



Review of Environmental Factors

Multi-program - Category B

Lane Cove Source Control Stage 2 – Maintenance Hole and Emergency Relief Structure repair outside Lane Cove National Park.

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) is to be read in conjunction with the Review of Environmental Factors Multi-program pipeline and related infrastructure replacement, repair and upgrades (Multi-program REF) (September 2022). Together both documents assess the potential environmental impacts of Lane Cove Source Control Stage 2 - Maintenance Hole (MH) and Emergency Relief Structure (ERS) repair outside of Lane Cove National Park. These documents were prepared under Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act), with Sydney Water as 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 of the proposal are typical construction impacts such as temporary dust and odour emissions, minor vegetation removal and trimming and 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 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. I certify the information it contains is neither false nor misleading.

Prepared by:	Reviewed by:	Endorsed by:	Approved by:
  REF author Sydney Water Date: 23/03/2023	  Senior Environmental Scientist Sydney Water Date: 28/03/2023	  Project Manager Sydney Water Date: 28/03/2023	  Environment & Heritage Manager Sydney Water Date: 4/04/2023

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:

- Ryde City Council
- Hornsby Shire Council
- Ku-ring-gai Council
- Willoughby City Council
- Parramatta 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-program 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 targeting stormwater infiltration into sewer mains through maintenance holes (MH) by the replacement of lid, frame and covers and the installations of rain-stoppers. There will also be a focus on installation of in-line check valves in ERSs. Wastewater assets included in the scope of works have been grouped into six 'clusters' A, B, C, D, E and F (groups of nearby individual assets).

Note that this proposal involves only assets located outside of Lane Cove National Park. A separate REF will assess those assets located within Lane Cove National Park.

Access and Tracks

Most of the wastewater assets are in bushland within the vicinity of Lane Cove National Park. Access to the assets would be provided by adjacent streets, existing fire trails and existing walking tracks. Where no existing access to the asset is available, construction personnel would walk hand-held materials and equipment to the sites trampling vegetation, but minimising disturbance where possible. Minor trimming or tying back of vegetation may also be required, however would be minor. No new tracks would be cleared to access assets in this proposal. Where necessary some clearing would be required immediately around MH and ERS to facilitate safe access. The following access arrangement would be employed:

- 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 most areas where access is required and would be utilised for light vehicular access where practicable. No vegetation impacts would be required on these existing tracks as they are wide enough for construction personnel to traverse
- new small pedestrian tracks would be required along the alignment of some MHs and ERSs where no tracks are present. the width of these pedestrian tracks would be about 1.2 metres and predominately formed through trampling rather than removal. Any areas requiring vegetation removal or trimming will be marked out and limited to that required for safe access only
- 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 material and equipment required would be contained on or within vehicles, minimising required space for storage
- minor site setups would be required around MHs and ERS which include fencing, signage, scaffolding, installing environmental controls where required.

Rehabilitation strategies for wastewater assets

Maintenance Holes (MH)

- Install rain-stopper: proper descaling of lid and frames and installation of rain-stopper only
- Replace lid/frame: complete replacement of the MH lid and frame. The frame refers to the edge of the MH structure where the lid is seated. Where the lid and frame are replaced, a rain-stopper will also be installed. The lid and frame may be provided with or without a



concrete surround and may require additional grouting of the frame. Grouting and sealing the new frame onto the existing structure is required both externally and internally.

- Grouting frame: rebuilding of the frame using grouting material if broken or filling in cracks in the frame. This can be both externally and internally between the frames and manhole riser/structure
- Seal structure: internal grouting/sealing of any cracks or source of infiltration inside the manhole structure.

Emergency Relief Structures (ERS)

- Minor excavation would be required around each ERS (up to 1.2 m x 1.2 m x 1.2 m)
- Install Inline Check Valve (ICV): installation of the ICV into the existing gas check chamber (GCC) or manhole without any major structural modifications
- Decommissioning: hand installation of a concrete plug inside the manhole outlet of the ERS and/or replacing the flap valve with metal square plate and sealing of the edges
- Remove existing flap valve: all sites, where applicable, would have the existing flap valve removed. This would be mostly completed by hand, with some assets requiring the use of robotics to remove the flap valve.

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 1-3 months and commence early/mid 2023. Works at each asset would be completed in 1-2 days.

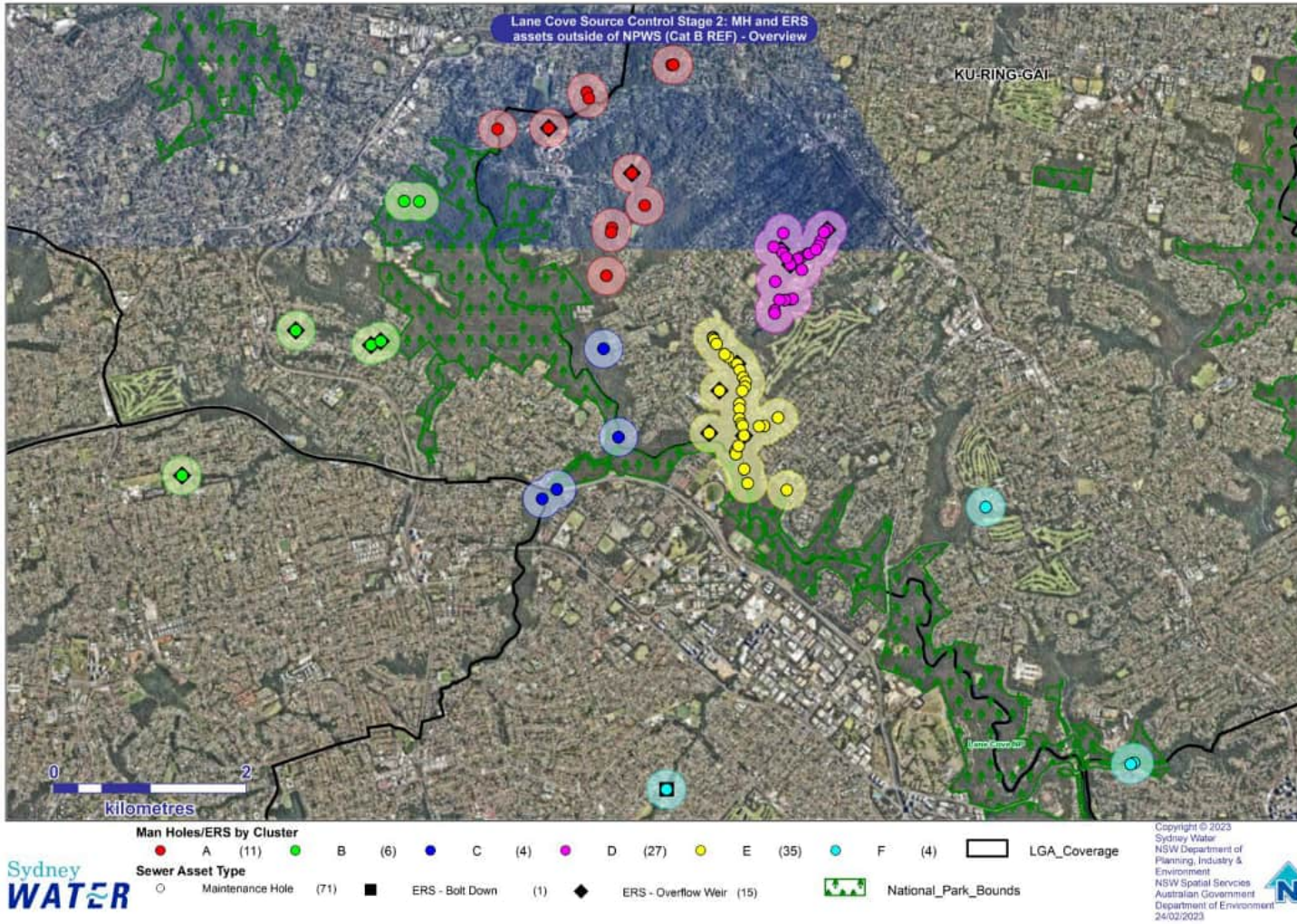


Figure 1 Location of the proposal



3 Legislative consideration

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

4 Consultation

Sydney Water's approach to consultation is described in the Multi-program REF (September, 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.

There are 33 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, Kuring-gai, Ryde, Willoughby and Parramatta. 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 Coups Creek, Peppermint Creek, Lane Cove River, Byles Creek, Scout Creek, Camp Creek, Devlins Creek, Terry Creek, Links Creek, Falls Creek, Sugarbag Creek and Shrimptons Creek. There are also 33 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.

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.

The ecological assessment assessed sites that had been determined to have a higher potential for vegetation and fauna impacts. These included sites which required clearing of vegetation around an asset, vegetation removal for access tracks, and vegetation trimming. The assessment considered sites located outside and within Lane Cove National Park. Those within of the National Park are not part of the scope of this proposal and are considered in a separate REF. As this proposal is focused on sites outside the National Park, only those finding relevant to this proposal are summarised and incorporated herein.

