

# Archerfield Wetlands Vegetation Management Plan

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January 2024



**BRISBANE**  
Sustainability  
AGENCY

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### Acknowledgement of Country

Brisbane Sustainability Agency acknowledges the Traditional Custodians of the land and their unique relationship with their ancestral Country. We pay respect to all Aboriginal and Torres Strait Islander Elders of the Oxley Creek catchment and recognise their strength and wisdom.

## 1 Restoring the Oxley Creek corridor

Currently urban forest covers about 41% of the Oxley Creek catchment within the Brisbane City Council (Council) Local Government Area (LGA). Natural habitat comprises around 8.7% of this urban forest and is preserved primarily along the corridors of Oxley Creek and its tributaries. Council's *Clean, Green, Sustainable* strategy includes a target to increase natural habitat cover on mainland Brisbane by 40% by 2031, where 75% of the natural habitat will be connected and healthy.

The [Oxley Creek Corridor Restoration Project](#) sets out the approach to improving the health and condition of Oxley Creek, and the corridor of land that borders the creek, within Council's LGA. It provides a framework and methodology for understanding the corridor's environmental condition, planning for restoration works and delivering targeted actions, including meeting Council's *Clean, Green, Sustainable* strategy targets.

The Restoration Project acknowledges that the ecological functioning of the Oxley Creek corridor has changed and adapted to the urban environment in which it sits; the environmental pressures and stresses placed on the corridor are ongoing. Urban development will remain and grow within the corridor and catchment. Restoration work cannot return the corridor back to its original natural state (pre-urbanisation), as such the focus will be on progressive improvements to habitat, vegetation, waterway stability and water quality. Historic issues such as land contamination will be considered, as will current and future pressures, including stormwater runoff from existing and developing residential precincts.

All restoration projects within the Oxley Creek corridor will seek to preserve and connect higher value ecosystems rather than attempting to restore environmentally degraded areas in isolation. Replicating fully functioning ecosystems in more degraded and/or urbanised areas within the Oxley Creek catchment and corridor would be extremely difficult, expensive and the resultant outcomes are likely to be poor versions of the originals, owing to the level of change that has occurred. Modified habitats can still be created which minimise edge effects and support wildlife habitat and movement.

Restoration and vegetation management within the Archerfield Wetlands site will draw on the restoration approach and objectives set out in the Oxley Creek Corridor Restoration Project.

## 2 Archerfield Wetlands Vegetation Management Plan

### 2.1 Background

Archerfield Wetlands (the Wetlands) is one of Brisbane's largest floodplain wetland ecosystems. Situated within the Oxley Creek corridor, between the Ipswich Motorway, Oxley and Bowhill Road, Willawong, the Wetlands encompasses an area of approximately 150 hectares. Fed by both Hanleys and Blunder Creeks from the south, the Wetlands empty into adjoining Oxley Creek. The Wetlands have a high conservation value, acting as the interface between varied terrestrial and aquatic ecosystems, as well as having remnant vegetation communities and providing diverse habitats.

The wide range of vegetation communities across the Wetlands provide homes for a range of terrestrial and aquatic fauna, including habitats for over 170 bird species. While the Wetlands hosts a diverse range of important ecosystems and habitats, historical land clearing and land use activities, including wastewater treatment, waste disposal, industrial meat processing, landfilling and grazing, have negatively impacted the Wetlands. Clearing and grazing has allowed weed species to thrive. Landfilling, within and adjacent to the Wetlands, as well as the realignment of watercourses, has changed the hydrology of the Wetlands, impacting pre-existing ecosystems. While wastewater treatment and meat processing has left a legacy of contaminated soils and fill.

### 2.2 Archerfield Wetlands Precinct Plan

The *Oxley Creek Transformation Master Plan*, released in 2018, identified the Wetlands site as a 'Priority Project' location for a future parkland. Planning for this parkland commenced in 2019 with the development of the Archerfield Wetlands Precinct Plan. The Precinct Plan established a vision, priority actions and improvements to transform the Wetlands' 150 hectares of underutilised green space into a one-of-a-kind recreational destination and environmental asset - Archerfield Wetlands Parkland.

Development of the parkland is intended to occur over a number of stages. The first stage involved the delivery of a shared maintenance and recreation path extending the length of the Wetlands. Completed in mid-2022, this shared trail provides maintenance vehicle access to support vegetation management activities across the Wetlands. The second stage involves the delivery of a new district park of the former wastewater treatment plant, which will provide picnicking facilities, playgrounds, a community event lawn as well as a catchment centre for Oxley Creek Catchment Association. The district park is scheduled for completion in 2024.

