



Review of Environmental Factors

Multi-program - Category B

Lane Cove Stage 2 Source Control – Relining

This document provides additional environmental assessment for Category B sites. It should be read in conjunction with the Multi-program REF. Unless otherwise stated below, the Multi-program REF safeguards apply, and no additional safeguards are required.

1 Determination

This Review of Environmental Factors Multiprogram - Category B (Category B REF), in conjunction with the Review of Environmental Factors Multi-program pipeline and related infrastructure replacement, repair and upgrades (Multi-program REF) (September 2022), assesses potential environmental impacts of Lane Cove Stage 2 Source Control. This Category B REF 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 to ensure the proposal is carried out as described in this Category B REF and Multi-program REF (September 2022). If the scope of work or work methods described in either the Multi-program REF or this Category B REF change significantly following determination, additional environmental impact assessment may be required.

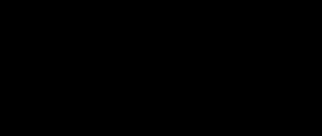
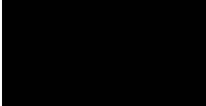
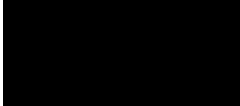
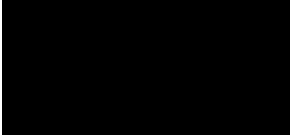
Decision Statement

During construction, the main potential environmental impacts from the proposal are typical construction impacts such as vegetation clearing, works in the vicinity of Aboriginal heritage and within non-Aboriginal heritage curtilage, and minor potential impacts to waterways from erosion and sedimentation. No operational impacts are anticipated as the proposal is being carried out to improve operational performance of the wastewater network. The proposal 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. Accordingly, a Species Impact Statement (SIS) or Biodiversity Development Assessment Report (BDAR) is not required.

It is considered that, given the nature, scale and extent of impacts and implementation of the safeguards outlined in both this Category B REF and the overarching Multi-program REF, the proposed work is unlikely to have a significant impact on the environment. Accordingly, we do not require an Environmental Impact Statement (EIS) and the proposal may proceed.

Certification

I certify that I have reviewed and endorsed the contents of this Category B REF document, and, to the best of my knowledge, it is in accordance with the EP&A Act, the EP&A Regulation (see Appendix A) and the Guidelines approved under section 170 of the EP&A Regulation and the information it contains is neither false nor misleading.

Prepared by:	Reviewed by:	Endorsed by:	Approved by:
 James Hugo REF author Sydney Water Date: 22/12/2022	 Natalie Swannack Senior Environmental Scientist Sydney Water Date: 01/02/2023	 Peter Murugathasan Project Manager Company Date: 02/02/2023	 Murray Johnson Environment and Heritage Manager Sydney Water Date: 15/02/2023

2 Project Summary

Project information

Location

The proposal will be carried out in the vicinity of Lane Cove National Park, within the local government areas (LGAs) of:

- Hornsby Shire Council
- Ku-ring-gai Council.

Figure 1 provides an overview of the location of the proposal.

Approved REF

Review of Environmental Factors Multi-program pipeline and related infrastructure replacement, repair and upgrades (Multi site REF) (September 2022).

Proposal description/ scope of work

The proposal is part of the Wet Weather Overflow Abatement program as detailed in the Multi site REF.

The proposal involves relining existing sewermain assets, and associated access works including vegetation clearing. The following number of assets are included in the scope of works:

- sewermain assets – grouped into eight ‘clusters’ A & H, B, C, F, G, I, J and K (groups of nearby individual assets). Refer to Appendix C for mapping of individual clusters and associated study areas.

Note that a number of assets are located within Lane Cove National Park. Those assets are assessed in a separate REF. Further detail for the scope of works for this REF is described below.

Access and Tracks

Many of the assets are in bushland that would require some clearing for access. The following access arrangements would be utilised:

- trucks carrying equipment will be parked on existing roads in locations that would minimise impacts to road users.
- existing fire trails or other formalised tracks are present in some areas where access is required and would be utilised for light vehicular (utes) access where practicable.

- new small pedestrian tracks would be required along the alignment of some maintenance holes where no tracks are present. The width of these pedestrian tracks would be about 1.2 metres and clearing would be marked out and limited to that required for safe access
- an existing track suitable for machinery and vehicles would be required at one location (cluster I), which would involve widening to about 2.5 metres wide
- access routes may also deviate around trees and not necessarily use the most direct route to minimise environmental impact
- private property access would be required for some works

Site Establishment

- most materials and equipment required would be contained on or within vehicles, minimising required space for storage
- minor site setups would be required at some locations, including scaffolding and where specialist access equipment above maintenance holes is required, signage and physical barriers to prevent unauthorised access.


Cleaning and CCTV

- remote controlled CCTV inspection of each asset provides video footage of the internal condition of the asset and assists in determining the maintenance requirements
- cleaning of assets would be undertaken using a purpose-built hydro jetting unit mounted on the back of a truck
- CCTV would be used to monitor the cleaning process to ensure all debris are removed
- a catch container would be placed downstream of the asset being cleaned to capture waste material generated during cleaning
- waste material would be appropriately disposed of following completion of cleaning.

Relining

- pipeline asset is CCTV inspected, cleared of debris and cleaned
- a winding machine is installed in the maintenance hole and configured to produce the required pipe diameter
- lining material is fed into the winding machine while a hot melt adhesive is also applied to the lining material as it is wound to maintain the required diameter
- winding stops once the lining reaches the maintenance hole at the other end of the asset and the lining is torsionally restrained
- the lining is then expanded by removing a sacrificial joint with the use of a pull wire
- a robotic cutter is used to reconnect lateral lines.

Restoration

- 
- demobilisation and removal of all plant and equipment
 - restoration activities including bush regeneration.

Proposal timing

Work is expected to occur during standard daytime construction hours and take approximately three months from February 2023 to April 2023.

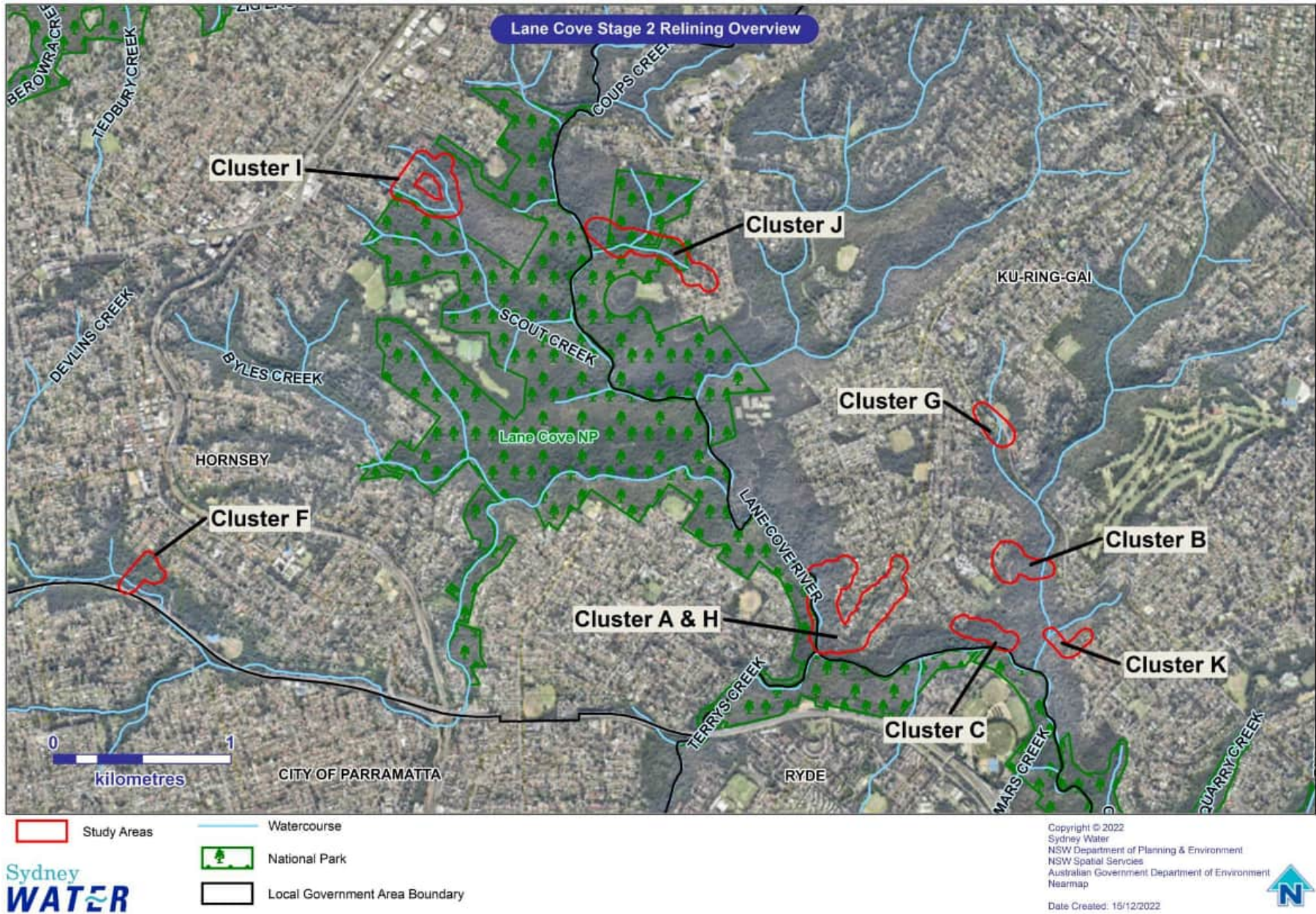


Figure 1 Proposal location – relining overview

3 Legislative consideration

There are no additional legislative requirements above those already assessed in the Multi-program REF (July 2022).

