



Review of Environmental Factors

Multi-program - Category B

SW 86 05/23

Mid Parramatta Source Control Stage 2 Relining

This document provides additional environmental assessment for Category B sites. It should be read in conjunction with the Overarching 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 Mid Parramatta Source Control Stage 2 Relining and 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 of 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. During operation, there are no additional potential impacts. 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 and the information it contains is neither false nor misleading.

Prepared by:	Reviewed by:	Endorsed by:	Approved by:
<p>[Redacted]</p> <p>REF author Sydney Water Date: 9/02/2023</p>	<p>[Redacted]</p> <p>[Redacted]</p> <p>Senior Environmental Scientist Sydney Water Date: 03/03/23</p>	<p>[Redacted]</p> <p>[Redacted]</p> <p>Assistant Project Manager Sydney Water Date: 03/03/2023</p>	<p>[Redacted]</p> <p>[Redacted]</p> <p>Manager, Environment and Heritage Sydney Water Date 03/03/2023</p>

2 Project Summary

Project information

Location

Sixty one sections of wastewater pipe between 150 mm and 1067 mm in diameter, totalling approximately 10 kilometres requires cleaning, CCTV inspection and relining in the local government areas (LGAs) of Parramatta, Ryde, Canada Bay, Cumberland and Strathfield (Figure 1).

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

- wastewater main assets – seventeen ‘Clusters’ A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P and Q (groups of nearby individual assets).

The layout and specific site locations are shown in Figure 1 to Figure 20, and described in detail in the following sections.

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 Stage 2 Source Control relining works as part of the Wet Weather Overflow Abatement (WWOA) program as detailed in the Multi-program REF.

The proposal involves relining existing wastewater main assets. Further detail for the scope of works is described below.

Access and tracks

Many of the assets are in bushland that would require some clearing for access including:

- existing fire trails or other formalised tracks would be utilised where practicable

- minor clearing to create small pedestrian tracks would be required along the alignment of assets where no tracks are present. The maximum width of these pedestrian tracks would be 1.2 metres
- tracks suitable for machinery and vehicles are required at Clusters B, D, F, H, I, K, L, N, P and Q, which would involve clearing a path about 2.5 metre wide
- access routes may also deviate around trees and not necessarily use the most direct route to minimise environmental impact.

Site establishment

- most materials and equipment required would be contained on or within vehicles, minimising required space
- minor site setups would be required at some locations, particularly where scaffolding or other specialist access equipment is required. Minor site setups would include signage and physical barriers to prevent unauthorised access.

Cleaning and CCTV

- CCTV inspection of each asset is required to assess the internal condition of the asset and determining the maintenance requirements
- cleaning 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
- catch containers 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 would be CCTV inspected, cleared of debris and cleaned
- a winding machine would be installed in the maintenance hole (MH) and configured to produce the required pipe diameter
- lining material would be 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 would stop once the lining reaches the MH at the other end of the asset and the lining is secured
- 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.

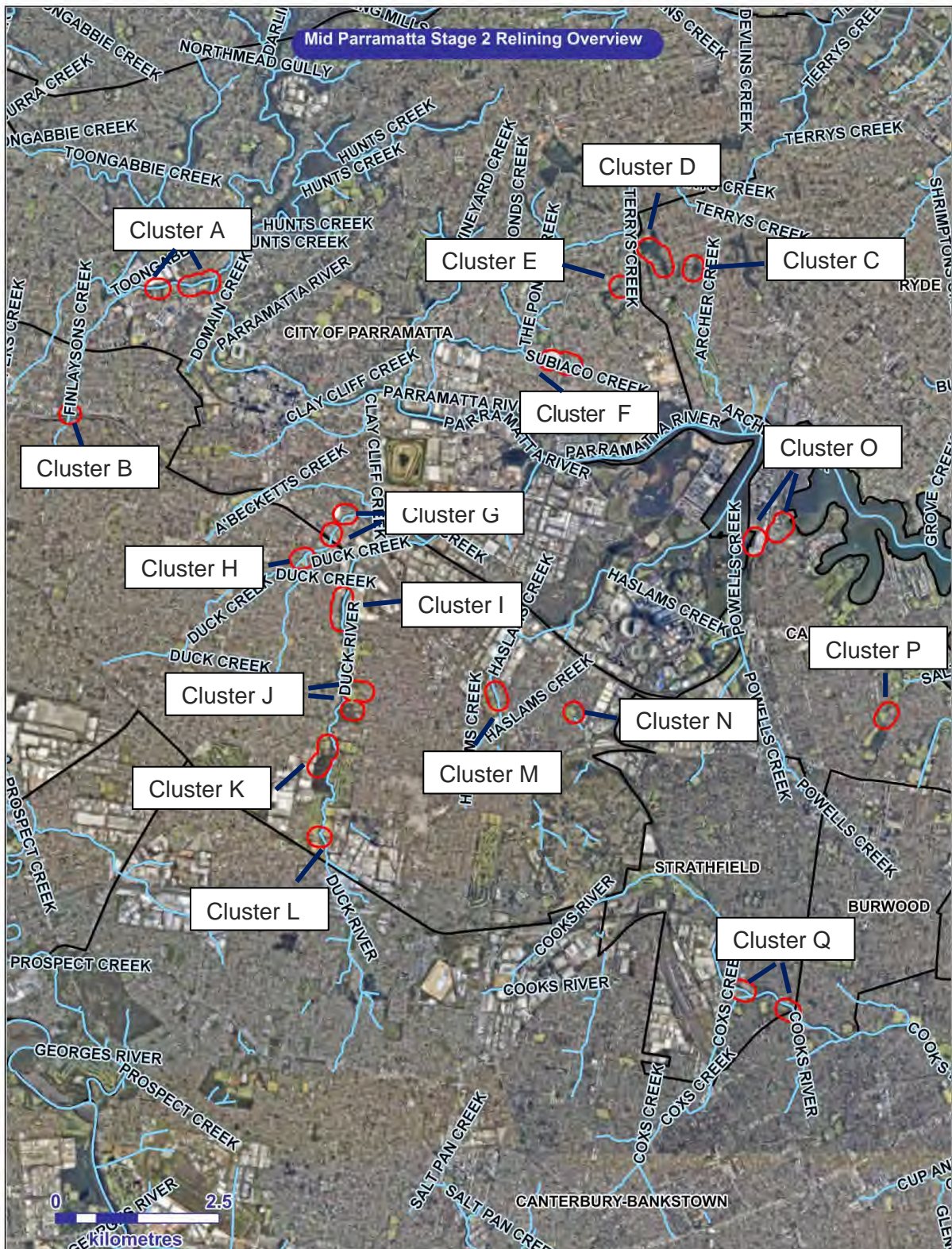


Restoration

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

Proposal timing

All work is expected to occur during standard daytime construction hours from February 2023 to June 2023.