The third stage of the parkland development will focus on rehabilitation of the Wetlands into an environmental asset that enhances its status as a nature-based recreation destination. Balancing the use of the Wetlands as a nature-based recreation destination while preserving and enhancing the valuable natural ecosystems and habitats that the Wetlands supports, to which visitors will come to the parkland to experience, requires careful consideration and ongoing site management.

The Archerfield Wetlands Vegetation Management Plan (the Plan) will help guide a holistic and staged vegetation restoration management approach that builds on the high ecological and habitat value that the parkland supports, even in its degraded state. Acknowledging that the existing modified landscape plays a critical role in supporting a diversity of habitats, site management regimes, or proposed restoration works, will aim to enhance the diverse floral and faunal habitats, rather than try to reinstate pre-European Regional Ecosystems.

The project area for the Plan is shown in Figure 1: Existing site plan.

### 2.3 Literature review

The following external reports and documents have informed this Management Plan:

- Water Technology (June 2023) Flooding Assessment- Archerfield Wetlands Revegetation Management Plan.
- GHD (December 2022) Archerfield Wetlands Revegetation Advice.
- GHD (April 2021) Oxley Greenway - Package 2 Planning and Environmental Assessment.
- Friend, R & Assoc (July 2021) Archerfield Wetlands Stage 1 Bushfire Management Plan.
- Litoria (January 2019) Archerfield Wetlands Ecological Assessment & Bushfire Hazard Assessment.
- Brisbane City Council City Project Office (2013) Greater Archerfield Wetlands Master Plan and Report.



Figure 1: Existing site plan

## 2.4 Purpose

The purpose of the Plan is to outline the process of achieving resilient existing and future ecosystems within the Wetlands.

## 2.5 Objectives

The following objectives support the purpose of the Plan and its holistic focused delivery.

- Carry out improvements to the natural areas of the Wetlands in a staged manner to preserve valuable flora and fauna habitat for species that have adapted to the modified natural landscape.
- Manage and restore the existing and future natural habitat with the view of achieving the pre-clearing Regional Ecosystem benchmark standard, only in areas where this is achievable and appropriate.
- Restoration work to allow the Wetlands to remain a natural floodplain, whilst causing no additional adverse impacts on flooding.
- Ensure restoration approaches are appropriate for the varying vegetation communities across the Wetlands.
- Ensure nature-based recreation activities complement the improvements to the natural areas of the Wetlands.
- Support the wider initiative of Oxley Creek as a wildlife movement corridor through corridor connectors, riparian and habitat planting and artificial habitat.
- Create a quality nature-based recreation destination, with a particular focus on birdwatching.

## 2.6 Ancillary outcomes

While the focus of the Plan is to protect, maintain and enhance the existing valuable ecosystems within the Wetlands through appropriate vegetation management and restoration activities, it is anticipated that the following ancillary outcomes will be by-products of the work:

- Improved water quality by reducing bank erosion and sediment / contaminants entering the waterways from revegetated riparian edges.
- Improved instream habitat and function along restored riparian areas, achieved through revegetation initiatives that assist in stabilising banks and providing shade over the waterways.
- Development of an attractive natural landscape, providing nature-based recreation opportunities including wildlife viewing.

## 2.7 Legislative context

Legislation context relevant to the Plan is detailed in Table 1.