4 Consultation

Sydney Water's approach to consultation is described in the Multi-program REF (July 2022). Consultation specific to the proposal is described below.

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 (specified in Part 2.2 Division 1 of the State Environmental Planning Policy (Transport and Infrastructure) 2021 (TISEPP)).

The proposal will not directly or indirectly impact on land administered under the *National Parks and Wildlife Act 1974*. The proposal is in part next to the Lane Cove National Park. However, the Lane Cove Stage 2 Source Control package of works has been separated into assets within National Parks and those that are not (this REF). Consultation with the Department of Planning and Environment – National Parks & Wildlife Service will be carried out for the works within Lane Cove National Park.

No formal consultation was required under the TISEPP. Further detail is provided in Appendix B.

There are no assets within Biodiversity Stewardship Agreement (BSA) sites, however there are several assets located within the easement and close to the boundary of BSA site BA00132 (Sheldon Forest, Rofe Park and Comenarra Creek Reserve Biobanking Agreement). The works are routine as per Section 5 of the Sydney Water Corporation and the Minister for Energy and Environment Access Protocol. No work will be undertaken within the BSA site. Light vehicular and pedestrian access is required on existing access paths through the BSA site however no vegetation trimming or clearing is required.

The Biodiversity Conservation Trust (BCT) were notified of works on 2nd February 2023. BCT have confirmed (by email dated 8th February) they have no concerns regarding access to BSA site BA00132.

Kur-ring-gai and Hornsby Shire Council have also been notified of works on 2nd February 2023.

There are five assets located within Key Fish Habitat (KFH) which during a site visit are confirmed to be above the top of bank for the Lane Cove River. On this basis the Department of Primary Industries – Fisheries do not need to be notified in accordance with Section 199 of the *Fisheries Management Act 1994*.

Where access to private residential properties is required consultation with residents prior to access will be undertaken.


5 Additional environmental impacts and mitigation measures

Existing environment

The proposal is situated across multiple discrete sites within the local government areas of Hornsby and Ku-ring-gai. The sites are generally situated on public land and within bushland, some of which are in the vicinity of and follow waterways. Some sites are partly or wholly situated on private property. The surrounding land has a mix of low density residential, recreational and environmental land uses.

The location and existing environment within study areas for of the clusters is shown in Appendix C.

The environmental sensitivities at the sites are associated with existing waterways, Aboriginal and non-Aboriginal heritage, and flora and fauna, some of which qualifies as a Threatened Ecological Community



(TEC) under the *Biodiversity Conservation Act 2016* (BC Act) and/or *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). A number of assets are also in close to or within private property.

Waterways

A number of assets are located close to or within waterways including Camp Creek, Scout Creek, Devlins Creek, and unnamed tributary and Lane Cove River. There are also five assets located in Key Fish Habitat mapped for the Lane Cove River. Site visits undertaken by Confluence Water have confirmed that these assets are above the top of bank for the Lane Cove River.

Flora and fauna

A specialist ecological assessment was carried out by Confluence Water ecologists (Appendix D) to determine the potential impacts to flora and fauna from the proposal. The results of the assessment are summarised here.

Most of the native vegetation in the cluster study areas are not mapped as threatened under the BC Act or the EPBC Act. However, two threatened ecological communities (TECs) were identified, Plant Community Type (PCT) PCT 3136 and PCT 3262. These TECs are the *Blue Gum High Forest in the Sydney Basin Bioregion* and *Turpentine - Ironbark Forest in the Sydney Basin Bioregion*, both listed as critically endangered ecological communities (CEEC's) under the BC Act and EPBC Act.

Parts of the proposal are within easements of a BSA site BA00132 (Sheldon Forest, Rofe Park and Comenarra Creek Reserve Biobanking Agreement). There are no assets within the BSA site however access through the BSA site on existing tracks is required.

Most of the native vegetation in the study areas is woodland. The canopy and mid storey vegetation provide foraging habitat for many fauna. Hollow bearing trees and fallen timber were observed within the study areas of all clusters and the woodland areas are considered suitable for foraging and breeding habitat for many owls (including the Powerful Owl) and parrots.

Many of the assets follow the creeklines. The creeklines are generally rocky and shallow with some sandy deposits which provide suitable habitat for small fish, invertebrates or amphibians and suitable foraging habitat for microbats.

Vegetation across the study areas is generally in high condition however weeds and garden escapes are prevalent in roads in residential areas. Weeds include *Asparagus asparagoides* (asparagus), *Ligustrum lucidum* (Large Leaved Privet), *Ligustrum sinense* (Large Leaved Privet) and *Lantana camara* (Lantana). No notable infestations were observed along any asset alignments within the study areas.

A summary of existing vegetation in each cluster study area is provided below and shown in Appendix C.

Cluster A & H – assets in these clusters are next to each other and accessible via an existing paved pathway. Vegetation comprises PCT 3136 *Blue Gum High Forest*, generally in high condition. In higher elevations, vegetation transitions into PCT 3592 *Sydney Coastal Enriched Sandstone Forest*. Along the eastern side of the cluster, along Kissing Point Road, most of the vegetation comprises commonly planted native and exotic garden species.

Cluster B – native vegetation comprises mostly PCT 3595 *Sydney Coastal Sandstone Gully Forest*, generally in high condition. Vegetation becomes weedy towards the rear of properties on Robin Avenue. There is also a known population of the threatened species *Darwinia biflora* along the existing access track nearby. The works are within a five metre BSA site easement.

Cluster C – assets in this cluster are located at the point of transition of three vegetation types: PCT 3586 *Northern Sydney Scribbly Gum Woodland*, PCT 3176 *Sydney Enriched Sandstone Moist Forest*, and PCT

3038 Sydney Coastal Coachwood Gallery Rainforest, generally in high condition. The works are within a five metre BSA site easement.

Cluster F – assets in this cluster are located within Beecroft Reserve. Native vegetation mostly comprises PCT 3592 Sydney Coastal Enriched Sandstone Forest in moderate condition. There is also an area of PCT 3262 Sydney Turpentine Ironbark Forest east of the assets in the cluster.

Cluster G – Native vegetation comprises PCT 3176 Sydney Enriched Sandstone Moist Forest in high condition. However, the existing access track and some maintenance holes are within non-native vegetation consistent with garden plantings. There is also a known population of the threatened species *Darwinia biflora* along the existing access track. The works are within a five metre BSA site easement.

Cluster I – The assets in this cluster generally follow two waterways within native vegetation comprising PCT 3176 Sydney Enriched Sandstone Moist Forest in high condition.

Cluster J – this cluster is mostly located within Lane Cove National Park. However, for the small number of assets outside Lane Cove National Park, vegetation comprises PCT 3176 Sydney Enriched Sandstone Moist Forest in high condition.

Cluster K – native vegetation mostly comprises PCT 3592 Sydney Coastal Enriched Sandstone Moist Forest in high condition. The vegetation transitions into non native species as it becomes weedy and dominated by planted garden species towards the rear of properties on Edenholme and Hillary Streets. The works are within a five metre BSA site easement.

Known Powerful Owl breeding sites are present within 200 metres of assets in the study areas for clusters A & H, C, and I, the closest of which is about 100 metres to the east of an existing access track in the study area for cluster A & H. Additionally, suitable foraging habitat is present across all clusters. However, no potential nesting hollows observed during the site inspection were identified in trees along the asset alignments.

There is potential for *Pommerhelix duralensis* (Dural Land Snail) to occur across all study areas.

There are known populations of the threatened species *Darwinia biflora* near the existing access tracks in study areas for clusters B and G.

The assessment in Appendix D reports that a total of 47 threatened flora and fauna species have a moderate to high potential to occur within the wider Lane Cove area. Threatened species mapped within the study areas are described on Figures A-1 to A-10 in Appendix D and the locations are also shown in Appendix C.

Aboriginal Heritage

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Non-Aboriginal Heritage

Some assets are located close to or within assets the curtilage of locally listed non-Aboriginal heritage items. These items are all listed under *Hornsby Local Environmental Plan 2013*. A summary of non Aboriginal heritage items is provided below.