Across the six cluster groups, 13 native plant community types (PCTs) are mapped. Most of the native vegetation in the cluster study areas are not mapped as threatened under the BC Act or the EPBC Act. However, eight PCTs were identified that are associated with threatened ecological communities (TECs):

Table 1 TEC associated PCTs within the cluster study areas.

PCT ID and Name	Listing	Status
PCT 3136 – <i>Blue Gum High Forest</i>	BC Act; EPBC Act	Critically Endangered (CE); CE
PCT 3176 – <i>Sydney Enriched Sandstone Moist Forest</i>	BC Act*	CE
PCT 3259 – <i>Sydney Coastal Shale-Sandstone Forest</i>	BC Act	Endangered (E)
PCT 3262 – <i>Sydney Turpentine Ironbark Forest</i>	BC Act; EPBC Act	CE
PCT 3593 – <i>Sydney Coastal Sandstone Bloodwood Shrub Forest</i>	BC Act	E
PCT 4057 – <i>Sydney Creek flat Swamp Mahogany-Paperbark Forest</i>	BC Act	E
PCT 4058 – <i>Sydney Hinterland Red Gum Riverflat Forest</i>	BC Act; EPBC Act	E; CE

*Although PCT 3176 and 3136 are associated with the NSW TEC 'Hydrocybeae Community of Lane Cove Bushland Park in the Sydney Basin Bioregion' listed as critically endangered, it does not meet the listing criteria, that being; within the Lane Cove LGA, in the Gore Creek catchment. As such, this TEC is not present in the study area.

Threatened Ecological Communities

There are likely eight TECs within the study area. The TECs are as follows:

- 'Duffys Forest Ecological Community in the Sydney Basin Bioregion' listed as endangered under the BC Act (associated with PCT 3259 and 3593)
- 'Sydney Turpentine-Ironbark Forest in the Sydney Basin Bioregion' listed as critically endangered under the BC Act (assumed, associated with PCT 3262)
- 'Turpentine-Ironbark Forest of the Sydney Basin Bioregion' listed as critically endangered under the EPBC Act (assumed, associated with PCT 3262)
- 'Blue Gum High Forest in the Sydney Basin Bioregion 'critically endangered' under the BC Act (associated with PCT 3136)
- 'Blue Gum High Forest in the Sydney Basin Bioregion' critically endangered under the EPBC Act (associated with PCT 3136)
- River-Flat Eucalypt Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions under the BC Act (associated with PCT 4058)
- River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria under the EPBC Act (associated with PCT 4058)
- Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions under the BC Act (associated with PCT 4057).

Most of the native vegetation in the study area 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 and the woodland areas are considered suitable foraging and breeding habitat for many owls (including the Powerful Owl) and parrots.

Most 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.

Whilst the assets are in native vegetation communities they are situated amongst highly weedy understories. Most areas have a native canopy with ground- and mid-story vegetation dominated by common weed species including Bridal Creeper, Large-leaved Privet, Small-leaved Privet and Lantana. This is typical of the creekline location of the assets.

Several threatened species have been previously recorded in the locality or in proximity to the assets. Notably, the Powerful Owl has been frequently recorded and has known breeding locations in nearby areas. The closest Grey-headed Flying Fox camp is located at Gordon about 5 kilometres east of the study area, and therefore the vegetation would likely provide opportunistic foraging habitat.

Suitable breeding and foraging habitat is present for various threatened species within the study area, including various microbat species, the Red-crowned Toadlet and the Giant Burrowing Frog.

Lane Cove River is mapped as having a 'fair' freshwater fish community status.

Coastal Wetlands

Coastal wetlands (CW) and coastal wetland proximity area mapped under the Resilience and Hazards SEPP (2021) and are located about 200 metres west of work sites located in cluster F.

Aboriginal Heritage

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Non-Aboriginal Heritage

Some assets are located close to or within the curtilage of locally listed non-Aboriginal heritage items. Cluster C and E are within 200 metres of a State listed heritage item. The location of these heritage items is displayed in Appendix C and a summary of these heritage listings within each cluster are provided below:

Cluster	Heritage ID and Name	Listing
A	(604) Roadside trees and bushland	Hornsby LEP 2013, Local Heritage Landscape
B	C2 Beecroft, Cheltenham Heritage Conservation Area	Hornsby LEP 2013, Heritage Conservation Area
B	(1646) Baden Powell Scout Centre, buildings, gate and grounds	Hornsby LEP 2013
C	(59) Lane Cove National Park	Ryde LEP 2014, Local Heritage
E	(59) Lane Cove National Park	Ryde LEP 2014, Local Heritage
F	(215) Stone Marker (Outside 54 Bridge Road)	Ryde LEP 2014, Local Heritage
F	(22) House	Ryde LEP 2014, Local Heritage

The tables below list the environmental impacts that could result from the proposal and the additional mitigation measures identified. All other environmental impacts and mitigation measures identified in the Multi-program REF (September 2022) remain the same and will be incorporated into the Contractor’s Construction Environmental Management Plan (CEMP).

Environmental impacts table		
Aspect	Additional impacts	Additional mitigation measures
Topography, geology and soils	Potential impacts to topography, geology and soils are expected to be minor, as works are relatively small scale and localised.	No additional measures required. Apply safeguards in the overarching multi program REF to manage potential impacts.

Water and drainage

Potential impacts to waterways from the proposal include erosion and sedimentation resulting from minor ground disturbance. Excavation is not required for any asset. Minor ground disturbance close to waterways may occur to expose assets where needed. This may cause temporary minor erosion and sedimentation impacts.

Key Fish Habitat (KFH) is mapped for various assets. With the observation of standard management measures, the works would have temporary and negligible impacts on adjacent waterways.

Potential impacts to KFH for the Lane Cove River (Appendix C) are not 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).

A groundwater assessment was prepared by Confluence Water in October 2022. It is anticipated that, up to 0.61 megalitres would need to be dewatered. However, dewatering induced impacts to groundwater are not anticipated as:

- groundwater interception depths are shallow
- excavation areas are small
- the construction dewatering period is short.

Sydney Water will obtain a groundwater Water Supply Work Approval prior to any dewatering taking place. A Water Access Licence is not anticipated to be required, as dewatering is not likely to exceed 3 megalitres. Dewatering would be managed with appropriate safeguards.

During operation, the proposal would improve the aquatic environment and have

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

- 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
- Sydney Water will obtain a groundwater Water Supply Works Approval. The Delivery Contractor is responsible for:
 - providing expert hydrogeological technical information to obtain the approvals preparing a Dewatering Management Plan
 - complying with the approval conditions (such as protecting water quality; minimising aquifer extraction volumes, monitoring extraction with flow meters and recording volumes).

a positive impact by reducing the likelihood of wastewater overflows from the network into waterways.

Flora and fauna

Vegetation impacts

An ecological assessment (18 January 2023) was undertaken and is included in the Appendix (18 January 2023). Following a combination of desktop and site investigations, the assessment focused on sites within the broader project scope that would likely be subject to fauna and flora impacts. A summary of vegetation impacts outside of Lane Cove National Park is provided in Table 2 and Table 3 in Appendix D, and below.

Potential impacts to vegetation would result from vegetation disturbance required for safe access to MH and ERS assets, including minor trimming along existing access tracks and, where no existing tracks are present, trampling of ground storey vegetation through bushland.

Overall, vegetation impacts are minor with only small areas of vegetation to be cleared. A maximum of 88 m² of vegetation would be cleared from around the MH and ERS assets including:

- 40 m² of CEECs
- 48 m² of non-threatened native vegetation.

Clearing in these areas would be limited to ground and mid-storey vegetation. No impacts to native canopy vegetation would occur. Up to 675 m² of vegetation would be trampled and some minor trimming required where there are no existing access tracks. Much of the areas to be trampled already have relatively open understory dominated by leaf litter therefore this is considered worst case scenario. This trample / trimming impact is also minor and generally comprises pedestrian access ('bush-bashing') with handheld equipment and materials through areas of vegetation.

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](#)
- 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](#)
- 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 un-harassed. If any nests or dreys are present, stop work and contact a suitably qualified ecologist for advice
- work area and surrounds should be checked for roosting owls before work commences. If an owl is observed, contact a suitably qualified ecologist for advice and the usual precautions should be followed, as per the *Powerful Owl*

The impacts to each PCT resulting from the proposal (clearing and trampling) would include:

- PCT 3038 – 6 m²
- PCT 3136 (CEEC) – 443 m²
- PCT 3176 – 189 m²
- PCT 3592 – 21 m²
- PCT 3595 – 99 m²
- PCT 3621 – 5 m².

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.

Threatened species and habitat

Numerous threatened species have been previously recorded in the locality or in proximity to the assets.