**Table 1 Legislative context**

Legislation	Relevance to the Plan
<i>Aboriginal Cultural Heritage Act 2003 (Qld)</i>	The main purpose of the <i>Aboriginal Cultural Heritage Act 2003</i> (Aboriginal Cultural Heritage Act) is to provide effective recognition, protection, and conservation of Aboriginal cultural heritage. Areas within the Wetlands that have not undergone significant disturbance are classified as Category 5 under the Duty of Care Guidelines.
<i>Biosecurity Act 2014 (Qld)</i>	The <i>Biosecurity Act 2014</i> (Biosecurity Act) provides comprehensive biosecurity measures to safeguard the Queensland economy, agricultural and tourism industries, environment and way of life, from pests, diseases and contaminants.  Invasive species listed under the Biosecurity Act were recorded within the Wetlands by Litoria (2019) and verified by GHD (2021). Appropriate management of invasive species in accordance with the Biosecurity Act will be required for consideration in undertaking works within the Wetlands.
<i>Environment Protection and Biodiversity Conservation Act 1999 (Cmwlth)</i>	The <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act) is the Australian Government's central piece of environmental legislation. It provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places — defined in the EPBC Act as matters of national environmental significance (MNES).  The EPBC Act Protected Matters Search Tool indicates the potential for listed threatened ecological communities, listed threatened species, and migratory species to occur in the Wetlands. Impacts to MNES may trigger the requirement for approval under the EPBC Act.
<i>Natural Assets Local Law 2003 (Brisbane City Council)</i>	The aim of Council's <i>Natural Assets Local Law 2003</i> (NALL) is to protect natural assets, including bushland areas, wetlands, waterway corridors and trees in urban areas. The NALL also allows better management of the impacts of weeds and hazardous vegetation.  The Wetlands contain vegetation mapped under NALL. Clearing of native or introduced vegetation within NALL mapped areas may trigger the requirement for a NALL permit.
<i>Nature Conservation Act 1992 (Qld)</i>	The <i>Nature Conservation Act 1992</i> (Nature Conservation Act) provides the framework for the creation and management of protected areas including national parks, conservation parks, resources reserves, nature refuges, coordinated conservation areas, wilderness areas, world heritage management areas, international agreement areas and protection of native species.  The Wetlands contain mapped flora survey trigger areas under the Nature Conservation Act. A protected plant permit may be required for any ground disturbance works undertaken within a trigger area.
<i>Vegetation Management Act 1999 (Qld)</i>	The purpose of the <i>Vegetation Management Act 1999</i> (Vegetation Management Act) is to regulate the clearing of vegetation in a way that conserves remnant vegetation and ensures that clearing does not result in loss of biodiversity and ecological processes.  The Wetlands contain mapped vegetation managed under the Vegetation Management Act and therefore must consider this Act.

### 3 Existing environment

#### 3.1 Natural habitat

##### Regional Ecosystems

Regional ecosystems (RE) mapped within the Wetlands are detailed in the Table 2 and shown on Figure 2.

**Table 2 Regional Ecosystems (RE) mapped within the Wetlands**

RE	Short Description	VM Act Status	Biodiversity Status	Locally significant*
12.3.3d	<i>Eucalyptus tereticornis</i> woodland on Quaternary alluvium	Endangered	Endangered	
12.3.6	<i>Melaleuca quinquenervia</i> +/- <i>Eucalyptus tereticornis</i> , <i>Lophostemon suaveolens</i> , <i>Corymbia intermedia</i> open forest on coastal alluvial plains	Least concern	No concern at present	
12.3.7	<i>Eucalyptus tereticornis</i> , <i>Casuarina cunninghamiana</i> subsp. <i>cunninghamiana</i> +/- <i>Melaleuca</i> spp. fringing woodland	Least concern	Of concern	Yes
12.3.7c	<i>Eucalyptus tereticornis</i> , <i>Casuarina cunninghamiana</i> subsp. <i>cunninghamiana</i> +/- <i>Melaleuca</i> spp. fringing woodland	Least concern	Of concern	
12.3.8	Swamps with <i>Cyperus</i> spp., <i>Schoenoplectus</i> spp. and <i>Eleocharis</i> spp.	Of concern	Of concern	Yes
12.3.11	<i>Eucalyptus tereticornis</i> +/- <i>Eucalyptus siderophloia</i> , <i>Corymbia intermedia</i> open forest on alluvial plains usually near coast	Of concern	Of concern	Yes
12.5.2a	<i>Corymbia intermedia</i> , <i>Eucalyptus tereticornis</i> open forest on remnant Tertiary surfaces, usually near coast and on deep red soils	Endangered	Endangered	
12.9-10.7a	<i>Eucalyptus crebra</i> +/- <i>E. tereticornis</i> , <i>Corymbia tessellaris</i> , <i>Angophora</i> spp. and <i>E. melanophloia</i> woodland on sedimentary rocks	Of concern	Of concern	

(source: Queensland Government 2021)

Table note: \*Locally significant is defined as the BCC City Plan Biodiversity Overlay Code (i.e. of city-wide significance due to being less than 40% of pre-clearing remaining).

##### Threatened Ecological Communities

During previous field surveys, a small patch of regrowth, consistent with endangered RE 12.3.3/12.3.20 (90/10) was identified in an area currently mapped as 'of concern', containing small patches (<2 ha) of the Coastal swamp oak (*Casuarina glauca*) Forest of New South Wales and South East Queensland ecological community. This ecological community is listed as a "Threatened Ecological Community" (TEC) under the EPBC Act. However, the size of the patches observed did not meet the minimum condition thresholds to constitute a TEC.

There is potential to restore or revegetate this patch to allow it to reach the protected TEC status. Should this occur, a 30 m buffer area is recommended to be maintained around the edges of the TEC to protect from potentially impacting activities (DoEE 2018).