Beecroft, Cheltenham Heritage Conservation Area (C2) - this conservation area is significant as an example of a government subdivision that was used to fund the development of a railway line. It contains buildings from the late 1800s to the 1960s.

Street trees (169) – this listing comprises street trees present along Castle Howard Road, next to Beecroft Reserve.

Bushland Reserve, Beecroft and Cheltenham Parks (170) – this listing comprises the remnant bushland around Beecroft and Cheltenham Parks. The bushland is listed for its relatively intact vegetation communities that have otherwise been highly fragmented, modified and reduced in size from their former geographical range.

Baden Powell Scout Centre, buildings, gate and grounds (1646) – this item, in addition to buildings and landscaping associated with the Baden Powell Scout Centre, includes the nearby bushland conserved for scout activity purposes.

The table below assesses the potential environmental impacts that may result from the proposal and additional safeguards that have been identified. All other environmental impacts and mitigation measures identified in the Multi-program REF (July 2022) remain the same and will be incorporated into the Contractor’s CEMP.

Environmental impacts table		
Aspect	Additional impacts	Additional safeguards
Topography, geology and soils	Potential impacts to topography, geology and soils are expected to be minor, as works are relatively small scale and localised and no excavation is required. No salinity issues or acid sulfate soils are mapped so impacts expected at any site.	No additional measures required. Apply safeguards in the overarching multi program REF to manage potential impacts.
Water and drainage	<p>Potential impacts to waterways include erosion and sedimentation resulting from minor ground disturbance. Excavation is not required. Minor ground disturbance close to waterways may occur during erection of scaffold platforms for access to maintenance holes or minor disturbance to expose assets where needed. This may cause temporary minor erosion and sedimentation impacts. Vegetation trimming and removal also has the potential to cause minor ground disturbance and minor erosion and sedimentation impacts. Waterway crossings would be required for pedestrian access at some locations. These waterways (Devilins Creek in cluster F, unnamed creek in Cluster G and Scout Creek in cluster I) are minor and ephemeral and can be accessed by foot. Works would be scheduled to avoid periods of predicted heavy rainfall and higher flows.</p> <p>Potential impacts to KFH for the Lane Cove River (Appendix C) are not</p>	<p>Apply safeguards in the overarching multi program REF and the additional safeguards to manage potential impacts:</p> <ul style="list-style-type: none"> • keep functioning aquatic spill kit on site for clean-up of accidental chemical/fuel spills in areas mapped as KFH. Keep the spill kits stocked and located for easy access • minimise vegetation and ground disturbance above the top of bank and within areas mapped as KFH • If the scope changes, where any work will occur below the top of bank for areas mapped as KFH NSW DPI Fisheries must be notified to provide input on potential impacts prior to work commencing.

expected because the assets in areas mapped as KFH are located above the top of bank and works do not require excavation. Because these assets are located above the top of bank there is no requirement to notify NSW Department of Primary Industry (DPI) Fisheries under s.199 of the Fisheries Management Act 1994 (FM Act).

During operation, the proposal would improve the aquatic environment and have a positive impact by reducing the likelihood of wastewater overflows from the network into waterways.

Interception of groundwater is not considered likely as ground disturbance would be minor and required to access existing maintenance holes.

Flora and fauna

Vegetation clearing

Potential impacts to vegetation results from clearing required for safe access. This includes clearing for up to 1.2m wide tracks to create new pedestrian access along the asset alignments, some minor trimming along existing tracks where light vehicles are required and clearing to widen an existing track up to 2.5m wide for truck access to assets in cluster I (shown in Appendix C). No trimming or clearing is required on access tracks through BSA sites.

Where new tracks are needed, clearing would generally involve cutting vegetation to the ground with brushcutters and other hand tools minimising ground disturbance. Only ground-storey and mid-storey vegetation would be impacted. Trees with a diameter at breast height (DBH) of over five centimetres would be avoided so impacts to mature trees are minimised. Cleared native vegetation cleared would be left on the ground or relocated to nearby areas within the bushland for habitat creation. Additionally, safeguards in this REF will ensure the cleared areas would be restored with like for like vegetation so potential impacts will be minimised.

Apply safeguards in the overarching multi program REF and the additional safeguards to manage potential impacts:

- physically delineate areas where access is not permitted prior to commencement of works.
- residual impacts to native vegetation will be offset in accordance with the Biodiversity Offset Guideline ([SWEMS0019.13](#))
- map and report native vegetation clearing greater than 0.01 ha in extent (and any associated rehabilitation) to the Sydney Water project manager and environmental representative. Track vegetation clearing in accordance with [SWEMS0015.26 Contractor Native Vegetation Clearing and Rehabilitation template](#)
- weed management within Sheldon Forest, Rofe Park and Comenarra Creek Reserve Biobanking site will be in accordance with the Biobanking Management Plan (OEH, 2011). Records must be kept and provided to the Biobank property owner/manager
- when clearing and trimming, separate all plant parts that may be infested with weeds and weed propagules and dispose of at a licensed waste disposal facility
- prior to clearing or trimming vegetation, visually examine the vegetation for fauna, nests or dreys (i.e. a small round nest made from a thicket of sticks). If mobile fauna is present, allow it to move away unharassed. If any nests or dreys are present,

The potential impact to vegetation from the proposal includes clearing of up to about:

- 3,683m² of native vegetation comprising:
 - 419m² of CEECs
 - 3,264m² of non-threatened native vegetation
- 634m² of non-native vegetation (weeds and exotics).

Of the native vegetation clearing assessed in Appendix D, the impacts to each PCT resulting from track widening for access in this proposal would include:

- PCT 3038 – 1 m²
- PCT 3136 (CEEC) – 412 m²
- PCT 3176 – 2239 m²
- PCT 3262 (CEEC) – 7 m²
- PCT 3586 – 12 m²
- PCT 3592 – 717 m²
- PCT 3595 – 295 m².

This is the maximum amount of native vegetation that may require clearing. Because narrow cleared areas exist along asset alignments the amount of clearing will likely be less. The access alignment will seek to minimise and avoid vegetation clearing to further minimise this impact.

The BSA site BA00132 (Sheldon Forest, Rofe Park and Comenarra Creek Reserve Biobanking Agreement) is shown in Appendix C. Assets are located within the BSA site easement and no assets are located within the BSA site. There is one asset (within cluster A and H) located close to the boundary of the BSA site. Vegetation clearing will be required within the BSA site easement to access assets however this will be limited to the minimum required for access and safety. Light vehicular and pedestrian access will be required on existing access tracks through the BSA site however vegetation clearing or trimming is not required. Therefore, impacts to vegetation within the BSA site will be minor.

stop work and contact a suitably qualified ecologist for advice

- no vegetation trimming or clearing is permitted within the 'no vegetation impact area' near assets in cluster B. If trimming is needed for access, engage a suitably qualified ecologist to ensure the *Darwinia biflora* plants are not impacted.
- during site inductions, make all staff aware of:
 - the locations and extents of the two critically endangered ecological communities: *Blue Gum High Forest* and *Sydney Turpentine Ironbark Forest*
 - the locations and extent of the 'no vegetation impact' areas around the *Darwinia biflora* populations close to assets in clusters B and G
 - the potential presence of other threatened species within study areas mapped in Appendix C and described in Appendix D
 - the location of BSA site BA00132
- dead timber (including standing or fallen branches) and leaf litter must not be removed from work sites. Move dead timber and leaf litter to a nearby location
- native cleared or trimmed vegetation with no attached weed material will be placed in the nearby bushland. All non-native material must be removed from work sites, or unless otherwise stated by a private landholder (where on private land)
- where rehabilitation works involve replanting of native species, the species selected should be chosen from the relevant PCT in accordance with [SWEMS0025.11 Guideline for managing native re-vegetation for construction projects](#)
- minimise vegetation impact to the smallest amount possible required for safe access:
 - branches should be tied back where possible instead of trimmed
 - no trees with a DBH over 5cm will be cleared
- If a snail is observed during works, stop work and contact a suitably qualified ecologist for advice
- No vegetation trimming or removal is to occur on existing access tracks through BSA site BA00132
- comply with the Sydney Water Corporation and the Minister for Energy and Environment Access

Fauna

Potential impacts to threatened species and their habitat, including loss of foraging resources result from the removal of vegetation for access, and temporary intermittent noise associated with the use of hand tools and people movement during construction. Due to the minor nature of vegetation clearing limited for access and the temporary, small scale nature of the work, potential impacts to threatened species and their habitats are considered minor.

The assessment in Appendix D notes the Dural Land Snail (*Pommerhelix duralensis*) is difficult to distinguish from other common snail species, therefore care should be taken if any snail is observed during works and clearing required for access to minimise impacts to this species.

Potential impacts to mature trees will be avoided and as no hollows have been observed in trees along asset alignment within the study areas potential impacts to Powerful Owls and their known breeding sites are considered minor. The assessment in Appendix D confirms work within these study areas can be undertaken at all times of the year.