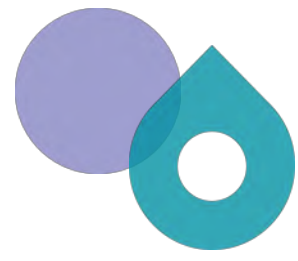
Legend
 Study Area Local Government Area Boundary



Copyright © 2023
 Sydney Water
 NSW Department of Planning, Industry & Environment
 NSW Spatial Services
 Australian Government Department of Environment
 (insert relevant source as required)
 Date Created: 13/01/2023

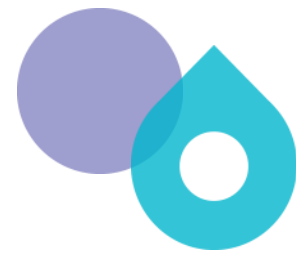


Figure 1 Proposal location – relining overview



This figure has been removed to protect Aboriginal heritage.





- Study Area
- MHs
- Watercourse
- Threatened Fauna
- Key fish habitat
- Coastal Valleys Swamp Oak Riparian Forest



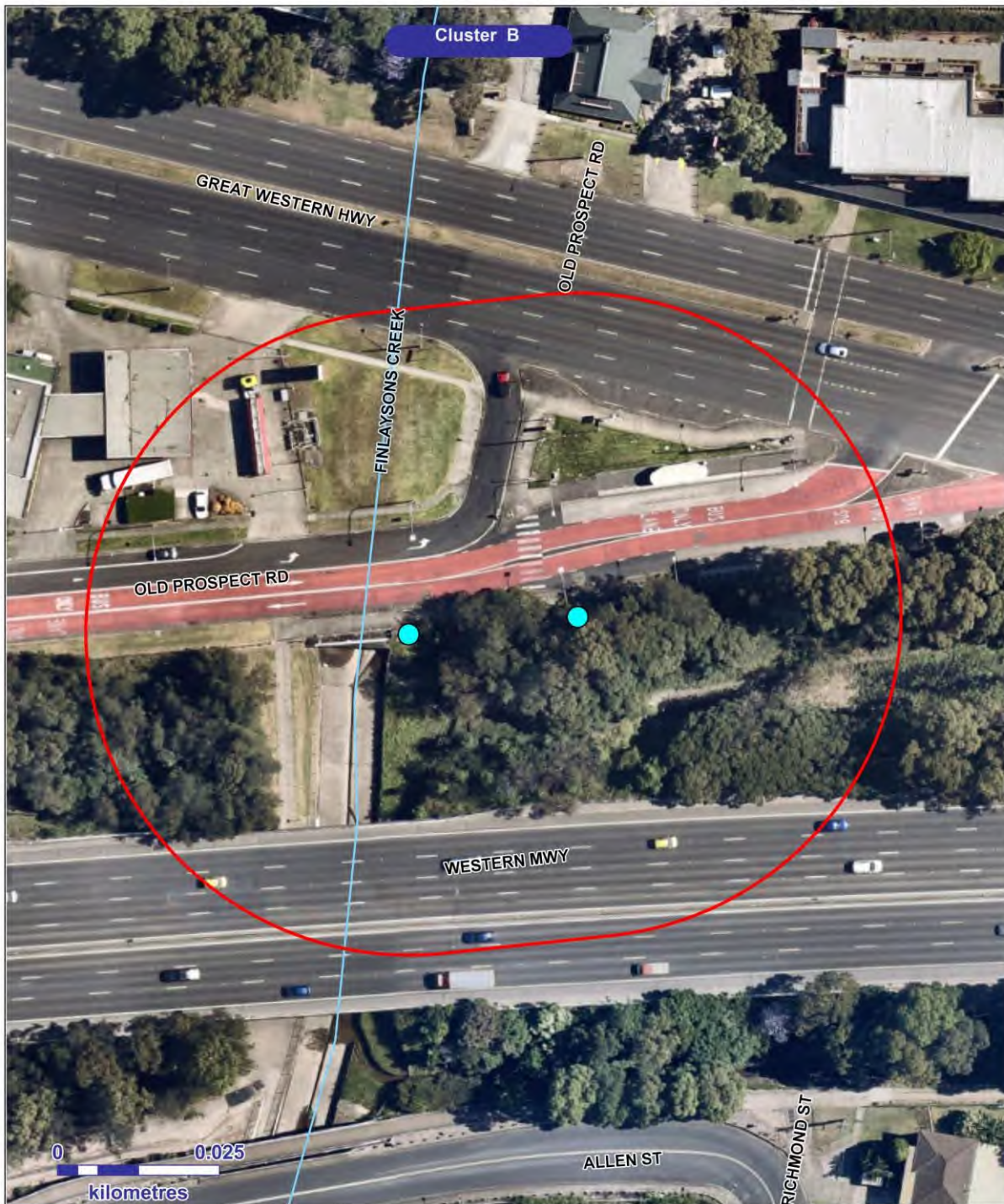
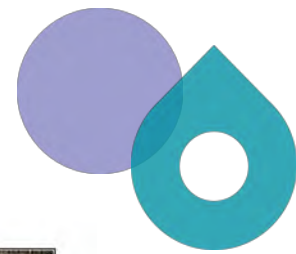
Do not make publicly available or publish this map in any form. AHILA #116, date 11/01/23

Copyright © 2023
 Sydney Water
 NSW Department of Planning, Industry & Environment
 NSW Spatial Services
 Australian Government Department of Environment
 ... (insert relevant source as required)
 Date Created: 27/02/2023



Figure 3 Cluster A – West





- ▭ Study Area
- MHs
- Watercourse



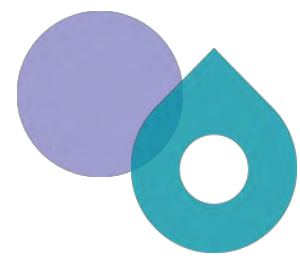
Do not make publicly available or publish this map in any form. AHILA #116, date 11/01/23

Copyright © 2023
 Sydney Water
 NSW Department of Planning, Industry & Environment
 NSW Spatial Services
 Australian Government Department of Environment
 ... (insert relevant source as required)
 Date Created: 9/02/2023