Potential impacts to threatened species and their habitat, including loss of foraging resources result from the removal of vegetation, and temporary intermittent noise associated with the use of hand tools and people movement during construction. Due to the minor nature of vegetation disturbance, the works being restricted to areas immediately surrounding existing assets and the temporary, small-scale nature of the work, potential impacts to threatened species and their habitats are considered minor.

Specifically relating to the Powerful Owl, the temporary and minor nature of the works is not expected to disturb the species during the breeding period (April to September).

Vegetation Management Guidelines – Greater Sydney

- avoid the use of loud machinery one hour prior to dawn and one hour before dusk within a 100 metre range of Powerful Owl breeding locations as described and shown in Appendix D
- during site inductions, make all staff aware of:
 - the locations and extents of the three critically endangered ecological community: *Blue Gum High Forest*,
 - the potential presence of threatened species within the study areas mapped in Appendix C and D
- no vegetation clearing or trimming is permitted where threatened flora species occur in proximity to the work sites (Appendix C). If trimming is required for access at these locations engage a suitably qualified ecologist to ensure no threatened flora species are impacted
- 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 weeds 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)
- 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.

Due to the minor and discrete nature of the works, no fragmentation of vegetation or species habitat would occur.

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, and as such does not trigger statutory offset requirements.

Heritage

Due to the non intrusive nature of works, it is not expected that any non-Aboriginal heritage item would be impacted by the proposed works. These items are all listed under *Hornsby Local Environmental Plan 2013* and the potential impacts to each item are discussed below. The following non-Aboriginal heritage items are within close proximity to Cluster B:

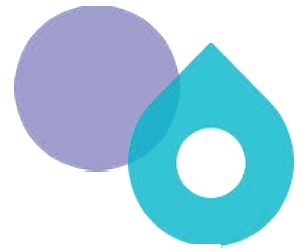
Beecroft, Cheltenham Heritage

Conservation Area (C2): The proposal will not impact any buildings or streetscape, and as such would not impact the significance of this conservation area.

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

Roadside trees and bushland (604)- this item – the significance of this item is to

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



conserve indigenous trees displaying strong local Australian identify to the streetscape.

Potential non-Aboriginal heritage impacts would be managed through the implementation of safeguards in the Multi-program REF.

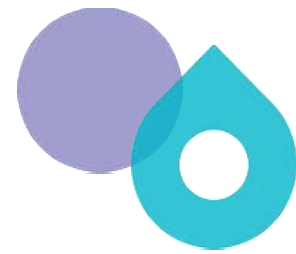
Aboriginal heritage

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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.

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

Equipment and materials would be carried on foot and using a trolley along the asset alignment.

Works within Cluster D and E would occur within the easement and close to the boundary of BSA site BA00132 (Sheldon Forest, Rofe Park and Comenarra Creek Reserve Biobanking Agreement). Works would follow existing tracks as shown in Appendix C. No work would be undertaken within the BSA site.

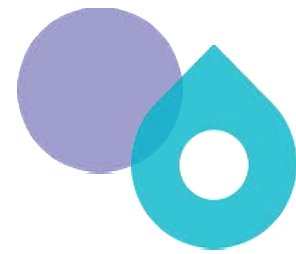
Numerous assets are in the vicinity of waterways. Crossing waterways to access assets should be avoided where practicable and no works would occur within a waterway. If a waterway crossing is necessary, this should occur at an existing crossing such as a bridge or natural crossing (such as a constrained channel or 'stepping stones') where it is safe to do so and would not affect the waterway.

No new tracks would be cleared to access assets in this proposal. Where access is required along the alignment of some MHs and ERSs, tracks would be formed via trampling rather than removal.

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 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

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>)	<p>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.</p> <p>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.</p>
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.
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.



Section 171 checklist

REF finding



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 the <i>Western Parkland City Authority Act 2018</i> , Schedule 2 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



Figure 2 Cluster A - Ecology

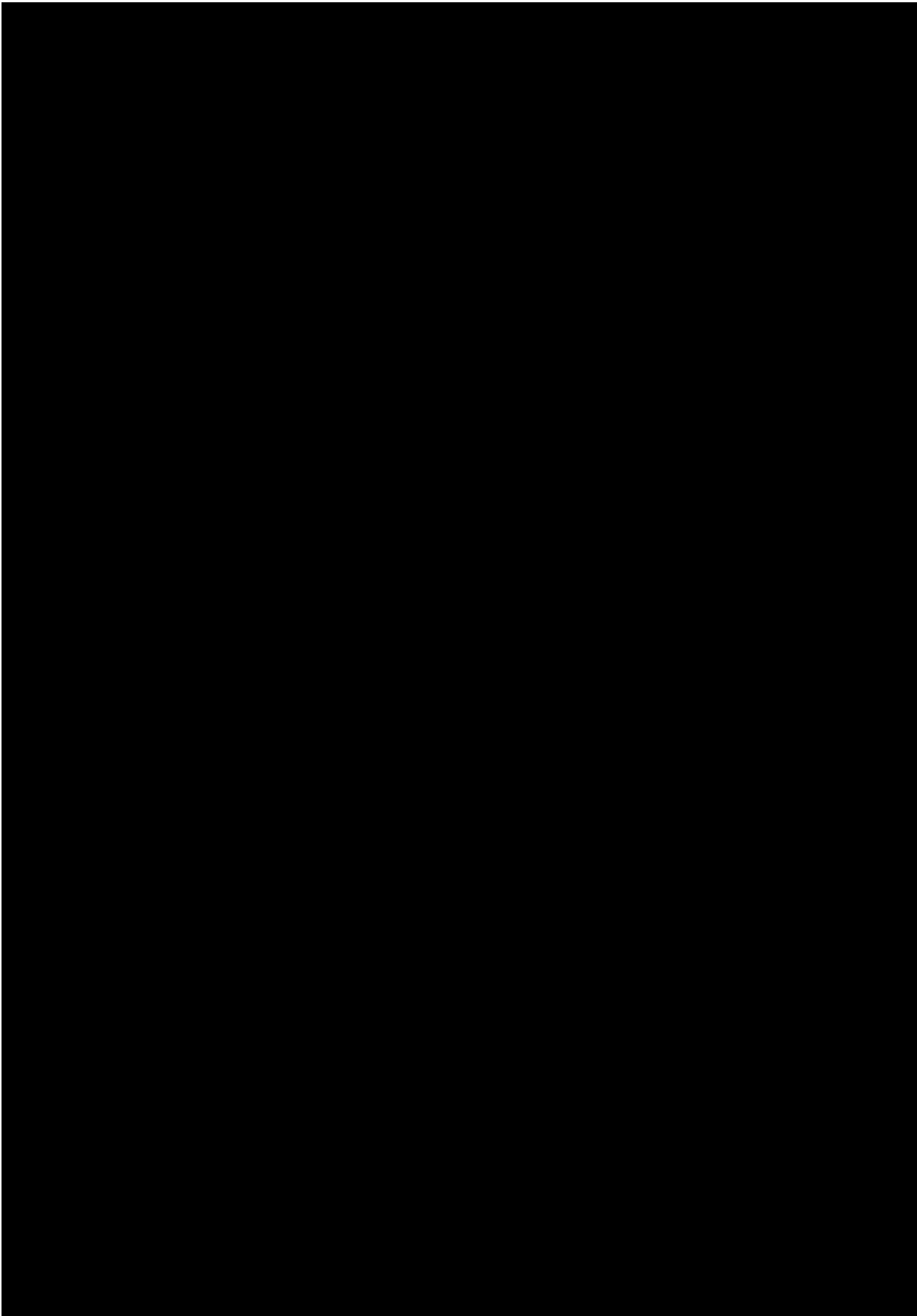
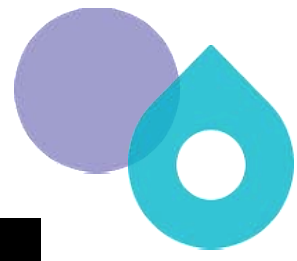
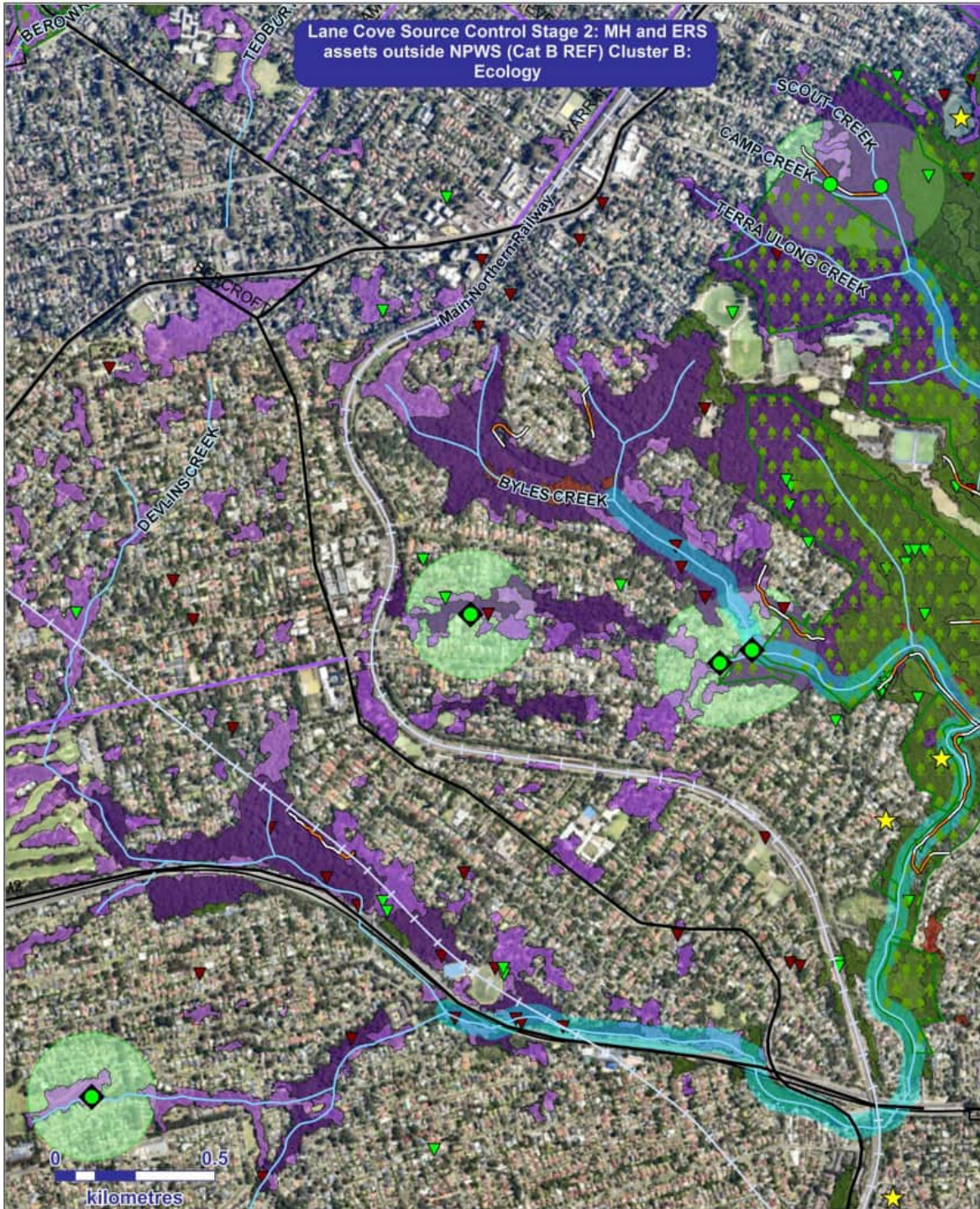