Test of significance

Tests of significance (Appendix D) as required under Part 7, Division 1 of the BC Act and the EPBC Act Policy Statement 1.1 Significant Impact Guidelines have been undertaken to determine whether the work identified in this proposal is likely to significantly affect threatened flora and fauna species, populations or communities or their habitats. The tests determined proposal would not result in a significant impact on any threatened species, populations or communities in the vicinity.

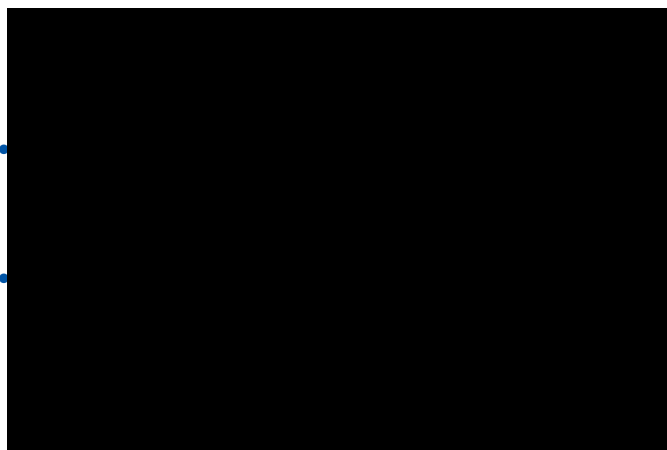
Overall, the removal of native vegetation for the proposal would not have a significant impact on any threatened species, populations, or communities,

Protocol. Vegetation disturbance is to be limited to the minimum required for access and safety (per section 5.3 of the protocol). If scope changes, and works are required within BSA site BA00132 contact BCT to provide input on any potential revised impact.

and as such does not trigger statutory offset requirements.

Aboriginal Heritage

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Non-Aboriginal Heritage

Due to the localised nature of works, it is not expected that any non-Aboriginal heritage item would be impacted where works are not within its curtilage. The potential impacts to each item are discussed below

Beecroft, Cheltenham Heritage Conservation Area (C2) – The proposal would not impact any buildings or streetscape, and as such would not

Apply safeguards in the overarching multi program REF and the additional safeguards to manage potential impacts:

- minimise vegetation trimming and removal within the curtilage of heritage items necessary to safely access work sites.

impact the significance of this conservation area.

Street trees (I69) – The proposal would not impact any trees along Castle Howard Road.

Bushland Reserve, Beecroft and Cheltenham Parks (I70) – Access to the assets within the heritage curtilage would be via the existing fire trail within the reserve. The proposal would involve minor trimming and removal of ground and mid-storey vegetation for safe pedestrian access along the asset alignment. No mature trees with a DBH greater than five centimetres would be cleared, and any other trimming and removal would be minimised. The potential impact to this heritage item is expected to be minor, as vegetation would be restored following completion of works.

Baden Powell Scout Centre, buildings, gate and grounds (I646) – The proposal would involve minor trimming and removal of vegetation to access assets within the curtilage of this item. The potential impact to this heritage item is expected to be minor, as vegetation would be restored following completion of works.

Overall, the potential impacts of the proposal on non-Aboriginal heritage are expected to be minor.

Noise and vibration

Works would occur within bushland and in the vicinity of residential properties. Residents in the vicinity of the works may be temporarily impacted by noise from workers and relining activities. No night works would be required. Potential noise impacts would be managed through the implementation of safeguards in the Multi-program REF.

No additional measures required. Apply safeguards in the overarching multi program REF to manage potential impacts.

Traffic and access

Trucks would be parked as near to the assets as practicable, either on a local road where parking is permitted or within cleared areas on existing tracks.

Apply safeguards in the overarching multi program REF and the additional safeguards to manage potential impacts:

- access sites only via access paths indicated in Appendix C. If alternative access is required notify and request approval from Sydney Water's project

Vehicles (utes) would be driven along existing tracks or fire trails if required to carry equipment.

Access along asset alignments would be on foot except for some assets in cluster I where truck access is required.

Equipment and materials would be carried on foot and using a trolley along the asset alignment. Scaffolding would be used at some locations (shown in Appendix C) where the ground is steep or to access elevated manholes.

Pedestrian access via private property to some assets in cluster A and H (next to Kissing Point Road) is required. Access to private properties would be maintained for the duration of the works as far as practicable, however any impacts restricting access would be short term, and temporary, and the property owner/occupier would be notified and consulted prior to commencing work.

Some assets are in the vicinity of minor (low flows and/or ephemeral) waterways. Crossing occurs in three locations: Devlins Creek for assets in cluster F, unnamed creek for assets in cluster G and Scout Creek for assets in cluster I. Crossings will be on foot and would occur at natural crossing points (such as a constrained channel or 'stepping stones') where practicable.

manager in consultation with the environmental representative.

- site laydown is permitted on any open grassed or areas of bare ground near to the work sites and in accordance with the following criteria:
 - locate at least 10 metres from waterways and not within areas mapped as KFH
 - within BSA site easements and along existing access tracks
 - protect nearby trees in accordance with the requirements of Australian Standard 4970-2009 for the Protection of Trees on Development Sites
 - no vegetation clearing for site laydown is permitted
- if fuels or contaminants are being stored, bund them with a robust waterproof membrane.

Cumulative and future trends

Works are minor and localised which are not anticipated to substantially contribute to any cumulative environmental impact at either a local or regional scale. The works would result in an improvement in the operation of the wastewater system, improving the health and amenity of the environment in the long-term, and reduce the risk of asset failure.

No measures are considered necessary.

General environmental safeguards

General	
1.1	<p>Should the proposal or methodology change from this EIA, no further environmental assessment is required provided the change:</p> <ul style="list-style-type: none">• remains within the study area for the EIA and has no net additional environmental impact; or• is outside the study area for the EIA but:<ul style="list-style-type: none">- reduces impacts to biodiversity, heritage or human amenity; or- avoids engineering (for example, geological, topographical) constraints; and- after consultation with any potentially affected landowners and relevant agencies. <p>The Contractor must demonstrate in writing how the changes meet these requirements, for approval by Sydney Water's Project Manager in consultation with the environmental and community representatives.</p>
1.2	<p>To ensure compliance with legislative requirements for incident management (eg <i>Protection of the Environment Operations Act 1997</i>), Sydney Water's employees and contractors will follow SWEMS0009. Attach SWEMS0009 to the CEMP.</p>

6 Conclusion

This Category B REF outlines potential environmental impacts associated with Lane Cove Stage 2 Source Control (relining works) as part of the Wet Weather Overflow Abatement program. Any additional environmental impacts are considered minor and potential impacts can be mitigated through implementation of the measures outlined in this Category B REF and the Multi-program REF (September 2022). The proposed works are not likely to significantly impact the environment.

Appendix A – Section 171 checklist

Requirements in addition to the Multi-program REF are considered in the table below.

Section 171 checklist	REF finding
Any environmental impact on a community	The proposal is consistent with Multi program REF findings.
Any transformation of a locality	The proposal is consistent with Multi program REF findings.
Any environmental impact on the ecosystems of the locality	In addition to the findings of the Multi program REF, the proposal would result in minor temporary impacts to the ecosystems of the Lane Cove locality. Impacts would be minimised through the implementation of safeguards, including restoration of disturbed areas following construction.
Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of the locality	The proposal would involve minor trimming and vegetation removal and use of existing access paths. However, as works are temporary and safeguards commit to restoration activities following construction, the potential reduction of aesthetic, recreational, scientific or other environmental quality or value of the locality is considered negligible.
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	The proposal would have a minor, temporary effect on localities or places that are locally heritage listed. This effect would be minimised through the implementation of safeguards, including safeguards that commit to restoring native vegetation post construction.
Any impact on the habitat of any protected animals (within the meaning of the <i>Biodiversity Conservation Act 2016</i>)	The proposal would involve trimming and removal of habitat that is likely utilised by threatened animals. However, impacts would be minor and the implementation of safeguards including minimising vegetation disturbance and restoration activities post construction would ensure impacts to potential habitat for protected animals is minimised.
	Light vehicular and pedestrian access is required on existing access paths through the BSA site however no vegetation trimming or clearing is required for access. No work will be undertaken within the BSA site. BCT have confirmed that there are no issues with current plans for access to BSA00132.
	The proposal does not trigger the requirement for offsets under the BC Act, however offsets to manage impacts associated with native vegetation loss would be provided in accordance with Sydney Water's Biodiversity Offsets Guideline. A test of significance applied as required under the BC Act concluded there would not be a significant impact to any threatened species, populations or communities as a result of the proposal.
Any endangering of any species of animal or plant or other form of life, whether living on land, in water or in the air	A specialist ecology assessment was carried out to assess biodiversity impacts associated with the proposal and found that works would not endanger any species.