Figure 4 Cluster B





- Study Area
- MHs
- Watercourse
- Pedestrian paths
- Blue Gum High Forest



Do not make publicly available or publish this map in any form. AHILA #116, date 11/01/23

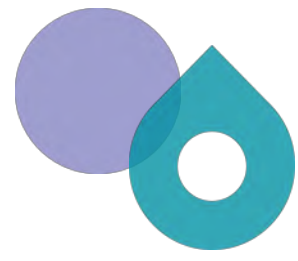
Copyright © 2023
 Sydney Water
 NSW Department of Planning, Industry & Environment
 NSW Spatial Services
 Australian Government Department of Environment
 ... (insert relevant source as required)

Date Created: 9/02/2023



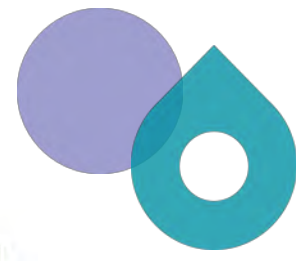
Figure 5 Cluster C





This figure has been removed to protect Aboriginal heritage.





- Study Area
- MMs
- Watercourse

Sydney
WATER

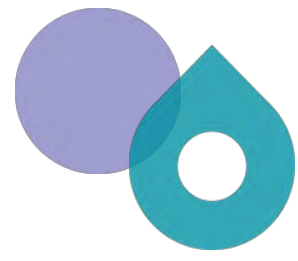
Do not make publicly available or publish this map in any form. AHILA #116, date 11/01/23

Copyright © 2023
 Sydney Water
 NSW Department of Planning, Industry & Environment
 NSW Spatial Services
 Australian Government Department of Environment
 ... (insert relevant source as required)
 Date Created: 9/02/2023



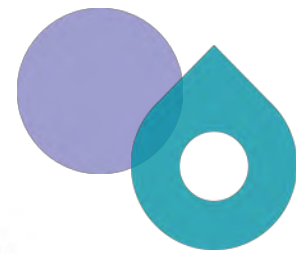
Figure 7 Cluster E





This figure has been removed to protect Aboriginal heritage.





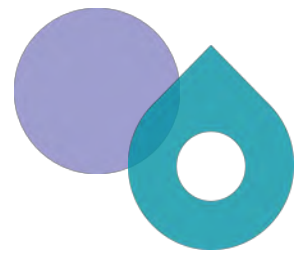
Do not make publicly available or publish this map in any form. AHILA #116, date 11/01/23

Copyright © 2023
 Sydney Water
 NSW Department of Planning, Industry & Environment
 NSW Spatial Services
 Australian Government Department of Environment
 ... (insert relevant source as required)
 Date Created: 9/02/2023



Figure 9 Cluster G





- Study Area
- MHs
- Watercourse
- Pedestrian paths
- Existing paths for machinery
- Disturbed terrain
- Heritage
- Threatened Fauna
- Threatened Flora

Sydney WATER

Do not make publicly available or publish this map in any form. AHILA #116, date 11/01/23

Copyright © 2023
 Sydney Water
 NSW Department of Planning, Industry & Environment
 NSW Spatial Services
 Australian Government Department of Environment
(insert relevant source as required)
 Date Created: 8/02/2023



Figure 10 Cluster H



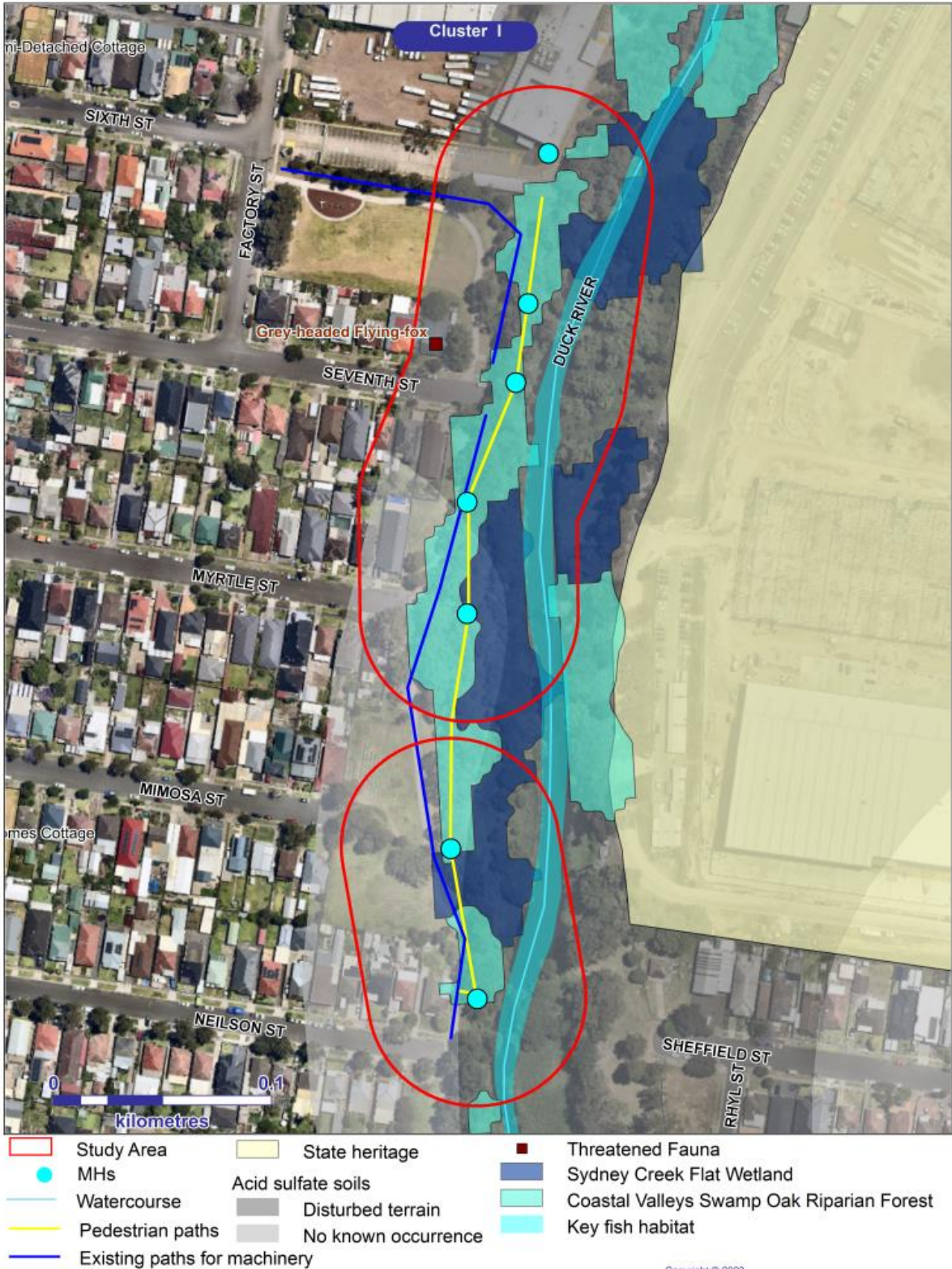
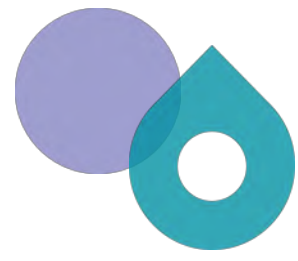
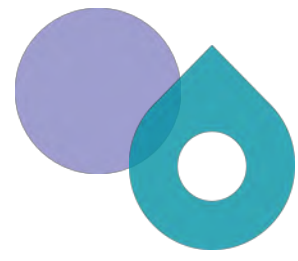