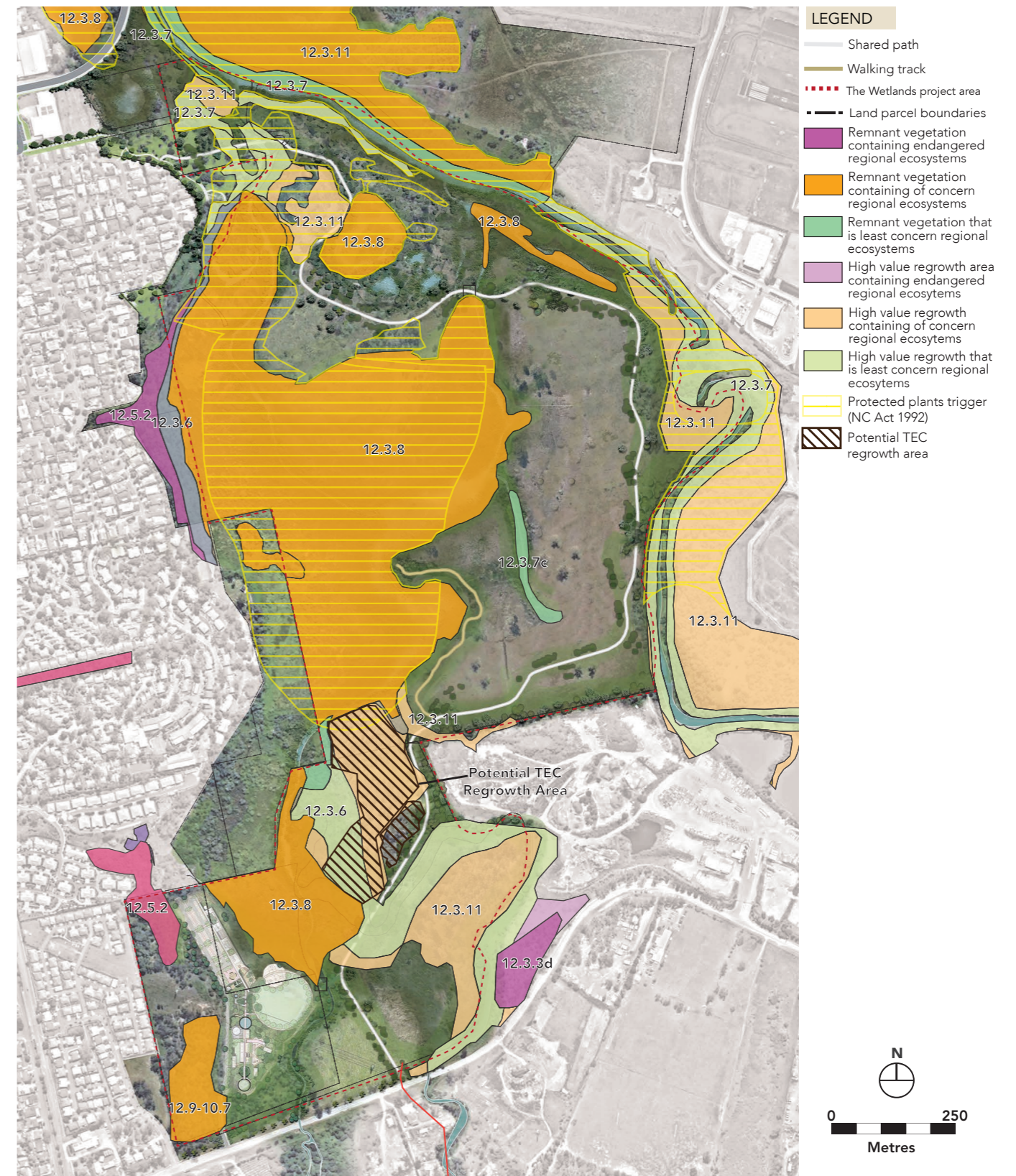
This potential TEC regrowth area is shown on Figure 2.

##### Conservation significant flora

No conservation significant flora species listed under the Nature Conservation Act or EPBC Act have been found to date within the Wetlands. The conservation significant *Gossia gonoclada* is considered likely to occur within intact remnant riparian vegetation communities along Oxley Creek.

Citywide significant flora species (as listed in Council's City Plan 2014 Biodiversity Overlay code) observed within the Wetlands included *Eucalyptus tereticornis*, *Leptospermum brachyandrum* and *Lophostemon confertus*.