**Section 171 checklist****REF finding**

Any long-term effects on the environment	The proposal would not have any adverse long term impacts to the environment. However, sewer relining work will improve the environment because the impact of overflows to the environment will be minimised. The proposal is consistent with Multi-program REF findings.
Any degradation of the quality of the environment	Impacts to native vegetation and waterways can be managed by the implementation of safeguards to avoid and minimise vegetation removal and disturbance and avoid and minimise the spread of weeds.
Any risk to the safety of the environment	The proposal consistent with multi program REF findings.
Any reduction in the range of beneficial uses of the environment	The proposal would have temporary impacts for public access to existing paths and tracks. However, impacts will be short term and temporary. Implementation of safeguards to manage the use of existing tracks and paths are consistent with the multi program findings.
Any pollution of the environment	The proposal has been designed to improve protection of the environment by reducing wastewater overflows. It will also ensure compliance with EPL 378. Safeguards have been adopted to minimise any potential pollution to the environment arising from incidents.
Any environmental problems associated with the disposal of waste	The proposal is consistent with Multi program REF findings and safeguards to manage potential impacts.
Any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply	There are no increased demands on resources as a result of the proposal.
Any cumulative environmental effect with other existing or likely future activities	The proposal is consistent with multi program REF findings.
Any impact on coastal processes and coastal hazards, including those under projected climate change conditions	The proposal does not impact coastal processes or coastal hazards.
Any applicable local strategic planning statements, regional strategic plans or district strategic plans made under the EP&A Act, Division 3.1	There are no applicable local strategic plans or district strategic plans relevant to the proposal.
Any other relevant environmental factors.	This REF in conjunction with the overarching multi program REF has assessed all the environmental factors that may impact the environment.



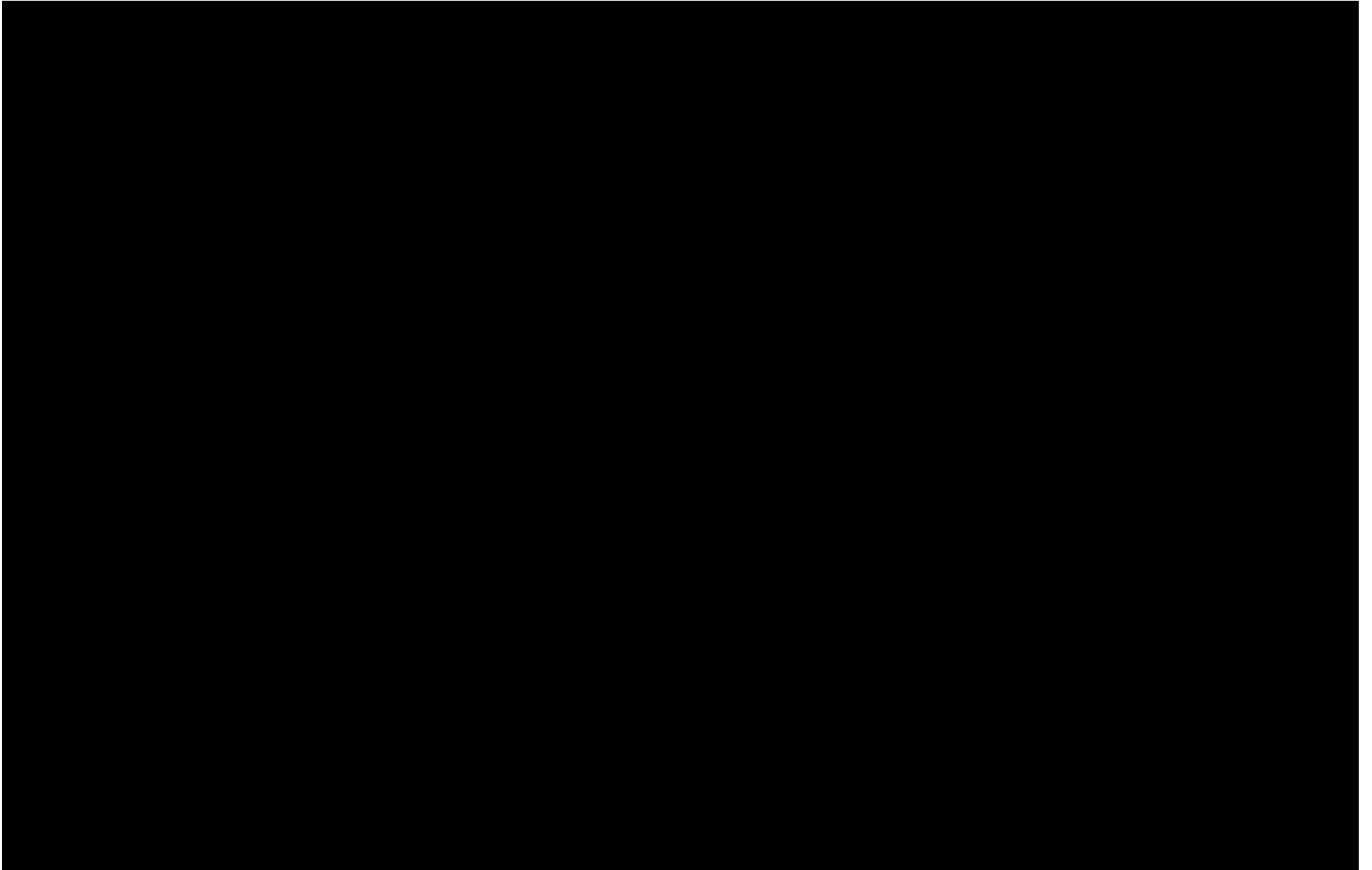
Appendix B – Consideration of TISEPP consultation

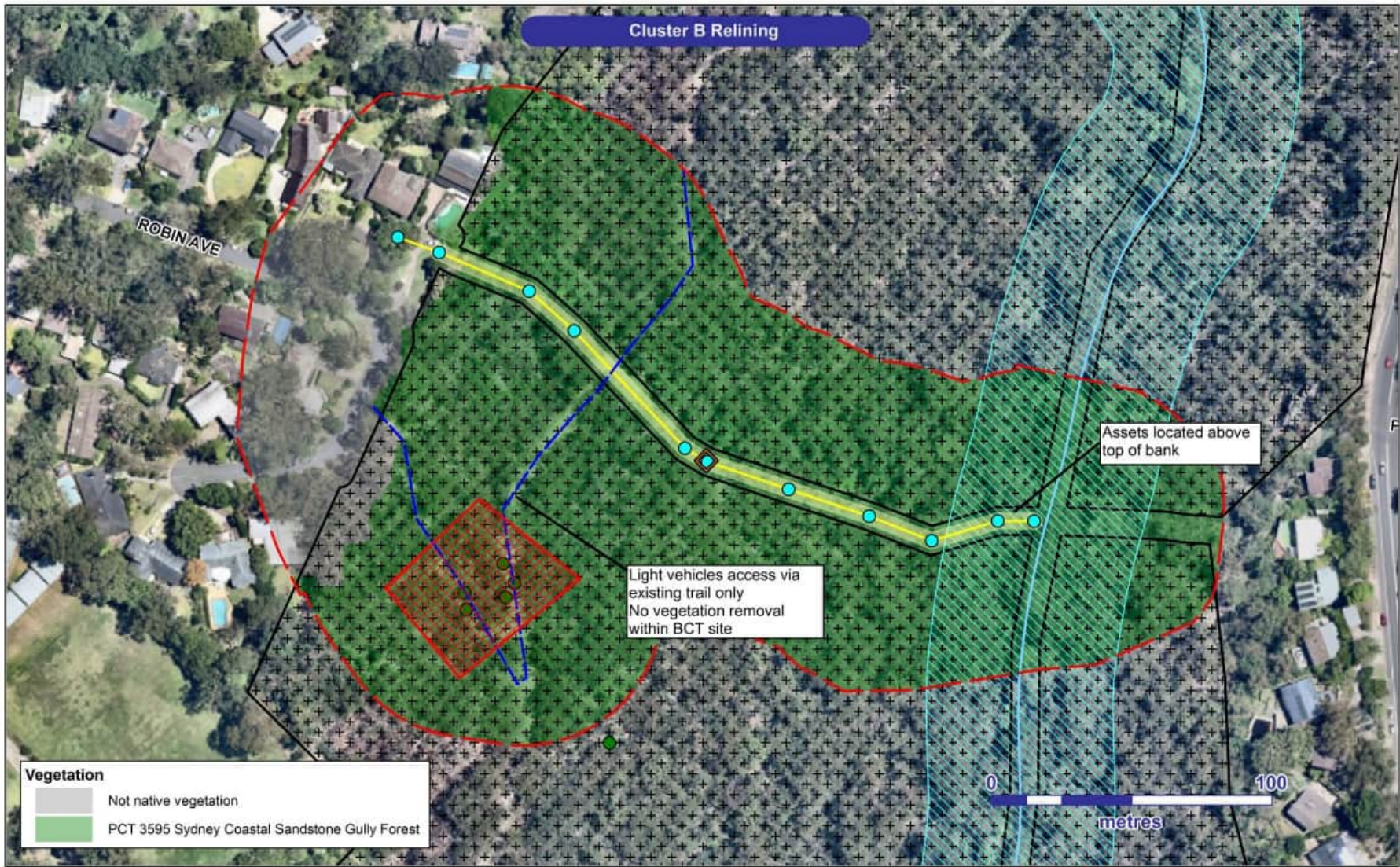
TISEPP section	Yes	No
Section 2.10, council related infrastructure or services – consultation with council		
Will the work:		
Potentially have a substantial impact on stormwater management services provided by council?		X
Be likely to generate traffic that will strain the capacity of the road system in the LGA?		X
Involve connection to, and have a substantial impact on, the capacity of a council owned sewerage system?		X
Involve connection to, and use of a substantial volume of water from a council owned water supply system?		X
Involve installation of a temporary structure on, or enclosing, a public space under council's control that will cause a disruption to pedestrian or vehicular traffic that is not minor or inconsequential?		X
Involve excavation of the surface of, 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 located on flood liable land (that is land that is susceptible to flooding by the probable maximum flood event) and will they 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 located on flood liable land (ie. 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? * (e) Div.14 (Public admin buildings), (g) Div. 16 (Research/ monitoring stations), (i) Div. 20 (Stormwater systems)?		X
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 proposal be located on land adjacent to land reserved under the <i>National Parks and Wildlife Act 1974</i> or to land acquired under Part 11 of that Act? <i>If so, consult with DPIE (NPWS).</i>		X
Will the proposal be located on land in Zone E1 National Parks and Nature Reserves or in a land use zone that is equivalent to that zone? <i>If so, consult with DPIE (NPWS)</i>		X
Will the proposal comprise a fixed or floating structure in or over navigable waters? <i>If so, consult TfNSW</i>		X
Will the proposal be located on land in a mine subsidence district within the meaning of the <i>Coal Mine Subsidence Compensation Act 2017</i> ? <i>If so, consult with Subsidence Advisory NSW.</i>		X
Will the proposal involve clearing of native vegetation on land that is not subject land (ie non-certified land)? <i>If so, notify DPIE at least 21 days prior to work commencing. (Requirement under s3.24 Chapter 3 Sydney Region Growth Centres - of the SEPP (Precincts – Central River City) 2021.</i>		X
Will the proposal involve development within a Western City operational area specified in Schedule 2 of the <i>Western Parkland City Authority Act 2018</i> with a capital investment value of \$30 million or more? <i>If so, consult with the Western Parkland City Authority.</i>		X