Figure 11 Cluster I



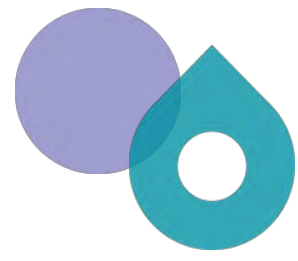
This figure has been removed to protect Aboriginal heritage.





This figure has been removed to protect Aboriginal heritage.





This figure has been removed to protect Aboriginal heritage.





- Study Area
- MHs
- Watercourse
- Pedestrian paths
- Existing paths for machinery

- Disturbed terrain
- Heritage



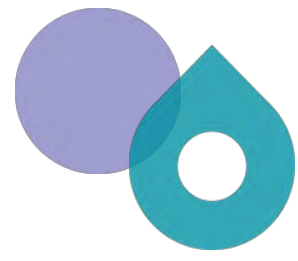
Do not make publicly available or publish this map in any form. AHILA #116, date 11/01/23

Copyright © 2023
 Sydney Water
 NSW Department of Planning, Industry & Environment
 NSW Spatial Services
 Australian Government Department of Environment
(insert relevant source as required)
 Date Created: 8/02/2023



Figure 15 Cluster M





This figure has been removed to protect Aboriginal heritage.



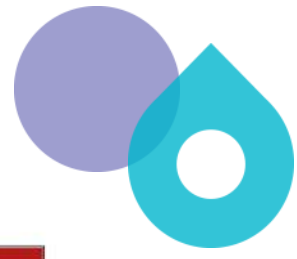
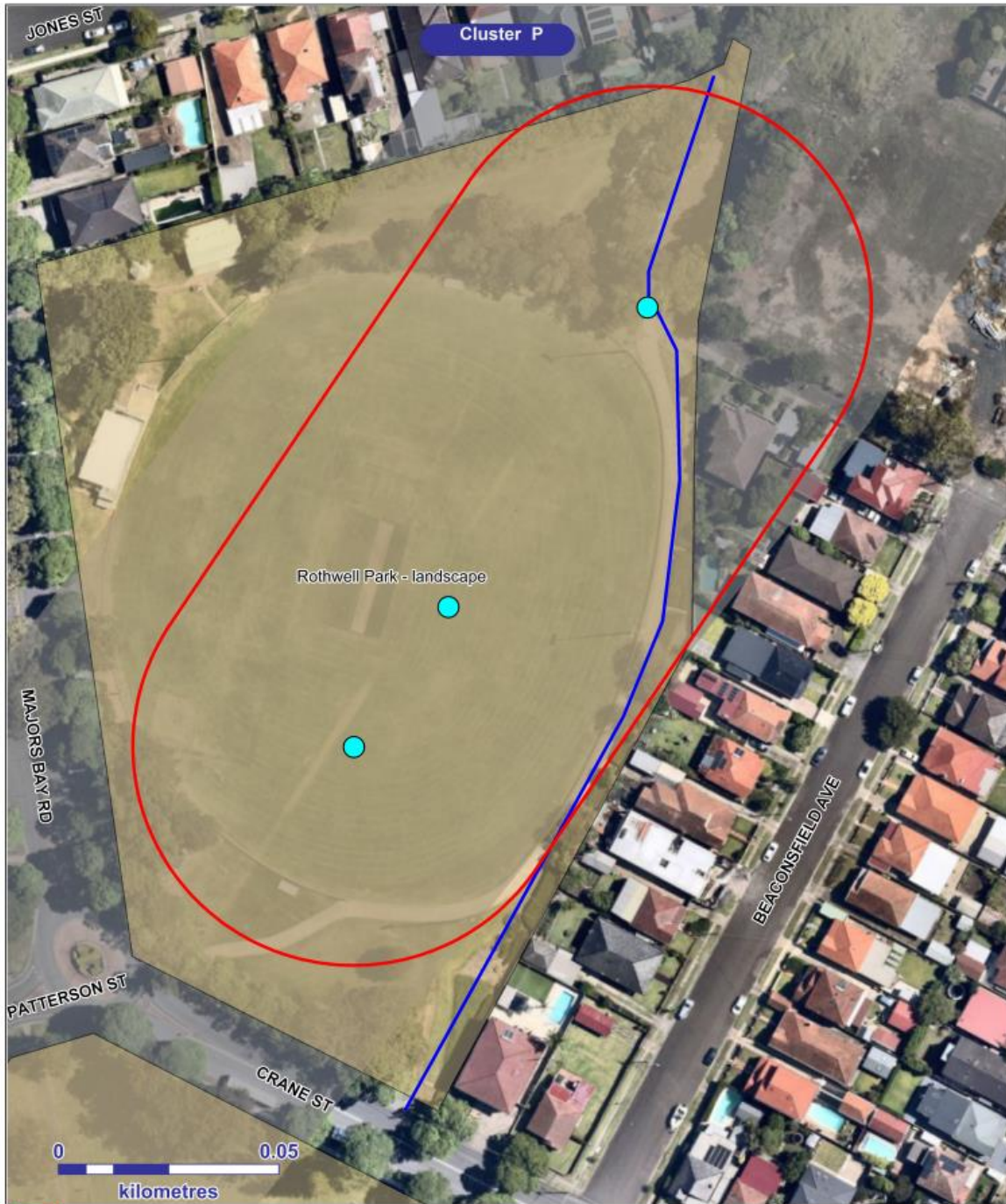
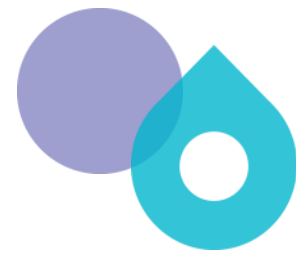