Figure 3 Cluster A - Heritage





<ul style="list-style-type: none"> ◆ Maintenance Hole (6) ◆ ERS - Overflow Weir ClusterB_Buffer Highway Regional Rd Existing Firetrails 	<ul style="list-style-type: none"> Syd. Coast. Coachwood Rainforest Sydney Sandstone Moist Forest (TEC) Blue Gum High Forest (TEC) Northern Sydney Scribbly Gum Woodland Sydney Coastal Sandstone Gully Forest ★ Phytophthora presence — Railway 	<ul style="list-style-type: none"> Waterways Key_Fish_Habitat BCT_Agreements LGA Coverage National Park Bounds ▼ Threatened Flora Species ▼ Threatened Fauna Species 	<p>Note: Works occur in areas mapped as: - Potentially Unstable - Category 1 Bushfire Prone</p> <p>Copyright © 2023 Sydney Water NSW Department of Planning, Industry & Environment NSW Spatial Services Australian Government Department of Environment</p> <p>Date Created: 24/02/2023</p>
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Figure 4 Cluster B - Ecology

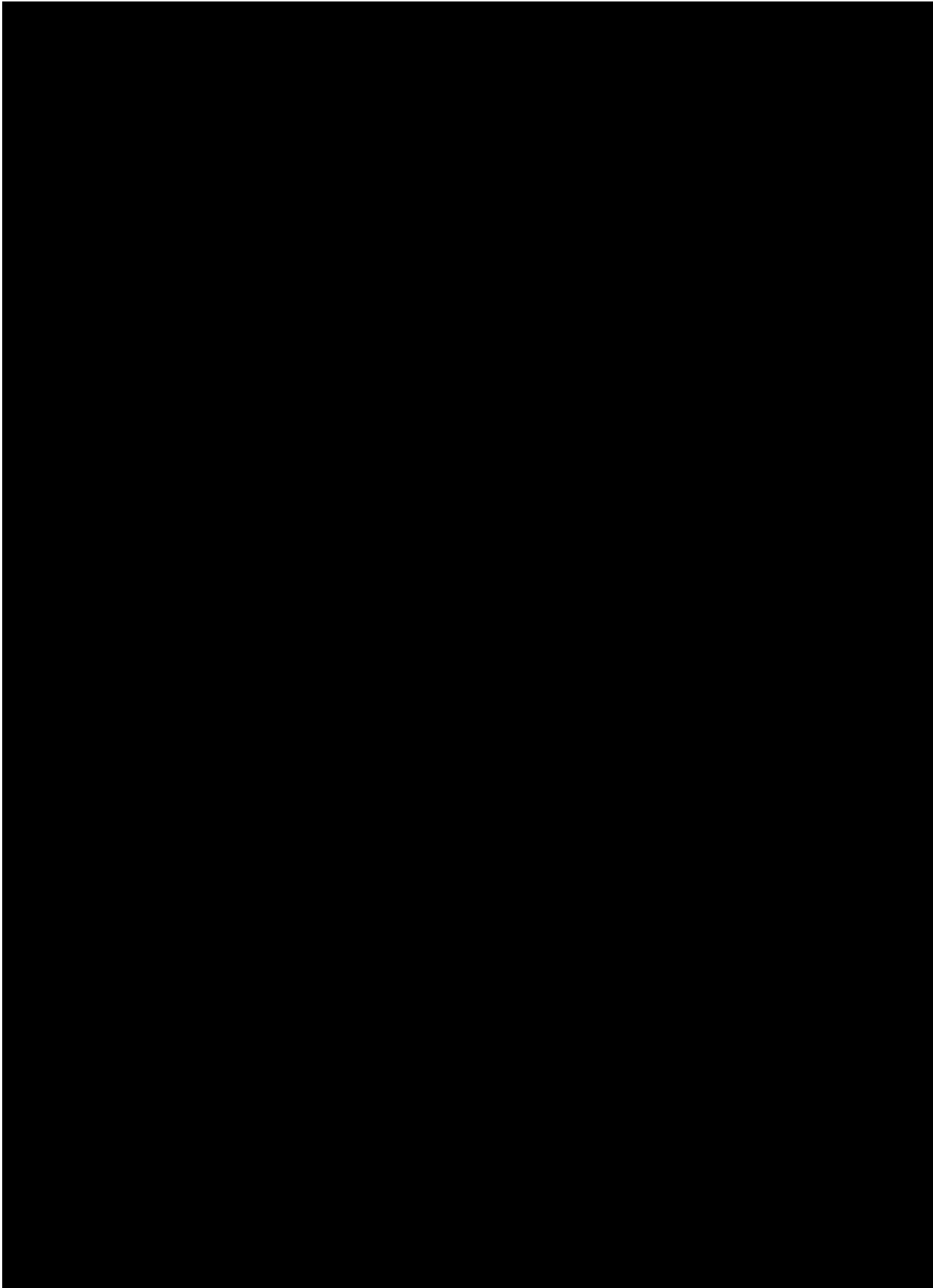


Figure 5 Cluster B - Heritage



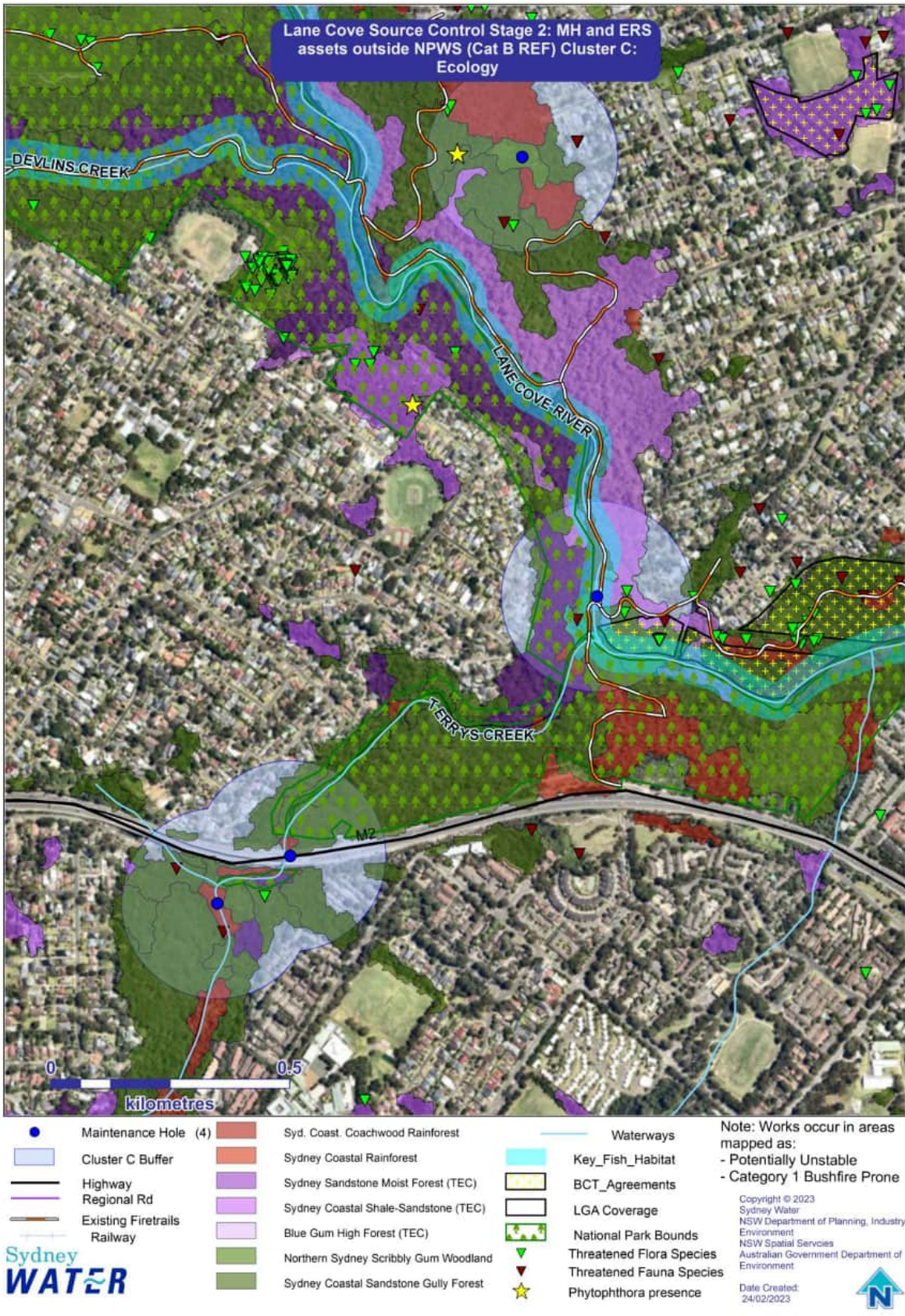


Figure 6 Cluster C - Ecology

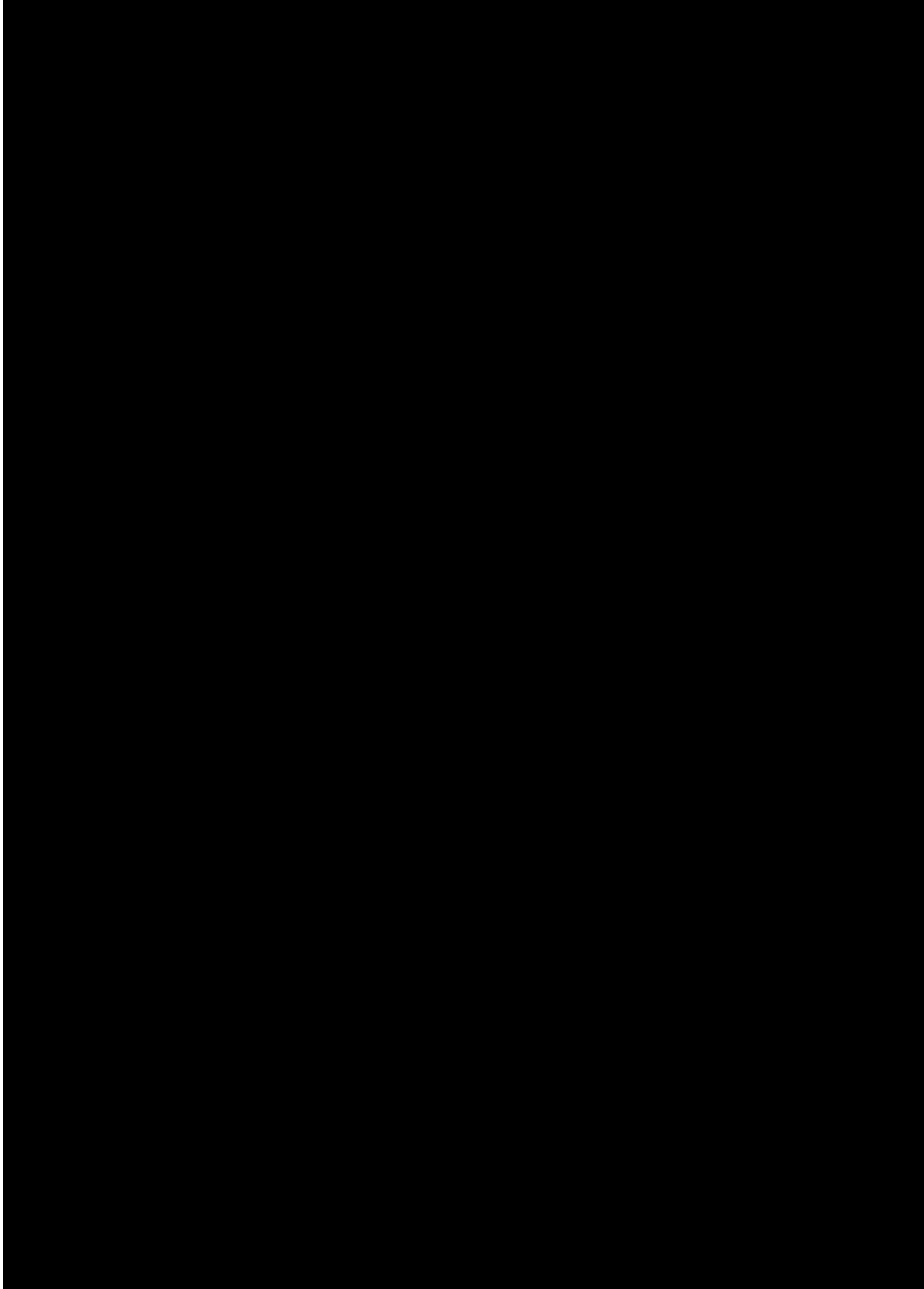
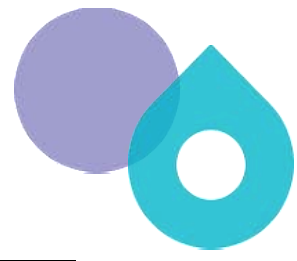