Appendix C – Cluster figures







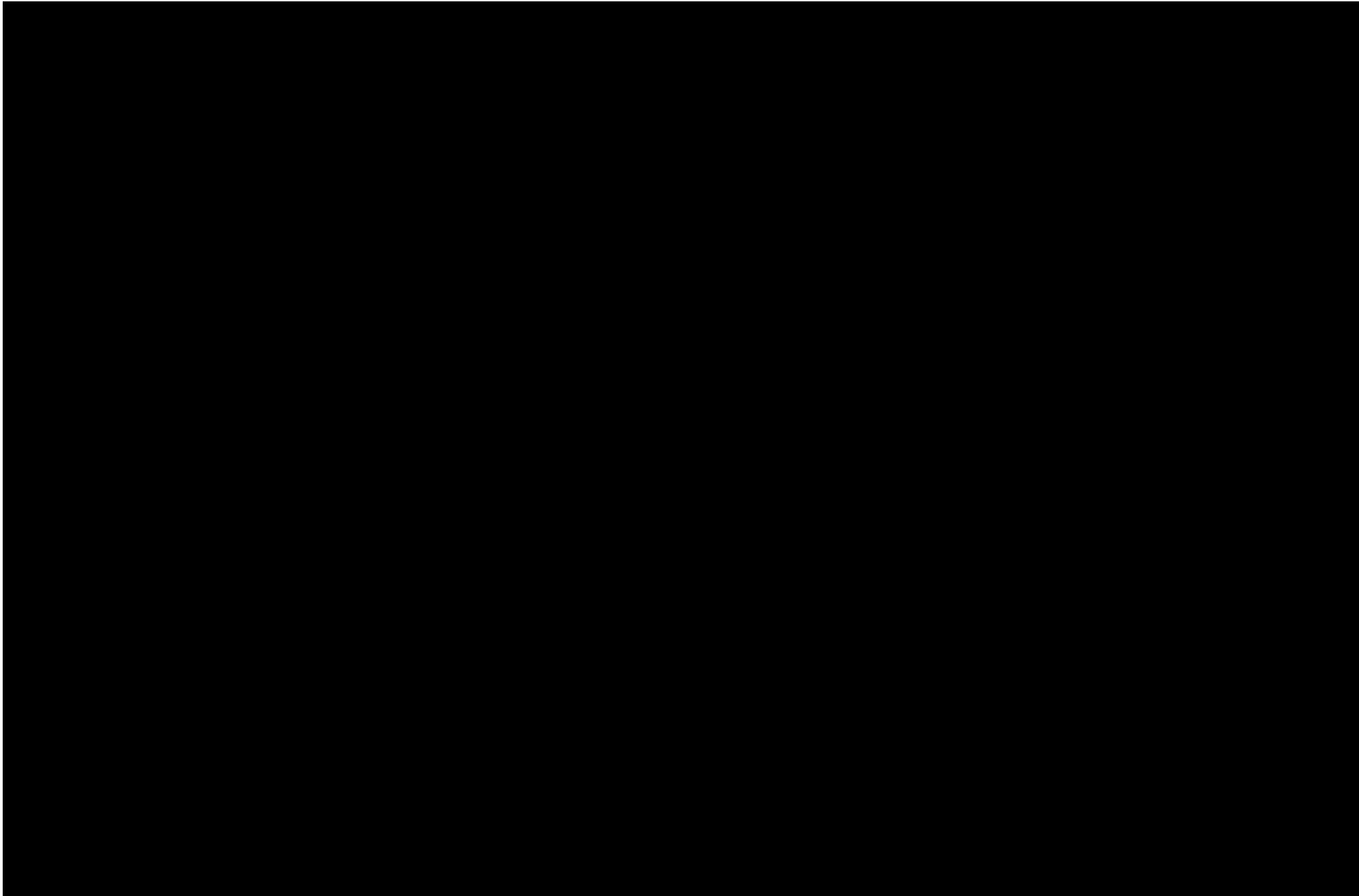
Vegetation

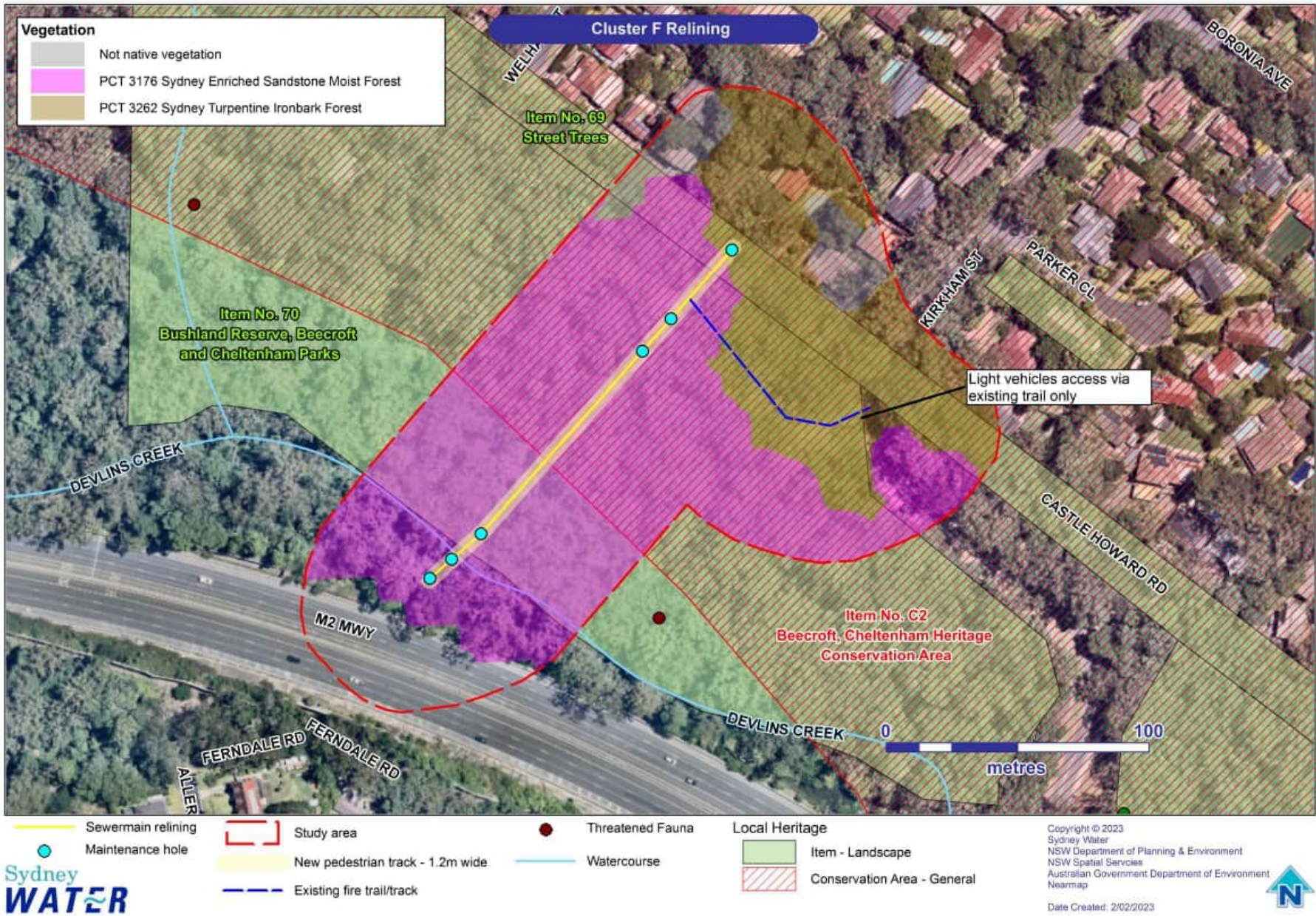
- Not native vegetation
- PCT 3595 Sydney Coastal Sandstone Gully Forest