Figure 17 Cluster O





- Study Area
- MHS
- Watercourse
- Pedestrian paths
- Existing paths for machinery
- Local heritage
- Disturbed terrain



Do not make publicly available or publish this map in any form. AHILA #116, date 11/01/23

Copyright © 2023
 Sydney Water
 NSW Department of Planning, Industry & Environment
 NSW Spatial Services
 Australian Government Department of Environment
 ... (insert relevant source as required)
 Date Created: 27/02/2023



Figure 18 Cluster P



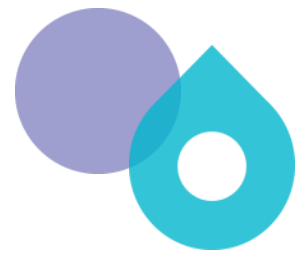
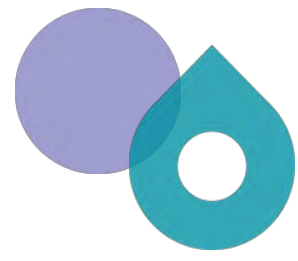


Figure 19 Cluster Q – West





This figure has been removed to protect Aboriginal heritage.





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).

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

There are 15 assets located near Key Fish Habitat (KFH) but not within areas mapped as KFH. 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*.

5 Additional environmental impacts and mitigation measures

Existing environment

The proposal is situated across multiple discrete sites within the local government areas of LGAs of Parramatta, Ryde, Canada Bay, Cumberland and Strathfield. 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 Figure 1 to Figure 20.

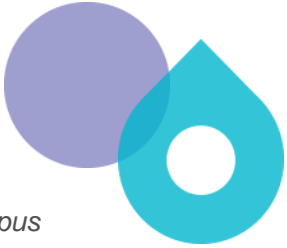

Some of the worksites are steeply sloping which is more prominent towards waterways in the vicinity of some assets. In particular, the areas surrounding Clusters C and D are identified as having slopes greater than 20 degrees which will require scaffolding for safe access.

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.

Flora and fauna

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

Impacts to threatened species and their habitat may occur at three of the clusters. During surveys the threatened flora species *Acacia pubescens* (Downy Wattle) was identified at Cluster K and the threatened bird species *Glossopsitta pusilla* (Little Lorikeet) at Cluster F. Clusters D and K have suitable habitat for



Ninox strenua (Powerful Owl), *Meridolum corneovirens* (Cumberland Plain Land Snail), *Pteropus poliocephalus* (Grey-headed Flying Fox) and *Acacia bynoeana* (Bynoe's Wattle).

Most of the native vegetation identified is not threatened under the BC Act or the EPBC Act. However, five plant community types (PCTs) were identified that are associated with five endangered TECs and four critically endangered TECs listed under the BC Act and EPBC Act.

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.

The condition of the native vegetation at these sites varied, with high compositions of weeds being evident at most sites. Weeds include *Anredera cordifolia* (Madeira vine), *Asparagus aethiopicus* (Ground asparagus), *Cestrum parqui* (Green Cestrum), *Cortaderia sp.* (Pampas grass), *Lantana camara* (Lantana) and *Salix sp.* (Willow).

A summary of existing vegetation at each cluster with potential vegetation impacts is provided below. Vegetation impacts are calculated based on a worst case scenario assuming clearing of a five metre wide corridor for machine tracks, 2.5 metre wide for pedestrian tracks and 3 metre wide around MHs. Actual impacts will be much lower than this as vegetation removal will be avoided where possible and will be limited to selective removal or pruning where access is otherwise not possible. Actual vegetation impacts will be recorded and offset in accordance with safeguards 2.1 and 2.10 in the table below. The full ecological assessment report is located in Appendix C.

Clusters and their corresponding site number in the ecology report are; A = 13, B = 12, C = 16, D = 15, E = 14, F = 20, 21 G = 11, H = 10, I = 9, J = 7 and 8 K = 6, L = 5, M = 4 N = 3, O = 17 and 18, P = 19 and Q = 1 and 2.

Waterways and drainage

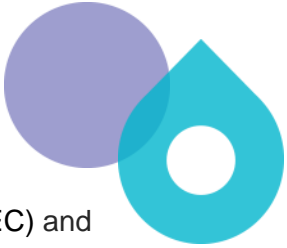

15 assets are located within 10 metre of waterways including Duck River, Duck Creek, Cooks River, Subiaco Creek, Finlaysons Creek, Haslams Creek and Toongabbie Creek. The assets at Clusters A, I and Q along Toongabbie Creek, Cooks River and Duck River are next to waterways mapped as Key Fish Habitat (KFH).

Cluster A – Assets in this cluster are accessible via existing pathways. Vegetation comprises PCT 4024 Cumberland Blue Box Riverflat Forest which is listed as a critically endangered TEC under the BC Act. The understorey includes a suite of exotic plant species. During the ecology site visit, a number of MHs could not be located. No threatened species were identified. Vegetation surrounding the assets is considered have a low habitat value for locally occurring threatened species.

Cluster B – Assets in this cluster are accessible via existing pathways. Native vegetation comprises a planted grove of *Casuarina glauca* (Swamp Oak), *Melaleuca decora* and *Cupaniopsis anacardioides* (Tuckeroo) with an understorey comprising of herbaceous weeds. Present vegetation does not constitute a PCT.

Cluster C – Assets in this cluster are accessible via existing pathways and private property. Vegetation is mapped as PCT 3136 Blue Gum High Forest which is a critically endangered TEC under the BC Act, however no vegetation associated with this PCT was observed during the site visit.

Cluster D – Assets in this cluster are located within Brush Farm Park along informal walking tracks. Native vegetation comprises PCT 3082 Western Sydney Complex Dry Rainforest (BC Act listed critically



endangered TEC), PCT 3136 Blue Gum High Forest (BC Act listed critically endangered TEC) and PCT 3262 Sydney Turpentine Ironbark Forest (BC Act listed critically endangered TEC) in moderate to good condition.