Figure 7 Cluster C - Heritage



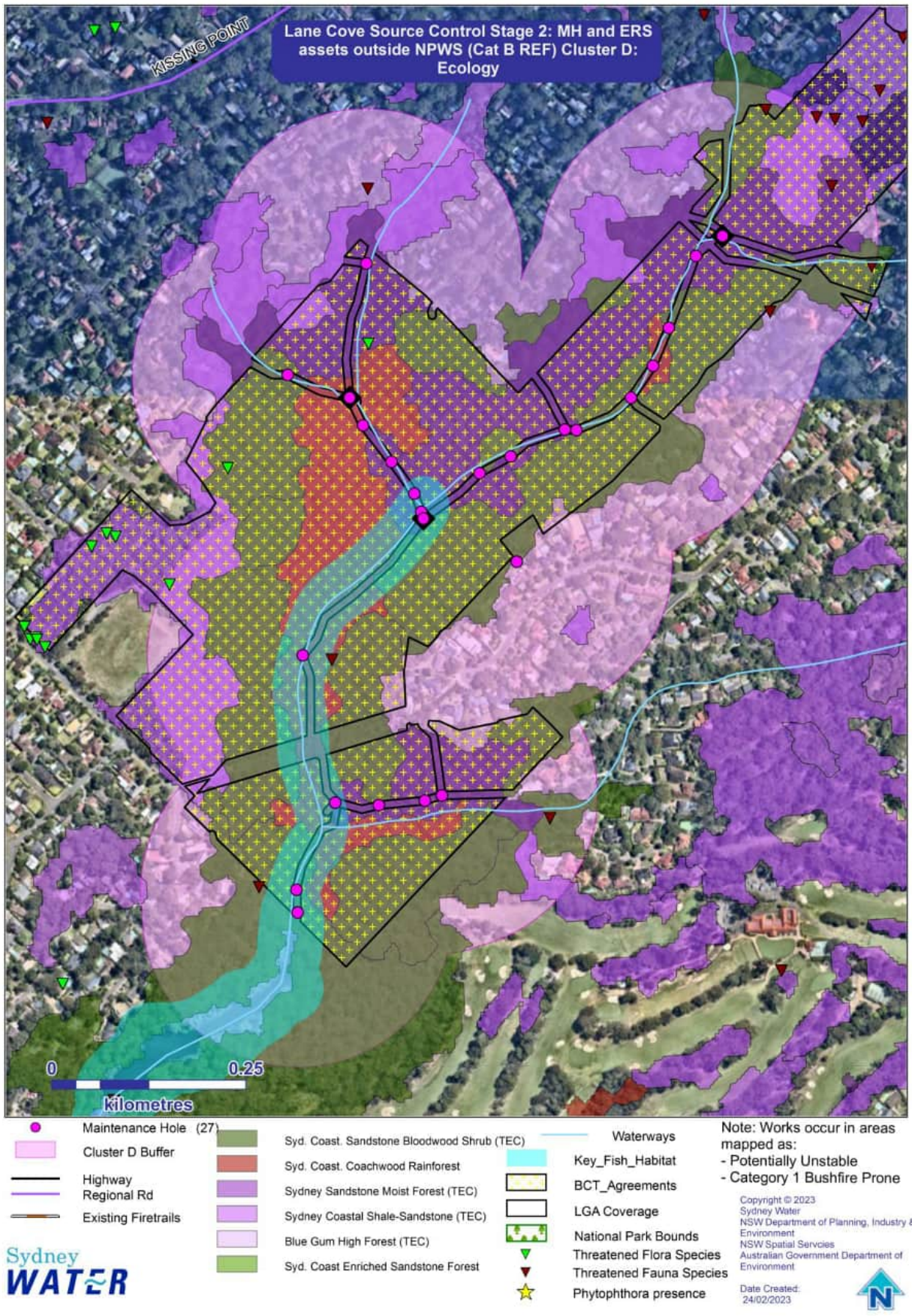


Figure 8 Cluster D - Ecology

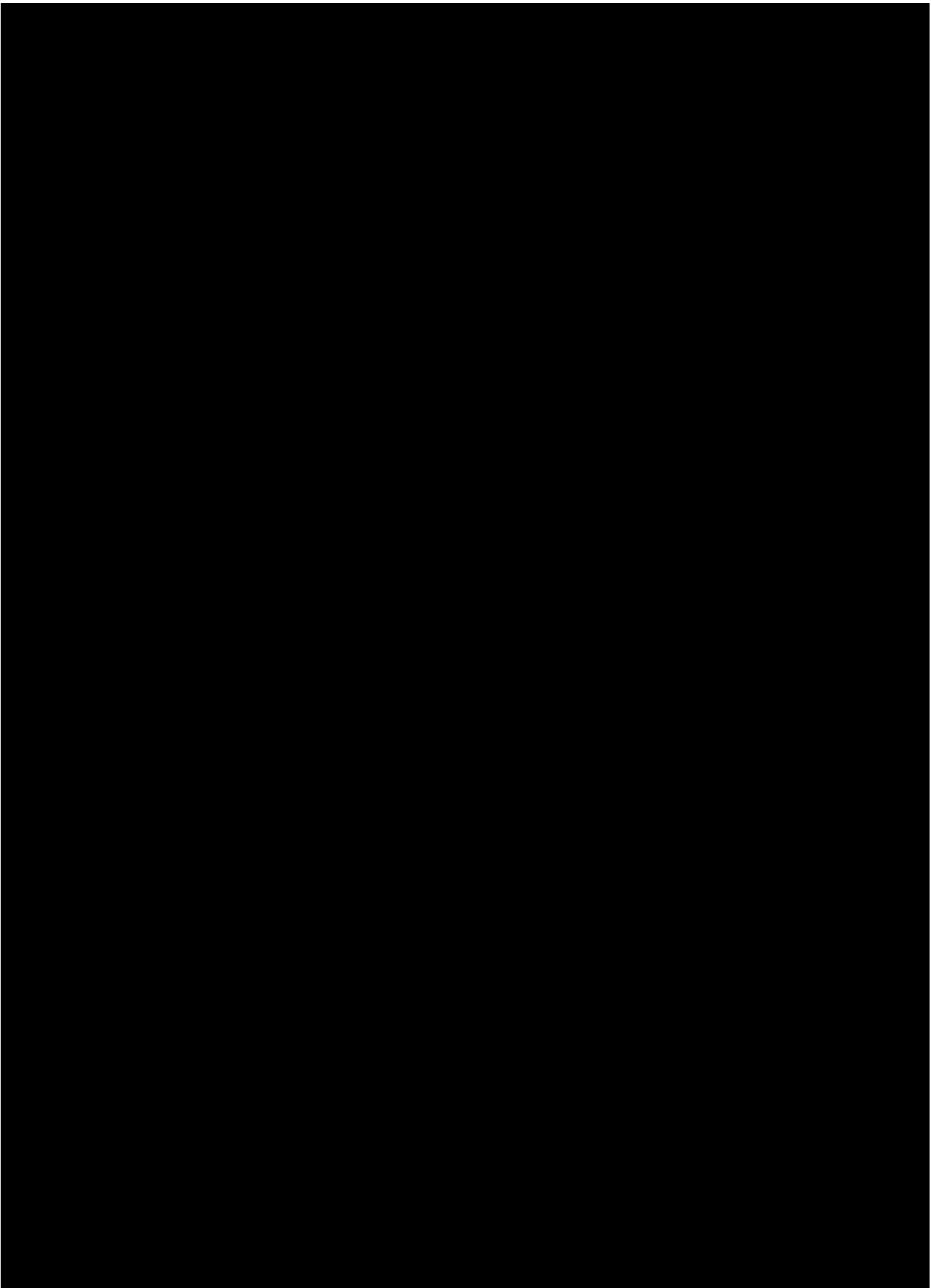


Figure 9 Cluster D - Ecology

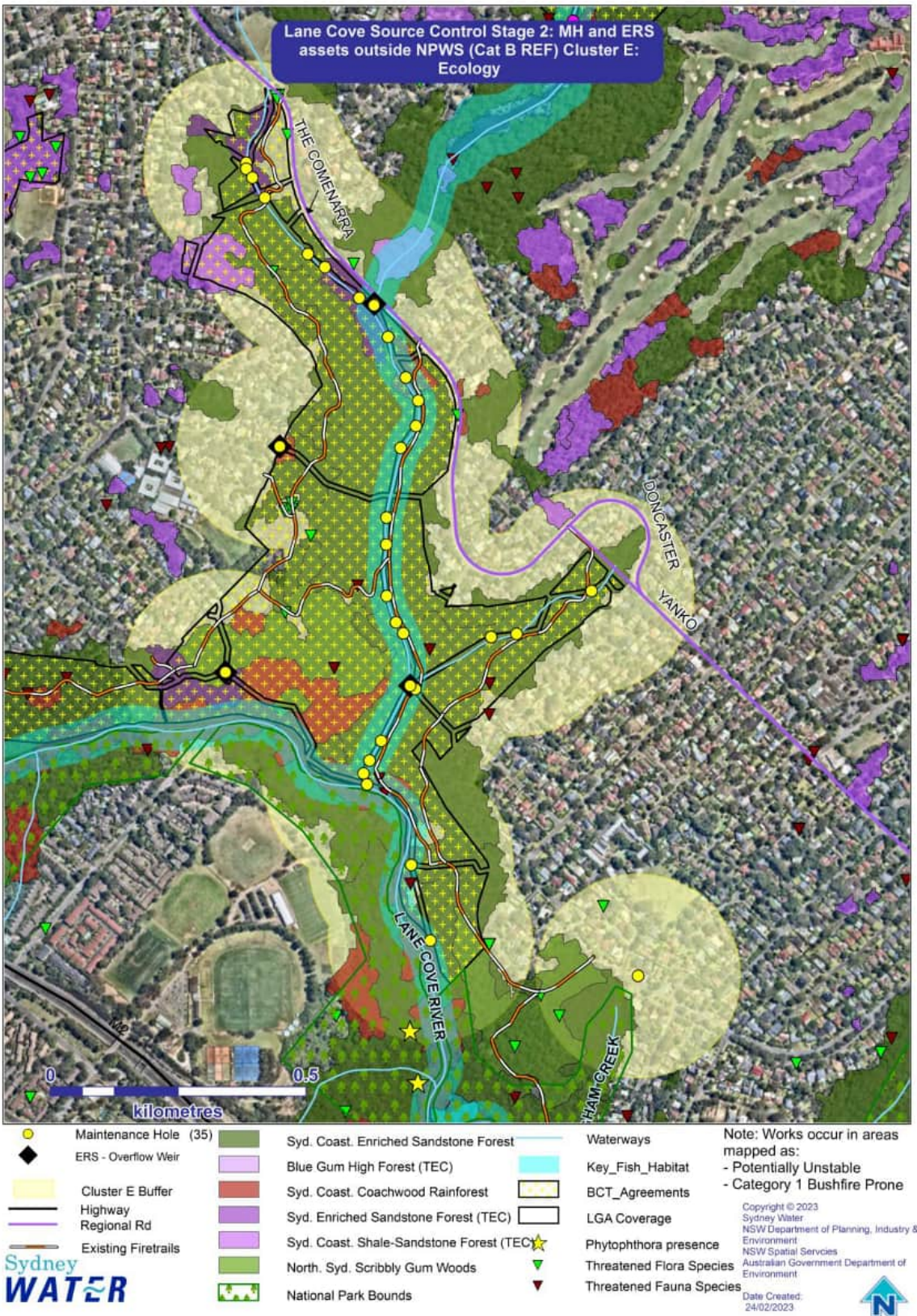


Figure 10 Cluster E - Ecology

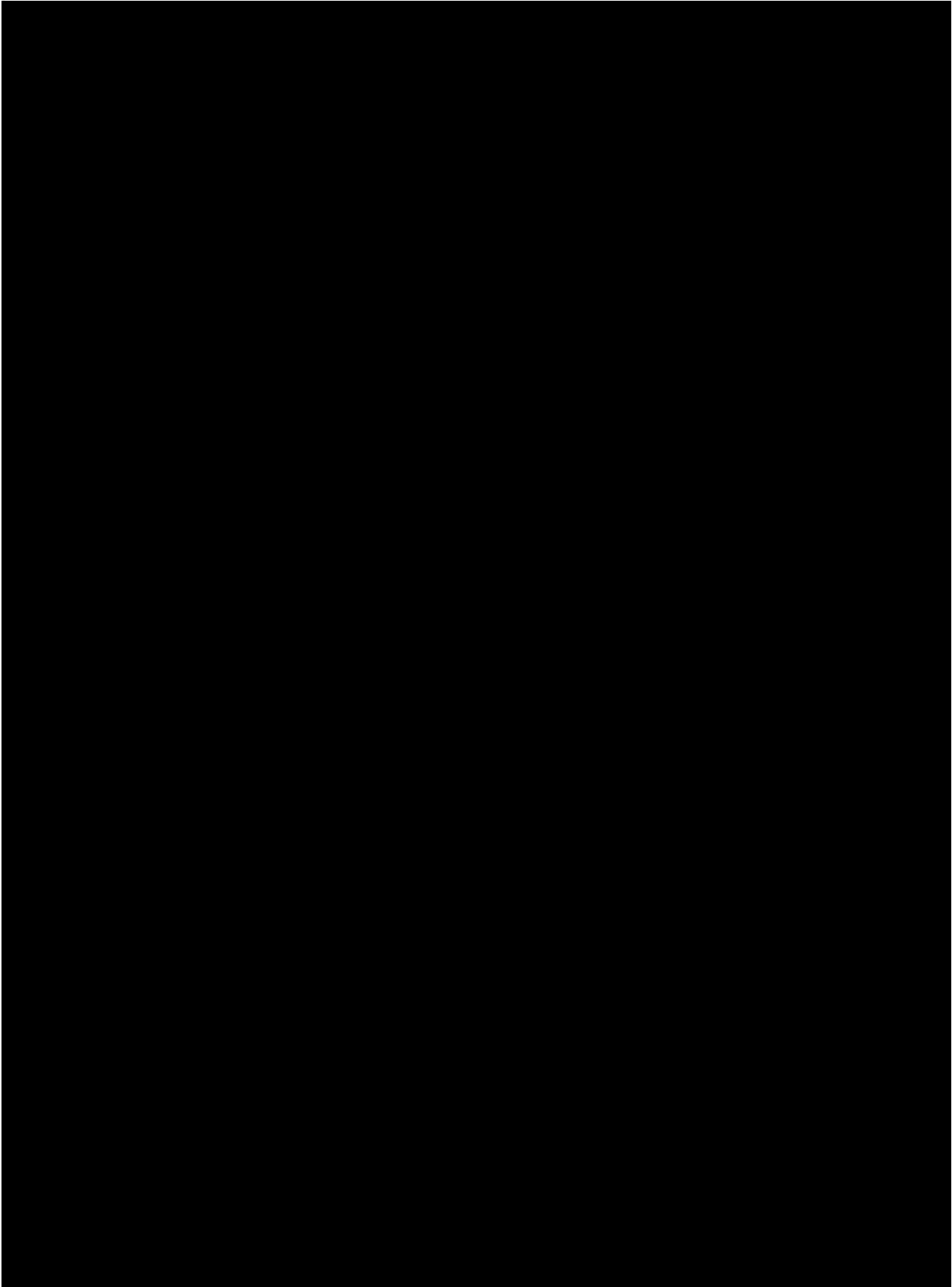


Figure 11 Cluster E - Heritage





Figure 12 Cluster F - Ecology

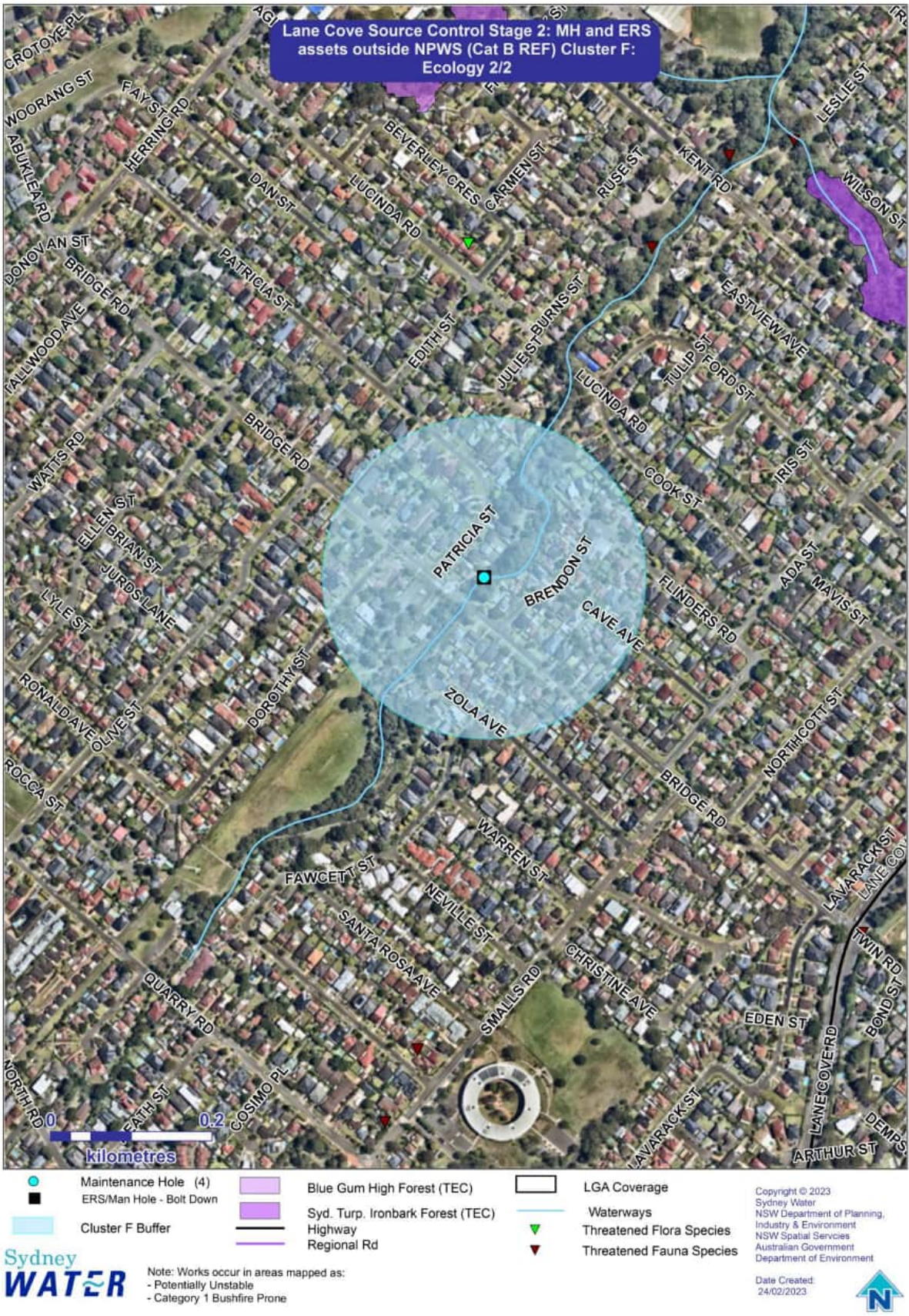


Figure 13 Cluster F - Ecology

