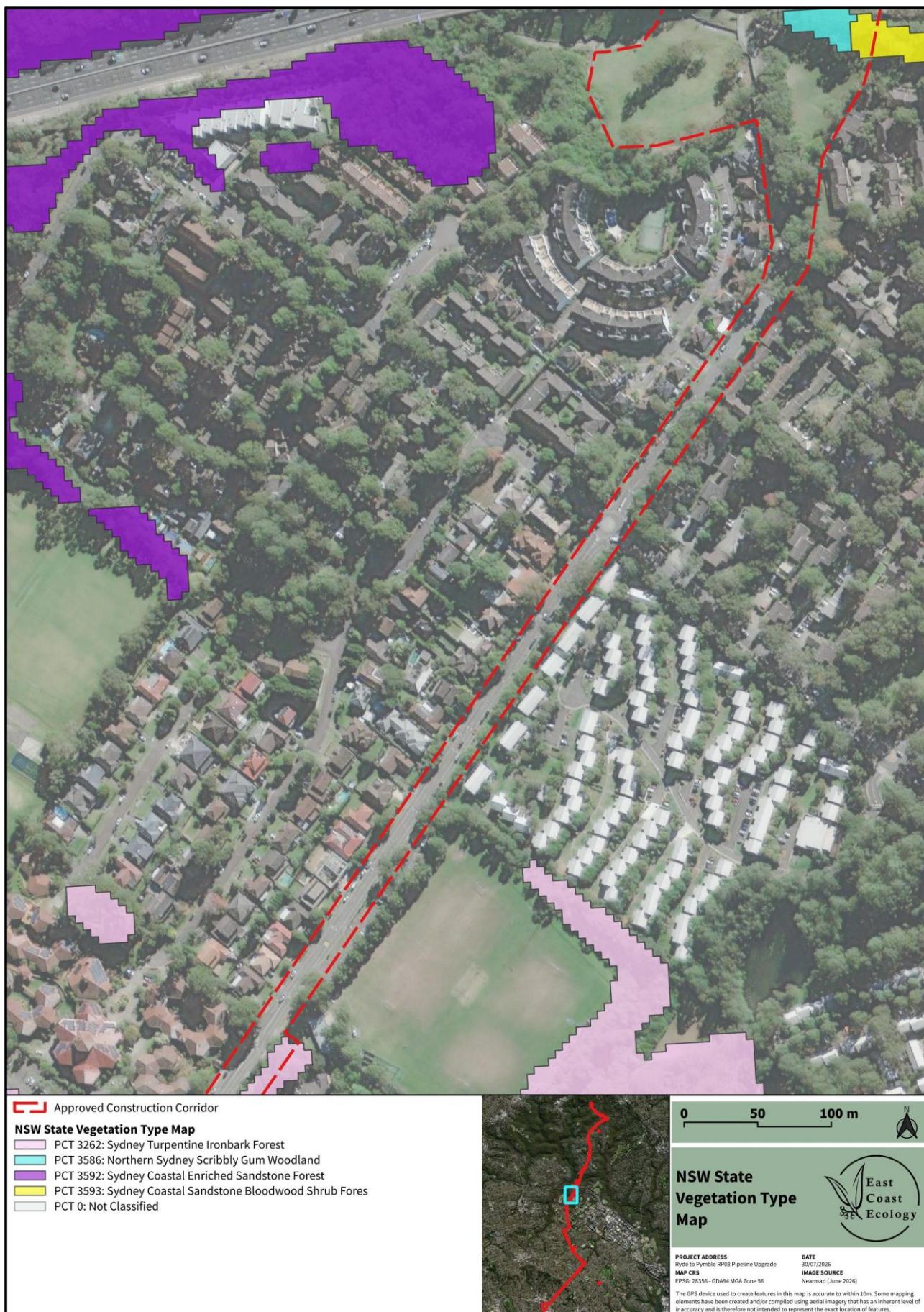


Figure 20. NSW State Vegetation Type Map (Marsfield & Macquarie Park) 5/13.



Figure 21. NSW State Vegetation Type Map 6/13.



Figure 22. NSW State Vegetation Type Map (Marsfield) 7/13.



Figure 23. NSW State Vegetation Type Map (Eastwood & Marsfield) 8/13.

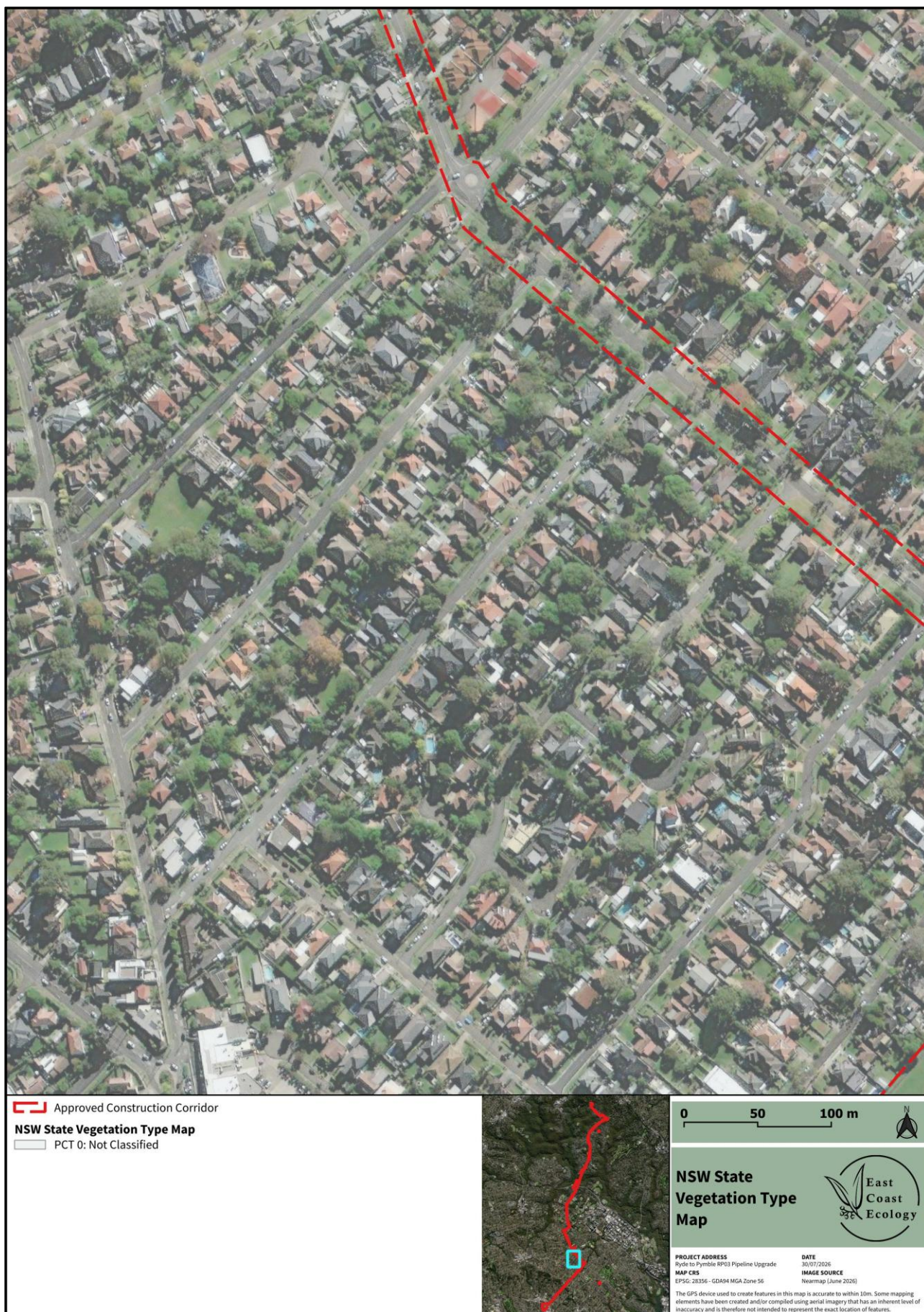


Figure 24. NSW State Vegetation Type Map (Eastwood & Ryde) 9/13.

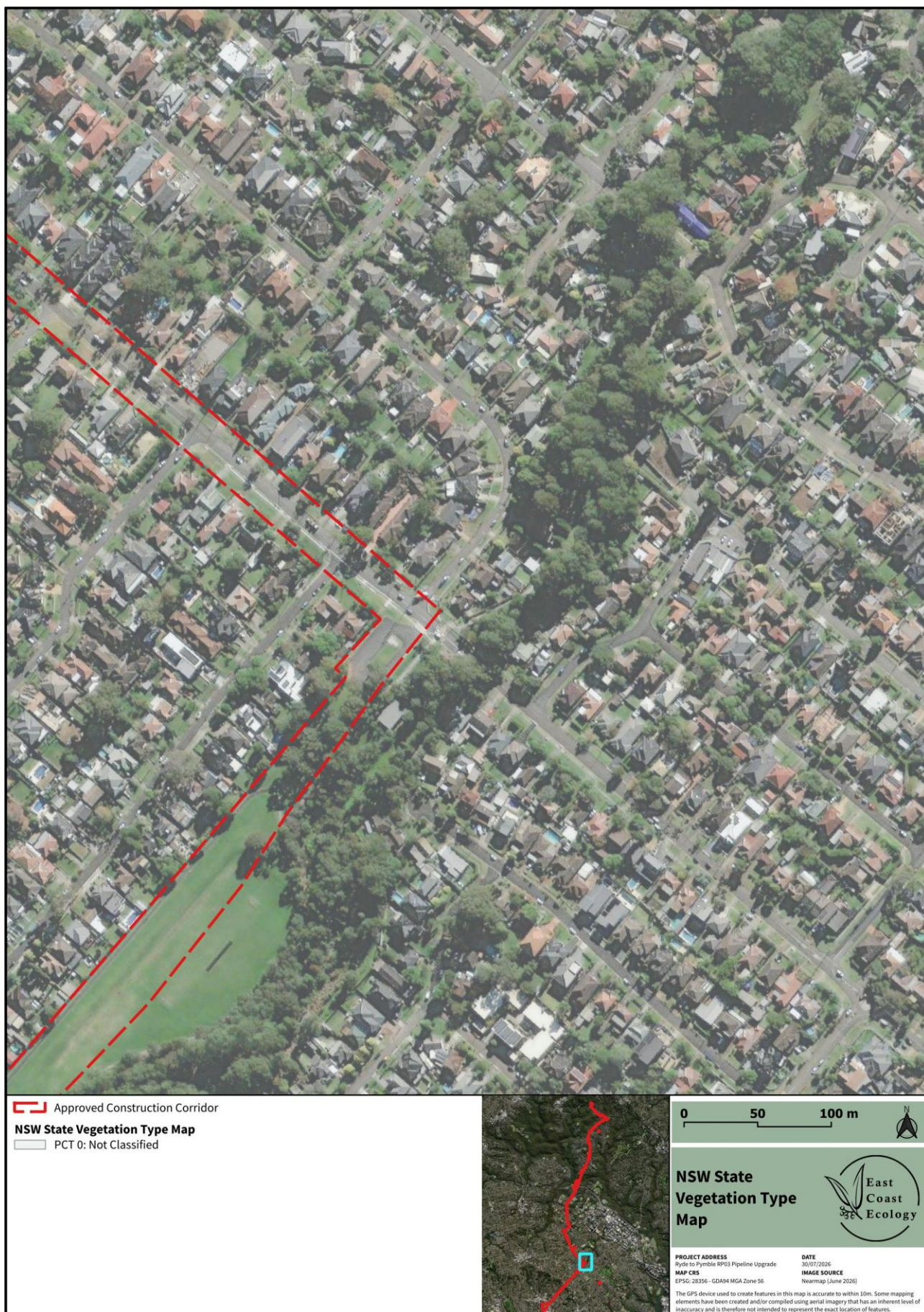


Figure 25. NSW State Vegetation Type Map (Ryde & North Ryde) 10/13.



Figure 26. NSW State Vegetation Type Map (Denistone East & Ryde) 11/13.



Figure 27. NSW State Vegetation Type Map (Denistone & West Ryde) 12/13.

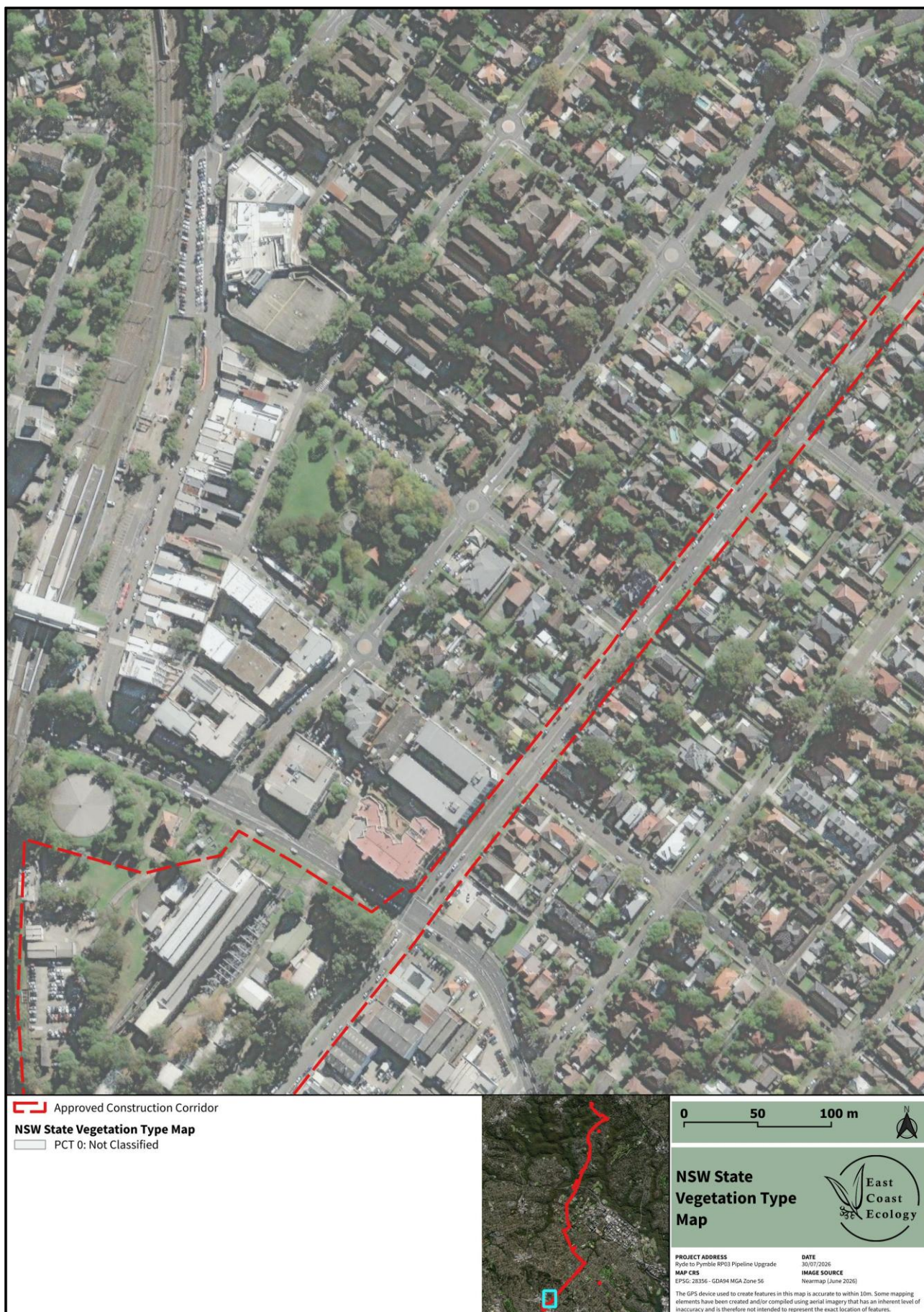


Figure 28. NSW State Vegetation Type Map (West Ryde) 13/13.

5.2 Field-validated Vegetation

5.2.1 Plant Community Types

The BAR (Aurecon, 2026) confirmed the presence of the following three PCTs within the Proposed Change:

- PCT 3262: Sydney Turpentine Ironbark Forest
- PCT 3259: Sydney Coastal Shale-Sandstone Forest, and
- PCT 3595: Sydney Coastal Sandstone Gully Forest.

The vegetation identified as part of the Proposed Change is depicted in **Figure 29 - Figure 41**.

Table 2. Vegetation identified within the Proposed Change.

PCT ID	PCT Scientific Name	Area identified as part of the Proposed Change (ha)
3262	Sydney Turpentine Ironbark Forest	- *
3259	Sydney Coastal Shale-Sandstone Forest	0.041
3595	Sydney Coastal Sandstone Gully Forest	0.012
Total Area		0.053

* - Facilitation of the proposal does not require any removal of this PCT, however 0.019ha of overhanging canopy will be pruned.

5.2.2 Tree Count

Consistent with the definition and methodology in the BAR (Aurecon, 2026), a total of 339 trees were identified within the Proposed Change (**Table 3**).

Table 3. Tree Count within the areas identified for the Proposed Change.

Tree Category	Tree Count
Remnant Trees	142
Planted Native Trees	103
Exotic Trees	94
Total Tree Count	339

5.2.3 Threatened Ecological Communities

TECs identified as part of the Proposed Change are detailed in **Table 4**.

Table 4. Threatened Ecological Communities identified as part of the Proposed Change.

Threatened Ecological Community	PCT Scientific Name	Area identified as part of the Proposed Change (ha)
Sydney Turpentine-Ironbark Forest in the Sydney Basin Bioregion (EPBC & BC Act)	PCT 3262: Sydney Turpentine Ironbark Forest	-*
Duffys Forest Ecological Community in the Sydney Basin Bioregion (BC Act)**	PCT 3259: Sydney Coastal Shale-Sandstone Forest	0.041
Total Area		0.041

* Facilitation of the Proposed Change does not require removal of this TEC however, approximately 0.006 ha of overhanging canopy would be pruned. The TEC extent adopted for this assessment is consistent with the Aurecon methodology in the original BAR.

** The BAR (Aurecon, 2026) stipulates the following: “Upon assessment of the ground-truthed vegetation and site conditions against the BC Act NSW Scientific Committee criteria for the plant community Duffys Forest Ecological Community in the Sydney Basin Bioregion, it was concluded that several criteria are satisfied and therefore the BC Act TEC does apply. This includes the presence of several characteristic canopy species including Sydney Red Gum (*Angophora costata*) and Red Bloodwood (*Corymbia gummifera*). Mid-storey diagnostic species present includes Silky Hakea (*Hakea sericea*) and Hairpin Banksia (*Banksia spinulosa*). One ground cover diagnostic species, Weeping Grass (*Microlaena stipoides*) was also present”.

On the basis that the Proposed Change does not occur within the Lane Cove LGA (Scientific Committee, 2014) and no fungi species belonging to the Hygrocybeae genera were seen, any association to the threatened Hygrocybeae community has been ruled out.

The extent of the identified TECs is depicted in **Figure 29 - Figure 41**.

Table 5. Description of PCT 3262 within the Proposed Change.

PCT 3262: Sydney Turpentine Ironbark Forest	
	
Vegetation Formation	Wet Sclerophyll Forests (Grassy sub-formation)
Area identified as part of the Proposed Change (ha) (approximate)	0.019ha of overhanging canopy (pruning only)
Description of PCT 3262 within the Proposed Change	
This PCT was identified by Aurecon during the March–May 2025 surveys undertaken for the BAR. PCT 3262 occurred within the Proposed Change only in the central and northern extents of the Approved Construction Corridor. Some areas of PCT 3262 presented in good condition, particularly within Stewart Park, where vegetation appeared healthy and all floristic structural elements were present. In these areas, canopies were characterised by <i>Eucalyptus pilularis</i>, <i>Syncarpia glomulifera</i> and <i>Eucalyptus resinifera</i>, with occasional <i>Eucalyptus tereticornis</i>, <i>Angophora floribunda</i> and <i>Angophora costata</i>. Shrub and smaller tree species included <i>Acacia implexa</i>, <i>Melia azedarach</i> and <i>Cupaniopsis anacardioides</i>. Beyond the Proposed Change, in the immediate vicinity of these healthier areas, additional native flora species were identified during site assessments, including <i>Allocasuarina littoralis</i>, <i>Glochidion ferdinandi</i>, <i>Ozothamnus diosmifolius</i>, <i>Notelaea longifolia</i>, <i>Breynia oblongifolia</i>, <i>Zieria smithii</i> and <i>Denhamia silvestris</i>.	

PCT 3262: Sydney Turpentine Ironbark Forest

Description of PCT 3262 in BioNet

A tall to very tall sclerophyll open forest with mid-stratum of mixed sclerophyll and mesophyll shrubs and a ground layer of grasses and forbs, found on shale or sheltered shale-sandstone soils mainly in the northern suburbs of Sydney and lower Blue Mountains. The tree canopy very frequently includes *Syncarpia glomulifera* either as a canopy dominant or as a smaller tree or both. Other species which are localised and occasionally dominant or co-dominant occasionally include *Eucalyptus pilularis*, *Angophora costata* and *Eucalyptus punctata*, rarely with one of several species from the Ironbark, Stringybark or Mahogany eucalypt groups of which *Eucalyptus paniculata*, *Eucalyptus globoidea* and *Eucalyptus resinifera* are the most frequent of each group. The mid-stratum is layered, with a sparse cover of small trees that includes Eucalypts, occasionally *Acacia parramattensis* and *Allocasuarina torulosa*, rarely with *Allocasuarina littoralis*. The lower shrub layer very frequently includes *Pittosporum undulatum* and *Leucopogon juniperinus*, commonly with *Breynia oblongifolia*, *Polyscias sambucifolia*, *Ozothamnus diosmifolius* and *Notelaea longifolia*. The ground layer includes a diverse cover of grasses that very frequently includes *Microlaena stipoides* and *Entolasia stricta*, commonly with *Imperata cylindrica*, *Entolasia marginata* and *Themeda triandra*. Small forbs including *Lobelia purpurascens* are also very frequent, together with *Lomandra longifolia*. This PCT occurs as small remnants in mosaics of urban land use in the shale-dominated landscapes in higher rainfall zones of the Sydney Metropolitan area. The northern suburbs between Baulkham Hills and Ku-ring-gai include the highest number of remnants, however small areas remain in Sutherland, Heathcote, Menai, lower Blue Mountains and Oakdale plateau west of Picton. Only a small number of remnants remain on the Wianamatta Group shales of the eastern Cumberland Plain between Villawood and Bankstown. This community grades into tall moist shrub forests PCT 3136 in higher rainfall shale-rich soils on the north shore, or into PCT 3620 in sandstone environments. On the margins of the Cumberland Plain it may grade into dry forests PCTs 3321 or 3616 with increased exposure.

Groundwater Dependent Ecosystems (GDE)	Assessment of the potential for the Proposed Change to support groundwater dependent ecosystems was carried out using the Commonwealth's Bureau of Meteorology Groundwater Dependent Ecosystems Atlas (BOM, 2026a). There is no potential groundwater dependent ecosystem within the Proposed Change.
BC Act 2016 Status	Sydney Turpentine-Ironbark Forest in the Sydney Basin Bioregion – critically endangered ecological community listing. Not all areas of PCT 3262 identified as part of the Proposed Change were allocated as the TEC; STIF. This reflects the approach adopted by Aurecon in the original BAR, which ECE has maintained for consistency between the two assessments.
EPBC Act 1999 Status	Turpentine-Ironbark Forest of the Sydney Basin Bioregion – critically endangered ecological community listing.

Table 6. Description of PCT 3259 within the Proposed Change.

PCT 3259: Sydney Coastal Shale-Sandstone Forest	
	
Vegetation Formation	Wet Sclerophyll Forests (Grassy sub-formation)
Extent within the Proposed Change (approximate)	0.041ha
Description of PCT 3259 within the Proposed Change	
This PCT was identified by Aurecon during the March–May 2025 surveys undertaken for the BAR. PCT 3259 was only identified within the Proposed Change in the Ku-ring-gai LGA, concentrated mostly in South Turramurra. Where it appeared in good condition, such as within Aluba Reserve, canopy species included <i>Corymbia eximia</i>, <i>Eucalyptus capitellata</i>, <i>Angophora costata</i>, <i>Eucalyptus resinifera</i>, <i>Angophora floribunda</i>, <i>Eucalyptus globoidea</i>, <i>Corymbia gummifera</i>, <i>Angophora bakeri</i> and <i>Eucalyptus haemastoma</i>, with lower stratum species including <i>Notelaea longifolia</i> and <i>Glochidion ferdinandum</i>. Beyond the Proposed Change within Aluba Reserve, <i>Ceratopetalum gummiferum</i> and <i>Corymbia gummifera</i> were dominant, with <i>Eucalyptus sieberi</i> and <i>Banksia serrata</i> also observed. Lower stratum layers contained, but were not limited to, <i>Persoonia levis</i>, <i>Dodonaea triquetra</i>, <i>Dillwynia retorta</i> and <i>Callistemon linearis</i>.	

PCT 3259: Sydney Coastal Shale-Sandstone Forest

Description of PCT 3259 in BioNet

A tall to very tall sclerophyll open forest with a sparse layer of dry sclerophyllous shrubs and a grassy ground cover found on clay-influenced sandstone crests in the greater Sydney metropolitan area. The tree canopy almost always includes *Corymbia gummifera*, very frequently with *Angophora costata*. Species from the stringybarks eucalypt group (*Eucalyptus globoidea*, *Eucalyptus capitellata* rarely *Eucalyptus sparsifolia*) are also common however rarely with high cover. In contrast *Eucalyptus pilularis* or species from the mahogany eucalypt group (*Eucalyptus resinifera* or *Eucalyptus umbra*) are occasional however with high cover. The mid-stratum is multi-layered, commonly with a tall sparse layer of *Allocasuarina littoralis* and a sparse cover of low dry shrubs. The shrub layer very frequently includes *Persoonia levis*, *Banksia spinulosa*, *Lomatia silaifolia* with *Acacia myrtifolia* and *Hakea sericea* also common. A characteristic of this PCT is that it has a grassier ground layer than other coastal sandstone ridgetop forests. *Entolasia stricta* is very frequent, often with a moderate cover, with *Austrostipa pubescens*, *Imperata cylindrica* and *Themeda triandra* also common with a high cover. This PCT occurs most extensively on large shale-sandstone, ironstone or laminite caps in the suburbs of the north shore of Sydney between Ryde and Duffys Forest, and in southern Sydney at Loftus, Heathcote and Menai. Isolated outliers occur on the Somersby Plateau on the Central Coast and in Dharawal National Park south of Helensburgh. Colloquially part of the shale-sandstone transition and ironstone forests of Sydney, this PCT occurs in a higher coastal rainfall zone generally of above 1100 mm per annum compared to the drier transition forests of Western Sydney (PCT 3616, PCT 3619 and PCT 3321).

Groundwater Dependent Ecosystems (GDE)	Assessment of the potential for the Proposed Change to support groundwater dependent ecosystems was carried out using the Commonwealth's Bureau of Meteorology Groundwater Dependent Ecosystems Atlas (BOM, 2026a). There is no potential groundwater dependent ecosystem within the Proposed Change.
BC Act 2016 Status	Duffys Forest Ecological Community in the Sydney Basin Bioregion – endangered ecological community listing.
EPBC Act 1999 Status	Not listed.

Table 7. Description of PCT 3595 within the Proposed Change.

PCT 3595: Sydney Coastal Sandstone Gully Forest	
	
Vegetation Formation	Dry Sclerophyll Forests (Shrubby sub-formation)
Extent within the Proposed Change (approximate)	0.012ha
Description of PCT 3595 within the Proposed Change	
This PCT was identified by Aurecon during the March–May 2025 surveys undertaken for the BAR. PCT 3595 was in moderate condition and was only identified within the Proposed Change in South Turramurra, north of Lane Cove National Park. Canopy species included <i>Angophora costata</i>, <i>Eucalyptus robusta</i>, <i>Eucalyptus resinifera</i>, <i>Eucalyptus saligna</i> and <i>Eucalyptus capitellata</i>. Beyond the Proposed Change, particularly along the embankment of the mapped waterway, additional native flora species were also observed, including <i>Callicoma serratifolia</i>, <i>Kunzea ambigua</i>, <i>Persoonia levis</i>, <i>Hakea sericea</i>, <i>Casuarina glauca</i>, <i>Tristaniopsis laurina</i>, <i>Acacia longifolia</i>, <i>Pteridium esculentum</i>, <i>Lomandra obliqua</i>, <i>Xanthosia pilosa</i>, <i>Leptospermum trinervium</i> and <i>Banksia serrata</i>.	

PCT 3595: Sydney Coastal Sandstone Gully Forest

Description of PCT 3595 in BioNet

A tall to very tall heathy sclerophyll open forest associated with Hawkesbury Sandstone gullies found along the eastern extent of the Sydney sandstone plateaus. The tree canopy very frequently includes a high cover of *Eucalyptus piperita* and *Angophora costata* with *Corymbia gummifera* occurring less frequently and with a lower cover. The mid-stratum includes a sparse small tree layer that very frequently includes *Ceratopetalum gummiferum* and *Banksia serrata*. A mid-dense to dense tall shrub layer covers steep to gentle slopes across rocky benches and frequent outcrops. The shrub layer very frequently includes *Acacia terminalis*, *Persoonia levis*, *Lomatia silaifolia*, *Platysace linearifolia*, *Leptospermum trinervium* and *Dillwynia retorta*. Other common shrubs include *Acacia suaveolens* and *Banksia ericifolia*, *Persoonia levis* are frequently recorded. The ground layer is comprised of a mix of graminoids, climbers, grasses and ferns that very frequently or commonly include *Lomandra longifolia*, *Smilax glycyphylla*, *Entolasia stricta* and *Pteridium esculentum*. The large lily *Doryanthes excelsa* is common to the south of Sydney. This PCT is widespread north of the Appin Road on the Woronora Plateau, extending onto the Hornsby Plateau at Lane Cove and Ku-ring-gai, Brisbane Water and Dharug national parks. It occurs at elevations of 40-410 metres asl, and in higher coastal rainfall zones of over 1000 mm mean annual rainfall. On ridges and exposed slopes, it is replaced by sandstone heathy woodlands PCT 3590 south of Sydney and by PCT 3586 north of Sydney.