Cluster E – Assets in this cluster are accessible via existing pathways and grassed areas. Native vegetation comprises PCT 3136 Blue Gum High Forest, which is a critically endangered TEC under the BC Act. One mature *Eucalyptus saligna* (Blue Gum) is present adjacent to one of the MHs. Excavation which may impact the mature Blue Gum is required to complete the relining. The findings from the proposed CCTV investigation will dictate the location of the excavation and potential impacts to the Blue Gum.

Cluster F – Assets in this cluster are accessible via existing pathways and through some vegetated areas. Native vegetation comprises PCT 3262 Sydney Turpentine Ironbark Forest, which is a critically endangered TEC under the BC Act, in moderate condition. Vegetation contains hollow-bearing trees and remnant soils which may be used by, or support threatened species.

Cluster G – Assets in this cluster are accessible via existing pathways and through some vegetated areas. Native vegetation includes planted native shrubs and colonising herbaceous weed species. Present vegetation does not constitute a PCT. One *Melaleuca linariifolia* (Flax-leaved Paperbark) may require minor pruning to facilitate works.

Cluster H – Assets in this cluster are accessible via existing pathways. Native vegetation is exotic with only two native trees being present including *Casuarina glauca* (Swamp Oak) and *Corymbia maculata* (Spotted gum). Present vegetation does not constitute a PCT.

Cluster I – Assets in this cluster are accessible via existing pathways and through some vegetated areas. Native vegetation is heavily degraded PCT 4023 Coastal Valleys Swamp Oak Riparian Forest. A large composition of exotic species are present in the understorey, including aggressive weed species.

Cluster J – Assets in this cluster are accessible via existing pathways and private property. The works are located entirely within constructed/landscaped areas. Vegetation is mapped as PCT 3448 Castlereagh Ironbark Forest, however no PCT was present during the site walk. Planted native vegetation is present



Cluster K – Assets in this cluster are accessible via existing informal tracks and in some cases through patches of native vegetation. Native vegetation mostly comprises PCT 3448 Castlereagh Ironbark Forest. threatened flora species *Acacia pubescens* (Downy Wattle) was observed. On the northern side of Wellington Road the assets are completely located within the playing fields. The playing fields comprise mostly exotic pastures with scattered native trees.

Cluster L – Assets in this cluster are accessible via existing informal tracks. Native vegetation mostly comprises PCT 4024 Cumberland Blue Box Riverflat Forest. No trees or large shrubs are anticipated to require removal.

Cluster M – Assets in this cluster are accessible via existing tracks and in some cases through patches of native vegetation. The present vegetation does not constitute a PCT. It is unlikely that works will require the removal of trees adjacent to the asset which include two *Casuarina glauca*, one mature *Angophora floribunda* and one mature *Eucalyptus amplifolia*.

Cluster N – Assets in this cluster are accessible via existing tracks and an open grassed area. Present vegetation does not constitute a PCT. No native vegetation impacts are required.

Cluster O – Assets in this cluster are accessible via existing tracks and areas of planted vegetation. No native vegetation impacts are required.



Cluster P – Assets in this cluster are accessible via existing tracks and an open grassed area. Present vegetation does not constitute a PCT. No native vegetation impacts are required.

Cluster Q – Assets in this cluster are accessible via existing tracks, open grassed areas and areas of exotic weed species. Present vegetation does not constitute a PCT. No native vegetation impacts are required.

Known Powerful Owl) breeding sites are present within 200 metre of assets in the study areas for cluster D. Additionally, suitable foraging habitat is present across all clusters. However, no hollow-bearing trees with large hollows were observed at the site and therefore it is unlikely that the works would impact breeding.

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

Aboriginal Heritage

Many clusters and assets are in the vicinity of natural features such as watercourses which increases the likelihood of encountering Aboriginal objects.

An Aboriginal due diligence assessment (AECOM, 2022) for the proposal has been undertaken to identify potential impacts to Aboriginal heritage values as a result of the proposed works. The assessment included a review of the site cards for AHIMS sites within 3 kilometre of each asset across the study area. A summary of the findings is described below. The full report is located in Appendix C.

AHIMS sites with potential to be impacted by the works are described further below.

Cluster A

[REDACTED]

Cluster F

[REDACTED]

Cluster K

[REDACTED]

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.

Some assets are however within the curtilage of locally listed non-Aboriginal heritage items. These items are all listed under Canada Bay Local Environmental Plan 2013, Ryde Local Environmental Plan 2014, Cumberland Local Environmental Plan 2021.

Rhodes Industrial Park – grounds (I118) – the significance of this listing is the commercial landscaping and remnant Victorian garden trees which are important to the streetscape of Concord Road.

Rothwell Park – landscape (I333) – the significance of this listing is the cricket field, fence and native trees. Temporary removal of the grass above a maintenance hole may be required to complete relining of assets 3013106 and 3015834 however it would be reinstated following relining of this asset.

Brush Farm Park – conservation area (C1) – the significance of this listing is the Brush Farm estate and it’s remnants of the earliest known vineyard in Australia.

Brush Farm Park (61) – the significance of this listing is the potential for of research the natural bushland and remnants of terracing for the vineyard and evidence of early fencing. Access will be along existing informal tracks and areas of disturbed or weedy vegetation.

Auburn Botanic Gardens (I5) – the significance of this listing is its aesthetic qualities and parkland design.

Granville Scout Hall (I39) – this item is listed as significant for historic and social reasons, and as a representative example of it’s time and function as a Scout Hall.

Wyatt Park Sporting Complex, Stand of Eucalyptus Microcorys (I187) – this item is listed as significant for its historic, aesthetic, social and rarity values to the local community. The Park is historically significant of the development of community sporting facilities and recreational uses. The *Eucalyptus microcorys* trees that line Olympic Drive are also part of the listing.

Soils

Clusters G, H, I, M, O, P and Q are within land mapped as acid sulfate soil ‘disturbed terrain’. Clusters A, J and K are located on land mapped as acid sulfate soil ‘no known occurrence’. Cluster Q is located within land mapped as ‘low probability of occurrence’ and is within 50 metre from land mapped as high probability of occurrence.

The table below assesses the potential environmental impacts that may result from the works and additional safeguards that have been 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 CEMP.

Environmental impacts table

Aspect	Additional impacts	Additional mitigation measures
Topography, geology and soils	<p>Where ground is steep, the works have potential to cause minor ground disturbance where scaffolding is required for safe access and from minor excavations required to locate some maintenance holes.</p> <p>Some clusters (G, H, I, M, O, P and Q) are within areas identified as having potential for acid sulfate and saline soils, particularly those adjacent to a watercourse.</p> <p>Due to the minor nature of the works, minor ground disturbance and the works being in areas previously disturbed, impacts from saline or acid sulfate soils are not anticipated.</p>	No additional mitigation measures required. Impacts can be managed by implementing the safeguards within the multi program REF.