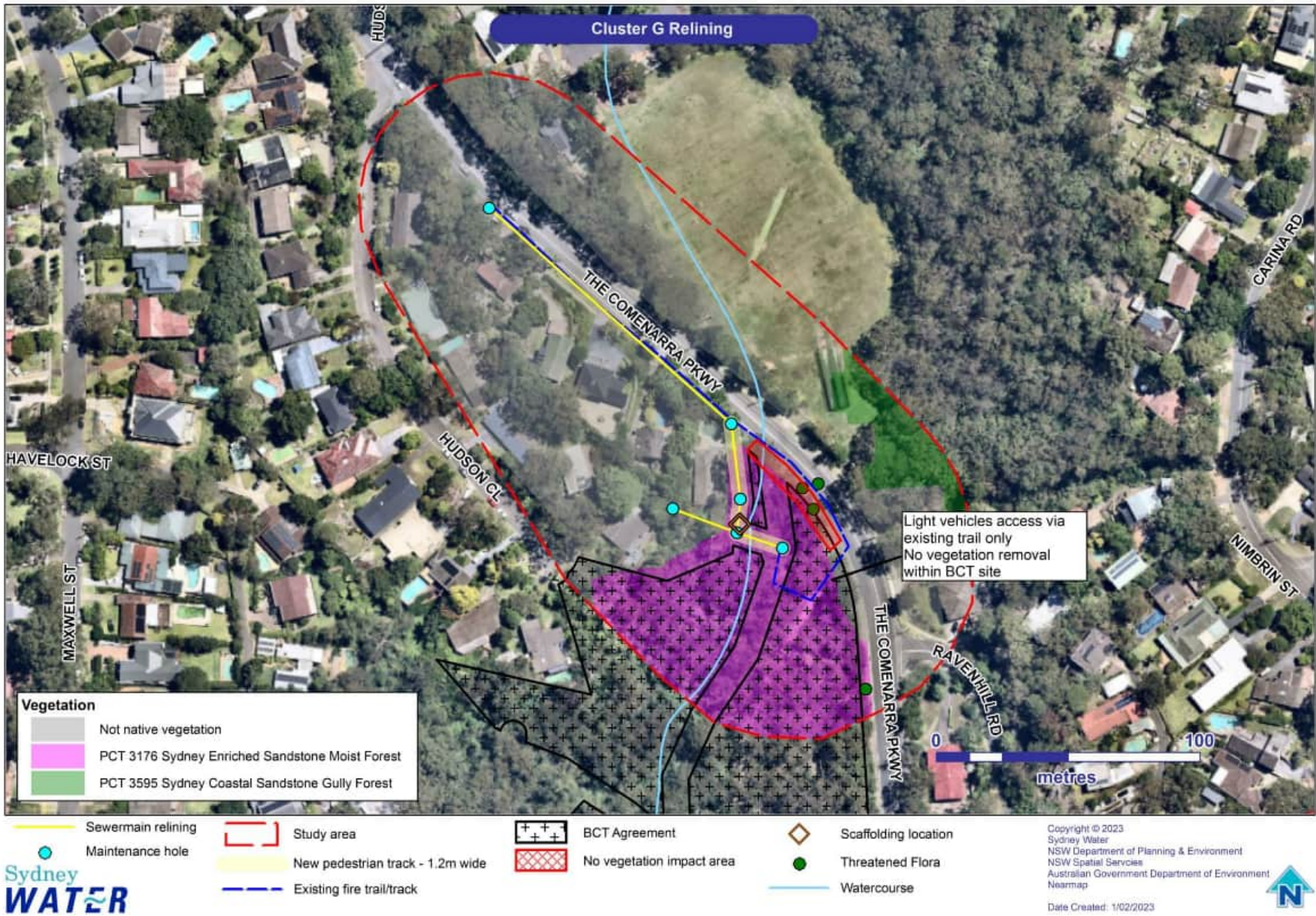
- Sewermain relining
- Maintenance hole
- Study area
- New pedestrian track - 1.2m wide
- Existing fire trail/track
- BCT Agreement
- Key Fish Habitat
- No vegetation impact area
- Scaffolding location
- Threatened Flora
- Watercourse

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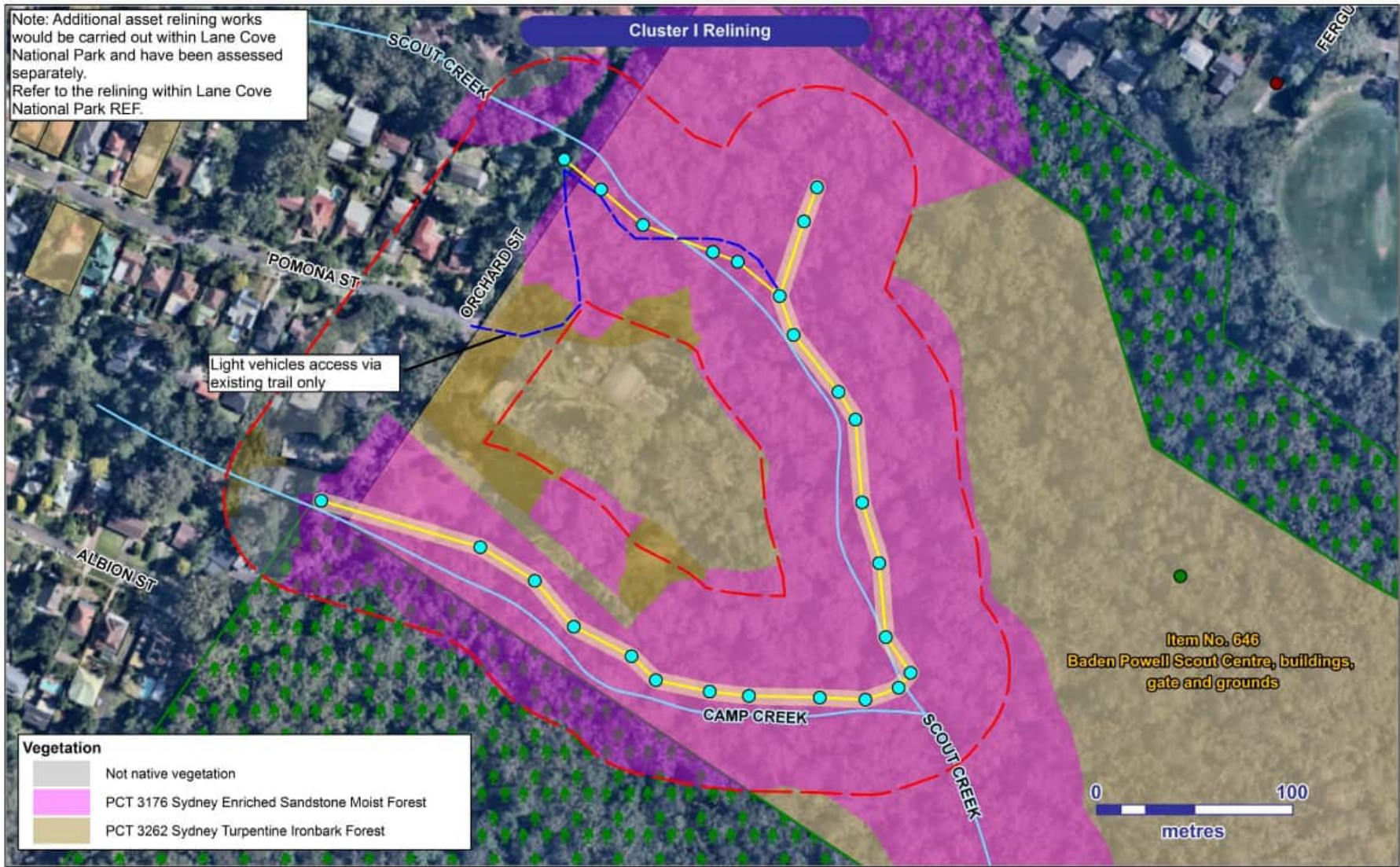








Note: Additional asset relining works would be carried out within Lane Cove National Park and have been assessed separately. Refer to the relining within Lane Cove National Park REF.