Groundwater Dependent Ecosystems (GDE)	Assessment of the potential for the Proposed Change to support groundwater dependent ecosystems was carried out using the Commonwealth's Bureau of Meteorology Groundwater Dependent Ecosystems Atlas (BOM, 2026a). There is no potential groundwater dependent ecosystem within the Proposed Change.
BC Act 2016 Status	Not listed.
EPBC Act 1999 Status	Not listed.



Figure 29. Field-validated vegetation mapping (Turramurra) 1/13.

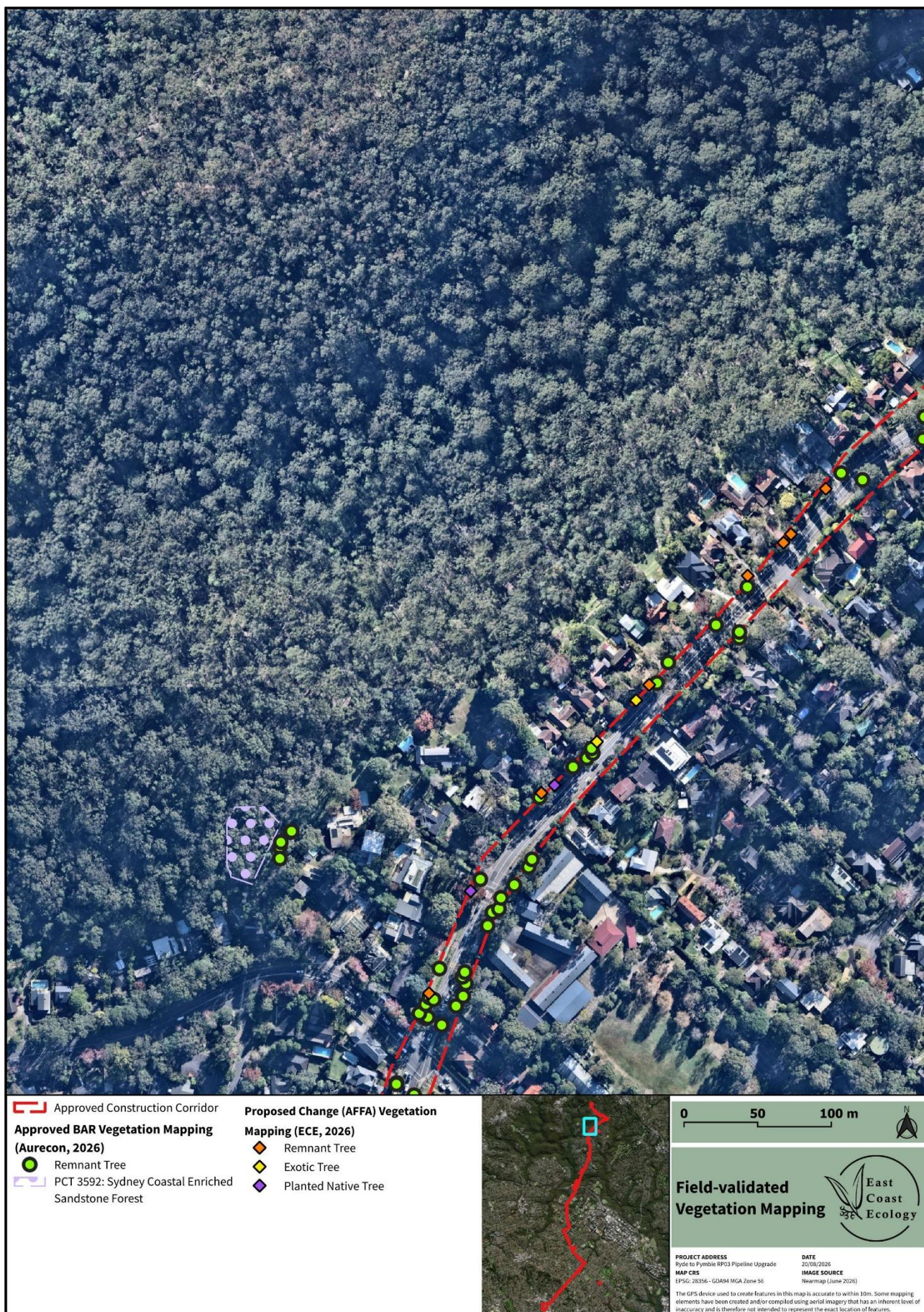


Figure 30. Field-validated vegetation mapping (Turramurra) 2/13.

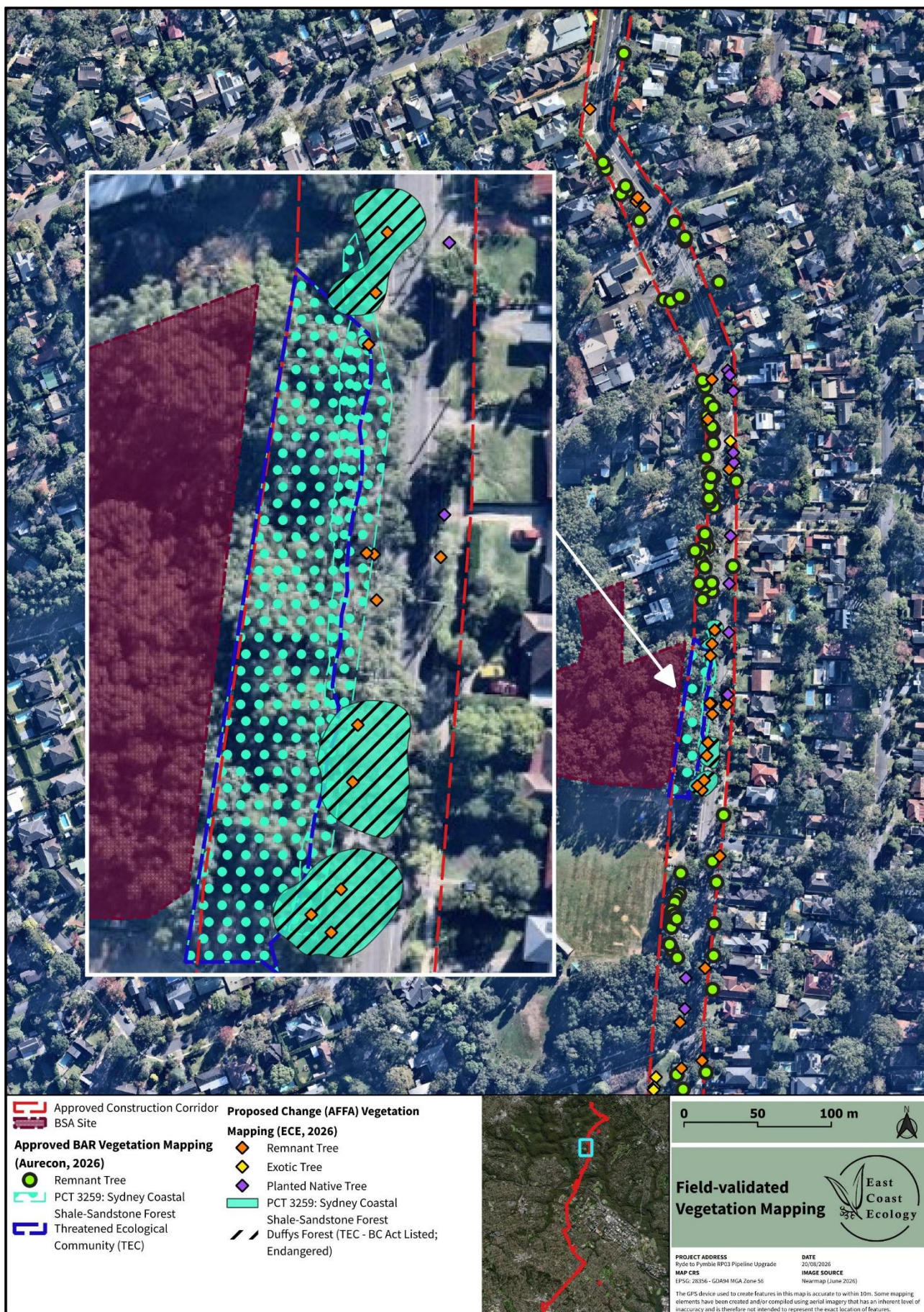


Figure 31. Field-validated vegetation mapping (South Turramurra) 3/13.

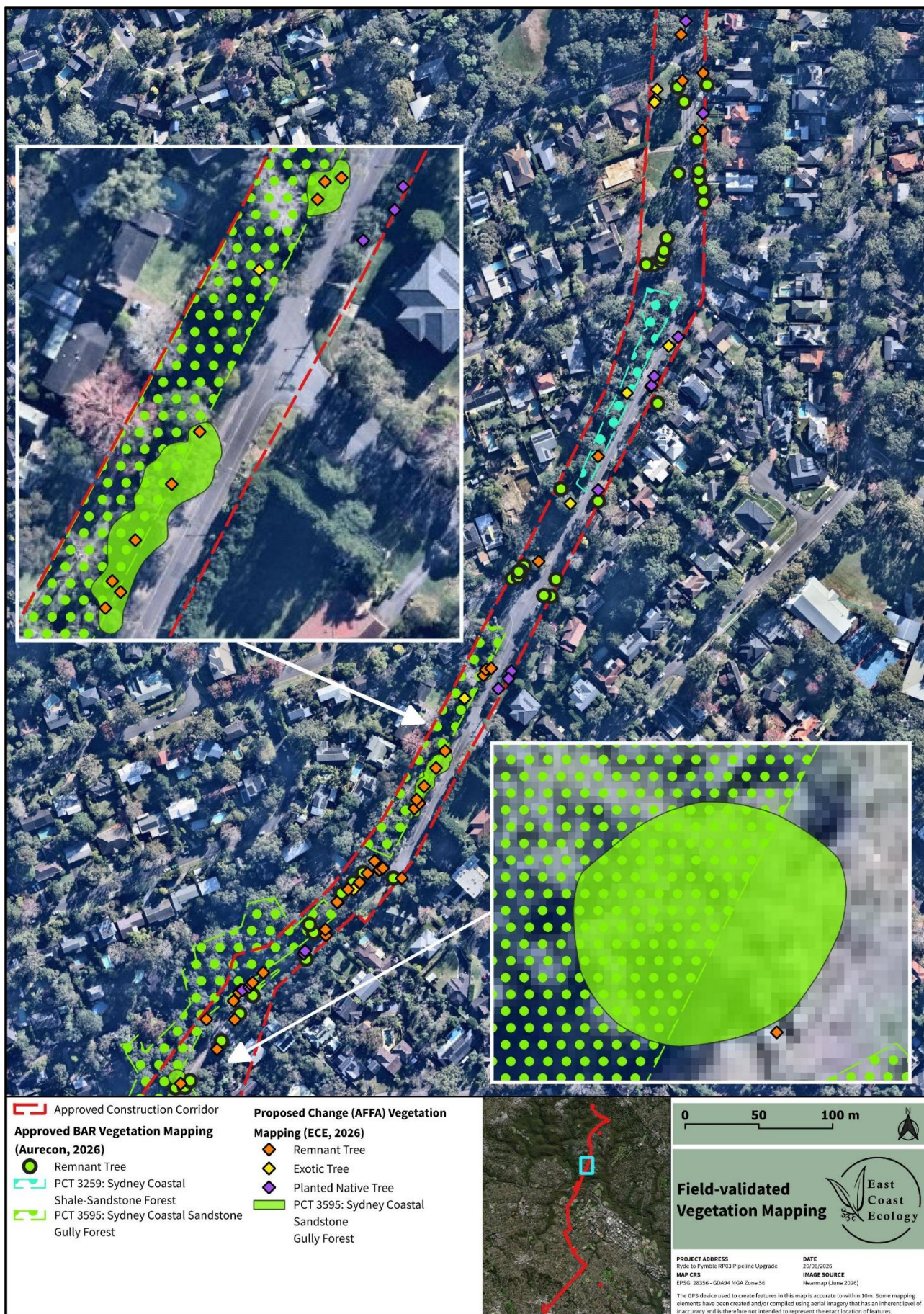


Figure 32. Field-validated vegetation mapping (South Turramurra) 4/13.



Figure 33. Field-validated vegetation mapping (Marsfield & Macquarie Park) 5/13.



Figure 34. Field-validated vegetation mapping (Marsfield) 6/13.

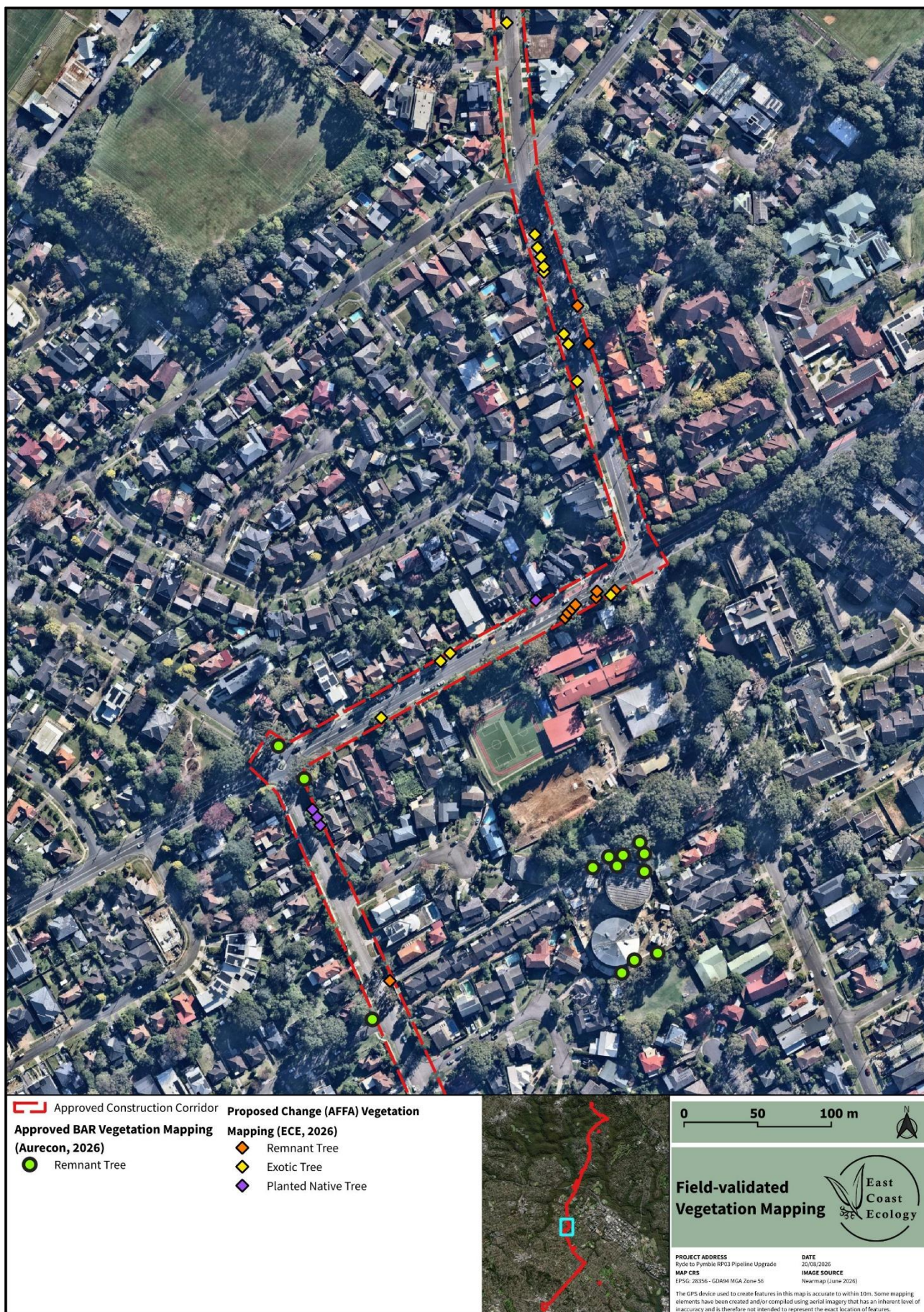


Figure 35. Field-validated vegetation mapping (Marsfield) 7/13.

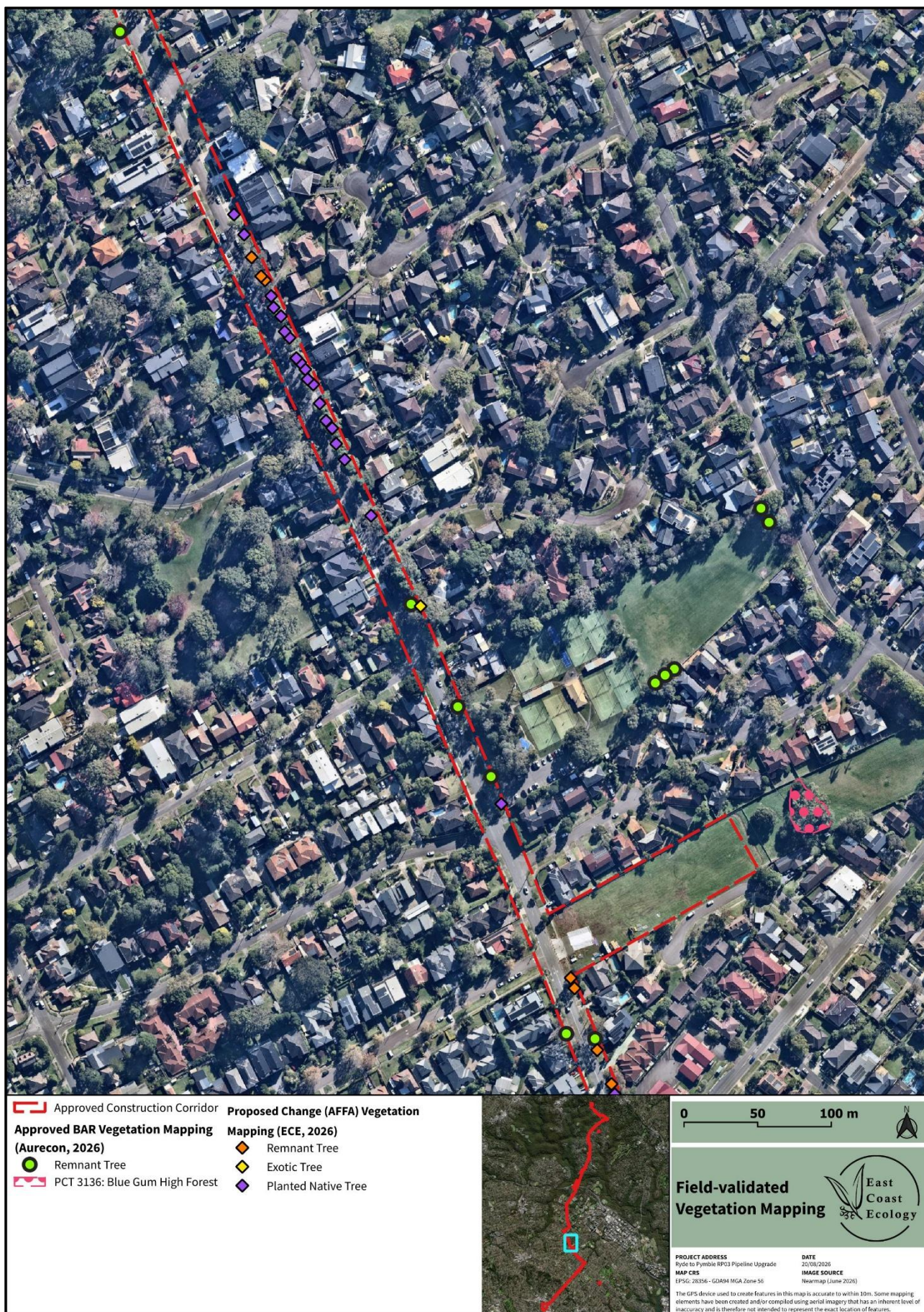


Figure 36. Field-validated vegetation mapping (Eastwood & Marsfield) 8/13.

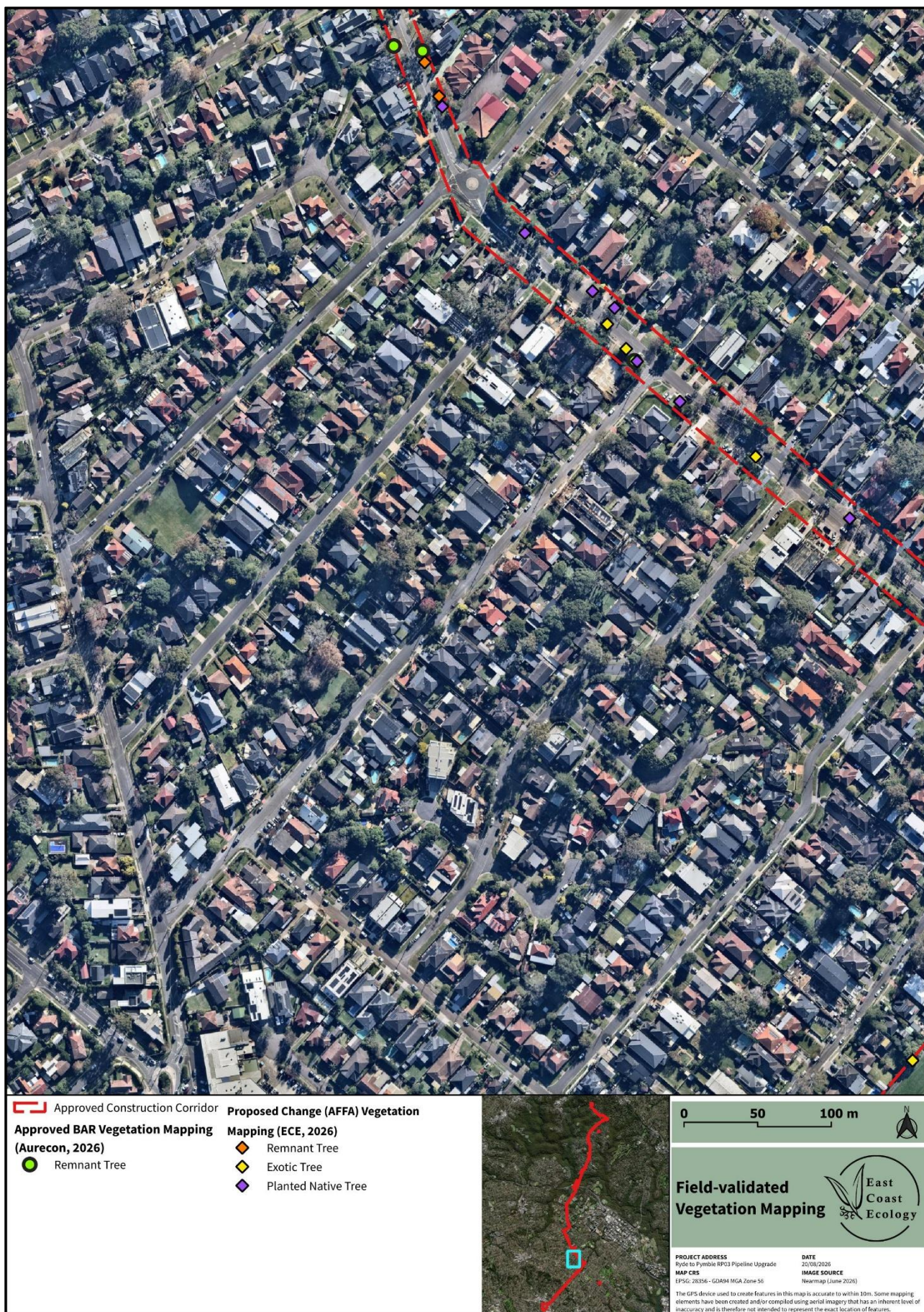


Figure 37. Field-validated vegetation mapping (Eastwood & Ryde) 9/13.

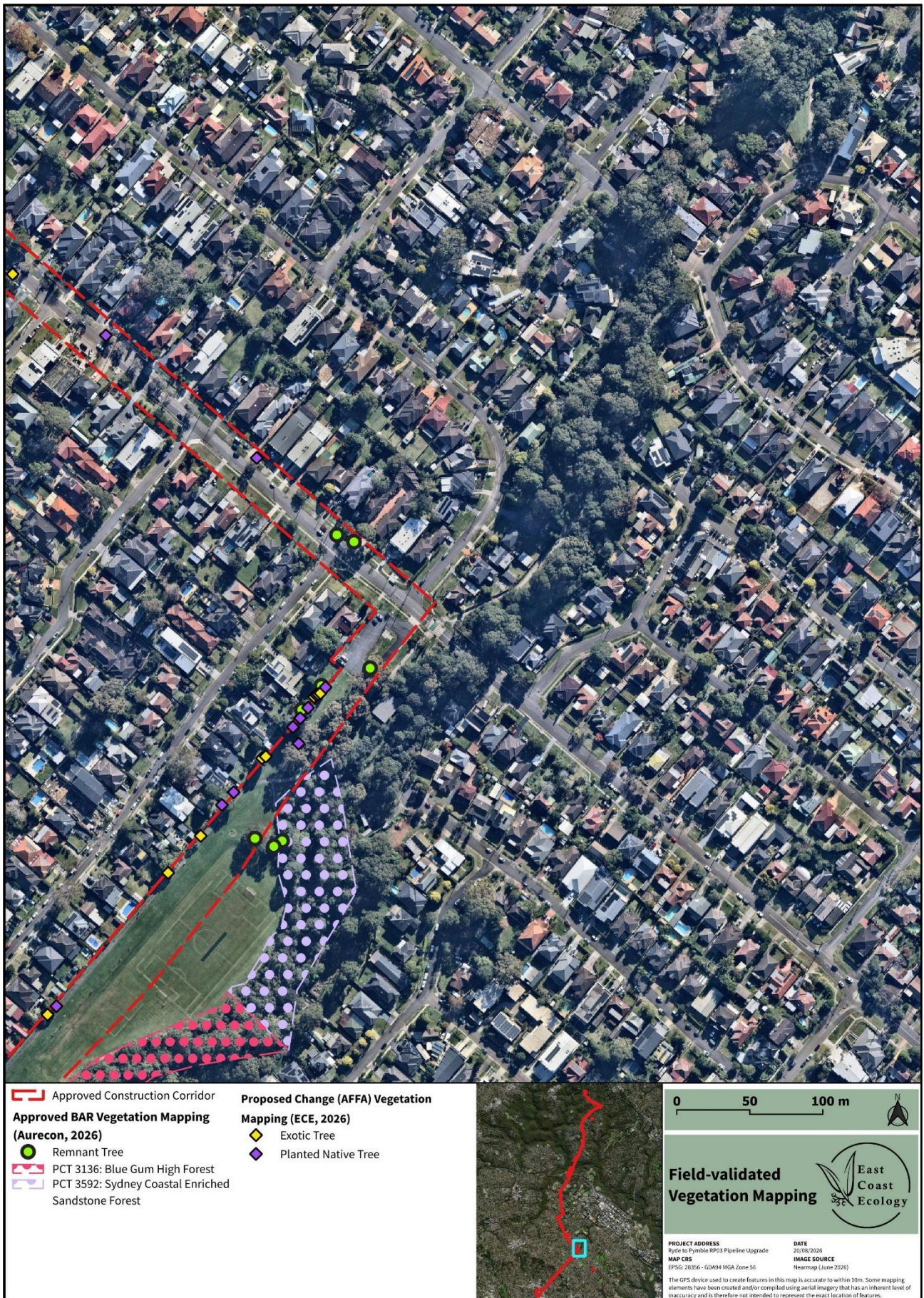


Figure 38. Field-validated vegetation mapping (Ryde & North Ryde) 10/13.



Figure 39. Field-validated vegetation mapping (Denistone East & Ryde) 11/13.



Figure 40. Field-validated vegetation mapping (Denistone East & Ryde) 12/13.



Figure 41. Field-validated vegetation mapping (West Ryde) 13/13.

6. RESULTS: THREATENED SPECIES

6.1 Threatened Flora

Database searches revealed 33 threatened flora species have been recorded within a ~5km radius of the Proposed Change (NSW DCCEEW, 2026a) (**Table 8**) (**Figure 42**).

Table 8. Threatened flora recorded within ~5km of the Proposed Change.