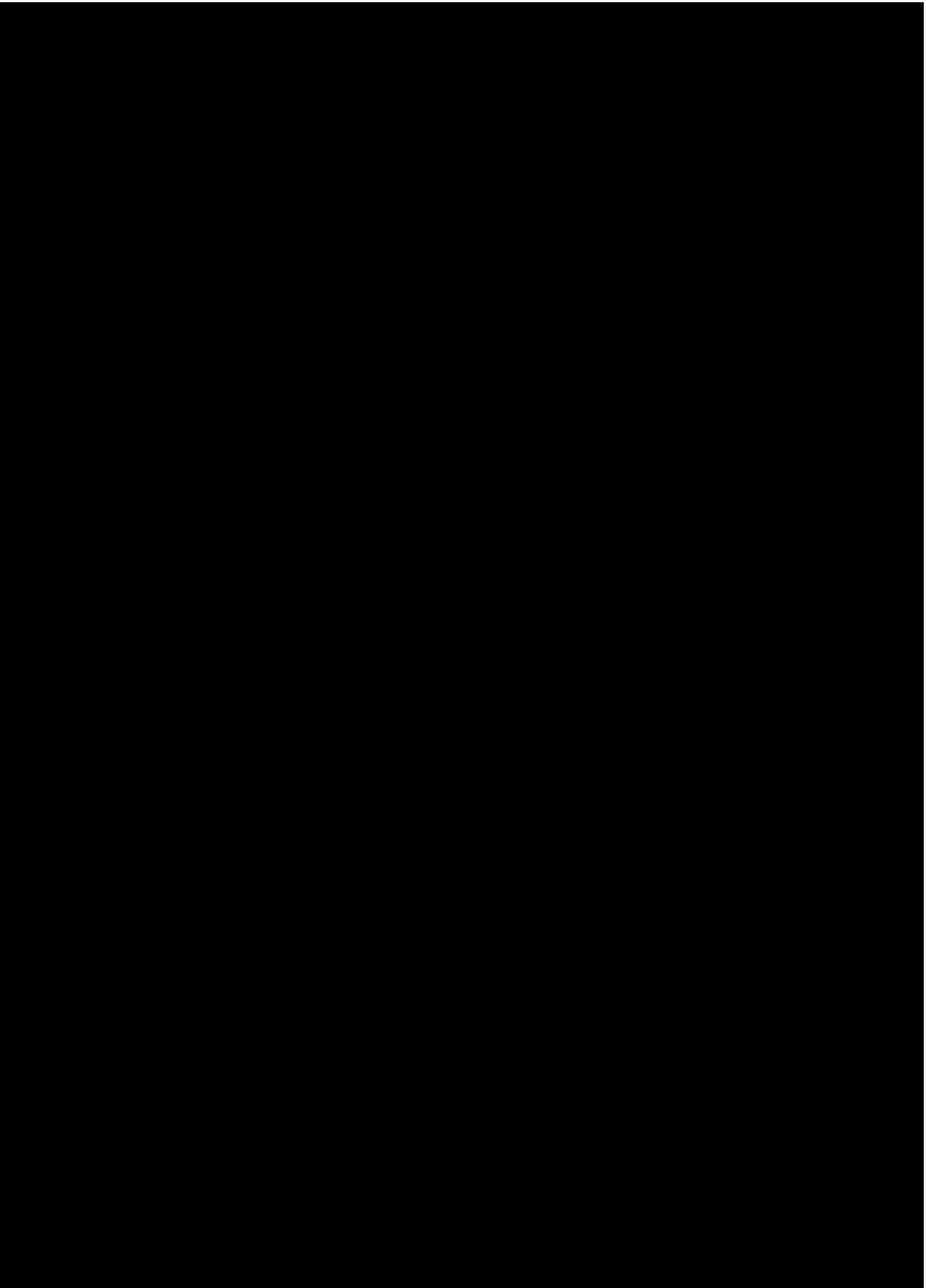
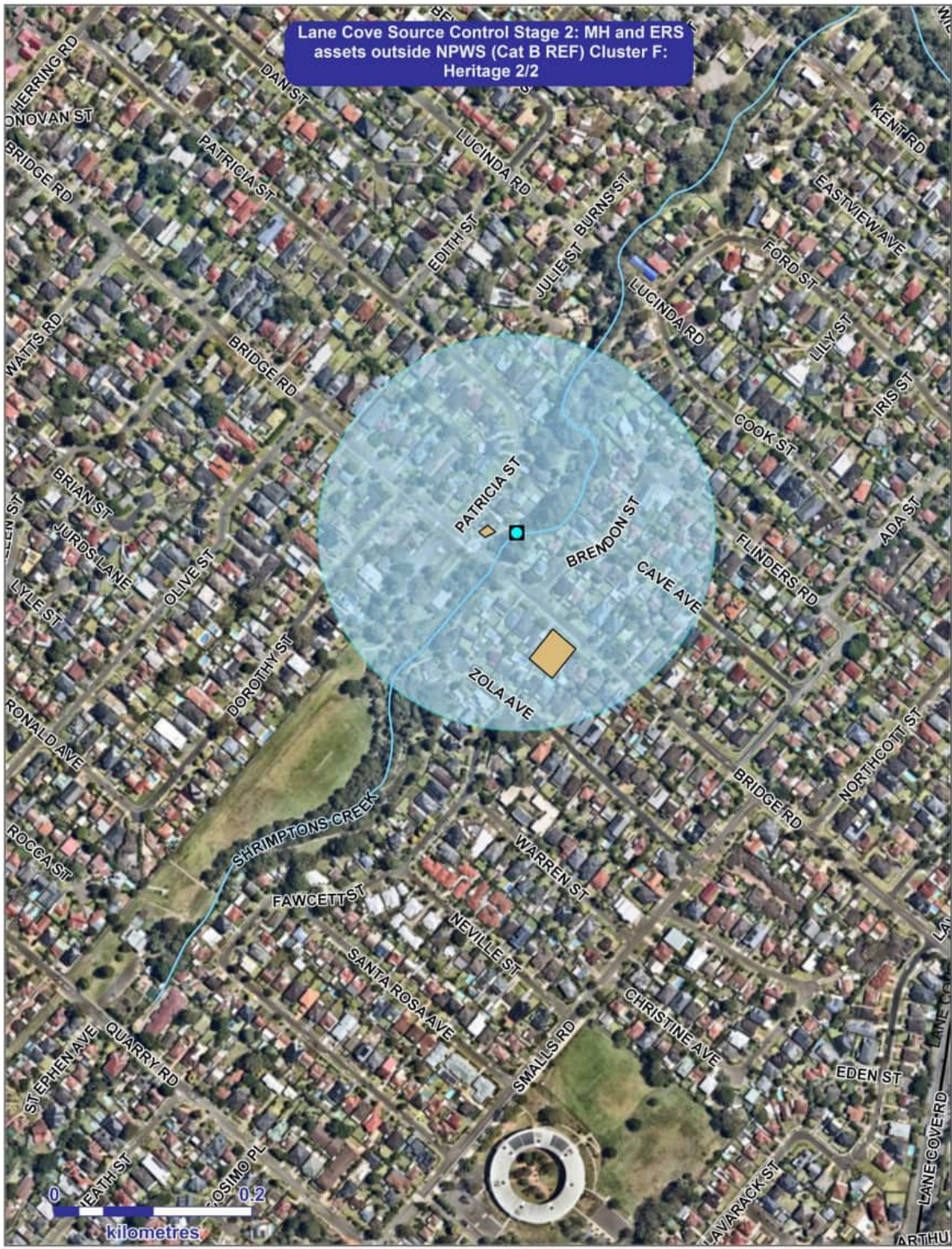


Figure 14 Cluster F - Heritage



Lane Cove Source Control Stage 2: MH and ERS assets outside NPWS (Cat B REF) Cluster F: Heritage 2/2

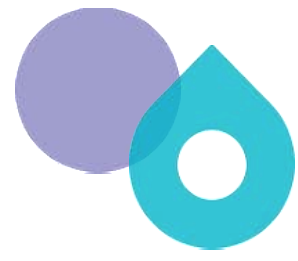
	Heritage - General		Cluster F Buffer		Highway Regional Rd		LGA Coverage
	Maintenance Hole - Bolt Down		Maintenance Hole (4)		Waterways		

Sydney WATER Do not make publicly available or publish this map in any form. AHILA#116, date 24/02/2023

Note: Works occur in areas mapped as:
 - Potentially Unstable
 - Category 1 Bushfire Prone

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 NSW Department of Planning, Industry & Environment
 NSW Spatial Services
 Australian Government Department of Environment
 Date Created: 24/02/2023

Figure 15 Cluster F - Heritage



Appendix D Ecology specialist study