Water and drainage

Where assets are located close to waterways there is potential for minor ground disturbance to occur during erection of scaffold platforms (waterway x and y). Minor excavation may also be necessary within Clusters A and F to locate the maintenance holes. Potential erosion and sedimentation impacts associated with these activities are anticipated to be minor.

Groundwater is not expected to be encountered as ground disturbance would generally be limited to surface/topsoil materials and excavation would be reasonably shallow (1 metre or less) to expose maintenance hole assets.

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

Flora and Fauna

Most assets are accessible by existing pathways or through private property. There is potential for native vegetation to be impacted from clearing trimming and trampling required to widen paths for safe access, machinery and equipment. Where access is required through vegetated areas pathways will be prioritised in disturbed areas supporting weeds. The potential worst case impacts for each cluster are described below. However, as paths are existing, vegetation clearing will be limited to the least amount required so the actual amount that will be cleared is expected to be less. The potential impacts to native vegetation from the works are expected to be minor.

Cluster A –Impacts will mainly be restricted to exotic under story vegetation. Trimming and removal of some native shrubs will also be required. Worst case scenario impacts are impacts to 0.17 ha of PCT 4024 Cumberland Blue Box Riverflat Forest.

Cluster B –Present vegetation does not constitute a PCT. Minor trimming of *Melaleuca decora*, Tuckeroo, Swamp Oak and removal of ground layer vegetation obscuring the manhole are required.

Cluster C –The works will have minor impacts on non-native vegetation including trampling and removal.

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

- residual impacts to native vegetation and trees will be offset in accordance with the Biodiversity Offset Guideline ([SWEMS0019.13](#))
- prior to clearing or trimming vegetation, visually examine the vegetation for fauna, nests or dreys (ie. a small round nest made from a thicket of sticks). If mobile fauna is present, allow it to move away unharassed. If any nests are present, stop work and contact the Project Ecologist for advice
- during site inductions, ensure site staff as aware of:
 - the locations and extents of the two threatened ecological communities: Blue Gum High Forest and Sydney Turpentine Ironbark Forest
 - the potential presence of other threatened species identified in Appendix C
- to prevent potential clearing of threatened species at Clusters A and F, a pre-clearing survey by a suitably licensed ecologist is required prior to works.
- access routes will prioritise existing tracks and for disturbed areas with a higher composition of weeds.
- if CCTV findings require potential impact to the mature Blue Gum adjacent to MH for Cluster E,

Cluster D –Impacts include removal/trampling of native shrubs and groundcovers through access and egress of the site as well as uncovering of the manholes. Impacts to tall shrubs and trees will be avoided. Worst case scenario impacts are impacts to 0.09 ha of Western Sydney Complex Dry Rainforest and 0.15 of PCT 3136 Blue Gum High Forest.

Cluster E- Excavation which may impact the mature Blue Gum is required to complete the relining. The findings from the proposed CCTV investigation will dictate the location of the excavation and potential impacts to the Blue Gum.

Cluster F- MHs 3762198 and 3764926 could not be located during the site walk. Additional investigation is required to locate these manholes for the pipeline to be relined. Once located, an ecologist should be engaged to assess the impacts to native vegetation for the additional area. Worst case scenario impacts are impacts to 0.04 ha of PCT 3262 Sydney Turpentine Ironbark Forest.

Cluster G- Present vegetation does not constitute a PCT. One *Melaleuca linariifolia* (Flax-leaved Paperbark) may require minor pruning to enable works.

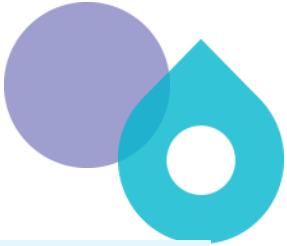

Cluster H - Present vegetation does not constitute a PCT. Trampling of exotic undergrowth and minor trimming of exotic trees and shrubs may occur however native vegetation will not be impacted.

Cluster I – Minor impacts to native vegetation including groundcovers and shrubs will occur during the works understorey including minor trimming and trampling. Impacts to native vegetation are considered to be minor and unlikely to significantly change the composition of the present PCT. Worst case scenario impacts are impacts to 0.13 ha of PCT 4023 Coastal Valleys Swamp Oak Riparian Forest.

Cluster J – Assets in this cluster are accessible via existing pathways and private property. The works are located entirely

the works methodology is to be reviewed in consultation with an arborist to minimize impact

- avoid impacts to *Casuarina galuca* (Swamp Oak) and *Corymbia maculata* (Spotted gum) at Cluster H
- for all works in cluster K an ecologist must attend site to undertake a pre-clearing survey with the works contractor during which:
 - bunting will be erected to delineate the access tracks
 - any *Acacia pubescens* (Downy Wattle) near to the access tracks or manholes will be visually demarcated and bunting erected to prevent damage during works
- a toolbox talk should be undertaken with all workers at the start of each day to explain the works methodology and identify exclusion zones where Downy Wattle are present
- 2.9 - Vehicles, equipment, materials and footwear are to be clean on entry (free of soil, mud and/or seeds) to minimise the risk of introduction or spread of weeds and *Phytophthora cinnamomic*
- map and report native vegetation clearing greater than 0.01 ha in extent (and any associated rehabilitation) to the Sydney Water Environmental Representative. Track vegetation clearing as per SWEMS0015.26 *Contractor Native Vegetation Clearing and Rehabilitation* template
- equipment and materials would be carried on foot and using a trolley where possible to minimise disturbance to bushland
- works within cluster D should be completed outside of *Ninox strenua* (Powerful Owl) breeding season which occurs from May to August. If works are required during these months, a search for signs of *Ninox strenua* (Powerful Owl) breeding should be undertaken by a qualified ecologist within 100 metre of the works. If breeding is detected, works should not occur until chicks have fledged
- if any snail is found during works, stop work and contact a suitably qualified ecologist for advice.



within constructed/landscaped areas. Vegetation is mapped as PCT 3448 Castlereagh Ironbark Forest, however no PCT was present during the site walk. Planted native vegetation is present. No impacts will occur to native vegetation forming part of a locally occurring PCT or threatened species habitat.