Scientific Name	Common Name	BC Act	EPBC Act	Records within 5km
<i>Acacia bynoeana</i>	Bynoe's Wattle	E	V	1
<i>Acacia clunies-rossiae</i>	Kanangra Wattle	V	-	1
<i>Acacia pubescens</i>	Downy Wattle	V	V	3
<i>Callistemon linearifolius</i>	Netted Bottle Brush	V	-	13
<i>Darwinia biflora</i>	-	V	V	347
<i>Darwinia peduncularis</i>	-	V	-	1
<i>Deyeuxia appressa</i>	-	E	E	1
<i>Doryanthes palmeri</i>	Giant Spear Lily	V	-	1
<i>Epacris purpurascens</i> var. <i>purpurascens</i>	-	V	-	99
<i>Eucalyptus camfieldii</i>	Camfield's Stringybark	V	V	2
<i>Eucalyptus nicholii</i>	Narrow-leaved Black Peppermint	V	V	11
<i>Eucalyptus scoparia</i>	Wallangarra White Gum	E	V	9
<i>Gaudium deanei</i>	-	V	V	14
<i>Genoplesium baueri</i>	Bauer's Midge Orchid	E	E	6
<i>Grammitis stenophylla</i>	Narrow-leaf Finger Fern	E	-	7
<i>Grevillea hilliana</i>	White Yiel Yiel	E	-	1
<i>Grevillea juniperina</i> subsp. <i>juniperina</i>	Juniper-leaved Grevillea	V	-	1
<i>Haloragodendron lucasii</i>	-	E	E	2
<i>Hibbertia spanantha</i>	Julian's Hibbertia	E	CE	30
<i>Isotoma fluviatilis</i> subsp. <i>fluviatilis</i>	-	-	X	1
<i>Macadamia integrifolia</i>	Macadamia Nut	-	V	11

Scientific Name	Common Name	BC Act	EPBC Act	Records within 5km
<i>Macadamia tetraphylla</i>	Rough-shelled Bush Nut	V	V	14
<i>Melaleuca biconvexa</i>	Biconvex Paperbark	V	V	1
<i>Melaleuca deanei</i>	Deane's Paperbark	V	V	27
<i>Persoonia hirsuta</i>	Hairy Geebung	E	E	2
<i>Pimelea curviflora</i> var. <i>curviflora</i>	-	V	V	11
<i>Prostanthera marifolia</i>	Seaforth Mintbush	E	CE	2
<i>Rhizanthella slateri</i>	Eastern Australian Underground Orchid	V	E	1
<i>Rhodamnia rubescens</i>	Scrub Turpentine	E	CE	12
<i>Syzygium paniculatum</i>	Magenta Lilly Pilly	V	V	29
<i>Tetratheca glandulosa</i>	-	V	-	41
<i>Tetratheca juncea</i>	Black-eyed Susan	V	V	2
<i>Wilsonia backhousei</i>	Narrow-leafed Wilsonia	V	-	44

V – Vulnerable; E – Endangered; CE – Critically Endangered; X – Extinct

No threatened flora were identified during the site surveys in preparation of the approved BAR (Aurecon, 2026). The BAR stipulated the following:

“No threatened flora species were recorded within the Impact Area. Given the high level of disturbance, and the extensive establishment of weeds and non-native species throughout the Impact Area, it is unlikely that threatened flora would successfully re-establish. Therefore, it is considered unlikely that the vegetation zones within the Study Area would provide suitable habitat for threatened flora species.”

Field surveys within the Proposed Change undertaken by ECE did not identify any threatened flora species; however, this does not rule out the potential for threatened species to still exist, particularly threatened orchids, grasses and herbs. As the Proposed Change lies within the Approved Construction Corridor and requires only select tree removal it is not expected that the activity would pose a significant impact to a viable local population on the basis that all mitigation measures proposed in this report are adhered to (**Section 8.1**). Further assessment is provided in **Appendix A** of this report.

6.2 Threatened Fauna

Database searches revealed 56 threatened fauna have been recorded within a ~5km radius of the Proposed Change (NSW DCCEEW, 2026) (**Table 9**) (**Figure 42**).

Table 9. Threatened fauna with potential to occur within the Proposed Change.

Scientific Name	Common Name	BC Act	EPBC Act	Records within 5km
<i>Anthochaera phrygia</i>	Regent Honeyeater	CE	CE	2
<i>Arenaria interpres</i>	Ruddy Turnstone	V	V	1
<i>Artamus cyanopterus cyanopterus</i>	Dusky Woodswallow	V	-	14
<i>Botaurus poiciloptilus</i>	Australasian Bittern	E	E	3
<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	V	V	147
<i>Calidris canutus</i>	Red Knot	V	E	1
<i>Calidris ferruginea</i>	Curlew Sandpiper	E	CE	17
<i>Callocephalon fimbriatum</i>	Gang-gang Cockatoo	E	E	59
<i>Calyptorhynchus lathami lathami</i>	South-eastern Glossy Black-Cockatoo	V	V	2
<i>Cercartetus nanus</i>	Eastern Pygmy-possum	V	-	3
<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat	E	E	2
<i>Daphoenositta chrysoptera</i>	Varied Sittella	V	-	3
<i>Dasyurus maculatus</i>	Spotted-tailed Quoll	V	E	4
<i>Ephippiorhynchus asiaticus</i>	Black-necked Stork	E	-	1
<i>Epthianura albifrons</i>	White-fronted Chat population in the Sydney Metropolitan Catchment Management Area	EP	-	239
<i>Epthianura albifrons</i>	White-fronted Chat	V	-	239
<i>Falco hypoleucos</i>	Grey Falcon	V	V	1
<i>Falsistrellus tasmaniensis</i>	Eastern False Pipistrelle	V	-	13
<i>Gallinago hardwickii</i>	Latham's Snipe	V	V	127
<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	V	-	148
<i>Heleioporus australiacus</i>	Giant Burrowing Frog	V	V	3
<i>Hieraetus morphnoides</i>	Little Eagle	V	-	9
<i>Hirundapus caudacutus</i>	White-throated Needletail	V	V	50

Scientific Name	Common Name	BC Act	EPBC Act	Records within 5km
<i>Ixobrychus flavicollis</i>	Black Bittern	V	-	4
<i>Lathamus discolor</i>	Swift Parrot	E	CE	12
<i>Limosa limosa</i>	Black-tailed Godwit	E	E	4
<i>Litoria aurea</i>	Green and Golden Bell Frog	E	V	417
<i>Lophoictinia isura</i>	Square-tailed Kite	V	-	6
<i>Melithreptus gularis gularis</i>	Black-chinned Honeyeater (eastern subspecies)	V	-	6
<i>Micronomus norfolkensis</i>	Eastern Coastal Free-tailed Bat	V	-	19
<i>Miniopterus australis</i>	Little Bent-winged Bat	V	-	94
<i>Miniopterus orianae oceanensis</i>	Large Bent-winged Bat	V	-	241
<i>Myotis macropus</i>	Southern Myotis	V	-	31
<i>Neophema pulchella</i>	Turquoise Parrot	V	-	1
<i>Nettapus coromandelianus</i>	Cotton Pygmy-Goose	E	-	4
<i>Ninox connivens</i>	Barking Owl	V	-	7
<i>Ninox strenua</i>	Powerful Owl	V	-	913
<i>Numenius madagascariensis</i>	Eastern Curlew	E	CE	22
<i>Pandion cristatus</i>	Eastern Osprey	V	-	15
<i>Parvipsitta pusilla</i>	Little Lorikeet	V	-	12
<i>Petauroides volans</i>	Southern Greater Glider	E	E	2
<i>Petaurus australis</i>	Yellow-bellied Glider	V	V	1
<i>Petaurus norfolcensis</i>	Squirrel Glider	V	-	2
<i>Petroica boodang</i>	Scarlet Robin	V	-	3
<i>Petroica phoenicea</i>	Flame Robin	V	-	1
<i>Phascolarctos cinereus</i>	Koala	E	E	11
<i>Pluvialis squatarola</i>	Grey Plover	V	V	2
<i>Polytelis swainsonii</i>	Superb Parrot	V	V	1
<i>Pommerhelix duralensis</i>	Dural Land Snail	E	E	3
<i>Pseudophryne australis</i>	Red-crowned Toadlet	V	-	80
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	V	V	1256

Scientific Name	Common Name	BC Act	EPBC Act	Records within 5km
<i>Ptilinopus superbus</i>	Superb Fruit-Dove	V	-	5
<i>Saccolaimus flaviventris</i>	Yellow-bellied Sheath-tail-bat	V	-	18
<i>Scoteanax rueppellii</i>	Greater Broad-nosed Bat	V	-	15
<i>Tringa nebularia</i>	Common Greenshank	E	E	138
<i>Tyto novaehollandiae</i>	Masked Owl	V	-	2

V – Vulnerable; E – Endangered; EP – Endangered Population; CE – Critically Endangered

No threatened fauna were identified during the site surveys in preparation of the approved BAR (Aurecon, 2026). The BAR stipulated the following:

“A total of five threatened fauna species were assessed as having a moderate Likelihood of occurrence within the locality:

- Little Lorikeet (*Parvipsitta pusilla*) (Vulnerable BC Act)
- Little Bent-winged Bat (*Miniopterus australis*) (Vulnerable BC Act)
- Large Bent-winged Bat (*Miniopterus orianae oceanensis*) (Vulnerable BC Act)
- Grey-headed Flying-fox (*Pteropus poliocephalus*) (Vulnerable BC Act and EPBC Act)
- Powerful Owl (*Ninox strenua*) (Vulnerable BC Act).”

The Proposed Change did not include any culverts or structures which may provide roosting habitat for threatened microbat species including the Little Bent-winged Bat and Large Bent-winged Bat. As such, these two threatened species have not been included in this assessment, and no further impacts beyond those already determined in the approved BAR (Aurecon, 2026) are expected.

All habitat constraint types (e.g. foraging trees, roosting trees, hollow-bearing trees etc.) identified during the assessment were present in the previous assessment (Aurecon, 2026), as there is only a marginal increase in impact to this habitat type from the previous assessment, no change to the previous non-significant impact conclusion is likely.

Although no threatened fauna were identified at the time of the assessment, this does not rule out the potential for threatened species to still exist within the Proposed Change, particularly highly mobile species. A consistent, but updated likelihood of occurrence assessment (**Appendix A**) has been prepared which determined that same suite of species require consideration. The BC Act 5-Part Tests and EPBC Act Assessments of Significance for threatened fauna remain consistent with those presented in the BAR (Aurecon, 2026) and determined that no significant impact was likely.

Details of the threatened fauna habitat recorded within the Proposed Change are included in **Table 10**.

Table 10. Fauna habitat values identified within the Proposed Change.

Habitat component	Proposed Change
Coarse woody debris	Absent.

Habitat component	Proposed Change
Rock outcrops and bush rock	Absent.
Caves, crevices and overhangs	Absent.
Culverts, bridges, mine shafts, or abandoned structures	Absent.
Nectar/lerp-bearing trees	Present throughout – <i>Eucalyptus</i> spp.
Nectar-bearing shrubs	Present – <i>Acacia</i> spp.
Large stick nests	Absent.
Sap and gum sources	Present throughout – <i>Eucalyptus</i> spp.
She-oak fruit	Absent.
Seed-bearing trees and shrubs	Present throughout – <i>Eucalyptus</i> spp., <i>Acacia</i> spp.
Soft-fruit-bearing trees/shrubs	Present – <i>Ficus</i> spp.
Dense shrubbery and leaf litter	Absent.
Tree hollows	Present – 6 x hollow-bearing trees proposed for removal. Details provided in Section 7.1.3
Decorticating bark	Absent.
Wetlands, soaks, and streams	Absent – available within the larger Approved Construction Corridor.
Open water bodies	Absent.
Estuarine, beach, mudflats, and rocky foreshores	Absent.
Termite mounds	Absent.

6.3 Migratory Species

Database searches revealed four migratory terrestrial species, or their habitat, are known to occur within the Proposed Change (**Table 11**).

Table 11. Migratory terrestrial species with potential to occur in the Proposed Change.

Species	EPBC Act Status
<i>Actitis hypoleucos</i> (Common Sandpiper)	Migratory
<i>Cuculus optatus</i> (Oriental Cuckoo)	Migratory, CAMBA, JAMBA, ROKAMBA
<i>Hirundapus caudacutus</i> (White-throated Needletail)	Vulnerable, Migratory, CAMBA, JAMBA, ROKAMBA
<i>Motacilla flava</i> (Yellow Wagtail)	Migratory, CAMBA, JAMBA, ROKAMBA



Figure 42. Threatened species records in proximity to the Approved Construction Corridor.

7. IMPACT SUMMARY

7.1 Proposed Change Impacts

The Proposed Change lies within a highly modified urban corridor, where native vegetation persists as fragmented remnants associated primarily with road reserves, parks, utility corridors and isolated bushland patches. Despite this modification, these remnants retain ecological value, providing local habitat, supporting components of the TECs; STIF and Duffys Forest, and facilitating movement of highly mobile fauna across the broader landscape.

7.1.1 Direct Impacts

The primary direct ecological impact of the Proposed Change is clearing and/ or pruning of native vegetation. **Table 12** & **Table 13** summarises the extent of impacts on native vegetation. **Table 14** summarises the extent of impacts on TECs. The extent of the impacts is shown in **Figure 43** - **Figure 55**.

Table 12. Summary of native vegetation (ha) to be impacted by the Proposed Change*.

Native Vegetation Zones	Proposed Change
	Revised total
PCT 3262: Sydney Turpentine Ironbark Forest	-
PCT 3259: Sydney Coastal Shale-Sandstone Forest	0.041ha
PCT 3595: Sydney Coastal Sandstone Gully Forest	0.012ha
PCT Total Area	0.053ha

**Consistent with Aurecon's methodology, selective clearing within existing PCT patches, or removal of individual stems within a broader PCT extent, does not constitute a change in the underlying vegetation classification. Where clearing occurs at the individual stem or partial patch level, the affected area continues to be assessed against the PCT classification and condition state originally attributed to it by Aurecon, rather than being reclassified as a discrete or separate vegetation unit. This approach ensures that impacts associated with selective or partial clearing are considered within the context of the broader PCT patch, consistent with the ecological framework established in the BAR.*

Table 13. Summary of Remnant Trees to be impacted by the Proposed Change.

Native Vegetation Zones	Proposed Change		Total
	Pruning	Removal	
Remnant Tree Impact*	90	52	142
Total Remnant Tree Count			142

Table 14. Summary of TECs to be impacted by the Proposed Change.

TEC	Proposed Change
	Revised Total
Sydney Turpentine-Ironbark Forest in the Sydney Basin Bioregion (BC Act)	-
Duffys Forest Ecological Community in the Sydney Basin Bioregion (BC Act)	0.041ha
TEC Total Area	0.041ha

7.1.2 Species & Habitat Impacts

7.1.2.1 Impacts to Threatened Flora

No threatened flora species were identified within the Proposed Change, and habitat constraint types remain consistent with the approved BAR (Aurecon, 2026), therefore potential impacts to threatened flora species remain consistent with the BAR.

7.1.2.2 Impacts to Threatened Fauna

No threatened fauna species were identified during the site assessment. Within the BAR (Aurecon, 2026), no specific measurements regarding threatened species habitat being impact were provided. As such, the below measurements extracted from the BAR, are dictated based on threatened species associations with PCTs scheduled for removal. See **Table 15** for further details.

Table 15. Impacts to threatened fauna species habitat as a result of the Proposed Change.

Threatened Fauna	Foraging habitat to be impacted as part of the Proposed Change			
	PCT (ha)	Remnant Trees	Planted Native Trees	Exotic Trees
<i>Parvipsitta pusilla</i> (Little Lorikeet)	0.053	142	103	-
<i>Ninox strenua</i> (Powerful Owl)	0.053	142	103	-
<i>Pteropus poliocephalus</i> (Grey-headed Flying Fox)	0.053	142	103	94

The native vegetation to be impacted as part of the Proposed Change was assessed for the presence of potential roosting habitat features suitable for threatened microbat species, including culverts, tunnels, derelict or abandoned structures, and other artificial or natural cavities capable of supporting maternity or overwintering colonies. No such features were identified within the vegetation to be impacted. As the *Miniopterus australis* (Little Bent-winged Bat) and *Miniopterus orianae oceanensis* (Large Bent-winged Bat) are highly reliant on caves, culverts, tunnels and similarly enclosed structures for roosting and breeding, and given the absence of any such habitat features within the affected vegetation, suitable roosting habitat for these species is considered absent. Whilst both species may occasionally forage over cleared or modified landscapes; the affected vegetation does not provide the specific structural habitat required to

support a roosting population or colony. Accordingly, the Little Bent-winged Bat and Large Bent-winged Bat have been excluded from this assessment, and no further impacts to these species, beyond those already accounted for within the existing approval, are anticipated as a result of the Proposed Change. Whilst roosts of the Little Bent-winged Bat and Large Bent-winged Bat are known to occur within 50km of the Approved Construction Corridor, these species are highly unlikely to be impacted by construction activities given the absence of suitable roosting habitat within the affected vegetation and the transient, wide-ranging foraging behaviour typical of these highly mobile species, which allows them to readily avoid areas subject to disturbance.

The Proposed Change has the potential to impact habitat connectivity within the Approved Construction Corridor, particularly where vegetation removal results in the loss or fragmentation of stepping-stone habitat linking remnant bushland patches, road reserves and riparian corridors. Given the highly modified urban context of the corridor, existing connectivity is already limited and reliant on scattered remnant and planted vegetation to facilitate fauna movement across the landscape. Removal of vegetation associated with the Proposed Change may therefore further reduce connectivity for highly mobile fauna species, including birds and volant mammals, by increasing gaps between habitat patches. However, the overall impact on landscape-scale connectivity is considered relatively minor. Based on the relatively urban nature of the area and more favourable habitat available in the vicinity, the proposal is unlikely to substantially impact on any threatened fauna or flora (**Appendix A**).

The result of a Test of Significance (5-Part Test) and Assessment of Significant Impact was that the Proposed Change is not likely to result in a 'significant impact' to any threatened entities and therefore the BOS is not triggered (**Appendix B & Appendix C**). As such, a SIS or a BDAR is not required. The Proposed Change will not result in a 'significant impact' on any MNES and a referral to the Australian Government Minister for the Environment is not required. These findings are therefore consistent with that detailed in the BAR (Aurecon, 2026).

7.1.3 Impacts to Fauna Habitat

All vegetation proposed for removal provides minor foraging habitat for a suite of protected fauna species. Sensitive and/or specialist habitats that may be impacted by the activity include:

- Nectar/lerp-bearing trees and shrubs
- Sap and gum sources
- Seed and soft-fruit-bearing trees and shrubs, and
- Tree hollows.

Six hollow-bearing trees suitable for breeding by various threatened species were identified within the Proposed Change and are subject to impacts from the Proposed Change (**Figure 43 - Figure 55**). Details of the hollow-bearing trees to be impacted are detailed in **Table 16**.

Table 16. Details of hollow-bearing trees to be impacted by the Proposed Change.

Habitat Feature	Number of Hollows	Size of hollow/s (cm)	Distance from ground (m)
HT1	1	11	11
HT2	1	10	8

Habitat Feature	Number of Hollows	Size of hollow/s (cm)	Distance from ground (m)
HT3	1	8	7
HT4	2	15	10
		10	14
HT5	1	9	12
HT6	2	9	10
		12	11

No other sensitive and/or specialist habitat i.e. rocky outcrops or caves were identified. Within the context of the surrounding landscape and the relatively urban nature of the area, these habitat types are unlikely to be of high significance to any threatened fauna given the more favourable habitats in the locality.

Based on habitat constraints (**Appendix A**), no other threatened fauna was considered likely to occur, or potential impacts were considered negligible, and no further assessment was required. As such, an SIS or a BDAR is not required. The Proposed Change will not result in a 'significant impact' on any MNES and a referral to the Australian Government Minister for the Environment is not required.

7.1.4 Indirect Impacts

Indirect impacts anticipated from the Proposed Change remain similar to those outlined in the BAR (Aurecon, 2026). Potential indirect impacts from the Proposed Change are described in **Table 17**.

Table 17. Indirect impacts from the Proposed Change assessed in BAR (Aurecon, 2026).

Indirect impact	Additional indirect impacts that require assessment
Wildlife connectivity and habitat fragmentation	The proposed vegetation removal will have minor impact on wildlife connectivity of some fauna that are deterred by edge effects, such as increased noise from traffic. However, fauna species utilising habitat within the Proposed Change are likely adapted to fragmented environments and are therefore likely to continue utilising the habitat within the locality.
Edge effects on adjacent native vegetation and habitat	The Proposed Change will create edge effects, in new relatively undisturbed areas, which will cause a change in biotic and abiotic factors i.e., light intensity, dumping of rubbish and increased susceptibility to weeds. However, it is unlikely that the Proposed Change will result in a significant decrease in condition due to weeds already being present.
Invasion and spread of weeds	It is possible new weeds could be introduced to the locality due to Proposed Change, therefore weed hygiene protocols should be implemented.
Invasion and spread of pests	None.

Indirect impact	Additional indirect impacts that require assessment
Invasion and spread of pathogens and disease	None.
Changes to hydrology	None.
Noise, light and vibration	None.
Groundwater dependent ecosystems	None.

7.2 Cumulative Impacts

When combined with impacts previously approved under the REF, the Proposed Change brings the cumulative impact to:

- Removal of 0.411ha of PCTs
- Removal of 0.102ha of TECs
- Pruning and/or removal of 263 remnant trees, and
- Removal of 17 hollow-bearing trees.

Cumulatively, 0.026ha of STIF will be impacted, however only 0.006ha will be subject to additional pruning under the Proposed Change, with no additional STIF removal proposed. Further, no impacts to the BSA Site Aluba Reserve are required to facilitate the Proposed Change. This assessment updates the impacts reported in the REF, reflecting changes to the Approved Construction Corridor.

These cumulative impacts reflect the combined outcome of detailed design and constructability review, and refinement of impact assumptions through the completion of a ground-truthed Arboricultural Assessment.

A detailed comparison of the impacts of the Proposed Change against the REF is detailed below in **Table 18 & Table 19**.

Table 18. Comparative impacts to native vegetation (ha) identified as part of the Proposed Change against the Approved REF (Sydney Water, 2026).

Native Vegetation Impact Category		Previously Approved Impacts (ha)	Proposed Change (ha)	Cumulative area of habitat to be impacted (ha)
		Aurecon, 2026	ECE, 2026	
PCT	PCT 3262: Sydney Turpentine Ironbark Forest	0.029	-	0.029
	PCT 3259: Sydney Coastal Shale-Sandstone Forest	0.199	0.041	0.240
	PCT 3595: Sydney Coastal Sandstone Gully Forest	0.130	0.012	0.142
Revised Totals		0.358	0.053	0.411
PCT Total Removal Area				0.411
TEC	Sydney Turpentine-Ironbark Forest in the Sydney Basin Bioregion (BC & EPBC Act)	0.026	-	0.026
	Duffys Forest in the Sydney Basin Bioregion (BC Act)	0.035	0.041	0.076
Revised Totals		0.061	0.041	0.102
TEC Total Removal Area				0.102

Table 19. Comparative impacts to trees identified as part of the Proposed Change against the Approved REF (Sydney Water, 2026).

Tree Impact Category	Previously Approved Impacts			Proposed Change			Cumulative number of trees to be impacted
	Pruning	Removal	Total Tree Count	Pruning	Removal	Total Tree Count	
Remnant Tree Impact	68*	53*	121	90	52	142	263
Planted Native Tree Impact	_**	_**	-	81	22	103	103
Exotic Tree Impact	_**	_**	-	62	32	94	94
Revised Tree Total	68	53	121	233	106	339	460
Total Tree Count							460 Trees
Hollow-bearing Trees	-	-	11	-	6	6	17
Revised Hollow-bearing Tree Total	-	-	11	-	6	6	17
Total Hollow-bearing Tree Count							17 Hollow-bearing Trees

* Since the REF was approved, Sydney Water reduced the construction footprint, resulting in the retention of 53 trees originally assessed for removal reducing the previously approved impact to 53 trees.

** Planted trees (either native or exotic) were not collected due to time constraints and lack of ecological values which needed to be considered within the BAR (Sydney Water/ MDGJV 2026 pers comm).



Figure 43. Impact Summary (Turramurra) 1/13.



Figure 44. Impact Summary (Turramurra) 2/13.

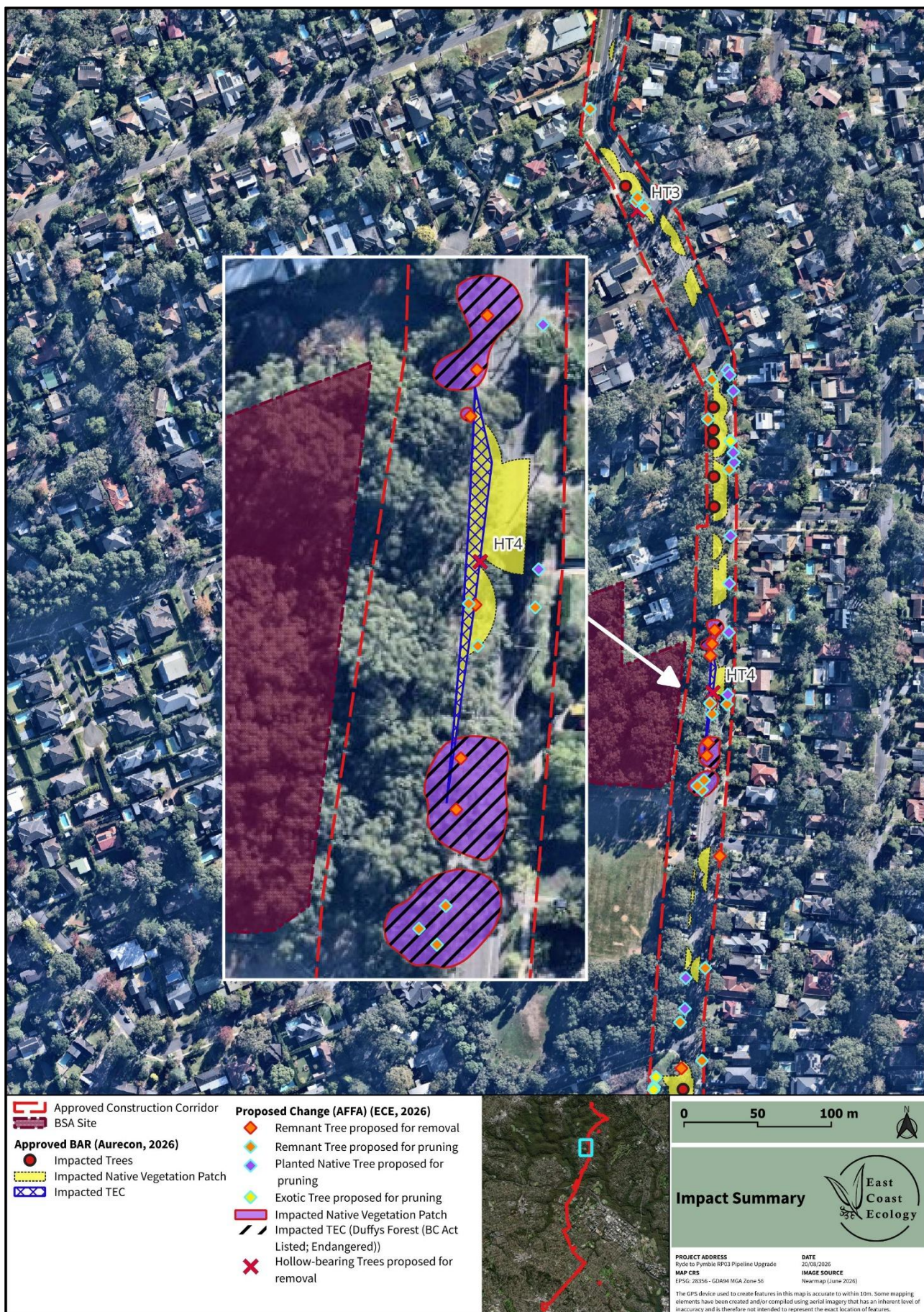


Figure 45. Impact Summary (South Turramurra) 3/13.

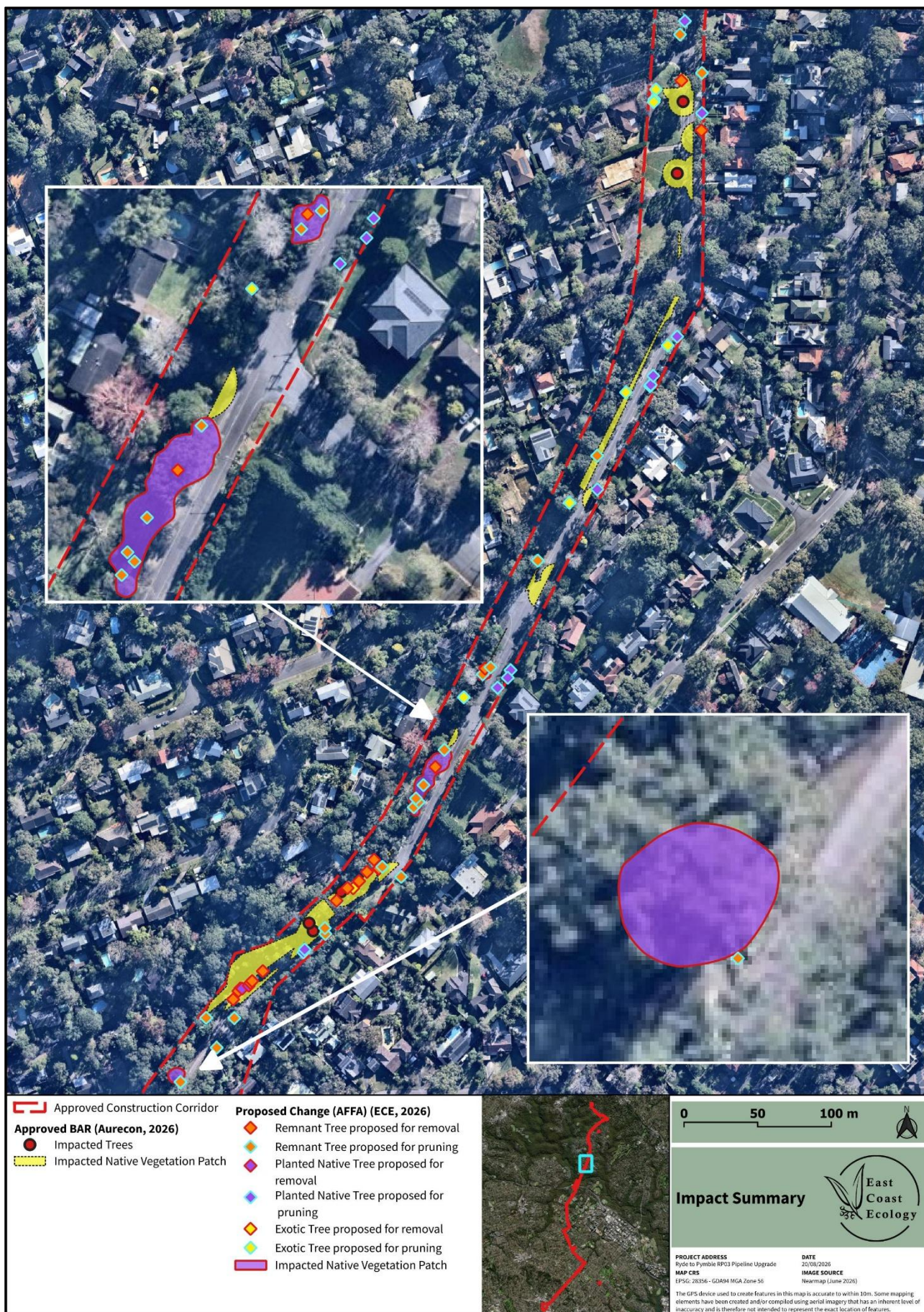


Figure 46. Impact Summary (South Turramurra) 4/13.