Vegetation

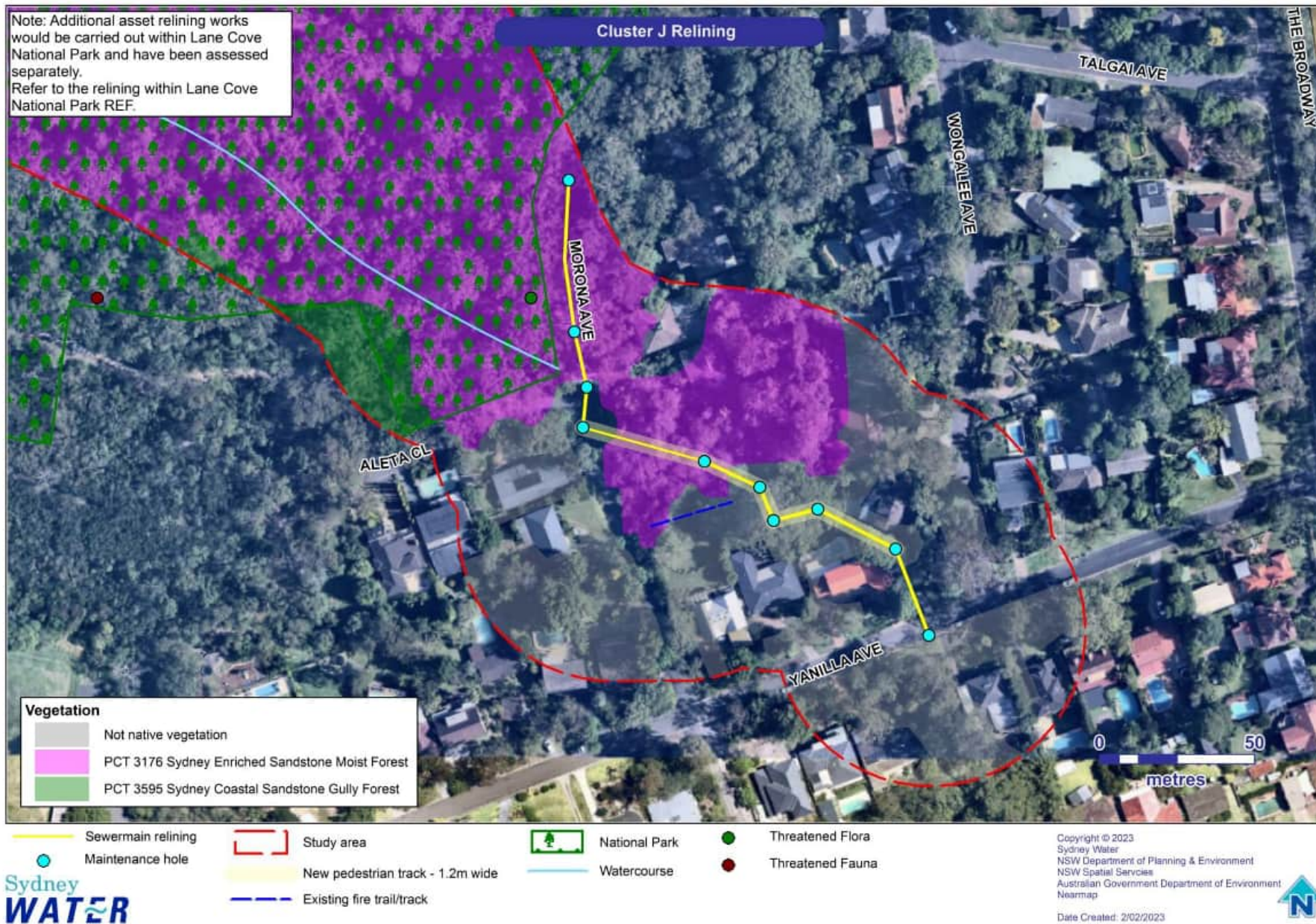
- Not native vegetation
- PCT 3176 Sydney Enriched Sandstone Moist Forest
- PCT 3262 Sydney Turpentine Ironbark Forest

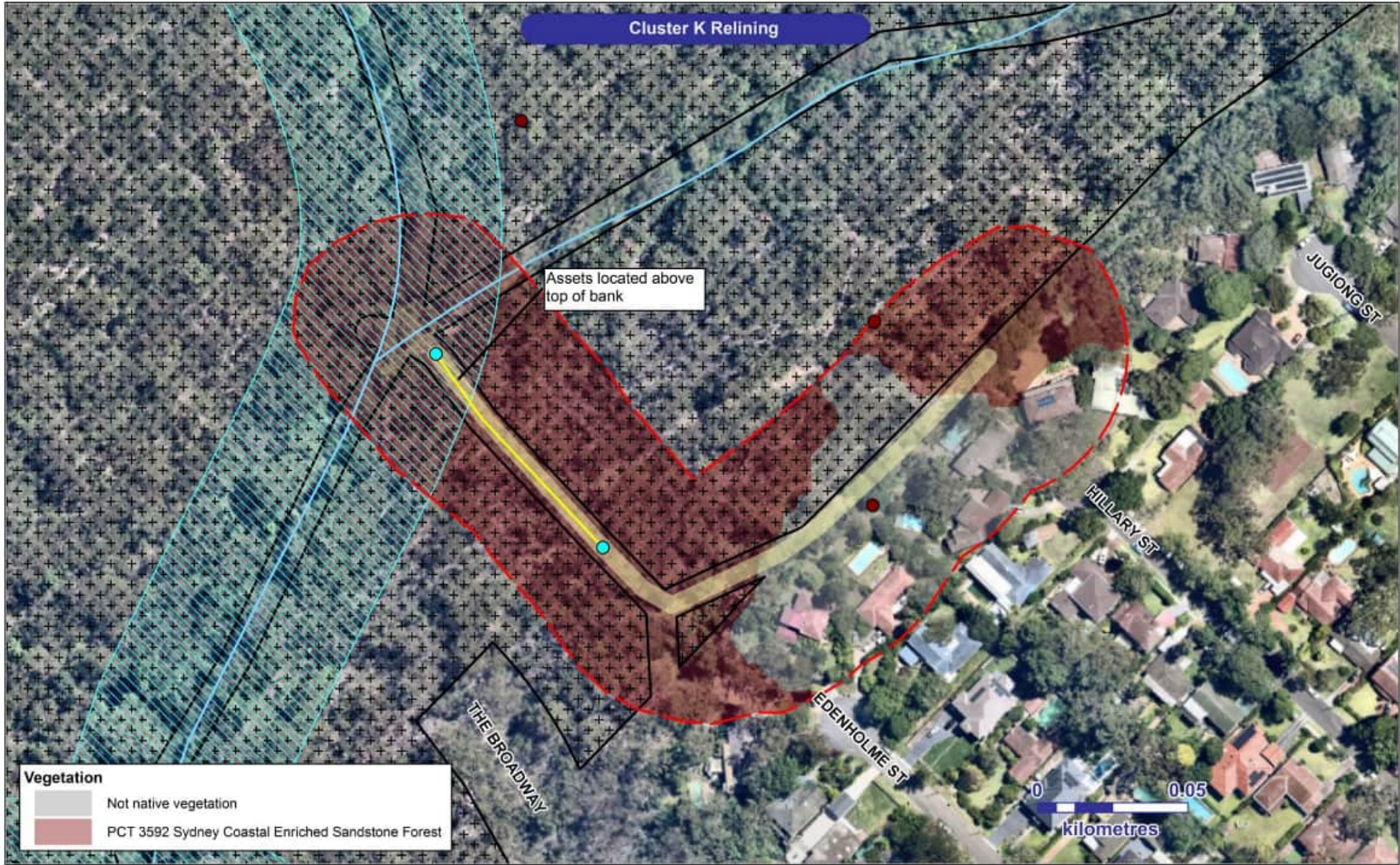
- Sewermain relining
- Maintenance hole
- Study area
- AHIMS 50m Buffer
- National Park
- Watercourse
- Threatened Flora
- Threatened Fauna
- Local Heritage
- Item - General
- New pedestrian track - 1.2m wide
- Existing fire trail/track



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Vegetation

- Not native vegetation
- PCT 3592 Sydney Coastal Enriched Sandstone Forest

- Sewermain relining
- Maintenance hole
- Study area
- New pedestrian track - 1.2m wide
- Watercourse
- Key Fish Habitat
- BCT Agreement
- Threatened Fauna

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