Cluster K – Assets in this cluster are accessible via existing informal tracks and in some cases through patches of native vegetation. Native vegetation mostly comprises PCT 3448 Castlereagh Ironbark Forest. The threatened flora species *Acacia pubescens* (Downy Wattle) was observed. On the northern side of Wellington Road the assets are completely located within the playing fields. The playing fields comprise mostly exotic pastures with scattered native trees. No trees or large shrubs are anticipated to require removal. No individuals of *Acacia pubescens* (Downy Wattle) have been identified as requiring removal to facilitate the works. Worst case scenario impacts are impacts to 0.09 ha of PCT 3448 Castlereagh Ironbark Forest.

Cluster L – Native vegetation mostly comprises PCT 4024 Cumberland Blue Box Riverflat Forest. No trees or large shrubs are anticipated to require removal.

Cluster M – The present vegetation does not constitute a PCT. It is unlikely that works will require the removal of trees adjacent to the asset which include two *Casuarina glauca*, one mature *Angophora floribunda* and one mature *Eucalyptus amplifolia*. Trampling and removal of juvenile Casuarinas and weeds will be required to access the asset.

Clusters N, O, P and Q - Assets in this cluster are accessible via existing tracks, vegetated and open grassed areas. Present vegetation does not constitute PCTs in any of these clusters. No native vegetation impacts are expected.

Summary

The potential impact to vegetation from the proposal includes clearing of up to about 0.21 hectares of native vegetation, all of which qualifies for listing as a TEC as shown in Table 4-1 of Appendix C. Potential impacts to TECs would occur to understory vegetation and would be temporary in nature, with most areas likely to return to their current state following the works.

Fauna

Known Powerful Owl breeding sites are present within 200 metre of assets in the study areas for cluster D. Additionally, suitable foraging habitat is present across all clusters. However, no hollow-bearing trees with large hollows were observed at the site and therefore it is unlikely that the works given their minor, temporary nature would impact breeding.

There is potential to impact *Pommerhelix duralensis* (Dural Land Snail) during works because there is potential for this species to occur across all study areas and the Dural Land Snail is similar in appearance to other snail species.

Heritage

Aboriginal heritage

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

[REDACTED] Provided the safeguards within the multi program REF and this REF are implemented no impacts to Aboriginal heritage are, expected

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.



Some assets (clusters J, M and O) are within the curtilage of locally listed non-Aboriginal heritage items, detailed below.

Rhodes Industrial Park – grounds (I118)

Some assets within cluster O are within this

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

- access to assets in the vicinity of AHIMS sites are to strictly follow existing tracks and access paths along asset alignment shown in Figure 1 to Figure 20.



curtilage however works would not affect the vegetation or streetscape and would not impact the significance of this heritage item.

Rothwell Park – landscape (I333) The works are located within the cricket field. Temporary removal of the grass above a maintenance hole may be required to complete relining of assets 3013106 and 3015834 and would be reinstated following relining of this asset. Due to the very minor nature of vegetation removal in this area, the works would not impact the significance of this heritage item.

Brush Farm Park – conservation area (C1) Works are limited to disturbed areas within the conservation area and will not impact the significance of this heritage item.

Brush Farm Park (61) –Works are in previously disturbed areas with impacts limited to removal of groundcover to open MHs. Impacts to tall shrubs and trees will be avoided. Due to the minor nature of the works, impacts to the significance of this heritage item are not expected.

Auburn Botanic Gardens (I5) As all access is via hardstand areas with no vegetation impacts expected in this area, the works would not impact the significance of this heritage item.

Granville Scout Hall (I39) – assets within cluster J would not impact the significance of this item.

Wyatt Park Sporting Complex, Stand of Eucalyptus Microcorys (I187) - The *Eucalyptus microcorys* trees that line Olympic Drive are also part of the listing. Assets within cluster M are within this curtilage however, there will be no excavation or vegetation removal so the works would not impact the significance of this heritage item.

Traffic and access

Work vehicles would be parked as near to the assets as practicable, either on a local

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

road where parking is permitted or cleared areas if accessible and suitable.

Vehicles may also be driven along council paths, tracks or fire trails where appropriate. Final access to each asset would generally occur on foot with vegetation disturbance to be minimised. Where there will be no additional impacts to vegetation, small mobile plant may be driven on pedestrian paths.

Scaffolding would be used at some locations where access routes are steep or unstable. Access to private properties would be maintained as far as practicable, however access to some private properties may be temporarily impacted.

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.

- equipment and materials would be carried on foot and using a trolley where possible to minimise disturbance to bushland
- 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.

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 proposal 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 cumulative impacts are expected.

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 relining of wastewater infrastructure as part of the Mid Parramatta Source Control Stage 2 Relining 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

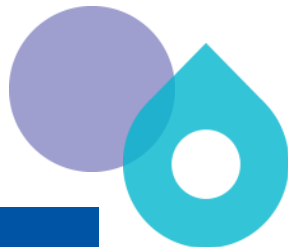
There are no requirements in addition to those considered in the Multiprogram REF.

Section 171 checklist	REF finding
Any environmental impact on a community	Environmental impacts would be minor and temporary, there will be no ongoing environmental impact on a community.
Any transformation of a locality	There will be no transformation of a locality because the works are minor and temporary with minor temporary associated environmental impacts.
Any environmental impact on the ecosystems of the locality	The proposal would result in minor impacts to the ecosystems of the 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, within the locality. 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 restoring any removed vegetation.
Any impact on the habitat of any protected animals (within the meaning of the <i>Biodiversity Conservation Act 2016</i>)	The works at Clusters D, F and K may impact habitat of protected animals including, <i>Glossopsitta pusilla</i> (Little Lorikeet), <i>Ninox strenua</i> (Powerful Owl), <i>Meridolum corneoviren</i> (Cumberland Plain Land Snail) and <i>Pteropus poliocephalus</i> (Grey-headed Flying Fox). However, impacts would be minor and restoration activities would provide potential habitat for protected animals. Offsets and restoration activities commensurate with the impacts would be provided in accordance with Sydney Water's Biodiversity Offsets Guideline.
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 for the proposal and found that proposal 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, wastewater 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



Section 171 checklist

REF finding



	removal and disturbance and avoid and minimise the spread of weeds.
Any risk to the safety of the environment	The proposal would not cause any risk to the safety of the environment.
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. Some works will occur in recreational areas, however, impacts will be minor and short term and will not cause any reduction in the range of beneficial uses of the environment
Any pollution of the environment	The proposal has been designed to improve protection of the environment by reducing wastewater overflows. It will also enable compliance with environmental protection licences (EPLs). 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 will not cause any problems associated with the disposal of waste.
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	Consistent with Overarching 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 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