Figure 47. Impact Summary (Marsfield & Macquarie Park) 5/13.

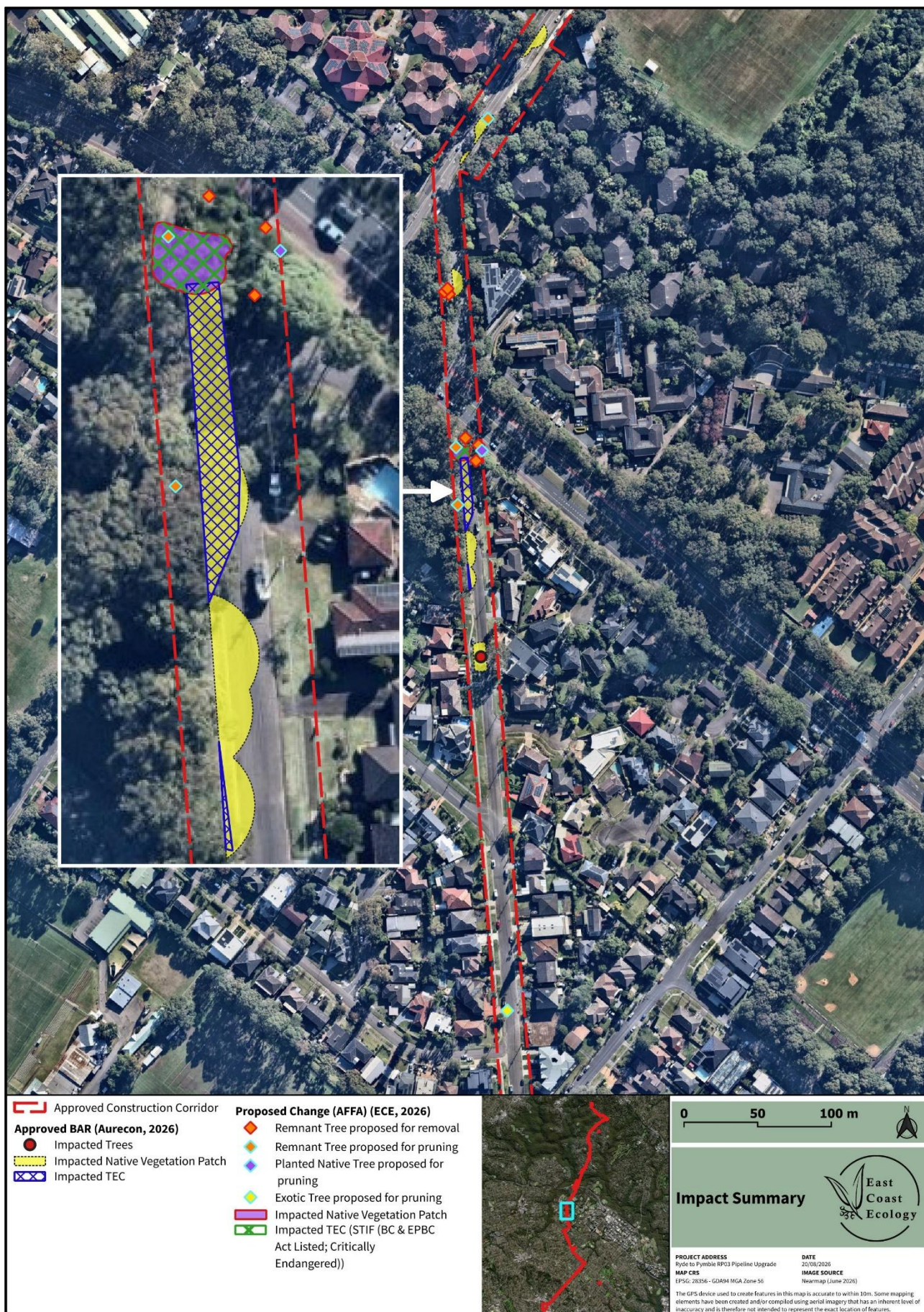


Figure 48. Impact Summary (Marsfield) 6/13.

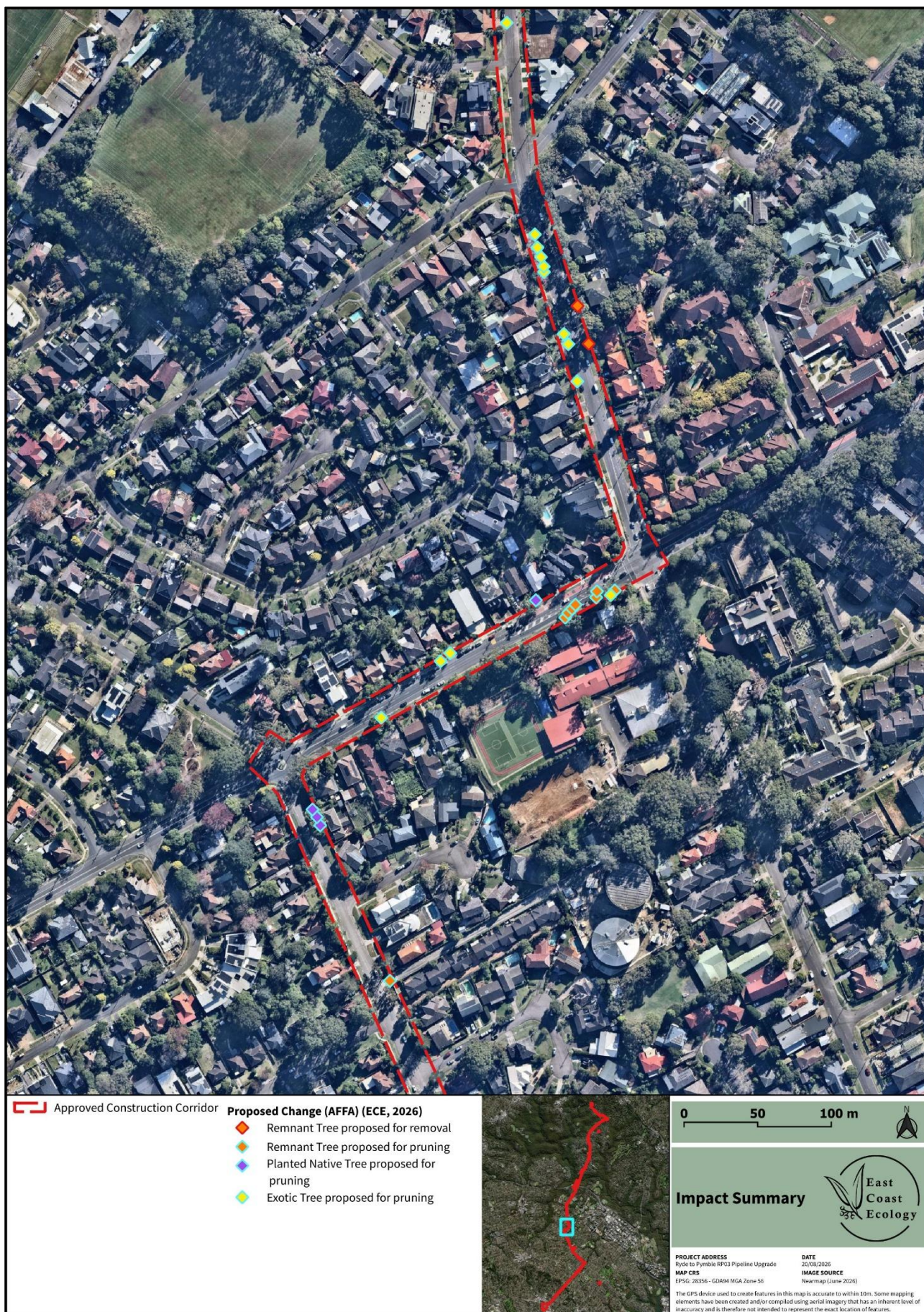


Figure 49. Impact Summary (Marsfield) 7/13.

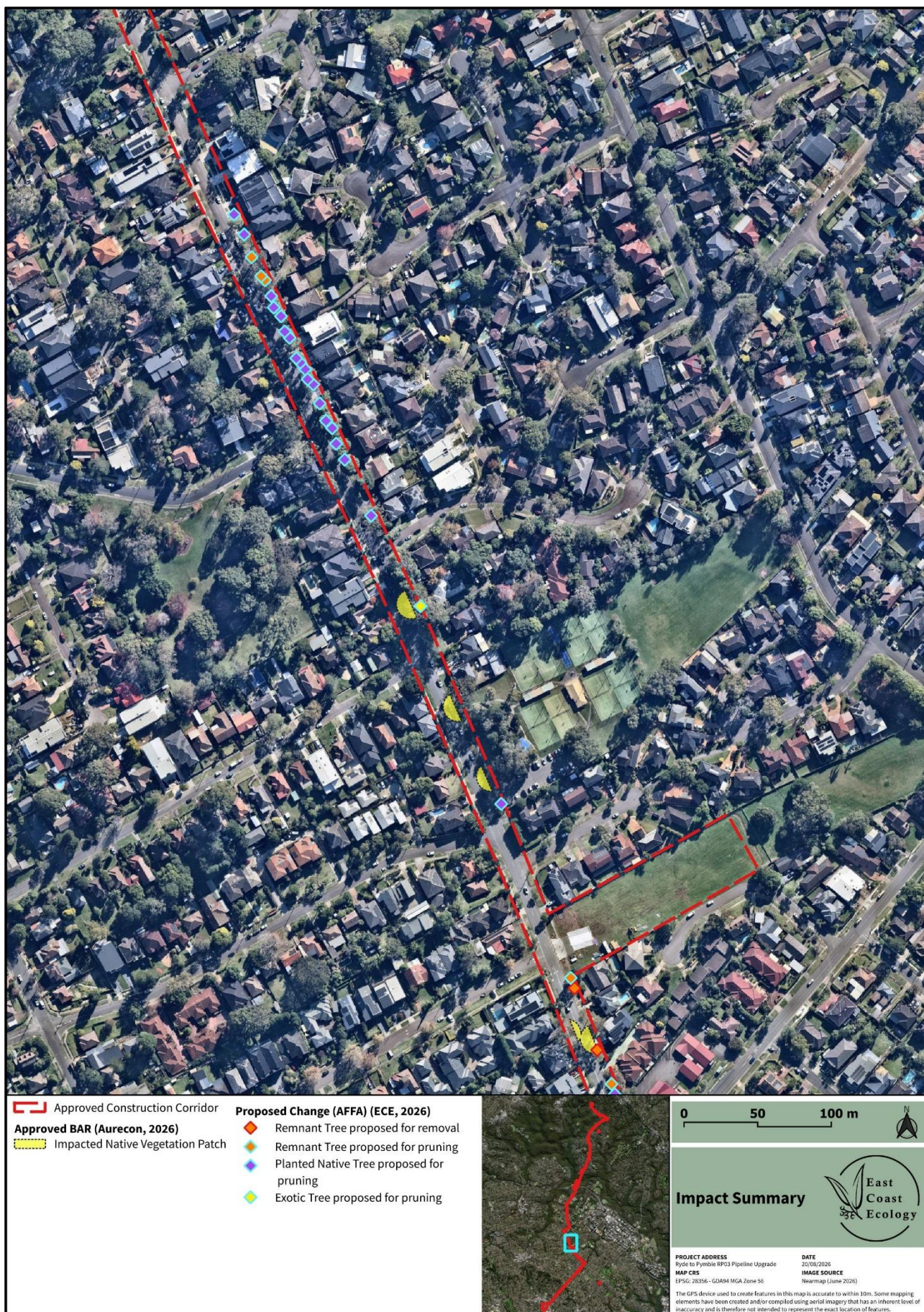


Figure 50. Impact Summary (Eastwood & Marsfield) 8/13.

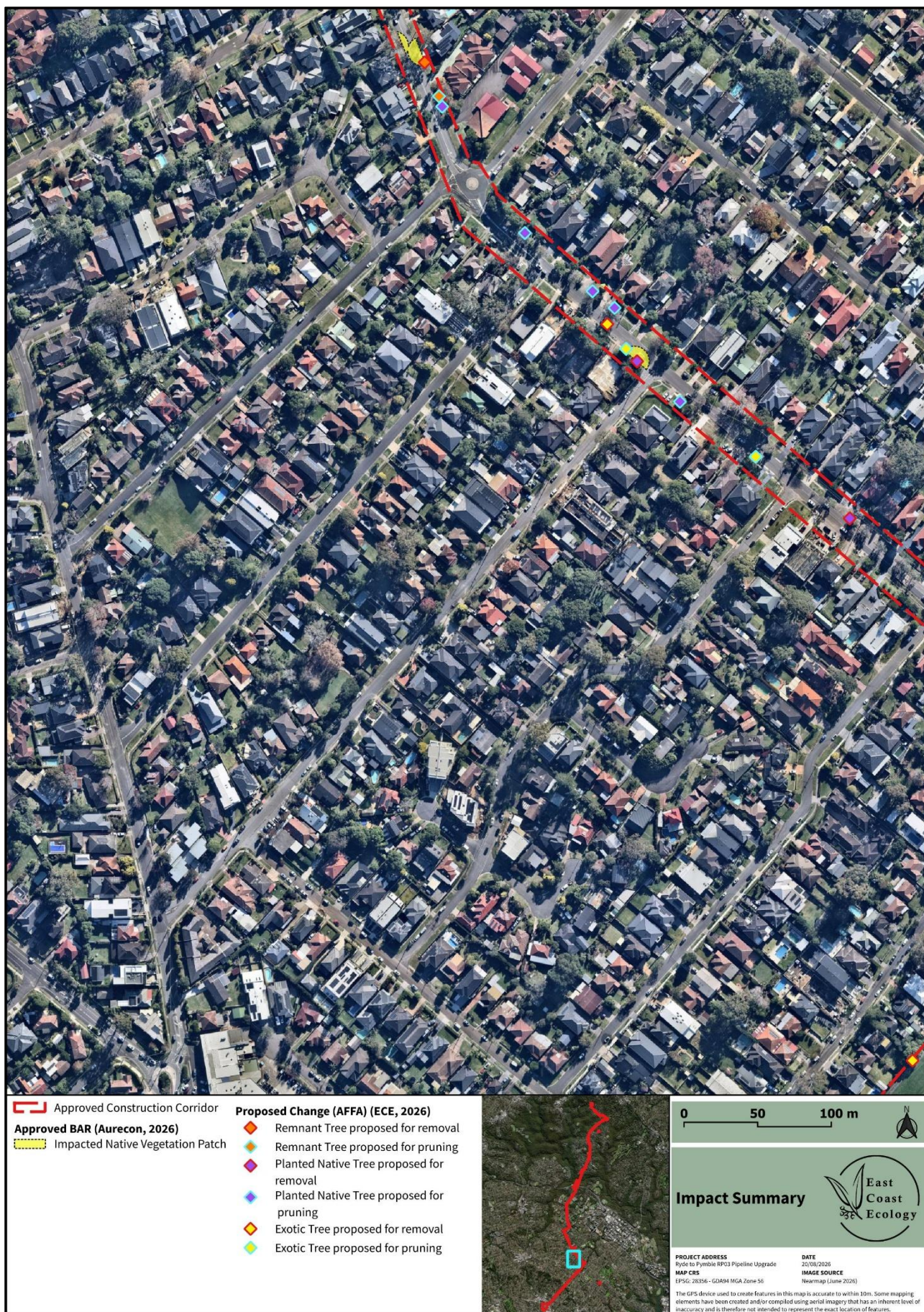


Figure 51. Impact Summary (Eastwood & Ryde) 9/13.



Figure 52. Impact Summary (Ryde & North Ryde) 10/13.

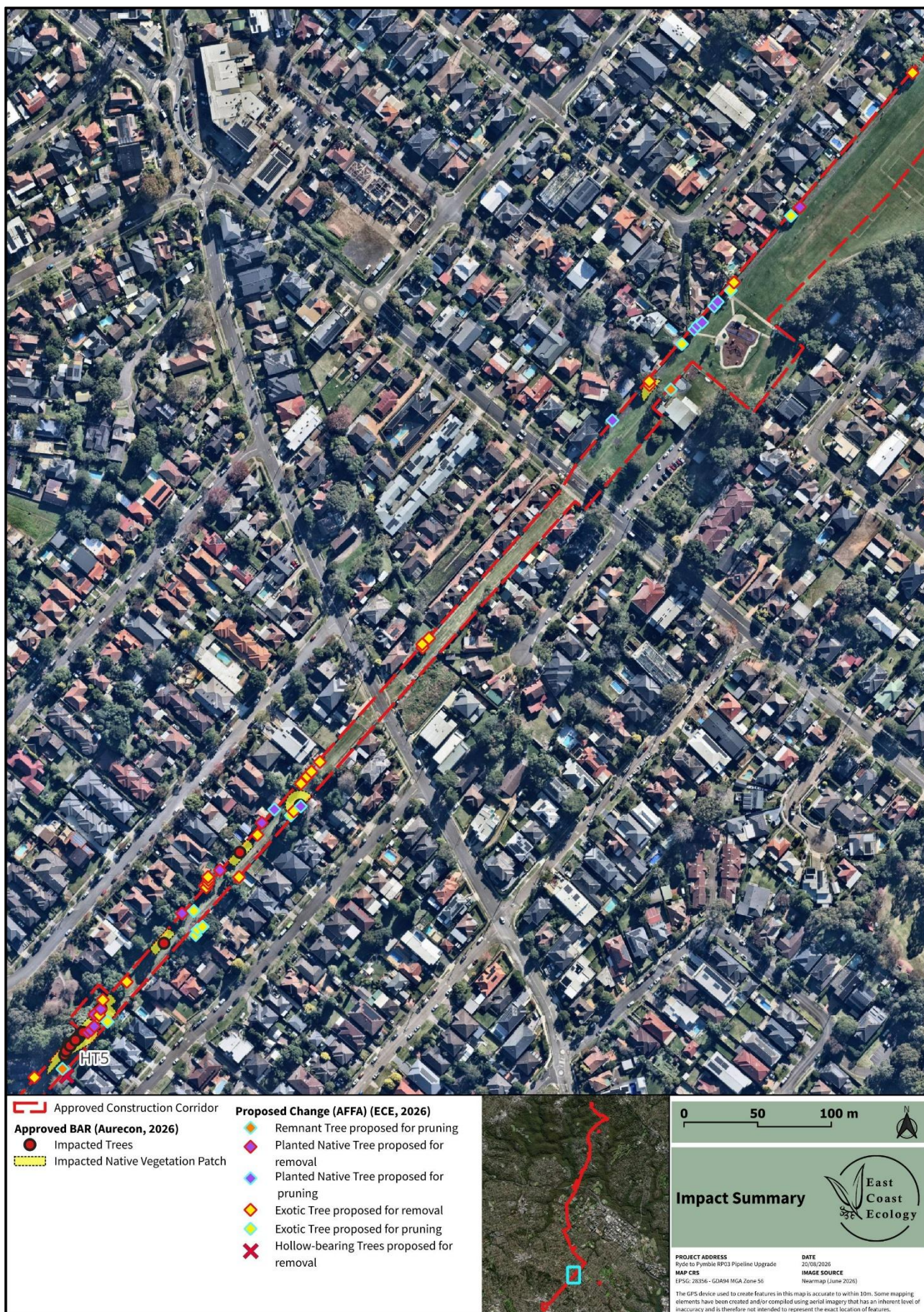


Figure 53. Impact Summary (Denistone East & Ryde) 11/13.

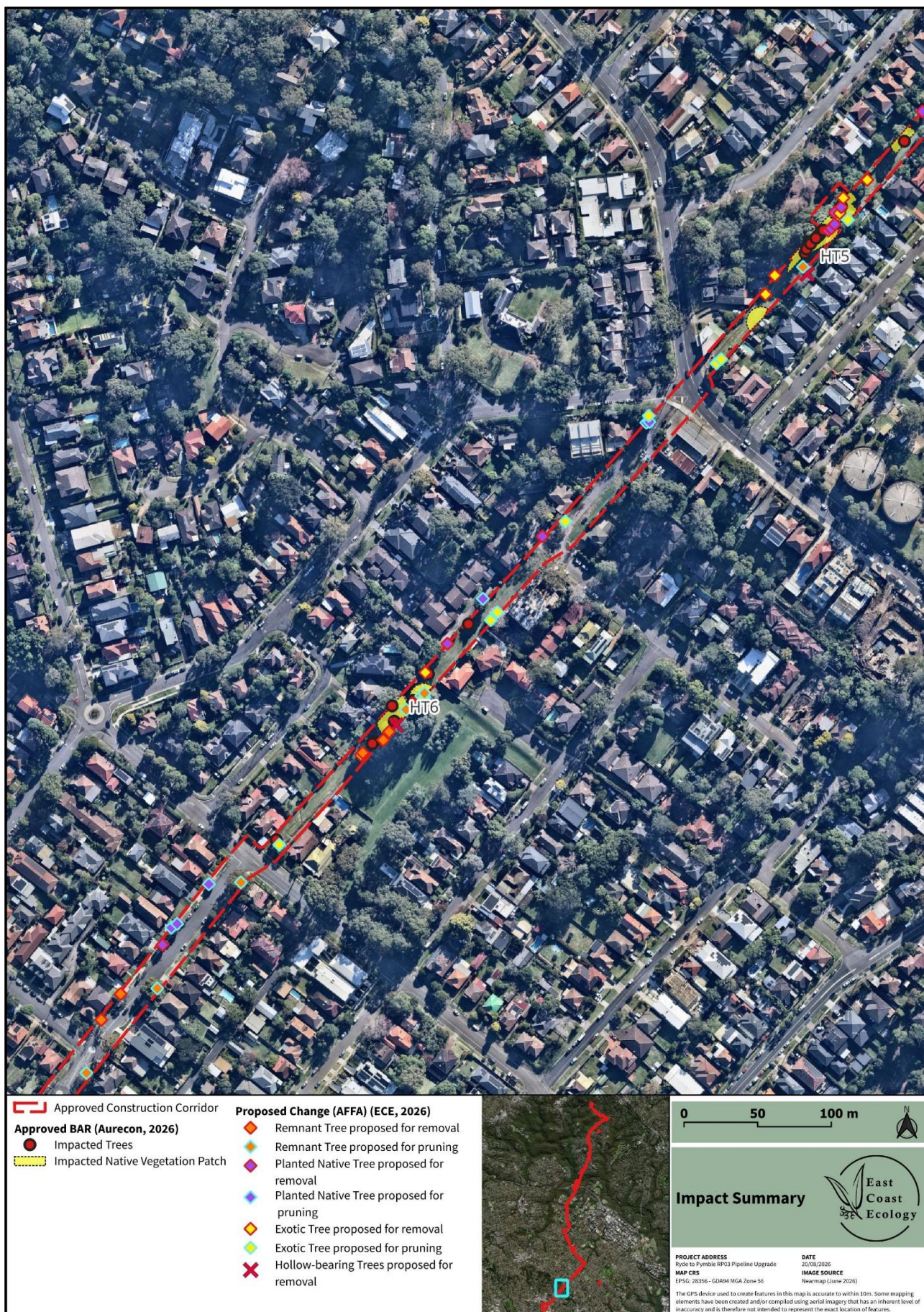


Figure 54. Impact Summary (Denistone & West Ryde) 12/13.

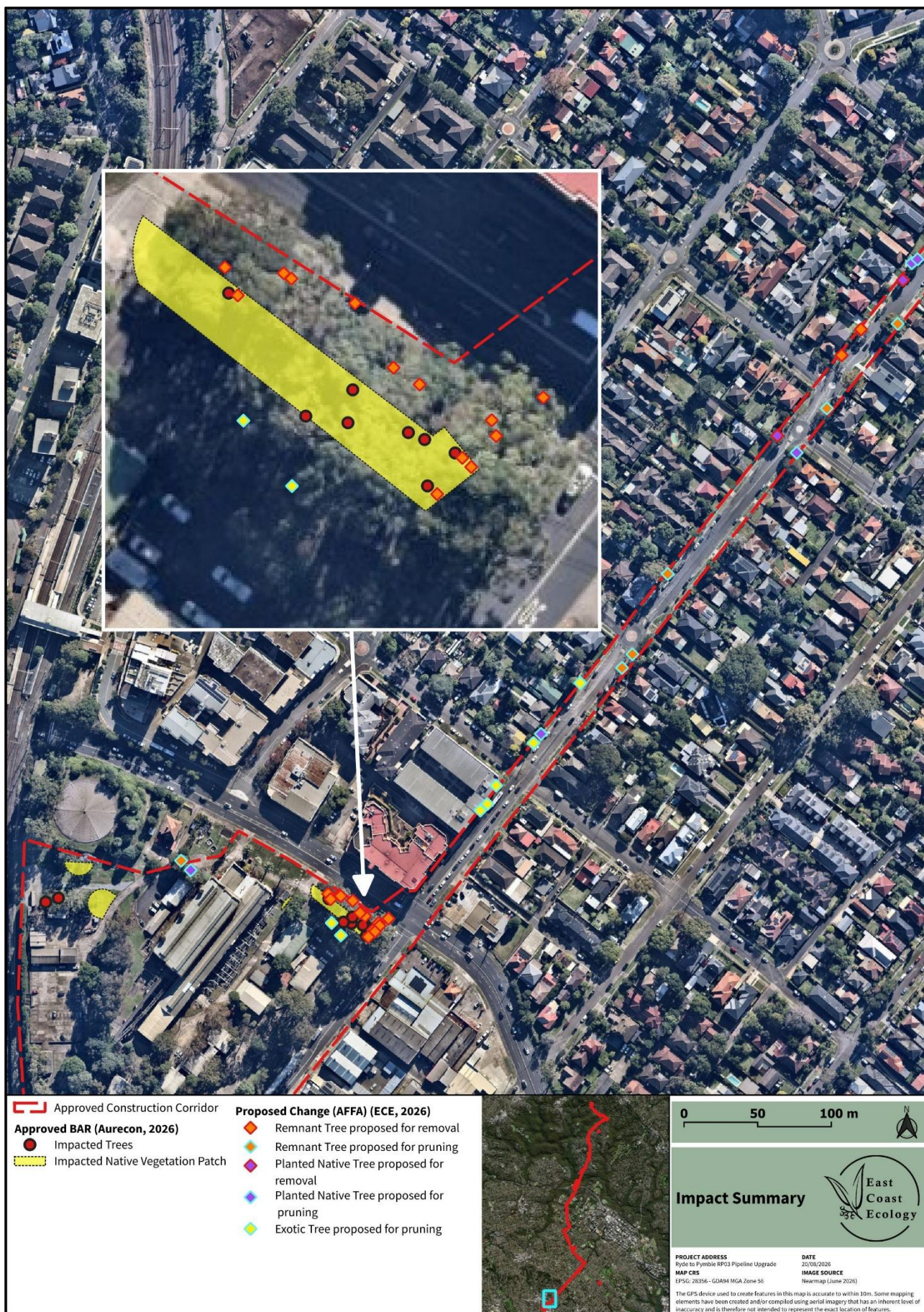


Figure 55. Impact Summary (West Ryde) 13/13.

8. MITIGATION AND OFFSET REQUIREMENTS

8.1 Avoidance and Minimisation

The revised assessment identifies an increase in tree impacts relative to the REF, with 142 additional remnant trees identified for impact under the AFFA (90 for pruning, 52 for removal), compared to 121 trees under the REF (68 for pruning, 53 for removal). This increase reflects methodological refinement rather than reduced avoidance effort, and is attributable to design and constructability review outcomes, Arboricultural assessment findings, and refinement of impact assumptions applied in the REF.

Design-based avoidance, including review of alternative pipeline alignments, was constrained by existing overhead and underground utilities within the Approved Construction Corridor, limiting scope for alignment refinement. Subsequent constructability review of construction methodologies, temporary work areas, plant access, excavation extents and equipment requirements reduced the construction footprint, including a smaller Kissing Point Road Retrieval site compound, lowering proposed additional removals from 159 to 106 trees and enabling retention of 53 trees previously approved for removal under the REF. Completion of the ground-truthed Arboricultural Assessment, in contrast to the REF's reliance on desktop vegetation mapping, accounts for much of the residual increase in tree numbers and reflects a more ecologically accurate impact footprint. Notably, impact severity has shifted favourably: the majority of affected trees (90) require pruning rather than removal.

Changes in tree numbers and changes in vegetation community impact area are not proportionally linked, as selective retention operates at the individual stem level whilst community-scale impact is a function of total disturbance extent within a mapped patch. Both metrics have increased relative to the REF; however, the shift toward pruning over removal, and the retention of previously approved removals, indicates a reduction in impact severity at the individual tree level notwithstanding the increase in overall impact extent.

Residual impacts arising from the Proposed Change that cannot be avoided have been assessed by qualified Arboricultural and ecological specialists to quantify impacts and identify mitigation measures. A Tree Impact Validation Procedure will be applied during delivery to confirm all practicable avoidance, and minimisation measures are documented prior to removal. The Proposed Change remains consistent with the proposal need, project objectives and environmental outcomes assessed in the approved REF.

8.2 Impact Mitigation and Minimisation Recommendations

A range of avoidance and minimisation measures have been implemented to reduce ecological impacts associated with the Proposed Change. The completion of a detailed, ground-truthed Arboricultural Assessment has identified opportunities to retain additional trees and vegetation beyond those assumed under the REF, resulting in a reduction from the conservative, desktop-based impact assumptions originally adopted, subject to confirmation of final impacts. Relevant pre-clearing and pre-construction requirements, including fauna and habitat inspections, exclusion zone establishment, and protocols for the management of hollow-bearing trees, will be implemented in accordance with the BAR (Aurecon, 2026); Table 8-1. In addition, design and construction refinements have been undertaken to avoid or reduce impacts to PCTs and TECs, including reductions in temporary work areas, revision of the pipe stringing methodology, localised construction methodology changes, and the use of trenchless

construction methods where feasible. These refinements have collectively reduced disturbance to tree root zones, canopy extent and understorey vegetation within retained PCT and TEC patches, consistent with the ecological outcomes assessed in the approved REF.

8.3 Offset Requirements

The biodiversity impacts and associated offset requirements are based on the current design and impact assessment. Consistent with the mitigation hierarchy, further avoidance and minimisation opportunities should continue to be pursued throughout detailed design. This may result in a reduced offset obligation where impacts are avoided. Any reduction in the final disturbance footprint should be reflected in subsequent impact validation and offset calculations undertaken in accordance with Sydney Water and MDGJV internal reporting processes.

Non-significant residual impacts must be offset based on the Guide (Sydney Water, 2024). Non-significant impacts apply to:

- Minor Impact: localised impacts, such as removal of an individual isolated tree (e.g. street tree or garden planting), or a small amount (< 100 m²) of native vegetation removal (e.g. around a maintenance hole), and
- Moderate Impact: larger scale impacts (> 100 m²), that are not considered significant (e.g. removal of native vegetation associated with new infrastructure projects).

Non-statutory offsets will be required for veg clearing in accordance with Sydney Water's Biodiversity Offset Guide (Sydney Water, 2024) (**Table 20**). Non-locally endemic vegetation has been offset using the multiplier detailed in Table 2 of Sydney Water's Offset Guide (Sydney Water, 2024).

Table 20. Biodiversity Values within the Proposed Change requiring non-statutory offsets in accordance with Sydney Water's Biodiversity Offset Guide.

Biodiversity Value Impact	Total Impact Proposal			Proposal Impact	Offset Multiplier	Offset Required
	REF	AFFA	Cumulative Impact			
Threatened Ecological Communities (TEC)						
PCT 3262 (STIF)	0.026	-	0.026	Removal of native vegetation	3:1	0.306ha
PCT 3259 (Duffys Forest)	0.035	0.041	0.076			
Total TEC Area		0.102ha				
Non-TECs						
PCT 3262	0.003	-	0.003	Removal of native vegetation	2:1	0.618ha
PCT 3259	0.164	-	0.164			
PCT 3595	0.130	0.012	0.142			
Total non-TEC Area		0.309ha				
Habitat Values						
Hollow-bearing trees	11	6	17	Removal of habitat values	2:1	34 hollows
Total hollow-bearing trees		17				
Native Tree Count						
Remnant Native Trees	53	52	105	Removal of native vegetation	3:1	315 native trees to be replanted
Total native tree count		105				
Non-locally Endemic Tree Count						
Planted Native Trees	-	22	22		1:1	54 native trees to be replanted

Biodiversity Value Impact	Total Impact Proposal			Proposal Impact	Offset Multiplier	Offset Required
	REF	AFFA	Cumulative Impact			
Exotic Trees	-	32	32	Removal of non-locally endemic vegetation		
Total Non-locally Endemic Tree count			54			

9. CONCLUSION

The primary direct ecological impact of the Proposed Change is clearing of native vegetation. The Proposed Change will result in removal of the following:

- 0.041ha of PCT 3259: Sydney Coastal Shale-Sandstone Forest, and
- 0.012ha of PCT 3595: Sydney Coastal Sandstone Gully Forest.

Only pruning of 0.019ha of PCT 3262 (overhanging canopy) is required to facilitate the Proposed Change.

Facilitation of the Proposed Change will also require removal of the following TEC:

- 0.041ha of Duffys Forest (BC Act Listed).

Only pruning of 0.006ha of STIF (BC & EPBC Act Listed) is required to facilitate the proposed scope of works. Impacts to the identified TECs (removal and/or pruning) is not likely to result in a significant impact, given these communities are well represented in the broader locality. No additional impacts beyond those discussed in this report are anticipated, subject to mitigation measures.

The Proposed Change will also require additional impacts to the following:

- 142 remnant trees (90 for pruning and 52 for removal)
- 103 Planted Native Trees (81 for pruning and 22 for removal)
- 94 Exotic Trees (62 for pruning and 32 for removal), and
- 6 hollow-bearing trees (6 proposed for removal).

As such, the cumulative impacts are as follows:

- Removal of a total PCT impact area of 0.411ha against the approved REF.
- Removal of a total TEC impact area of 0.102ha against the approved REF.
- Pruning and/or removal of 263 remnant trees, and
- Removal of 17 hollow-bearing trees.

Further discussion of the cumulative impacts in its entirety is provided in **Table 18 & Table 19**.

All vegetation proposed for removal provides minor foraging habitat for a suite of protected fauna species. Sensitive and/or specialist fauna habitats that may be directly impacted by the activity include:

- Nectar/lerp-bearing trees and shrubs
- Sap and gum sources
- Seed and soft-fruit-bearing trees and shrubs, and
- Tree hollows.

No threatened flora or fauna species were identified at the time of the site assessment. Potential impacts to threatened flora species remain consistent with the BAR (Aurecon, 2026). Based on habitat constraints and/or proximity to historical records, the following threatened species may potentially utilise habitat available within the vegetation to be impacted by the Proposed Change:

- *Parvipsitta pusilla* (Little Lorikeet)
- *Ninox strenua* (Powerful Owl)

- *Pteropus poliocephalus* (Grey-headed Flying Fox)

The result of a Test of Significance (**Appendix B**) and Assessment of Significance (**Appendix C**) determined that no significant impact to any threatened entities is likely as a result of the Proposed Change. These findings are therefore consistent with those detailed in the BAR (Aurecon, 2026). No other sensitive and/or specialist habitat features, such as rocky outcrops or caves, were identified. Within the context of the surrounding landscape and the relatively urban nature of the area, these habitat types are unlikely to be of high significance to any threatened fauna, given the more favourable habitats available in the locality (**Appendix A**)

This assessment demonstrates that the relevant provisions of the *Environmental Planning and Assessment Act 1979*, *Biodiversity Conservation Act 2016* and the *Environment Protection and Biodiversity Conservation Act 1999* have been satisfied. If the appropriate recommendations in this report are followed, the Proposed Change will have a non-significant impact to protected biodiversity and is unlikely to significantly impact any threatened ecological community or species.

10. REFERENCES

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11. APPENDICES

Appendix A. Assessment of likely occurrence of threatened species within the Proposed Change.

Appendix B. 5-Part Tests (Tests of Significance) under the BC Act.

Appendix C. Assessment of Significant Impact (EPBC Act).

Appendix A. Assessment of likely occurrence of threatened species within the Proposed Change.

Scientific name	Status		Distribution and habitat	Number of records (BioNet)	Likelihood of occurrence
	BC Act	EPBC Act			
<i>Acacia bynoeana</i>	E	V	Grows mainly in heath and dry sclerophyll forest in sandy soils. Mainly south of Dora Creek-Morisset area to Berrima and the Illawarra region, west to the Blue Mountains, also recorded from near Kurri Kurri in the Hunter Valley and from Morton National Park.	1	Low (Aurecon, 2026). No additional impacts to habitats for this species will occur. No further assessment is required.
<i>Acacia clunies-rossiae</i>	V	-	Grows in the Kowmung and Coss River areas entirely within Kanangra-Boyd and Blue Mountains National Parks. Grows in dry sclerophyll forest on skeletal soils on rocky slopes, or on alluvium along creeks.	1	Low (Aurecon, 2026). No additional impacts to habitats for this species will occur. No further assessment is required.
<i>Acacia pubescens</i>	V	V	Concentrated around the Bankstown-Fairfield-Rookwood area and the Pitt Town area, with outliers occurring at Barden Ridge, Oakdale and Mountain Lagoon. Occurs on alluviums, shales and at the intergrade between shales and sandstones. The soils are characteristically gravelly soils, often with ironstone. Grows in open woodland and forest, in a variety of plant communities, including Cooks River-Castlereagh Ironbark forest, Shale-Gravel Transition forest and Cumberland Plain woodland.	3	Low (Aurecon, 2026). No additional impacts to habitats for this species will occur. No further assessment is required.
<i>Callistemon linearifolius</i>	V	-	Recorded from the Georges River to Hawkesbury River in the Sydney area, and north to the Nelson Bay area of NSW. Recorded in 2000 at Coalcliff in the northern Illawarra. For the Sydney area, recent records are limited to the Hornsby Plateau area near	13	Low (Aurecon, 2026). No additional impacts to habitats for this species will occur. No further assessment is required.

Scientific name	Status		Distribution and habitat	Number of records (BioNet)	Likelihood of occurrence
	BC Act	EPBC Act			
			the Hawkesbury River. Grows in dry sclerophyll forest on the coast and adjacent ranges.		
<i>Darwinia biflora</i>	V	V	Recorded in Ku-ring-gai, Hornsby, Baulkham Hills and Ryde local government areas. The northern, southern, eastern and western limits of the range are at Maroota, North Ryde, Cowan and Kellyville, respectively. Occurs on the edges of weathered shale-capped ridges, where these intergrade with Hawkesbury Sandstone. The vegetation structure is usually woodland, open forest or scrub-heath.	347	Low (Aurecon, 2026). No additional impacts to habitats for this species will occur. No further assessment is required.
<i>Darwinia peduncularis</i>	V	-	Occurs as local disjunct populations in coastal NSW with a couple of isolated populations in the Blue Mountains. It has been recorded from Brooklyn, Berowra, Galston Gorge, Hornsby, Bargo River, Glen Davis, Mount Boonbourwa and Kings Tableland. Usually grows on or near rocky outcrops on sandy, well drained, low nutrient soil over sandstone.	1	Low (Aurecon, 2026). No additional impacts to habitats for this species will occur. No further assessment is required.
<i>Deyeuxia appressa</i>	E	E	A highly restricted NSW endemic known only from two pre-1942 records in the Sydney area (Herne Bay, Saltpan Creek, off the Georges River, south of Bankstown and Killara, near Hornsby). Almost nothing is known about the species' habitat and ecology. Flowers spring to summer and is mesophytic (grows in moist conditions).	1	Low (Aurecon, 2026). No additional impacts to habitats for this species will occur. No further assessment is required.

Scientific name	Status		Distribution and habitat	Number of records (BioNet)	Likelihood of occurrence
	BC Act	EPBC Act			
<i>Doryanthes palmeri</i>	V	-	Giant Spear Lily occurs on exposed rocky outcrops on infertile soils or on bare rock. It grows in a narrow band of vegetation along the cliff-tops and on steep cliff-faces or rocky ledges in montane heath next to subtropical rainforest, warm temperate rainforest or wet eucalypt forest.	1	Low. A targeted survey was undertaken during the NSW DCCEEW endorsed survey period and this species was absent from the Proposed Change. No further assessment is required.
<i>Epacris purpurascens</i> var. <i>purpurascens</i>	V	-	Recorded from Gosford in the north, to Narrabeen in the east, Silverdale in the west and Avon Dam vicinity in the South. Found in a range of habitat types, most of which have a strong shale soil influence.	99	Low (Aurecon, 2026). No additional impacts to habitats for this species will occur. No further assessment is required.
<i>Eucalyptus camfieldii</i>	V	V	Restricted distribution in a narrow band with the most northerly records in the Raymond Terrace Area south to Waterfall. Localised and scattered distribution includes sites at Norah Head (Tuggerah Lakes), Peats Ridge, Mt Colah, Elvina Bay Trail (West Head), Terrey Hills, Killara, North Head, Menai, Wattamolla and a few other sites in Royal National Park. Poor coastal country in shallow sandy soils overlying Hawkesbury sandstone. Coastal heath mostly on exposed sandy ridges. Occurs mostly in small scattered stands near the boundary of tall coastal heaths and low open woodland of the slightly more fertile inland areas.	2	Low (Aurecon, 2026). No additional impacts to habitats for this species will occur. No further assessment is required.
<i>Eucalyptus nicholii</i>	V	V	Typically grows in dry grassy woodland, on shallow soils of slopes and ridges. Found primarily on infertile	11	Low (Aurecon, 2026).

Scientific name	Status		Distribution and habitat	Number of records (BioNet)	Likelihood of occurrence
	BC Act	EPBC Act			
			soils derived from granite or metasedimentary rock. Seedling recruitment is common, even in disturbed soils, if protected from grazing and fire.		No additional impacts to habitats for this species will occur. No further assessment is required.
<i>Eucalyptus scoparia</i>	E	V	In NSW it is known from only three locations near Tenterfield. Found in open eucalypt forest and woodland on well-drained granite hilltops, slopes and rocky outcrops, typically at high altitudes. At lower elevations can occur in less rocky soils in damp situations.	9	None. Outside of natural distribution. No further assessment is required.
<i>Gaudium deanei</i>	V	V	Occurs in woodland on lower hill slopes or near creeks. Sandy alluvial soil or sand over sandstone.	14	Low (Aurecon, 2026). No additional impacts to habitats for this species will occur. No further assessment is required.
<i>Genoplesium baueri</i>	E	E	Grows in dry sclerophyll forest and moss gardens over sandstone. Flowers February to March. Has been recorded between Ulladulla and Port Stephens. Currently the species is known from just over 200 plants across 13 sites. The species has been recorded in Berowra Valley Regional Park, Royal National Park and Lane Cove National Park and may also occur in the Woronora, O'Hares, Metropolitan and Warragamba Catchments.	6	Low (Aurecon, 2026). No additional impacts to habitats for this species will occur. No further assessment is required.
<i>Grammitis stenophylla</i>	E	-	Moist places, usually near streams, on rocks or in trees, in rainforest and moist eucalypt forest.	7	Low (Aurecon, 2026). No additional impacts to habitats for this species will occur.

Scientific name	Status		Distribution and habitat	Number of records (BioNet)	Likelihood of occurrence
	BC Act	EPBC Act			
					No further assessment is required.
<i>Grevillea hilliana</i>	E	-	White Yiel Yiel grows in subtropical rainforest, often on basalt-derived soils.	1	Low. A targeted survey was undertaken during the NSW DCCEEW endorsed survey period and this species was absent from the Proposed Change. No further assessment is required.
<i>Grevillea juniperina subsp. juniperina</i>	V	-	Endemic to Western Sydney, centred on an area bounded by Blacktown, Erskine Park, Londonderry and Windsor with outlier populations at Kemps Creek and Pitt Town. Recorded from Cumberland Plain woodland, Castlereagh Ironbark woodland, Castlereagh Scribbly Gum woodland and Shale-Gravel Transition forest. Grows on reddish clay to sandy soils derived from Wianamatta Shale and Tertiary alluvium (often with shale influence), typically containing lateritic gravels.	1	Low. A targeted survey was undertaken during the NSW DCCEEW endorsed survey period and this species was absent from the Proposed Change. No further assessment is required.
<i>Haloragodendron lucasii</i>	E	E	Occurs on Hawkesbury Sandstone in moist sandy loam soil. The species prefers sheltered aspects and inhabits gentle slopes below cliff lines near creeks in low open woodland or open forest. Its distribution is correlated with high soil moisture and phosphorus levels.	2	Low (Aurecon, 2026). No additional impacts to habitats for this species will occur. No further assessment is required.
<i>Hibbertia spanantha</i>	E	CE	Grows in forest with canopy species including Eucalyptus pilularis, E. resinifera, Corymbia gummifera and Angophora costata on light clay soils	30	Low (Aurecon, 2026). No additional impacts to habitats for this species will occur.

Scientific name	Status		Distribution and habitat	Number of records (BioNet)	Likelihood of occurrence
	BC Act	EPBC Act			
			occurring on a shale sandstone soil transition on Sydney's north shore. The understorey is open with species of Poaceae, Orchidaceae, Fabaceae and Liliaceae. Flowers October and November.		No further assessment is required.
<i>Isotoma fluviatilis</i> subsp. <i>fluviatilis</i>	-	X	Known from only two adjacent sites on a single private property at Erskine Park in the Penrith LGA. Previous sightings are all from western Sydney, at Homebush and at Agnes Banks. Grows in damp places, on the Cumberland Plain, including freshwater wetland, grassland/alluvial woodland and an alluvial woodland/shale plains woodland (Cumberland Plain Woodland) and related vegetation types/. May be an early successional species that benefits from some disturbance. Possibly out competed when overgrown by some species such as <i>Cyndon dactylon</i> .	1	Low. This species is presumed extinct. A targeted survey during the site assessment did not identify this species. Given the nature of the modification (select tree removal and pruning) it is not likely that this species would be affected if it did occur nearby. No further assessment is required.
<i>Macadamia integrifolia</i>	-	V	Macadamia Nut occurs from Mt Bauple, near Gympie, to Currumbin Valley in the Gold Coast hinterland, south-east Queensland. The species was known to occur in north-east New South Wales; was described from 1850-60 specimens collected from Camden Haven, and there are specimens also from Lismore. This species grows in remnant rainforest, including complex mixed notophyll forest, and prefers partially open areas such as rainforest edges.	11	Low (Aurecon, 2026). No additional impacts to habitats for this species will occur. No further assessment is required.

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	BC Act	EPBC Act			
<i>Macadamia tetraphylla</i>	V	V	Confined chiefly to the Richmond and Tweed Rivers in north-east NSW, extending just across the border into Queensland. Found in subtropical rainforest, usually near the coast.	14	None. Outside of natural distribution. No further assessment is required.
<i>Melaleuca biconvexa</i>	V	V	Grows in damp places, often near streams or low-lying areas on alluvial soils of low slopes or sheltered aspects. Scattered and dispersed populations found in the Jervis Bay area in the south and the Gosford-Wyong area in the north.	1	Low (Aurecon, 2026). No additional impacts to habitats for this species will occur. No further assessment is required.
<i>Melaleuca deanei</i>	V	V	Grows in wet heath on sandstone in coastal districts from Berowra to Nowra.	27	Low (Aurecon, 2026). No additional impacts to habitats for this species will occur. No further assessment is required.
<i>Persoonia hirsuta</i>	E	E	Distributed from Singleton in the north, along the east coast to Bargo in the south and the Blue Mountains to the west. A large area of occurrence, but occurs in small populations, increasing the species's fragmentation in the landscape. Found in sandy soils in dry sclerophyll open forest, woodland and heath on sandstone. Usually present as isolated individuals or very small populations. Probably killed by fire (as other <i>Persoonia</i> spp. are) but will regenerate from seed.	2	Low (Aurecon, 2026). No additional impacts to habitats for this species will occur. No further assessment is required.
<i>Pimelea curviflora</i> var. <i>curviflora</i>	V	V	Confined to the coastal area of Sydney between northern Sydney in the south and Maroota in the	11	Low (Aurecon, 2026).

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	BC Act	EPBC Act			
			north-west. Former range extended south to the Parramatta River and Port Jackson region including Five Dock, Bellevue Hill and Manly. Occurs on shaley-lateritic soils over sandstone and shale-sandstone transition soils on ridgetops and upper slopes amongst woodlands.		No additional impacts to habitats for this species will occur. No further assessment is required.
<i>Prostanthera marifolia</i>	E	CE	Occurs in localised patches in or in close proximity to the endangered Duffys forest ecological community. Located on deeply weathered clay-loam soils associated with ironstone and scattered shale lenses, a soil type which only occurs on ridge tops and has been extensively urbanised.	2	Low (Aurecon, 2026). No additional impacts to habitats for this species will occur. No further assessment is required.
<i>Rhizanthella slateri</i>	V	E	Habitat requirements are poorly understood and no particular vegetation type has been associated with the species, although it is known to occur in sclerophyll forest.	1	Negligible (Aurecon, 2026). No additional impacts to habitats for this species will occur. No further assessment is required.
<i>Rhodamnia rubescens</i>	E	CE	Found in littoral, warm temperate and subtropical rainforest and wet sclerophyll forest usually on volcanic and sedimentary soils. This species is characterised as highly to extremely susceptible to infection by Myrtle Rust. Myrtle Rust affects all plant parts.	12	Low (Aurecon, 2026). No additional impacts to habitats for this species will occur. No further assessment is required.
<i>Syzygium paniculatum</i>	V	V	Found only in NSW, in a narrow, linear coastal strip from Bulahdelah to Conjola State forest. On the south coast the species occurs on grey soils over sandstone,	29	Negligible (Aurecon, 2026). No additional impacts to habitats for this species will occur.

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	BC Act	EPBC Act			
			restricted mainly to remnant stands of littoral rainforest. On the central coast it occurs on gravels, sands, silts and clays in riverside gallery rainforests and remnant littoral rainforest communities		No further assessment is required.
<i>Tetratheca glandulosa</i>	V	-	Associated with shale-sandstone transition habitat where shale-cappings occur over sandstone, with associated soil landscapes such as Lucas Heights, GyMEA, Lambert and Faulconbridge. Topographically, the plant occupies ridgetops, upper-slopes and to a lesser extent mid-slope sandstone benches. Soils are generally shallow, consisting of a yellow, clayey-sandy loam. Stony lateritic fragments are also common in the soil profile on many of these ridgetops. Vegetation structure varies from heaths and scrub to woodlands-open woodlands, and open forest.	41	Low (Aurecon, 2026). No additional impacts to habitats for this species will occur. Given the nature of the modification (select tree removal and pruning) it is not likely that this species would be affected if it did occur nearby. No further assessment is required.
<i>Tetratheca juncea</i>	V	V	Confined to the northern portion of the Sydney Basin bioregion and the southern portion of the North Coast bioregion in the local government areas of Wyong, Lake Macquarie, Newcastle, Port Stephens, Great Lakes and Cessnock. It is usually found in low open forest-woodland with a mixed shrub understorey and grassy groundcover. The majority of populations occur on low nutrient soils associated with the Awaba Soil Landscape. Cryptic species that requires survey in September-October.	2	Low. A targeted survey during the site assessment did not identify this species. Given the nature of the modification (select tree removal and pruning) it is not likely that this species would be affected if it did occur nearby. No further assessment is required.

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	BC Act	EPBC Act			
<i>Wilsonia backhousei</i>	V	-	In NSW Narrow-leaf <i>Wilsonia</i> is found on the coast between Mimosa Rocks National Park and Wamberal north of Sydney. This is a species of the margins of salt marshes and lakes.	44	Low (Aurecon, 2026). No additional impacts to habitats for this species will occur. No further assessment is required.
<i>Anthochaera phrygia</i>	CE	CE	The Regent Honeyeater mainly inhabits temperate woodlands and open forests of the inland slopes of south-east Australia. Birds are also found in drier coastal woodlands and forests in some years. The distribution of the species has contracted dramatically in the last 30 years to between north-eastern Victoria and south-eastern Queensland. There are only three known key breeding regions remaining: north-east Victoria (Chiltern-Albury), and in NSW at Capertee Valley and the Bundarra-Barraba region. In NSW the distribution is very patchy and mainly confined to the two main breeding areas and surrounding fragmented woodlands. In some years flocks converge on flowering coastal woodlands and forests.	2	Low (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. This highly mobile species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in the broader locality. This means the species is not dependent on the habitat to be impacted by the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). No further assessment is required.
<i>Arenaria interpres</i>	V	V	Ruddy Turnstones are almost exclusively coastal, favouring rocky shorelines, tidal mudflats, sandy beaches, and intertidal reef flats, where they use their distinctive upward-flicking bill action to turn over stones, seaweed, and debris in search of invertebrates such as crustaceans, molluscs, and insects. During breeding, they shift to Arctic tundra	1	Negligible (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. This highly mobile species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in

Scientific name	Status		Distribution and habitat	Number of records (BioNet)	Likelihood of occurrence
	BC Act	EPBC Act			
			habitats, often near coasts or wetlands, where they nest on the ground in low vegetation		the broader locality. This means the species is not dependent on the habitat to be impacted by the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). No further assessment is required.
<i>Artamus cyanopterus cyanopterus</i>	V	-	The Dusky Woodswallow is widespread in eastern, southern and southwestern Australia. In New South Wales it is widespread from coast to inland, including the western slopes of the Great Dividing Range and farther west. It is sparsely scattered in, or largely absent from, much of the Upper Western region. The Dusky Woodswallow is often reported in woodlands and dry open sclerophyll forests, usually dominated by eucalypts, including mallee associations. It has also been recorded in shrublands and heathlands and various modified habitats, including regenerating forests; very occasionally in moist forests or rainforests. At sites where Dusky Woodswallows are recorded the understorey is typically open with sparse eucalypt saplings, acacias and other shrubs, including heath. The ground cover may consist of grasses, sedges or open ground, often with coarse woody debris (Higgins and Peter 2002). Birds are also often observed in farm land, usually at the edges of	14	Low (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. This highly mobile species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in the broader locality. This means the species is not dependent on the habitat to be impacted by the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). No further assessment is required.

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	BC Act	EPBC Act			
			forest or woodland or in roadside remnants or wind breaks with dead timber.		
<i>Botaurus poiciloptilus</i>	E	E	The Australasian Bitterns is widespread but uncommon over south-eastern Australia. In NSW they may be found over most of the state except for the far north-west. Favours permanent freshwater wetlands with tall, dense vegetation, particularly bullrushes and spikerushes.	3	Low (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. This highly mobile species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in the broader locality. This means the species is not dependent on the habitat to be impacted by the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). No further assessment is required.
<i>Calidris acuminata</i>	V	V	Freshwater or saltwater wetlands- the muddy edges of lagoons, swamps, lakes, dams, soaks, sewage dams or temporary floodwaters.	147	Negligible (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. This highly mobile species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in the broader locality. This means the species is not dependent on the habitat to be impacted by the Proposed Change (e.g. for breeding or other

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					important life cycle stages, such as winter flowering resources). No further assessment is required.
<i>Calidris canutus</i>	V	E	The Red Knot is common in all the main suitable habitats around the coast of Australia. Very large numbers are regularly recorded in north-west Australia, with 80 Mile Beach and Roebuck Bay being particular strongholds. The only places it is not found in significant numbers are the northern part of the Great Australian Bight in South Australia and Western Australia, and along much of the NSW coast, where wader habitat is rather scarce (excluding the Hunter Estuary). It is widespread along the coast south of Townsville and along the coasts of NSW and Victoria. In Australasia the Red Knot mainly inhabit intertidal mudflats, sandflats and sandy beaches of sheltered coasts, in estuaries, bays, inlets, lagoons and harbours; sometimes on sandy ocean beaches or shallow pools on exposed wave-cut rock platforms or coral reefs. They are occasionally seen on terrestrial saline wetlands near the coast, such as lakes, lagoons, pools and pans, and recorded on sewage ponds and saltworks, but rarely use freshwater swamps. They rarely use inland lakes or swamps.	1	Low (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. This highly mobile species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in the broader locality. This means the species is not dependent on the habitat to be impacted by the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). No further assessment is required.
<i>Calidris ferruginea</i>	E	CE	The Curlew Sandpiper is distributed around most of the coastline of Australia. It occurs along the entire	17	Low (Aurecon, 2026).

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			coast of NSW, particularly in the Hunter Estuary, and sometimes in freshwater wetlands in the Murray-Darling Basin. It generally occupies littoral and estuarine habitats, and in New South Wales is mainly found in intertidal mudflats of sheltered coasts. It also occurs in non-tidal swamps, lakes and lagoons on the coast and sometimes the inland		Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. This highly mobile species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in the broader locality. This means the species is not dependent on the habitat to be impacted by the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). No further assessment is required.
<i>Callocephalon fimbriatum</i>	E	E	In summer, occupies tall montane forests and woodlands, particularly in heavily timbered and mature wet sclerophyll forests. Also occur in subalpine snow gum woodland and occasionally in temperate or regenerating forest. In winter, occurs at lower altitudes in drier, more open eucalypt forests and woodlands, particularly in box-ironbark assemblages, or in dry forest in coastal areas. It requires tree hollows in which to breed.	59	Low (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. This highly mobile species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in the broader locality. This means the species is not dependent on the habitat to be impacted by the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). No further assessment is required.

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	BC Act	EPBC Act			
<i>Calyptorhynchus lathami lathami</i>	V	V	Inhabits forest with low nutrients, characteristically with key Allocasuarina spp. Tends to prefer drier forest types with a middle stratum of Allocasuarina below Eucalyptus or Angophora. Often confined to remnant patches in hills and gullies. Breed in hollows stumps or limbs, either living or dead. Endangered population in the Riverina.	2	Low (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. This highly mobile species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in the broader locality. This means the species is not dependent on the habitat to be impacted by the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). No further assessment is required.
<i>Cercartetus nanus</i>	V	-	Inhabits rainforest through to sclerophyll forest and tree heath. Banksias and myrtaceous shrubs and trees are a favoured food source. Will often nest in tree hollows, but can also construct its own nest. Because of its small size it is able to utilise a range of hollow sizes including very small hollows. Individuals will use a number of different hollows and an individual has been recorded using up to 9 nest sites within a 0.5ha area over a 5 month period.	3	Low (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. No further assessment is required.
<i>Chalinolobus dwyeri</i>	E	E	Located in a variety of drier habitats, including the dry sclerophyll forests and woodlands to the east and west of the Great Dividing Range. Can also be found on the edges of rainforests and in wet sclerophyll	2	Low (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat

Scientific name	Status		Distribution and habitat	Number of records (BioNet)	Likelihood of occurrence
	BC Act	EPBC Act			
			forests. This species roosts in caves and mines in groups of between 3 and 37 individuals.		types will be impacted. This highly mobile species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in the broader locality. This means the species is not dependent on the habitat to be impacted by the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). No further assessment is required.
<i>Daphoenositta chrysoptera</i>	V	-	Inhabits wide variety of dry eucalypt forests and woodlands, usually with either shrubby under storey or grassy ground cover or both, in all climatic zones of Australia. Usually in areas with rough-barked trees, such as stringybarks or ironbarks, but also in paperbarks or mature Eucalypts with hollows.	3	Low (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. This highly mobile species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in the broader locality. This means the species is not dependent on the habitat to be impacted by the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). No further assessment is required.
<i>Dasyurus maculatus</i>	V	E	Spotted-tailed Quoll are found on the east coast of NSW, Tasmania, eastern Victoria and north-eastern Queensland. Only in Tasmania is it still considered common. Recorded across a range of habitat types,	4	Low (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and

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			including rainforest, open forest, woodland, coastal heath and inland riparian forest, from the sub-alpine zone to the coastline.		located within the same area. No new habitat types will be impacted. No further assessment is required.
<i>Ephippiorhynchus asiaticus</i>	E	-	Mainly found on shallow, permanent, freshwater terrestrial wetlands, and surrounding marginal vegetation, including swamps, floodplains, watercourses and billabongs, freshwater meadows, wet heathland, farm dams and shallow floodwaters, as well as extending into adjacent grasslands, paddocks and open savannah woodlands. They also forage within or around estuaries and along intertidal shorelines, such as saltmarshes, mudflats and sandflats, and mangrove vegetation.	1	Negligible (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. This highly mobile species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in the broader locality. This means the species is not dependent on the habitat to be impacted by the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). No further assessment is required.
<i>Epthianura albifrons</i>	EP	-	Low vegetation in salty coastal and inland areas and crops. Runs along ground and is found in local flocks in Winter.	239	Low. This highly mobile species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in the broader locality. This means the species is not dependent on the habitat to be impacted by the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). No further assessment is required.

Scientific name	Status		Distribution and habitat	Number of records (BioNet)	Likelihood of occurrence
	BC Act	EPBC Act			
<i>Epthianura albifrons</i>	V	-	Low vegetation in salty coastal and inland areas and crops. Runs along ground and is found in local flocks in Winter.	239	Low. This highly mobile species may be an occasional visitor, but habitat constraints required for this species are absent within the Proposed Change. This highly mobile species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in the broader locality. This means the species is not dependent on the habitat to be impacted by the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). No further assessment is required.
<i>Falco hypoleucos</i>	V	V	Usually restricted to shrubland, grassland and wooded watercourses of arid and semi-arid regions, although it is occasionally found in open woodlands near the coast. Also occurs near wetlands where surface water attracts prey.	1	Negligible (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. This highly mobile species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in the broader locality. This means the species is not dependent on the habitat to be impacted by the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). No further assessment is required.

Scientific name	Status		Distribution and habitat	Number of records (BioNet)	Likelihood of occurrence
	BC Act	EPBC Act			
<i>Falsistrellus tasmaniensis</i>	V	-	Inhabit sclerophyll forests, preferring wet habitats where trees are more than 20 m high. Two observations have been made of roosts in stem holes of living eucalypts. There is debate about whether or not this species moves to lower altitudes during winter, or whether they remain sedentary but enter torpor. This species also appears to be highly mobile and records showing movements of up to 12 km between roosting and foraging sites.	13	Low (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. This highly mobile species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in the broader locality. This means the species is not dependent on the habitat to be impacted by the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). No further assessment is required.
<i>Gallinago hardwickii</i>	V	V	Latham's Snipe is a non-breeding migrant to the south east of Australia including Tasmania, passing through the north and New Guinea on passage. Latham's Snipe breed in Japan and on the east Asian mainland. seen in small groups or singly in freshwater wetlands on or near the coast, generally among dense cover. They are found in any vegetation around wetlands, in sedges, grasses, lignum, reeds and rushes and also in saltmarsh and creek edges on migration.	127	Negligible (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. This highly mobile species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in the broader locality. This means the species is not dependent on the habitat to be impacted by the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). No further assessment is required.

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<i>Haliaeetus leucogaster</i>	V	-	Inhabits coastal and near coastal areas, building large stick nests, and feeding mostly on marine and estuarine fish and aquatic fauna.	148	Negligible (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. This highly mobile species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in the broader locality. This means the species is not dependent on the habitat to be impacted by the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). No further assessment is required.
<i>Heleioporus australiacus</i>	V	V	The Giant Burrowing Frog has been recorded breeding in a range of water bodies associated with more sandy environments of the coast and adjacent ranges from the Sydney Basin south the eastern Victoria. It breeds in hanging swamps, perennial non-flooding creeks and occasionally permanent pools, but permanent water must be present to allow its large tadpoles time to reach metamorphosis.	3	Low (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. No further assessment is required.
<i>Hieraaetus morphnoides</i>	V	-	Most abundant in lightly timbered areas with open areas nearby. Often recorded foraging in grasslands, crops, treeless dune fields, and recently logged areas. May nest in farmland, woodland and forest in tall trees.	9	Low (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. This highly mobile

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	BC Act	EPBC Act			
					species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in the broader locality. This means the species is not dependent on the habitat to be impacted by the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). No further assessment is required.
<i>Hirundapus caudacutus</i>	V	V	An aerial species found in feeding concentrations over cities, hilltops and timbered ranges.	50	Low (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. This highly mobile species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in the broader locality. This means the species is not dependent on the habitat to be impacted by the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). No further assessment is required.
<i>Ixobrychus flavicollis</i>	V	-	Usually found on coastal plains below 200 m. Often found along timbered watercourses, in wetlands with fringing trees and shrub vegetation. The sites where they occur are characterized by dense waterside vegetation.	4	Low (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. This highly mobile

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	BC Act	EPBC Act			
					species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in the broader locality. This means the species is not dependent on the habitat to be impacted by the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). No further assessment is required.
<i>Lathamus discolor</i>	E	CE	The Swift Parrot occurs in woodlands and forests of NSW from May to August, where it feeds on eucalypt nectar, pollen and associated insects. The Swift Parrot is dependent on flowering resources across a wide range of habitats in its wintering grounds in NSW. This species is migratory, breeding in Tasmania and also nomadic, moving about in response to changing food availability.	12	Low (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. This highly mobile species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in the broader locality. This means the species is not dependent on the habitat to be impacted by the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). No further assessment is required.
<i>Limosa limosa</i>	E	E	Primarily a coastal species. Usually found in sheltered bays, estuaries and lagoons with large intertidal mudflats and-or sandflats. Further inland, it can also be found on mudflats and in water less than 10 cm deep, around muddy lakes and swamps.	4	Low (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. This highly mobile

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	BC Act	EPBC Act			
					species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in the broader locality. This means the species is not dependent on the habitat to be impacted by the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). No further assessment is required.
<i>Litoria aurea</i>	E	V	Inhabits a very wide range of water bodies including marshes, dams and streams, particularly those containing emergent vegetation such as bullrushes or spikerushes. It also inhabits numerous types of man-made water bodies including quarries and sand extraction sites. Optimum habitat includes water-bodies that are un-shaded, free of predatory fish such as Plague Minnow, have a grassy area nearby and diurnal sheltering sites available.	417	Low (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. No further assessment is required.
<i>Lophoictinia isura</i>	V	-	Typically inhabits coastal forested and wooded lands of tropical and temperate Australia. In NSW it is often associated with ridge and gully forests dominated by Eucalyptus longifolia, Corymbia maculata, E. elata or E. smithii. Individuals appear to occupy large hunting ranges of more than 100km ² . They require large living trees for breeding, particularly near water with surrounding woodland -forest close by for foraging habitat. Nest sites are generally located along or near	6	Low (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. This highly mobile species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in the broader locality. This means the species is not dependent on the habitat to be impacted by

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			watercourses, in a tree fork or on large horizontal limbs.		the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). No further assessment is required.
<i>Melithreptus gularis gularis</i>	V	-	Eucalypt woodlands within an approximate annual rainfall range of 400-700mm	6	Low (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. This highly mobile species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in the broader locality. This means the species is not dependent on the habitat to be impacted by the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). No further assessment is required.
<i>Micronomus norfolkensis</i>	V	-	Most records are from dry eucalypt forests and woodlands to the east of the Great Dividing Range. Appears to roost in trees, but little is known of this species' habits.	19	Low (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. This highly mobile species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in the broader locality. This means the species is not dependent on the habitat to be impacted by

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<i>Miniopterus australis</i>	V	-	Coastal north-eastern NSW and eastern Queensland. Little Bent-wing Bat is an insectivorous bat that roost in caves, in old mines, in tunnels, under bridges, or in similar structures. They breed in large aggregations in a small number of known caves and may travel 100s km from feeding home ranges to breeding sites. Little Bent-wing Bat has a preference for moist eucalypt forest, rainforest or dense coastal banksia scrub where it forages below the canopy for insects.	94	the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). No further assessment is required. Moderate (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. The Proposed Change did not include any culverts or derelict structures which may provide roosting habitat for threatened microbat species such as the Little Bent-winged Bat and Large Bent-winged Bat. As such, these two threatened species have not been included in this assessment, and no further impacts beyond those already calculated in the existing approval are expected. This highly mobile species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in the broader locality. This means the species is not dependent on the habitat to be impacted by the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). No further assessment is required.

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<i>Miniopterus orianae oceanensis</i>	V	-	Eastern Bent-wing Bats occur along the east and north-west coasts of Australia. Caves are the primary roosting habitat, but also use derelict mines, storm-water tunnels, buildings and other man-made structures. Form discrete populations centred on a maternity cave that is used annually in spring and summer for the birth and rearing of young.	241	Moderate (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. The Proposed Change did not include any culverts or derelict structures which may provide roosting habitat for threatened microbat species such as the Little Bent-winged Bat and Large Bent-winged Bat. As such, these two threatened species have not been included in this assessment, and no further impacts beyond those already calculated in the existing approval are expected. This highly mobile species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in the broader locality. This means the species is not dependent on the habitat to be impacted by the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). No further assessment is required.
<i>Myotis macropus</i>	V	-	The Large-footed Myotis is found in the coastal band from the north-west of Australia, across the top-end and south to western Victoria. Generally roost in groups of 10 - 15 close to water in caves, mine shafts,	31	Low (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. This highly mobile

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			hollow-bearing trees, storm water channels, buildings, under bridges and in dense foliage.		species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in the broader locality. This means the species is not dependent on the habitat to be impacted by the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). No further assessment is required.
<i>Neophema pulchella</i>	V	-	The Turquoise Parrot's range extends from southern Queensland through to northern Victoria, from the coastal plains to the western slopes of the Great Dividing Range. Lives on the edges of eucalypt woodland adjoining clearings, timbered ridges and creeks in farmland. Nests in tree hollows, logs or posts, from August to December. It lays four or five white, rounded eggs on a nest of decayed wood dust.	1	Low (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. This highly mobile species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in the broader locality. This means the species is not dependent on the habitat to be impacted by the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). No further assessment is required.
<i>Nettapus coromandelianus</i>	E	-	Freshwater lakes, lagoons, swamps and dams, particularly those vegetated with waterlilies and other floating and submerged aquatic vegetation.	4	Low. This highly mobile species may be an occasional visitor, but habitat constraints required for this species are absent within the Proposed Change. This highly mobile species may be an occasional visitor, but similar and/or

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	BC Act	EPBC Act			
					higher-quality habitat will be retained in the broader locality. This means the species is not dependent on the habitat to be impacted by the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). This species has not been recorded within the locality in the last 20-years. No further assessment is required.
<i>Ninox connivens</i>	V	-	Generally found in open forests, woodlands, swamp woodlands and dense scrub. Can also be found in the foothills and timber along watercourses in otherwise open country.	7	Low (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. This highly mobile species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in the broader locality. This means the species is not dependent on the habitat to be impacted by the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). No further assessment is required.
<i>Ninox strenua</i>	V	-	Occupies wet and dry eucalypt forests and rainforests. Can occupy both un-logged and lightly logged forests as well as undisturbed forests where it usually roosts on the limbs of dense trees in gully	913	Moderate (Aurecon, 2026). Multiple historical records are available in the vicinity of the Proposed Change. This species is highly likely to forage within the Proposed

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			areas. It is most commonly recorded within red turpentine in tall open forests and black she-oak within open forests. Large mature trees with hollows at least 0.5 m deep are required for nesting. Tree hollows are particularly important for the Powerful Owl because a large proportion of the diet is made up of hollow-dependent arboreal marsupials. Nest trees for this species are usually emergent with a diameter at breast height of at least 100 cm.		Change. Similar habitat beyond the Approved Construction Corridor is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding or important life cycle periods such as winter flowering resources) on habitats in the Proposed Change. No hollows suitable for breeding by threatened owls were identified within the Proposed Change. Further assessment is required (Appendix B).
<i>Numenius madagascariensis</i>	E	CE	The Eastern curlew spends its breeding season in northeastern Asia, including Siberia to Kamchatka, and Mongolia. Its breeding habitat is composed of marshy and swampy wetlands and lakeshores. Most individuals winter in coastal Australia, with a few heading to South Korea, Thailand, Philippines and New Zealand, where they stay at estuaries, beaches, and salt marshes. It uses its long, decurved bill to probe for invertebrates in the mud. It may feed in solitary but it generally congregates in large flocks to migrate or roost. Its call is a sharp, clear whistle, cuuue-reee, often repeated.	22	Negligible (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. This highly mobile species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in the broader locality. This means the species is not dependent on the habitat to be impacted by the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). No further assessment is required.
<i>Pandion cristatus</i>	V	-	Ospreys are found right around the Australian coast line, except for Victoria and Tasmania. They are common around the northern coast, especially on rocky shorelines, islands and reefs. The species is	15	Negligible (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat

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			uncommon to rare or absent from closely settled parts of south-eastern Australia. Favour coastal areas, especially the mouths of large rivers, lagoons and lakes. Feed on fish over clear, open water.		types will be impacted. This highly mobile species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in the broader locality. This means the species is not dependent on the habitat to be impacted by the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). No further assessment is required.
<i>Parvipsitta pusilla</i>	V	-	Distributed in forests and woodlands from the coast to the western slopes of the Great Dividing Range in NSW, extending westwards to the vicinity of Albury, Parkes, Dubbo and Narrabri. Mostly occur in dry, open eucalypt forests and woodlands. They feed primarily on nectar and pollen in the tree canopy. Nest hollows are located at heights of between 2 m and 15 m, mostly in living, smooth-barked eucalypts. Most breeding records come from the western slopes.	12	Moderate (Aurecon, 2026). Multiple historical records are available in the vicinity of the Proposed Change. This species is highly likely to forage within the Proposed Change. Similar habitat beyond the Approved Construction Corridor is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding or important life cycle periods such as winter flowering resources) on habitats in the Proposed Change. Hollow-bearing trees suitable for breeding are available within the Proposed Change. Further assessment is required (Appendix B).
<i>Petauroides volans</i>	E	E	The Greater Glider occurs in eucalypt forests and woodlands. Utilise tree hollows	2	Negligible (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and

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					located within the same area. No new habitat types will be impacted. No further assessment is required.
<i>Petaurus australis</i>	V	V	Occur in tall mature eucalypt forest generally in areas with high rainfall and nutrient rich soils. forest type preferences vary with latitude and elevation; mixed coastal forests to dry escarpment forests in the north; moist coastal gullies and creek flats to tall montane forests in the south. Found along the eastern coast to the western slopes of the Great Dividing Range, from southern Queensland to Victoria.	1	Low (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. No further assessment is required.
<i>Petaurus norfolcensis</i>	V	-	Generally occurs in dry sclerophyll forests and woodlands but is absent from dense coastal ranges in the southern part of its range. Requires abundant hollow bearing trees and a mix of eucalypts, banksias and acacias. There is only limited information available on den tree use by Squirrel gliders, but it has been observed using both living and dead trees as well as hollow stumps. Within a suitable vegetation community at least one species should flower heavily in winter and one species of eucalypt should be smooth barked. Endangered population in the Wagga Wagga LGA.	2	Low (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. No further assessment is required.
<i>Petroica boodang</i>	V	-	The Scarlet Robin is found from SE Queensland to SE South Australia and also in Tasmania and SW Western Australia. In NSW, it occurs from the coast to the	3	Low (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and

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			inland slopes. The Scarlet Robin lives in dry eucalypt forests and woodlands. The understorey is usually open and grassy with few scattered shrubs.		located within the same area. No new habitat types will be impacted. This highly mobile species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in the broader locality. This means the species is not dependent on the habitat to be impacted by the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). No further assessment is required.
<i>Petroica phoenicea</i>	V	-	Flame Robins are found in a broad coastal band from southern Queensland to just west of the South Australian border. The species is also found in Tasmania. The preferred habitat in summer includes eucalyptus forests and woodland, whilst in winter prefers open woodlands and farmlands. It is considered migratory. The Flame Robin breeds from about August to January.	1	Low. This highly mobile species may be an occasional visitor, but habitat similar to the Proposed Change is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding or important life cycle periods such as winter flowering resources) on habitats in the Proposed Change. No further assessment is required.
<i>Phascolarctos cinereus</i>	E	E	Inhabits eucalypt forests and woodlands. The suitability of these forests for habitation depends on the size and species of trees present, soil nutrients, climate and rainfall.	11	Low (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. No further assessment is required.
<i>Pluvialis squatarola</i>	V	V	In Australia, Grey Plovers occur almost entirely in coastal areas, where they usually inhabit sheltered	2	Low (Aurecon, 2026).

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	BC Act	EPBC Act			
			embayments, estuaries and lagoons with mudflats and sandflats, and occasionally on rocky coasts with wave-cut platforms or reef-flats, or on reefs within muddy lagoons. They also occur around terrestrial wetlands such as near-coastal lakes and swamps, or salt-lakes. The species is also very occasionally recorded further inland, where they occur around wetlands or salt-lakes.		Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. This highly mobile species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in the broader locality. This means the species is not dependent on the habitat to be impacted by the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). No further assessment is required.
<i>Polytelis swainsonii</i>	V	V	The Superb Parrot is found throughout eastern inland NSW. On the South-western Slopes their core breeding area is roughly bounded by Cowra and Yass in the east, and Grenfell, Cootamundra and Coolac in the west. Birds breeding in this region are mainly absent during winter, when they migrate north to the region of the upper Namoi and Gwydir Rivers. Inhabits box-gum, box-cypress-pine and boree woodlands and river red gum forest.	1	Low (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. This highly mobile species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in the broader locality. This means the species is not dependent on the habitat to be impacted by the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). No further assessment is required.

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<i>Pommerhelix duralensis</i>	E	E	Endemic to NSW and confined to northwest fringes of the Cumberland Plain. Distribution extends as far north as St. Albans; southwest to Mulgoa, and southeast to Parramatta. Occurs in low densities in Hawkesbury Sandstone Vegetation and Shale/Sandstone Transition Forest. Found under rocks, logs, bark and in leaf litter. Has a strong preference for shale-influenced transitional landscapes and has not been confirmed outside such habitats.	3	Low (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. No further assessment is required.
<i>Pseudophryne australis</i>	V	-	Occurs on wetter ridge tops and upper slopes of sandstone formations on which the predominant vegetation is dry open forests and heaths. This species typically breeds within small ephemeral creeks that feed into larger semi-perennial streams. After rain these creeks are characterised by a series of shallow pools lined by dense grasses, ferns and low shrubs and usually contain leaf litter for shelter. Eggs are terrestrial and laid under litter, vegetation or rocks where the tadpoles inside will reach a relatively late stage of development before waiting for flooding waters before hatching will occur.	80	Low (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. No further assessment is required.
<i>Pteropus poliocephalus</i>	V	V	This species is a canopy-feeding frugivore and nectarivore of rainforests, open forests, woodlands, melaleuca swamps and banksia woodlands. Bats commute daily to foraging areas, usually within 15 km	1256	Moderate (Aurecon, 2026). Multiple historical records are available in the vicinity of the Proposed Change. This highly mobile species is likely to forage within the

Scientific name	Status		Distribution and habitat	Number of records (BioNet)	Likelihood of occurrence
	BC Act	EPBC Act			
			of the day roost although some individuals may travel up to 70 km.		Proposed Change. Similar habitat beyond the Approved Construction Corridor is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding or important life cycle periods such as winter flowering resources) on habitats in the Proposed Change. Further assessment is required (Appendix B & Appendix C).
<i>Ptilinopus superbus</i>	V	-	It inhabits rainforest and other dense, moist forest types, including monsoon forest, gallery forest along watercourses, and well-timbered woodland, generally favouring the mid-to-upper canopy layer. The species is highly frugivorous, feeding largely on the fruits of rainforest trees and vines such as figs, and its movements are strongly tied to the fruiting patterns of these food sources — Australian populations are at least partly migratory or nomadic, moving north in the cooler months and south again to breed, tracking food availability across its range.	5	Low (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. This highly mobile species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in the broader locality. This means the species is not dependent on the habitat to be impacted by the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). No further assessment is required.
<i>Saccolaimus flaviventris</i>	V	-	Roosts singly or in groups of up to six, in tree hollows and buildings; in treeless areas they are known to utilise mammal burrows. When foraging for insects, flies high and fast over the forest canopy, but lower in	18	Low (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat

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			more open country. Forages in most habitats across its very wide range, with and without trees; appears to defend an aerial territory.		types will be impacted. This highly mobile species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in the broader locality. This means the species is not dependent on the habitat to be impacted by the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). No further assessment is required.
<i>Scoteanax rueppellii</i>	V	-	Prefer moist gullies in mature coastal forests and rainforests, between the Great Dividing Range and the coast. They are only found at low altitudes below 500 m. In dense environments they utilise natural and human-made opening in the forest for flight paths. Creeks and small rivers are favoured foraging habitat. This species roosts in hollow tree trunks and branches.	15	Low. This highly mobile species may be an occasional visitor, but habitat similar to the Proposed Change is widely distributed in the locality, meaning that the species is not dependent (i.e., for breeding or important life cycle periods such as winter flowering resources) on habitats in the Proposed Change. Hollow-bearing trees suitable for breeding are available within the Proposed Change. No further assessment is required
<i>Tringa nebularia</i>	E	E	Habitat is diverse, both inland and coastal. Found inland on both permanent and temporary wetland-billabongs, swamps, lakes, floodplains, sewage, farms and saltwater ponds. On the coast, it uses sheltered estuaries and bays with extensive mudflats, mangrove swamps, muddy shallows of harbours and lagoons and occasionally rocky tidal edges.	138	Negligible (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. This highly mobile species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in

Scientific name	Status		Distribution and habitat	Number of records (BioNet)	Likelihood of occurrence
	BC Act	EPBC Act			
<i>Tyto novaehollandiae</i>	V	-	Inhabits a diverse range of wooded habitat that provide tall or dense mature trees with hollows suitable for nesting and roosting. Mostly recorded in open forest and woodlands adjacent to cleared lands. Nest in hollows, in trunks and in near vertical spouts or large trees, usually living but sometimes dead. Nest hollows are usually located within dense forests or woodlands. Masked owls prey upon hollow-dependent arboreal marsupials, but terrestrial mammals make up the largest proportion of the diet.	2	the broader locality. This means the species is not dependent on the habitat to be impacted by the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). No further assessment is required. Low (Aurecon, 2026). Additional impacts from the Proposed Change are generally consistent with the BAR and located within the same area. No new habitat types will be impacted. This highly mobile species may be an occasional visitor, but similar and/or higher-quality habitat will be retained in the broader locality. This means the species is not dependent on the habitat to be impacted by the Proposed Change (e.g. for breeding or other important life cycle stages, such as winter flowering resources). No further assessment is required.

Appendix B. 5-Part Tests (Tests of Significance) under the BC Act.

Biodiversity Conservation Act 2016 – Test of Significance (5-part Test) for Threatened Ecological Communities	
Duffys Forest Ecological Community in the Sydney Basin Bioregion (Endangered)	
Species Ecology (Scientific Committee, 2002)	Duffys Forest Ecological Community is the accepted name for the ecological community that occurs on the ridgetops, plateaus, upper slopes and occasionally mid slopes on Hawkesbury sandstone geology, typically in association with laterite soils and soils derived from shale and laminite lenses. It has the structural form predominantly of open forest to woodland. The Duffys Forest Ecological Community has been reported from the Warringah, Pittwater, Ku-ring-gai, Hornsby and Manly Local Government Areas, although it may occur elsewhere in the Sydney Basin Bioregion. The species composition of the site will be influenced by the size of the site and by its recent disturbance history. The number of species and the above ground composition of species will change with time since fire and may also change in response to changes in fire frequency. The endangered shrub <i>Grevillea caleyi</i> is largely restricted to Duffys Forest Ecological Community though it is not present at all locations of the community. Other threatened plant species known from the community include <i>Persoonia hirsuta</i>, <i>Tetratheca glandulosa</i>, <i>Pimelea curviflora</i> var. <i>curviflora</i>, <i>Epacris purpurascens</i> var. <i>purpurascens</i>. It is estimated that only 15% of the original area of the Duffys Forest Ecological Community currently exists in the form of a number of remnants.
(a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,	Not applicable.

**Biodiversity Conservation Act 2016 – Test of Significance (5-part Test)
for Threatened Ecological Communities**

Duffys Forest Ecological Community in the Sydney Basin Bioregion (Endangered)

(b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:	(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or	The Project alignment would have indirect impacts to 0.076ha of this community at David Martin Reserve and Rothwell Rd, South Turramurra. This can be considered a notable small-scale impact. Based on Duffys Forest vegetation community-endangered ecological community profile, approximately 240ha of the original distribution remains. Conservatively, the Project would impact a very small percentage (0.076ha) of the estimated remainder of the ecological community, suggesting that vegetation clearance within the Impact Area would not be on such a significant scale that the ecological community will be placed at a risk of extinction Furthermore, minor impacts to the community is predominantly within urban and residential environments, suggesting that a local and broad scale impact to ecological function is highly unlikely. The Project is not likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction
	(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local	The Project alignment would have indirect impacts to 0.076ha of this community at David

**Biodiversity Conservation Act 2016 – Test of Significance (5-part Test)
for Threatened Ecological Communities**

Duffys Forest Ecological Community in the Sydney Basin Bioregion (Endangered)

	occurrence is likely to be placed at risk of extinction,	Martin Reserve and Rothwell Rd, South Turramurra. As only minor TPZ and RPZ impacts are proposed to occur, the Project is not considered to cause a modification of the species composition of the ecological community.
(c) in relation to the habitat of a threatened species or ecological community:	(i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and	The Project alignment would have indirect impacts to 0.076ha of this community at David Martin Reserve and Rothwell Rd, South Turramurra.
	(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and	As only small-scale impacts are anticipated, the Project is considered unlikely to fragment or isolate the community. Furthermore, the Impact Area already exists within a fragmented landscape, due to surrounding urbanisation, so the Project is unlikely to further isolate the Impact Area from other areas of habitat.
	(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,	The majority of the community within the Impact Area is not considered important to the survival of the TEC due to its highly fragmented condition in a disturbed urban environment. Therefore, direct and indirect impacts to this vegetation is considered unlikely to significantly impact the long-term survival of the community in the locality.

**Biodiversity Conservation Act 2016 – Test of Significance (5-part Test)
for Threatened Ecological Communities**

Duffys Forest Ecological Community in the Sydney Basin Bioregion (Endangered)

(d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly),

No areas of outstanding biodiversity value are present or will be impacted by the Project.

(e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.

In relation to this community, the Project is likely to include or exacerbate the following Key Threatening Processes:

- Anthropogenic climate change: The Project would contribute a minor increase in the processes causing
- anthropogenic climate change via the removal of vegetation which act as a carbon sink. The impact is
- considered minimal due to the small amount of non-vegetation removed.
- Clearing of native vegetation
- Invasion and establishment of exotic vines and scramblers,
- Invasion of native plant communities by exotic perennial grasses
- Infection of native plants by *Phytophthora cinnamomic*

The introduction and spread of invasive weed species and pathogens have the potential to occur during the Project, as weeds and pest species are commonly introduced through earthworks, movement of soil and through attachment of seeds to vehicles and machinery. Weed spread can occur from outside the Study Area, and from within the Study Area. Mitigation measures include biosecurity procedures to disinfection of equipment before entering site

Conclusion

Overall based on the small-scale impact of the Project to the remainder of the ecological community, the Project is not likely to have a significant negative impact on the extent of the ecological community and its long-term survival.

**Biodiversity Conservation Act 2016 – Test of Significance (5-part Test)
for Threatened Ecological Communities**

Sydney Turpentine-Ironbark Forest in the Sydney Basin Bioregion (Critically Endangered)

Species Ecology

(Scientific Committee, 2019)

Sydney Turpentine-Ironbark Forest corresponds to the community described by Benson and Howell (1990) and is distributed across the Hornsby Plateau, the eastern Cumberland Lowlands and the northern Woronora Plateau, with more recent surveys also identifying occurrences near the south-eastern margin of the Cumberland Plain, as well as to the south-west and north-west of the Cumberland Plain. The community falls within the Northern Hinterland Wet Sclerophyll Forests Class of Keith's (2004) Wet Sclerophyll Forest Formation. Its distribution is highly restricted, with an extent of occurrence of 4,479 km² and an estimated area of occupancy of only 12 (10 km x 10 km) grid cells. Remnants of Sydney Turpentine-Ironbark Forest have historically been subject to a range of anthropogenic disturbances, including logging, livestock grazing and burning of varying intensities, which have altered both the structure and composition of remaining stands. The removal of large, older trees has generally resulted in higher densities of smaller trees, giving many remnants the structure of regrowth forest, whilst increased fire frequency associated with hazard reduction burning has contributed to declines in slow-maturing, fire-sensitive species and structural simplification. Conversely, remnants subject to long-term fire exclusion, particularly where coupled with elevated nutrient and moisture availability, tend to support higher densities of mesic species such as *Pittosporum undulatum*, *Glochidion ferdinandi* and *Homalanthus populifolius*, alongside larger populations of exotic species and reduced understorey diversity. High-frequency fire and the loss of hollow-bearing trees are both listed as Key Threatening Processes under the Act, reflecting their significance to the ongoing viability of the community.

**Biodiversity Conservation Act 2016 – Test of Significance (5-part Test)
for Threatened Ecological Communities**

Sydney Turpentine-Ironbark Forest in the Sydney Basin Bioregion (Critically Endangered)

(a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,	Not applicable.	
(b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:	(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or	No. The Proposed Change is unlikely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction. Whilst 0.026ha of Sydney Turpentine Ironbark Forest (STIF) is impacted cumulatively, only 0.006ha is subject to additional pruning under the Proposed Change, with no additional STIF removal proposed. Removal of STIF for the facilitation of the Proposed Change would constitute a minor impact on the extent of the CEEC within the broader locality, approximately 0.441% of the immediate patch (5.891ha), given the limited area affected relative to the larger occurrence of the community in

**Biodiversity Conservation Act 2016 – Test of Significance (5-part Test)
for Threatened Ecological Communities**

Sydney Turpentine-Ironbark Forest in the Sydney Basin Bioregion (Critically Endangered)

		the surrounding landscape (74.272ha). As such, surrounding vegetation to be retained will remain connected to areas of equal and higher quality habitat within the locality.
	(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,	The Proposed Change is not likely to substantially and adversely modify the composition of the ecological community such that the local occurrence is likely to be placed at risk of extinction. Whilst 0.026ha of Sydney Turpentine Ironbark Forest (STIF) is impacted cumulatively, only 0.006ha is subject to additional pruning under the Proposed Change, with no additional STIF removal proposed. Species indicative of the TEC requiring pruning are well represented in areas surrounding the Proposed Change. Areas to be impacted are also expected to recover post construction. It is not expected that the Proposed Modification will cause the permanent loss of any complexity or unique floristic components of the ecological community, such that it is likely to be placed at risk of extinction.
	(i) the extent to which habitat is likely to be removed or	The Proposed Change will require the impacts to a

**Biodiversity Conservation Act 2016 – Test of Significance (5-part Test)
for Threatened Ecological Communities**

Sydney Turpentine-Ironbark Forest in the Sydney Basin Bioregion (Critically Endangered)

(c) in relation to the habitat of a threatened species or ecological community:	modified as a result of the proposed development or activity, and	cumulative total of 0.026ha of potential habitat in which STIF can occur. Disturbance to the topsoil and other vegetation outside the Proposed Change is to be avoided as to preserve the larger occurrence of STIF in the surrounding landscape
	(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and	Minor fragmentation is anticipated to facilitate the proposal. More appropriate means of connectivity will remain in the habitat provided in the broader locality.
	(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,	All areas which support viable patches are important. The habitat exists in an already highly modified state from the urban nature of the area and encroachment from exotic weed species. It is not likely that the habitat to be impacted will reduce the long-term survival of the TEC.
(d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly),	The activity proposed is not likely to have an adverse effect on any declared area of critical habitat, directly or indirectly.	
(e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.	The following Key Threatening Processes (KTPs) are documented to impact upon the survival of the ecological community: • Clearing of native vegetation	

***Biodiversity Conservation Act 2016 – Test of Significance (5-part Test)
for Threatened Ecological Communities***

Sydney Turpentine-Ironbark Forest in the Sydney Basin Bioregion (Critically Endangered)

Conclusion

There will be no significant impact on the threatened ecological community therefore the proposed action should not warrant the preparation of a Species Impact Statement (SIS) or Biodiversity Development Assessment Report (BDAR).

**Biodiversity Conservation Act 2016 – Test of Significance (5-part Test)
for Threatened Birds**

***Parvipsitta pusilla* (Little Lorikeet) (Vulnerable)**

(a) in the case of a threatened species, whether the proposed activity or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,	The Proposed Change is not likely to have an adverse effect on the life cycle of this species such that a viable local population is likely to be placed at risk of extinction. No Little Lorikeets were seen during site assessment completed by ECE; however, this was outside the species' known nesting season (August to January) (Scientific Committee, 2009). Hollow-bearing trees suitable for breeding (>3 cm entrance diameter and 2–15 m above ground) were identified within trees subject to the Proposed Change and will be impacted by the Proposed Change. Little Lorikeets exhibit high fidelity to nesting hollows and are likely to return to the same hollow-bearing tree for breeding in successive seasons (Scientific Committee, 2009). Pre-clearing surveys and clearing supervision will be exercised during construction to avoid any impacts to this species, should they occur within the Proposed Change. The Proposed Change includes the removal of a cumulative total of approximately 0.411ha (worst case) of native vegetation and 366 native trees (remnant trees and planted native trees) constituting suitable foraging habitat, as well as at least two hollow-bearing trees suitable for breeding. It is not expected that a viable local population would be likely to be placed at risk of extinction due to the activity, given the large areas of suitable habitat remaining in the broader locality. It is possible that this species will suffer from indirect impacts (e.g. noise or vibration) during construction. These indirect impacts will be controlled through standard mitigation measures and are not likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.	
(b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed activity or activity:	(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or	Not Applicable.

**Biodiversity Conservation Act 2016 – Test of Significance (5-part Test)
for Threatened Birds**

***Parvipsitta pusilla* (Little Lorikeet) (Vulnerable)**

	(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,	Not Applicable.
(c) in relation to the habitat of a threatened species or ecological community:	(i) the extent to which habitat is likely to be removed or modified as a result of the proposed activity or activity, and	A cumulative total of approximately 0.411ha (worst case) of native vegetation and 366 native trees (remnant trees and planted native trees) containing potential habitat for this species will be impacted as a result of the Proposed Change. Little Lorikeets exhibit high fidelity to nesting hollows and are likely to return to the same hollow-bearing tree for breeding in successive seasons (Scientific Committee, 2009). Other hollow-bearing trees within the vicinity will be retained in which this species can utilize for future breeding seasons. Pre-clearing surveys and clearing supervision will be exercised during construction to avoid any impacts to this species, should they occur within the Proposed Change.
	(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed activity or activity, and	The habitat to be impacted is already highly fragmented due to its current location near live roads. Connectivity will remain to areas of equal and higher

**Biodiversity Conservation Act 2016 – Test of Significance (5-part Test)
for Threatened Birds**

***Parvipsitta pusilla* (Little Lorikeet) (Vulnerable)**

		quality habitat outside of the Proposed Change.
	(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,	The habitat to be impacted may be of high importance to this species. Even so, pre-clearing surveys and clearing supervision will be exercised during construction to avoid any impacts to this species, should they occur within the Proposed Change. Higher-quality habitat, not subject to edge effects will continue to persist in the broader locality, which will support the long-term survival of this species.
(d) whether the proposed activity or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly),	The activity proposed is not likely to have an adverse effect on any declared area of critical habitat, directly or indirectly.	
(e) whether the proposed activity or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.	The following Key Threatening Processes (KTPs) have the potential to impact upon the survival of these species: ▪ Clearing of native vegetation, and ▪ Loss of hollow-bearing trees. Suitable habitat will be retained in the broader locality of the Proposed Change.	

Conclusion

There will be no significant impact on *Parvipsitta pusilla* therefore the Proposed Change should not warrant the preparation of a Species Impact Statement (SIS) or Biodiversity Development Assessment Report (BDAR).

**Biodiversity Conservation Act 2016 – Test of Significance (5-part Test)
for Threatened Owls**

***Ninox strenua* (Powerful Owl) (Vulnerable)**

(a) in the case of a threatened species, whether the proposed activity or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,

The Proposed Change is not likely to have an adverse effect on the life cycle of this species such that a viable local population is likely to be placed at risk of extinction.

No evidence of Powerful Owls was recorded during site assessments completed by ECE or in prior surveys of the Proposed Change, however no targeted surveys were undertaken. The species is known to frequent the Proposed Change, particularly within the Ku-ring-gai LGA, which supports suitable habitat within its broader home range. The Powerful Owl is a highly mobile, wide-ranging predator that relies on large territories of forest and woodland habitat, foraging primarily on small-to-medium-sized arboreal and semi-arboreal mammals such as gliders, possums and small birds. The availability of structurally diverse native vegetation, including mid-storey and canopy strata, is critical in supporting the prey species on which the Powerful Owl depends, as this vegetation provides shelter, food resources and movement corridors for arboreal fauna.

The Proposed Change includes impacts to a cumulative total of 0.411ha (worst case) of native vegetation and 366 native trees (remnant trees and planted native trees), which constitutes potential foraging habitat for this species by way of supporting arboreal prey populations. Whilst this represents a loss of habitat value, it is not expected that a viable local population of the Powerful Owl would be placed at risk of extinction as a result of the activity, given the extent of suitable foraging and denning habitat retained in the broader locality, including within nearby bushland reserves and conservation areas.

It is possible that this species will suffer from indirect impacts (e.g. noise or vibration) during construction, potentially affecting its use of adjacent habitat or the behaviour of prey species. These indirect impacts will be controlled through standard mitigation measures and are not likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

**Biodiversity Conservation Act 2016 – Test of Significance (5-part Test)
for Threatened Owls**

***Ninox strenua* (Powerful Owl) (Vulnerable)**

(b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed activity or activity:	(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or	Not Applicable.
	(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,	Not Applicable.
(c) in relation to the habitat of a threatened species or ecological community:	(i) the extent to which habitat is likely to be removed or modified as a result of the proposed activity or activity, and	Approximately a cumulative total of approximately 0.411ha (worst case) of native vegetation and 366 native trees (remnant trees and planted native trees) serving as potential foraging habitat for this species will be impacted as a result of the Proposed Change. Given the highly mobile nature of this species, they are more likely to utilize higher quality habitat, such as vegetation within Lane Cove and Ku-ring-gai National Park. Pre-clearing surveys and clearing supervision will be exercised during construction to avoid any impacts to this species, should they occur within the Proposed Change.

**Biodiversity Conservation Act 2016 – Test of Significance (5-part Test)
for Threatened Owls**

***Ninox strenua* (Powerful Owl) (Vulnerable)**

	(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed activity or activity, and	The habitat to be impacted is considered to be of moderate quality. Connectivity will remain to areas of equal and higher quality habitat outside of the Proposed Change.
	(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,	The habitat to be impacted is unlikely to be of high importance to this species. Higher-quality habitat, not subject to edge effects will continue to persist in the broader locality, which will support the long-term survival of this species.
(d) whether the proposed activity or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly),	The activity proposed is not likely to have an adverse effect on any declared area of critical habitat, directly or indirectly.	
(e) whether the proposed activity or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.	The following Key Threatening Processes (KTPs) have the potential to impact upon the survival of these species: • Clearing of native vegetation Suitable habitat will be retained in the broader locality of the Proposed Change.	

Conclusion

There will be no significant impact on *Ninox strenua* therefore the Proposed Change should not warrant the preparation of a Species Impact Statement (SIS) or Biodiversity Development Assessment Report (BDAR).

**Biodiversity Conservation Act 2016 – Test of Significance (5-part Test)
For Threatened Frugivorous Bats**

***Pteropus poliocephalus* (Vulnerable)**

(a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,	No Grey-headed Flying-foxes were recorded during site assessments completed by ECE; however, targeted assessments for this species were not undertaken. Known roosts occur in the locality within Ku-ring-gai Chase National Park, and the species is therefore likely to intermittently forage within the Proposed Change. The Grey-headed Flying-fox is a highly mobile, wide-ranging species capable of travelling large distances from roost sites each night in search of food, relying on the availability of flowering and fruiting native vegetation, particularly eucalypts, for nectar and pollen resources. The loss or fragmentation of foraging habitat across the landscape is a key threat to the species, given its dependence on connected, resource-rich vegetation to meet its energy requirements across seasons. The Proposed Change includes impacts to the cumulative total of 0.411ha (worst case) of native vegetation and 460 trees (remnant trees, planted native trees and exotic trees), which constitutes potential foraging habitat for this species. It is not expected that a viable local population of the Grey-headed Flying-fox would be placed at risk of extinction as a result of the activity, given the comparatively small proportion of foraging habitat affected relative to the extent of suitable habitat retained in the broader locality, including within Ku-ring-gai Chase National Park. It is possible that this species will suffer from indirect impacts (e.g. noise, vibration or light spill) during construction, potentially affecting foraging behaviour in habitat adjacent to the Proposed Change. These indirect impacts will be controlled through standard mitigation measures and are not likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.	
(b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:	(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or	Not Applicable.

**Biodiversity Conservation Act 2016 – Test of Significance (5-part Test)
For Threatened Frugivorous Bats**

***Pteropus poliocephalus* (Vulnerable)**

	(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,	Not Applicable.
(c) in relation to the habitat of a threatened species or ecological community:	(i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and	0.411ha (worst case) of native vegetation and 460 trees (remnant trees, planted native trees and exotic trees) of potential foraging habitat for this species will be impacted as a result of the Proposed Change. Given the highly mobile nature of this species, they are more likely to utilize higher quality habitat, such as vegetation within Lane Cove and Ku-ring-gai National Park. Pre-clearing surveys and clearing supervision will be exercised during construction to avoid any impacts to this species, should they occur within the Proposed Change.
	(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and	It is not expected that an increase in fragmentation will occur for these species.
	(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,	The habitat to be impacted is not expected to be of high importance to this species given the mobility of the species. Higher-quality habitat will continue to persist in the broader locality.

**Biodiversity Conservation Act 2016 – Test of Significance (5-part Test)
For Threatened Frugivorous Bats**

***Pteropus poliocephalus* (Vulnerable)**

(d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly),

The activity proposed is not likely to have an adverse effect on any declared area of critical habitat, directly or indirectly.

(e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.

The following Key Threatening Processes (KTPs) are documented to impact upon the survival of the ecological community:

- Clearing of native vegetation.

Suitable habitat will remain adjacent to the Proposed Change and in the broader locality.

Conclusion

There will be no significant impact on this species therefore the proposed action should not warrant the preparation of a Species Impact Statement (SIS) or Biodiversity Development Assessment Report (BDAR).

Appendix C. Assessment of Significant Impact (EPBC Act).

Commonwealth Environment Protection and Biodiversity Conservation Act 1999– Assessment of Significant Impact Criteria for Turpentine Ironbark Forest in the Sydney Basin Bioregion	
EPBC Act Status: Critically Endangered	
Significant Impact Criteria	
An action is likely to have a significant impact on a critically endangered or endangered ecological community if there is a real chance or possibility that it will:	
• Reduce the extent of an ecological community;	The Proposed Change will result in very low impacts to STIF. Only a marginal proportion (0.026ha) of vegetation eligible for the EPBC listing will be impacted, approximately 0.441% of the immediate patch (5.891ha) and only 0.006ha of STIF requires pruning under the Proposed Change. Subject to mitigation measures, no other areas of STIF will be impacted by the proposal. It is therefore not considered likely that the extent of the ecological community will be reduced.
• Fragment or increase fragmentation of an ecological community, for example by clearing vegetation for roads or transmission lines;	STIF within the area is already fragmented due to the urban nature of the landscape. No increased fragmentation will occur, and connectivity is expected to remain the same extent within the Proposed Change.
• Adversely affect habitat critical to the survival of an ecological community;	0.026ha of EPBC eligible STIF requires impacts to facilitate the proposal. Subject to mitigation measures, it is considered unlikely that the Proposed Change would adversely affect habitat critical to the survival of this community.
• Modify or destroy abiotic (non-living) factors (such as water, nutrients or soil) necessary for an ecological community's survival including reduction of groundwater levels or substantial alteration of surface water drainage patterns;	It is not expected that the Proposed Change will modify or destroy abiotic factors (such as water, nutrients, or soil) that is necessary for the survival of this ecological community. No reduction in groundwater levels, or substantial alterations of surface water drainage patterns are anticipated as a result of the Proposed Change.

Commonwealth Environment Protection and Biodiversity Conservation Act 1999– Assessment of Significant Impact Criteria

for

Turpentine Ironbark Forest in the Sydney Basin Bioregion

EPBC Act Status: Critically Endangered

- **Cause a substantial change in the species composition of an occurrence of an ecological community, including causing a decline or loss of functionally important species, for example through regular burning or flora or fauna harvesting;**

The Proposed Change will require impacts to 0.026ha of STIF. Species to be impacted are exceedingly common in the known occurrence of STIF across the region (*Corymbia spp*, *Acacia parramattensis* etc.) These species do not contribute to unique species compositions of this CEEC. It is considered unlikely that the proposal will cause a substantial change in the species composition of the occurrence of the ecological community.

- **Cause a substantial reduction in the quality or integrity of an occurrence of an ecological community, including, but not limited to:**
 - i. **assisting invasive species, that are harmful to the listed ecological community, to become established**
 - ii. **causing regular mobilisation of fertilisers, herbicides, or other chemicals or pollutants into the ecological community which kill or inhibit the growth of species in the ecological community;**

The Proposed Change will not cause a substantial reduction in the quality or integrity of the occurrence of this CEEC.

- i. The Proposed Change will not assist invasive species to become established as the STIF, subject to appropriate management. No harmful, invasive species were identified within the Proposed Change; and
- ii. The Proposed Change is not expected to cause the regular mobilisation of fertilisers, herbicides, or other chemicals or pollutants.

- **Interfere with the recovery of an ecological community.**

It is not anticipated that the Proposed Change will interfere with the recovery of the CEEC. The anticipated impacts are relatively insignificant in the context of the surrounding landscape. Appropriate habitat for the CEEC will remain available in the broader locality. As such, it is not expected that the Proposed Change will interfere with the recovery of this ecological community.

Conclusion

There will be no significant impact on the ecological community therefore the proposed action should not warrant referral to the Commonwealth Minister for the Environment and Water.

Commonwealth Environment Protection and Biodiversity Conservation Act 1999
Assessment of Significant Impact Criteria

***Pteropus poliocephalus* (Vulnerable)**

Significant impact criteria

An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:

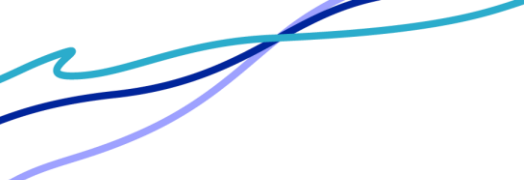
Lead to a long-term decrease in the size of an important population of a species	The proposed action will not lead to a long-term decrease in the size of an important population of this species. 0.411ha (worst case) of native vegetation and 460 trees (remnant trees, planted native trees and exotic trees), serving as potential foraging habitat will be impacted by the proposed action. This species will continue to have large areas of appropriate foraging habitat available within the broader locality.
Reduce the area of occupancy of an important population	The proposed action will not reduce the area of occupancy of an important population of this species. This highly mobile species will continue to have more appropriate areas of foraging habitat available in the broader locality.
Fragment an existing important population into two or more populations	The proposed action will not fragment any existing important population into two or more populations. The Proposed Change occurs within a highly urbanised landscape on the City of Ryde and Ku-ring-gai LGAs. Therefore, this area is already considered highly fragmented. No additional clearing is to occur beyond the Proposed Change.
Adversely affect habitat critical to the survival of a species	The proposed action will not adversely affect habitat critical to the survival of this species.
Disrupt the breeding cycle of an important population	No Flying Fox camps were identified within the Proposed Change, nor will any be directly impacted by the proposal. Noise, vibration and light spill impacts have potential to indirectly impact nearby foraging habitat, if not mitigated appropriately.
Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposed action will lead to a slight decrease in the available foraging habitat for this species, however, it is not expected that this will lead to an ongoing decline. In the context of the surrounding landscape the amount of foraging habitat to be destroyed is considered minor.

Commonwealth Environment Protection and Biodiversity Conservation Act 1999
Assessment of Significant Impact Criteria

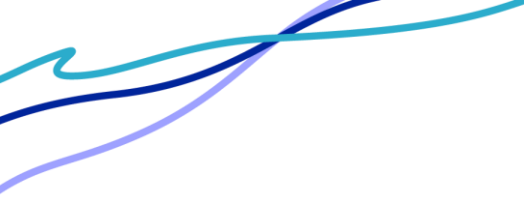
***Pteropus poliocephalus* (Vulnerable)**

Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	Subject to weed control measures, the activity will not result in the introduction of an invasive species harmful to this species.
Introduce disease that may cause the species to decline	Subject to pathogen control measures, the activity will not result in the introduction of a disease that may cause this species to decline.
Interfere substantially with the recovery of the species	The proposal is not expected to interfere substantially with the recovery of this species. Potential foraging habitat to removed is only minor in the context of the surrounding landscape.
Conclusion There will be no significant impact on <i>Pteropus poliocephalus</i> , therefore the proposed action should not warrant referral to the Commonwealth Minister for the Environment and Water.	





Appendix D – Updated Statement of Heritage Impact (SoHI)



EVERICK HERITAGE

Ryde Pumping Station – Watermain Renewal

Statement of Heritage Impact

Addendum Report

Prepared for

Sydney Water

July 2026



EVERICK HERITAGE

Everick Heritage 2026. Ryde Pumping Station: Watermain Replacement - Statement of Heritage Impact – Addendum Report. Everick Heritage Pty Ltd; unpublished report prepared for Sydney Water.



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1. Introduction

1.1. Background

Everick Heritage Pty Ltd (Everick Heritage) has been commissioned by McConnell Dowell Constructors Pty Ltd and Gamuda Engineering Pty Ltd Joint Venture (MDGJV) to prepare an Addendum Report to Everick Heritage's *Ryde Pumping Station: Watermain Replacement - Statement of Heritage Impact*; May 2025. The 2025 SoHI was prepared to assess the potential impact of Sydney Water's Ryde to Pymble Pipeline Watermain Replacement works on the heritage significance of Ryde Pumping Station, which is a heritage item included in the State Heritage Register, the *Ryde Local Environmental Plan 2014 (Schedule 5, Part 1)* and in the Sydney Water Heritage and Conservation Register (s.170).

This Addendum Report relies upon the previous SoHI, whose assessment should be read in conjunction with this Addendum, and on a description of the proposed works provided in email correspondence with the client in July 2026.

1.2. Project Context

Sydney Water is proposing to deliver a new drinking water pipeline that will connect Ryde Pumping Station to the Pymble pipeline and to the Wahroonga Reservoir. Whilst the Watermain Renewal Project's REF had identified that some of the trees adjacent to Victoria Road may need to be removed as part of these works, at that time, the project specifications did not take into consideration the constructability of the proposed works in relation to the potential impacts to roots of these trees. Further project analysis revealed that design amendments that may have allowed the retention of the trees were not feasible, due to the operational requirements of associated underground services.

The REF for the Watermain Renewal Project acknowledged and allowed for the removal of some of these trees. Following further analysis and design refinement, it is apparent that more trees than anticipated will need to be removed. Consequently, an REF Addendum process has been initiated to modify the planning approval to include the removal of trees that had been missed during the development of the original REF. This Addendum Report addresses the project's requirement for the removal of trees in the Project Area near the Victoria Road frontage of the site.

1.3. Site Identification

Ryde Pumping Station is located at 948 Victoria Road (Lot 100 DP1274192), West Ryde, within Ryde City Local Government Area (LGA). The Project Area related to this Addendum Report is in the south-western corner of Ryde Pumping Station, at the intersection of Hermitage Road and Victoria Road. It is approximately 20 metres wide (along the Heritage Road boundary) by 60 metres long (along the Victoria Road boundary) and sits between Hermitage Road and the Pumping Station's Victoria Road driveway entrance.



Figure 1-1: Aerial images of Ryde Pumping Station's boundary (L) and the Project Area (R) within the Pumping Station. (Sources: SIXMaps (L) and GoogleEarth (R))

The Project Area is located within Ryde Pumping Station's property boundary, though it is not within the Pumping Station's fenced land. There are twenty-two mature trees within the Project Area, with a thin grass groundcover below. The trees are believed to be Sydney Blue Gums and Turpentine.



Figure 1-2: Streetview of the Victoria Road frontage, looking east, showing the trees fronting the Ryde Pumping Station. (Source: Streetview)

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Figure 1-3: View of the Project Area from Hermitage Road, looking west. (Source: Streetview)

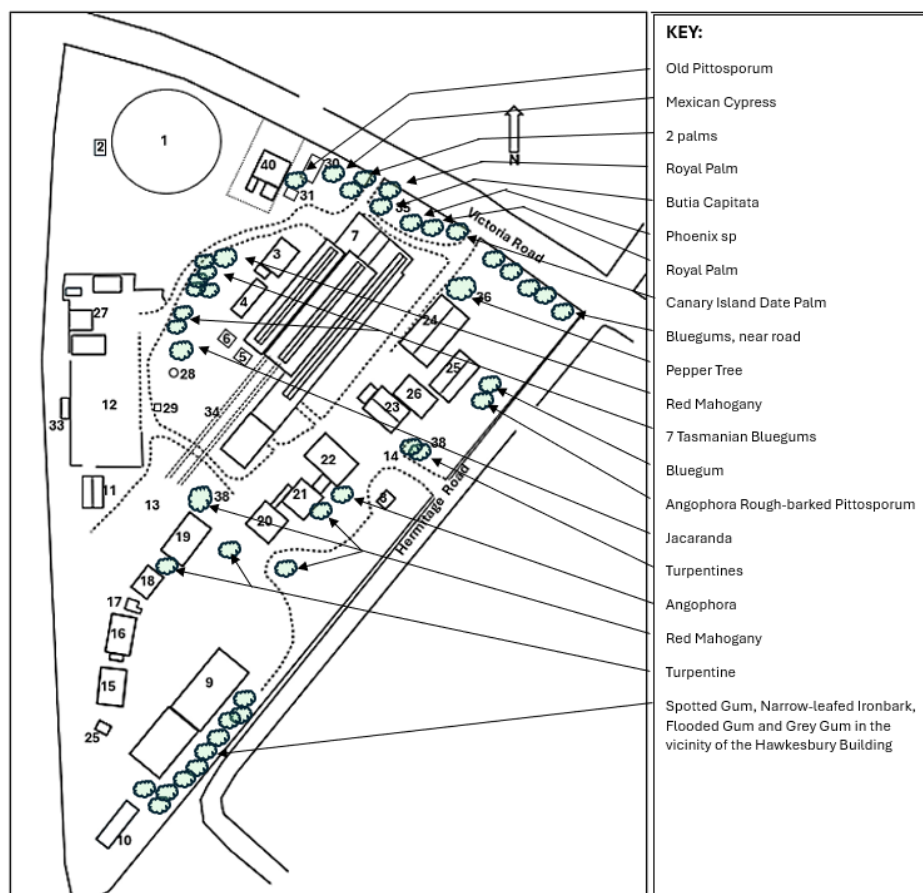


Figure 1-4: Site Plan indicating the location and species of major individual trees and groups of trees throughout the Ryde Pumping Station site. (Source: Redrawn by Everick based upon CMP 2004; SWC)

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1.4. Curtilages

Ryde Pumping Station is a heritage item included in the NSW State Heritage Register (SHR), the Ryde Local Environmental Plan 2014 Schedule 5, Part 1 – Environmental Heritage (LEP) and in the Sydney Water Heritage and Conservation Register (s.170 Register). However, the SHR listing and the LEP listing have different curtilages. Specifically, the curtilage of the State Heritage Register listing is less extensive than the curtilage of the Pumping Station’s Local Environmental Plan listing, as it excludes the land fronting Heritage Road. The s.170 Register curtilage reflects the larger LEP listing curtilage.

Consequently, the Project Area subject to this Addendum’s heritage impact assessment is located within the LEP curtilage but outside the SHR curtilage (Figure 1-5 below illustrates the differing curtilage of the two heritage listings).

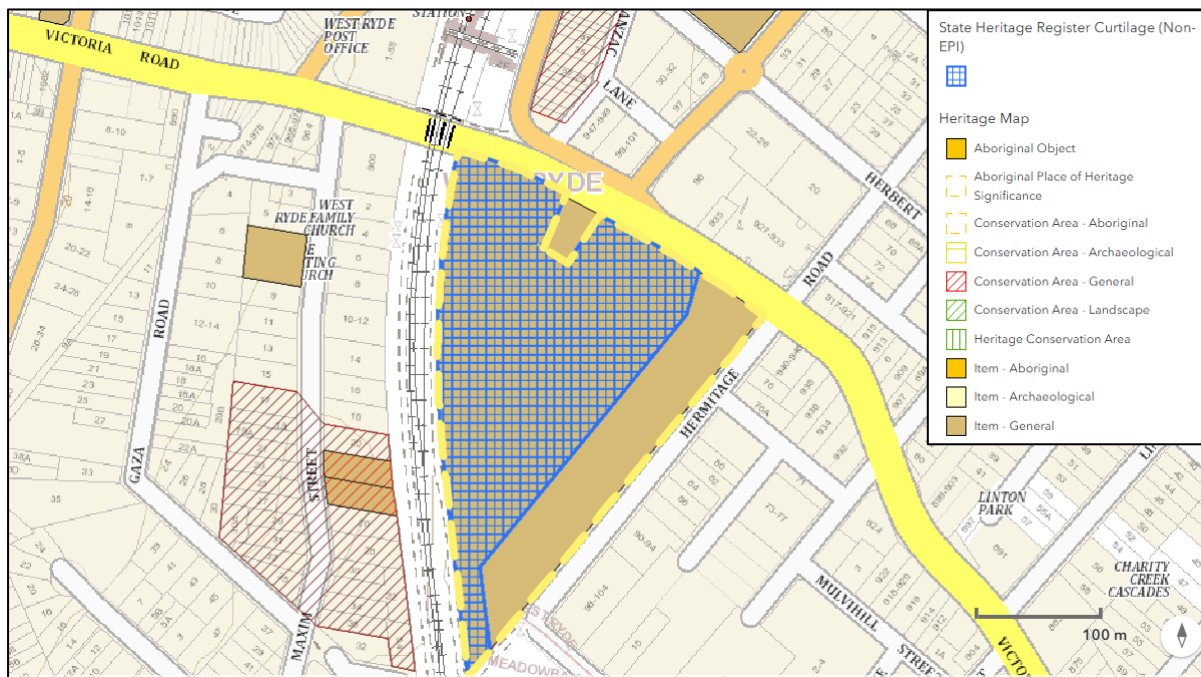


Figure 1-5: Map showing the differing curtilage of Ryde Pumping Station’s local heritage listing and state heritage listing. (Source: NSW Planning Portal Spatial Viewer)

1.5. Authorship

This Addendum Report has been prepared by Tony Brassil, Principal Heritage Advisor, and Jane Alexander, Principal Heritage Advisor. Ben Calvert, Associate Heritage Advisor, reviewed the Report.

2. Historical Context

2.1. Context

The Everick Heritage SoHI (2025) and the Pumping Station's Conservation Management Plans (2004; Draft 2018) contain detailed site and contextual histories of the Pumping Station site overall. The following section provides a brief historical overview of the specific Project Area.

2.2. Land Acquisitions

The Board of Water Supply and Sewerage (the Board) commenced planning for Ryde Pumping Station in 1887, with the resumption of 5 acres and 39 perches of land for the erection of a steam-powered pumping station to supply water to the northern suburbs of Sydney. The building was completed and commenced operation in 1891.

By 1916, the need to further increase pumping capacity could no longer be accommodated in the existing station. Land on the eastern boundary of the old station fronting Vickers Street, part of the Blaxland Estate, was acquired in 1915 and a second, much larger Pumping Station was built and commissioned on the 15th September 1921. Gradually the new Pumping Station took over the pumping duties of the old station, until the old Pumping Station ceased to operate in November 1930. The old Pumping Station was used as a store until it was demolished in 1961.

Having acquired the land on the western side of Vickers Street in 1915, the Board decided to acquire all the land between Vickers Street and Hermitage Road to its east. This land had previously been subdivided into thirteen allotments (though only two lots had been built upon), which they purchased between 1915 and 1920. The Board also resumed Vickers Street itself to create a consolidated site and provide room for ancillary structures (see Figure 2-1), establishing the site configuration that exists today.

Part of Lot 1 of this subdivision roughly corresponds to the Project Area. Based upon aerial photographs and known history, this lot was never utilised for any purpose and remained as a buffer area between Victoria Road and the Pumping Station land. The Pumping Station fence was placed twenty metres to the rear of the property boundary along Victoria Road in this area.

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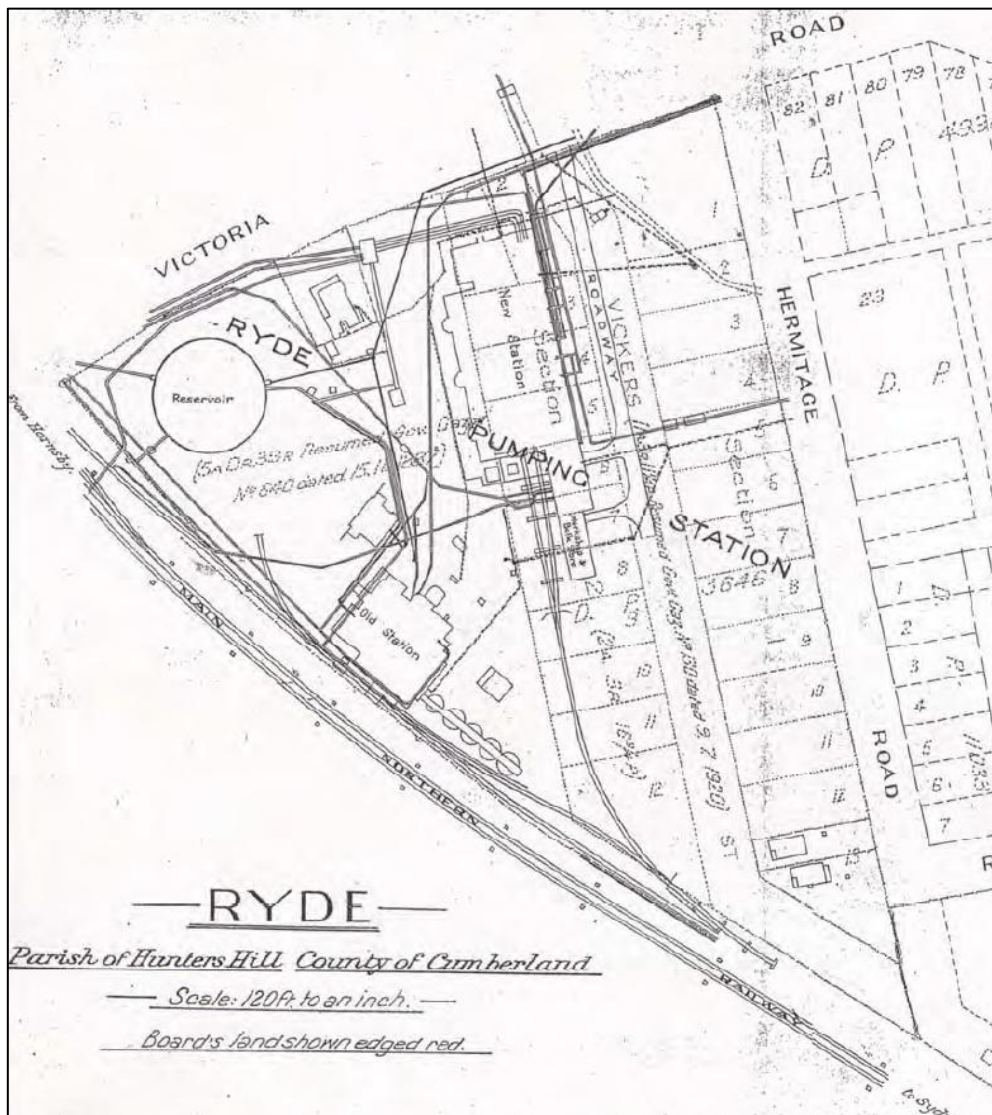


Figure 2-1: Site Plan showing the various lots, roads and resumptions at the Pumping Station. (Source: reproduced from CMP; SWC, 2004)

There is no definitive evidence to indicate when the current trees in the Project Area originated. Aerial photographs (see Figures 2-2 to 2-5) indicate that mature trees have been located in the Project Area from at least 1930 to the present. However, it has not been determined if the current trees are the same ones shown in earlier aerial photographs or whether they were planted or self-seeded.

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Figure 2-2: The subject area of land in 1930. (Source: NSW HLRV)



Figure 2-3: The subject area of land in 1943. (Source: NSW SixMaps)

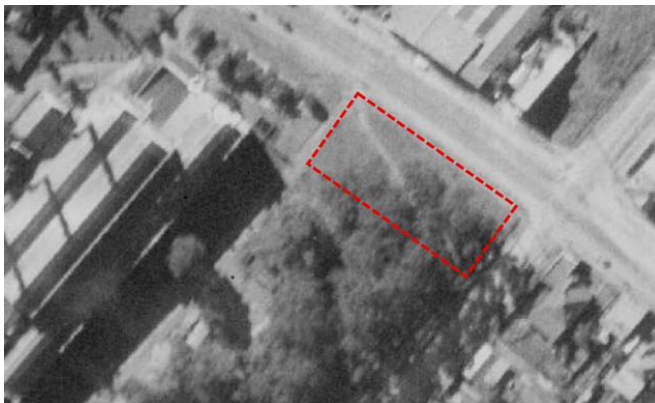


Figure 2-4: The subject area of land in 1951. (Source: NSW HLRV)



Figure 2-5: The subject area of land in 1961. (Source: NSW HLRV)

3. Proposed Works

3.1. Background

The Proposed Works comprise the removal of some, possibly all, of the trees within the Project Area, alongside the Pumping Station's Victoria Road frontage. The trees need to be removed to allow excavation of a pipeline trench through this area, as part of the Ryde to Pymble Watermain Renewal project. The renewal of this pipeline is a crucial infrastructure upgrade for the Sydney water reticulation network and, owing to other underground services, the pipeline route design cannot be amended to avoid these trees.

3.2. Extent of Works

The proposed works are for the removal, or modification of, various trees within the Project Area. The trees require removal where the proposed pipeline trenching will pass through their location. Additional assessment is also required for adjacent trees whose root systems will be impacted by the proposed pipeline. This assessment is required to determine whether these trees will survive this impact upon their root systems and whether the tree root systems will present a threat to the pipeline.

At this stage, the full extent of tree removal has not been determined and it is unclear which trees may be removed or retained. Hence this Addendum Report is based on the presumption that most, if not all, trees may be removed. It should be noted, however, that any trees that can be safely and feasibly retained will be identified and protected during the works.

Figure 3-1 below shows the pipeline footprint (light blue). The trees indicated by yellow dots are currently proposed for retention and the trees indicated by red dots are proposed to be removed (pending the final analysis and its recommendations).

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Figure 3-1: The Project Area showing trees marked for retention (indicated with yellow dots), for removal (red dots) or retention yet to be determined (orange dots). These predictions will be confirmed following further assessment. The proposed pipeline's footprint is indicated by the light blue lines. (Source: MDGJV)

4. Heritage Significance

Ryde Pumping Station's heritage significance is well established, having been previously assessed for its various statutory heritage listings and via two previous Conservation Management Plans. This significance is outlined below in relation to the proposed works within the Project Area.

4.1. NSW State Heritage Register

The State Heritage Register listing for the *Ryde Water Pumping Station and Site* includes the following Statement of Significance (relevant statements highlighted in bold):

"Ryde Water Pumping Station as a whole is highly significant as an integral component of the water supply system to much of Sydney. At its completion it was the largest water pumping station in Australia, and today retains considerable fabric and work practices which can be interpreted from that period. While much of the significant plant and equipment has been removed and replaced, it still maintains the overall function and values it was designed for. The significant curtilage includes only the buildings, works, archaeological evidence, machinery and equipment, sheds, and cultural landscape elements (including paths, drives, plantings etc.) up to 1930 listed in the following pages.

*The Ryde Water Pumping Station site contains landscape elements of high significance and has the ability to demonstrate three important and distinct phases of its history by its pre-European vegetation remnants, farming phase remnants and the distinctive 1890s earthworks and group of 1920s plantings associated with, respectively, the 1890s site use, and 1920s major expansion, for the North Shore water supply. The design of the main civic address both built, (pumping station and residence) and planted, demonstrates the high importance placed on the site at this time of its development. The place continues to make an important contribution to the local townscape and serve as an outstanding landmark group. The remnant 1920s plantings are likely to have associative value in being with the influence of J H Maiden Director of the Royal Botanic Gardens (1896-1924) and include mature species that are uncommon within the State Chilean Wine Palm (*Jubaea chilensis*). **The place holds scientific value as a reserve for indigenous vegetation remnants.**"*

4.2. Conservation Management Plan 2004

The *Ryde Water Pumping Station and Site Conservation Management Plan 2004* was prepared by Sydney Water in 2004 and contains the following assessment of significance relevant to the trees adjacent to Victoria Road (relevant statements highlighted in bold).

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*“The Ryde Water Pumping Station Site contains important landscape elements and has the ability to demonstrate important and distinct phases of its history. **Notable are the pre-European vegetation remnants, farming phase evidence, and the distinctive 1890s earthworks and group of 1920s plantings associated with the major expansion of the water supply system.**”*

Elsewhere in the report, this area is identified as the Sydney Blue Gum Group and the CMP cites an earlier assessment by Rosen in 2001 that stated:

*“The grounds contain many remnant trees from the forest, which covered the site prior to its development providing examples of the Sydney Turpentine Ironbark Forest plant community. **The stands of trees on the site do not technically form part of the listed community** as they do not have an associated understorey of native plants, however there are many magnificent trees and they have significance as a demonstration of the type of forest which previously covered the site. The forest tree species now present at the site include Turpentine (*Syncarpia glomulifera*), Red Mahogany (*Eucalyptus resinifera*), Grey Gum (*E. punctata*), Smooth-barked Apple (*Angophora costata*), Roughbarked Apple (*A. floribunda*) and Sydney Blue Gum (*E. saligna*). **The Sydney Blue Gum trees between the Warragamba Building and Victoria Road are outstanding specimens.** A group of palm trees situated in front of the No.2 Pumping Station Building are an important landscape element and of interest due to the diversity of species present. They include Canary Island Date Palm (*Phoenix canariensis*), two Royal Palms (*Roystonea regia*), another date palm (*Phoenix* sp.) and *Butia capitata*.”*

In the assessment of significance of individual elements of the site (pp120), the CMP identifies the “Sydney Blue Gum Trees Group” and ranks them as having “Medium Significance.”

The 2004 CMP divides the Ryde Pumping Station site into three ‘significance zones’ (see Figure 4-1 below). Despite the stand of trees in the Project Area being assessed as having ‘moderate’ significance, the Project Area is in a zone of ‘Low Significance.’

4.3. Draft Conservation Management Plan 2018

In 2018, a draft Conservation Management Plan was prepared by Urbis. This report was never completed and it remains a draft document. Nonetheless, it was cross-checked for any assessment relevant to the Sydney Blue Gum trees. Similar to the 2004 CMP, the draft 2018 report ranks the Sydney Blue Gums within the Project Area as being of ‘moderate’ heritage significance.

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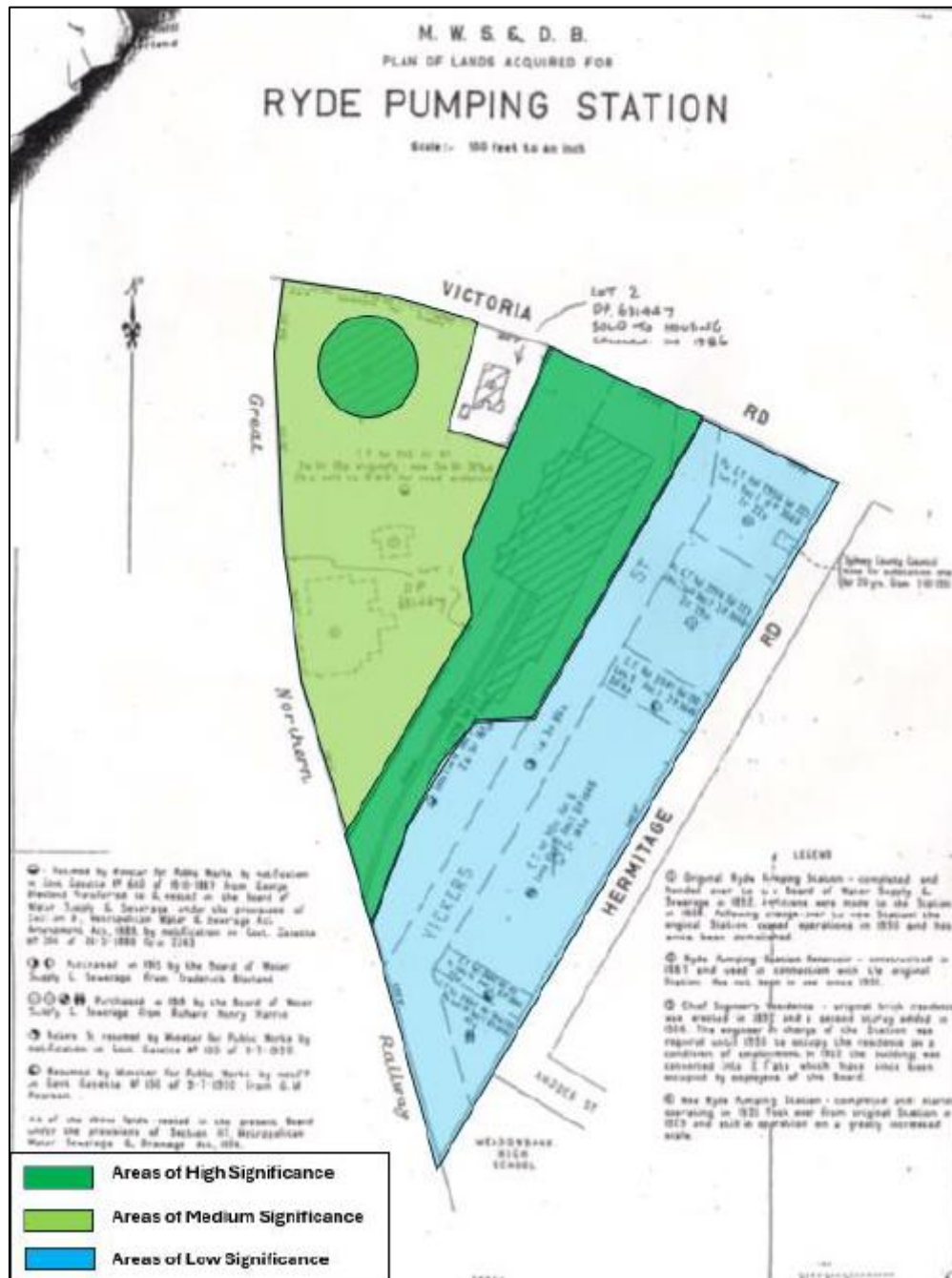


Figure 4-1: Site Plan showing the relative significance of the parts of the site. (Source: CMP 2004)

5. Heritage Impact Assessment

5.1. General

The proposed works will remove an unknown (at present) number of the trees within the Project Area. Currently, there are twenty-two trees growing in this area with:

- Six marked for retention;
- Two yet to be determined; and
- Fourteen marked for removal.

However, these numbers are, at this stage, preliminary and the precise outcomes will be subject to further study. This Addendum Report is based on an assumption that the majority of these trees are likely to be removed.

5.2. Matters for Consideration

5.2.1. Fabric and Spatial Arrangements

The proposed works are likely to remove the majority of a group of trees assessed as having medium heritage significance as part of the Ryde Pumping Station. Whilst elements of moderate significance can generally be altered, changed or removed (if there are no other possible options), they do contribute to the Pumping Station's significance and their removal will have an adverse impact on its overall significance.

The removal of these trees will also alter the current spatial arrangements at Ryde Pumping Station, albeit in a minor way, by changing an area that is currently perceived as being outside the Pumping Station to being part of its grounds. This change will not, of itself, have a substantive adverse impact, as it represents a change in the relationship of this area of land to the rest of the Pumping Station site.

The Sydney Blue Gums also represent West Ryde's endemic vegetation species, even if purposely planted. Mature native trees have conservation value and their removal will have an adverse impact.

5.2.2. Setting, Views and Vistas

The removal of the Project Area's trees will alter views into the site when approaching from the east along Victoria Road. At present, these trees screen the available views of the Pumping Station from the east and north-east, with the only existing views being largely perpendicular to the site (ie from the north). There are no significant vistas that would be impacted, as the area is relatively low-lying, nor will the removal of these trees substantively affect the setting of the Ryde Pumping Station.

5.2.3. Landscape

The landscape of Ryde Pumping Station is one of its characteristic heritage values. This value is composed of two aspects, one being the survival of numerous endemic trees representing the Sydney Turpentine-Ironbark Forest Community, although the loss of understorey has constrained its conservation value, and the other being the wide range of cultural plantings of both native and exotic species that present the site as a mature vegetated landscape. The trees within the Project Area appear to represent surviving endemic tree species, which may have been planted or may have self-seeded.

The 2004 CMP cites Rosen's assessment that: *"Despite the fact that remnant species of the endangered ecological community Sydney Turpentine Ironbark forest are found on the Ryde Water Pumping Station site, a lack of corresponding understorey species means that these trees are not considered to be part of the endangered community (Rosen, 2000:37)".* The location of the Project Area, adjacent to a major road and highly constrained, means that there is virtually no chance that any native understorey species could become established at any time in the future and the trees within the Project Area are individual specimens, rather than part of the significant (and endangered) plant community.

Within the Ryde Pumping Station site, the Project Area is the northern extremity of the band of vegetation along the eastern side of the site. The removal of these trees will constrain the boundary of this band of vegetation but is unlikely to have any notable effect upon the overall appearance of the site as a vegetated industrial landscape.

5.2.4. Use

The proposed works will not involve the change of use of any structures that are of heritage significance, nor of the site as a whole.

5.2.5. Demolition

The proposed works will not involve any demolition of buildings or structures.

5.2.6. Curtilage

The proposed works will not involve any changes of curtilage.

5.2.7. Movable Heritage

There are no items of movable heritage significance located within or in the vicinity of the Project Area that will be impacted by the proposed works.

5.2.8. Aboriginal Cultural Heritage

This Statement of Heritage Impact does not provide an assessment of Aboriginal Cultural Heritage.

5.2.9. Historical Archaeology

Based upon the known history of the development and use of the Project Area, there is minimal probability that there are any historical archaeological materials within the Project Area that may have local or state significance.

5.2.10. Natural Heritage

There are no items of natural heritage significance located within or in the vicinity of the Project Area that will be impacted by the proposed works. Although the site retains mature trees that are characteristic of the Sydney Turpentine – Ironbark Forest Community, the lack of any associated understorey means that there is no ecological community associated with these trees and they are not (in heritage terms) items of natural heritage.

5.2.11. Heritage Conservation Areas

The Project Area is not located within or in the vicinity of a heritage conservation area.

5.2.12. Cumulative Impacts

Everick Heritage's SoHI undertaken for the Watermain Renewal Project in May 2025 concluded that there were no adverse impacts to the heritage significance of Ryde Pumping Station arising from the proposed works.

The additional removal of the trees subject to this Addendum Report adds a minor adverse impact upon the heritage significance values of the Ryde Pumping Station, through the loss of a small group of significant specimens of endemic trees.

5.2.13. Conservation Management Plans

The 2018 draft CMP did not contain any Conservation Policies for the Ryde Pumping Station.

The 2004 CMP provides the following Conservation Policies in relation to the Landscape and Remnant Vegetation:

7.11.1 Landscape/Setting Policy

The cultural landscape of the site will be actively managed to retain the amenity and landscaped character of the place. Significant views to Pumping Station No. 2 from Victoria Road, as the original presentation, should be conserved and retained.

Guidelines

1. Retain and conserve cultural plantings and remnant vegetation of significance
2. New plantings shall not obscure significant views to the Pumping Station.
3. The landscape shall be regularly maintained.

7.11.3 Remnant Vegetation Policy Statement

The remnant species on site should be conserved as a reminder of the Sydney Turpentine Ironbark forest, which once covered the site.

Guidelines

1. Carry out guidelines 1, 2, 4, 5, 6 and 8 as for the Policy 7.11.2 – Cultural Plantings.
2. Signage should be placed near one of the Turpentine species to indicate that is a remnant species of the Sydney Turpentine Ironbark forest, once covering the site, and now an endangered community.

In general, the proposed removal of the trees within the Project Area is contrary to the policy that such trees should be conserved. However, in view of the necessity for the trees to be removed to allow for the renewal of a critical infrastructure watermain, there is little scope to implement this policy in the Project Area by replanting replacement trees to mitigate the removal of other trees.

5.2.14. Heritage Items in the Vicinity

There are no heritage items in the vicinity of the Project Area that will be impacted by the proposed works.

5.2.15. Commonwealth/National Heritage Significance

There are no items of Commonwealth or National heritage significance located within or in the vicinity of the Project Area that will be impacted by the proposed works.

5.2.16. World Heritage Significance

There are no items of World Heritage significance located within or in the vicinity of the Project Area that will be impacted by the proposed works.

5.2.17. Interpretation

In view of the circumstances and situation of the group of trees in the Project Area, there is no aspect of the proposal that would be improved by the addition of interpretation media.

5.3. Summary of Impacts

The proposed Watermain Renewal works have been designed overall to avoid any impacts to significant fabric at Ryde Pumping Station, however, the works will require the removal of a group of trees assessed as having medium significance within the context of the Ryde Pumping Station.

Their removal represents an adverse impact upon the heritage significance values of the Ryde Pumping Station through the loss of group of significant specimens of endemic trees, the survival of which within the site is one of the place's positive heritage attributes. In view of the nature of this impact, and in relation to the nature and degree of significance of the Ryde Pumping Station overall, in terms of the definitions of 'heritage impact' set out in Heritage NSW's *Material Threshold Policy*¹, it is a minor adverse impact.

In view of the necessity for the trees to be removed to allow for the renewal of a critical infrastructure watermain, the proposed works are nonetheless consistent with the heritage value of Ryde Pumping Station as an operational infrastructure facility and will enable and enhance its ongoing operations.

¹ Heritage NSW; *Material Threshold Policy*; Department of Planning and Environment; 20 Sep 2022.

6. Statutory Context

6.1 General

The Statement of Heritage Impact report (2025) prepared to inform the Watermain Renewal Project's REF addressed the statutory context for the proposed works and identified the relevant approval pathway.

However, as this Addendum Report has assessed the proposed removal of the trees within the Project Area as having an overall minor adverse impact upon the heritage significance of Ryde Pumping Station, there may be an effect in relation to the approval pathway and associated statutory requirements.

6.2 NSW Heritage Act

The proposed works within the Project Area are located outside of the statutory curtilage of the State Heritage Register listing of the Ryde Pumping Station. On this basis, an application for approval under s60 of the *NSW Heritage Act* **is not** required for the removal of the trees within the Project Area.

6.3 State Environmental Planning Policy (Transport and Infrastructure) 2021

The Statement of Heritage Impact report (2025) determined, in relation to the *State Environmental Planning Policy (Transport and Infrastructure) 2021* (the Transport and Infrastructure SEPP), that the proposed works could be undertaken under the provisions of Division 4, Clause 2.159(1) without the need to seek development consent from, in this case, Ryde City Council.

Although the additional works addressed in this Addendum Report occur outside the State Heritage Register curtilage, they are still located within the curtilage of the site's listing as "*Ryde Pumping station and Site*" in Schedule 5 – Environmental Heritage of the *Ryde Local Environmental Plan 2014*. Consequently, the proposed works potentially fall within the scope of Clause 2.11 of the Transport and Infrastructure SEPP, where:

if the development—

(a) is likely to affect the heritage significance of a local heritage item, or of a heritage conservation area, that is not also a State heritage item, in a way that is more than minor or inconsequential, and

(b) is development that this Chapter provides may be carried out without consent.

Clause 2.11(2) requires that, if the above conditions are met, the proponent is required to provide notice and information to the local council authority and to take *“into consideration any response to the notice that is received from the council within 21 days after the notice is given.”*

The assessment of the impact of the proposed works undertaken for this Addendum Report has identified that the removal of the trees in the Project area will have a minor adverse impact upon the heritage significance of the Ryde Pumping Station. In view of the location of the works being outside of the State Heritage Register curtilage of the site and the proportionality of this area, and the works, in relation to the size of the overall Pumping Station site and its landscape, the minor adverse impact can be further classed as inconsequential for the purposes of Clause 2.11(a). Formal consultation with Ryde Council is therefore not required.

7 Conclusions

7.1 Statement of Heritage Impact

The proposed Watermain Renewal Works at Ryde Pumping Station will require the removal of a group of trees assessed as having medium heritage significance as part of the heritage listed '*Ryde Pumping Station and Site*'. Their removal represents an adverse impact upon the heritage significance of the Pumping Station, through the loss of group of significant specimens of endemic trees. In view of the nature of this impact in relation to the nature and degree of significance of the Ryde Pumping Station overall, it is a minor adverse impact.

In view of the necessity for the trees to be removed to allow for the renewal of a critical infrastructure watermain, the proposed works are nonetheless consistent with the heritage significance of Ryde Pumping Station as an operational infrastructure facility and will enable and enhance its ongoing operations.

7.2 Approval Pathway

The proposed removal of most, if not all, of the trees in the Project Area will occur outside of the State Heritage Register statutory curtilage for '*Ryde Pumping Station and Site*' and therefore **does not** require an application for approval under Section 60 of the *NSW Heritage Act*.

However, the proposed works are located within the curtilage of the local heritage listing in Schedule 5 – Environmental Heritage of the *Ryde Local Environmental Plan 2014*. Consequently, the proposed works may fall within the scope of Clause 2.11 of the Transport and Infrastructure SEPP. In view of the location of the works being outside of the State Heritage Register curtilage of the site and the proportionality of this area, and the works, in relation to the size of the overall Pumping Station site and its landscape, the minor adverse impact can be further classed as inconsequential for the purposes of Clause 2.11(a). Formal consultation with Ryde Council is therefore not required.

8 References

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