Citywide significant vegetation protected under the NALL is mapped across most of the Wetlands, this includes protection of dead trees and hollow logs that provide habitat for wildlife.



**Figure 2: Regional Ecosystems mapping**

Source: Department of Environment and Science (2021), GHD (2021)

Regional ecosystems are vegetation communities in a bioregion that are consistently associated with a particular combination of geology, landform and soil (Sattler and Williams 1999, Vegetation Management Act 1999)

### 3.2 Introduced species

#### Weeds

An extensive range of weed species occupy the Wetlands. They are a legacy of historical land clearing and land disturbance. Established woody and herbaceous weeds primarily inhabit the understorey and shrub layers and include both State (Queensland) and Federal-listed weed species.

State and Federal listed weed species recorded within the Wetlands are detailed within Table 3.

**Table 3 Weed species recorded within the Wetlands**

Latin Name	Common Name	Status*	Location
<i>Ambrosia artemisiifolia</i>	Annual ragweed	Cat 3*	Widespread, dense in patches
<i>Baccharis halimifolia</i>	Groundsel bush	Cat 3*	Localised, occasional
<i>Cardiospermum grandiflorum</i>	Balloon vine	Cat 3*	Localised, dense in patches
<i>Celtis sinensis</i>	Chinese elm	Cat 3*	Along Oxley Creek
<i>Cinnamomum camphora</i>	Camphor laurel	Cat 3*	Along Oxley Creek
<i>Eichhornia crassipes</i>	Water hyacinth	Cat 3* WONS^	Dense in open wetland
<i>Erythrina cristagalli</i>	Coral tree	Cat 3*	Widespread along Hanleys Creek
<i>Lantana camara</i>	Lantana	Cat 3*, WONS^	Widespread, primarily in previously cleared areas, dense in patches
<i>Lantana montevidensis</i>	Creeping lantana	Cat 3* WONS^	Localised, dense in patches
<i>Opuntia stricta</i>	Prickly pear	Cat 3* WONS^	Occasional
<i>Schinus terebinthifolius</i>	Broad-leaved pepper tree	Cat 3*	Occasional
<i>Senecio madagascariensis</i>	Fireweed	Cat 3* WONS^	Occasional
<i>Sphagneticola trilobata</i>	Singapore daisy	Cat 3*	Widespread, particularly adjacent to waterways
<i>Sporobolus sp</i>	Rats tail grass	Cat 3*	Widespread, dense in patches

Table note: \*Cat3 – Category 3 weed under restricted invasive weed species listed under the Biosecurity Act  
^WONS – Weed of national significance.

Several species of weeds of local significance were also recorded on site. These weeds are managed under Council's NALL.

#### Introduced fauna

Introduced terrestrial fauna, including deer and foxes, have been recorded within the Wetlands. Control of these introduced species is managed by Council's Pest Management Unit.

Exotic fish species including tilapia, gambusia, platys and goldfish have been recorded within the waterways.

The entirety of the project area is located within the fire ant biosecurity zone 2, according to the National Red Imported Fire Ant Eradication Program: Fire Ant Biosecurity Zones mapping (DAF 2020). Fire ant nests have been observed throughout the Wetlands.

Whilst noisy miners are native species, they do have a tendency to dominate green open spaces, and displace other native birds. Vegetation clearing and fragmentation has increased their suitability of habitat. Their dominating and harassing behaviour towards other birds is listed as a Key Threatening Process (KTP) under the EPBC Act. Noisy miners have been recorded in higher numbers to the north of the site between Gleneagles Crescent entrance and Culvert 1. This area comprises mowed turf and trees. Noisy miners have also been recorded between the walking track and Culvert 3.

Noisy miners prefer short grass, absence of midshrub layer and smooth barked Eucalyptus species. Vegetation management throughout the Wetlands is to be conducted in a manner that discourages the presence of noisy miners to maintain the diversity of birdlife across the site.



**Figure 3: Weeds observed on site**  
Source: adapted from GHD (2021), Litoria (2019)

### 3.3 Wetlands and waterways

The Wetlands are located at the confluence of three creek systems, Hanleys Creek, Blunder Creek and Oxley Creek. The Wetlands are fed by both Hanley and Blunder Creek, as well as by a large, connected, subterranean aquifer. Both the Wetlands and the three waterways are mapped as Groundwater Dependant Ecosystems (GDE). Refer to Figure 4: Wetland and waterway mapping.

#### Waterways

Both Hanleys and Blunder Creeks flow directly into the Wetlands from the south. Water discharges from the Wetlands into Oxley Creek from two exit points located at its northern and eastern extremities. Oxley Creek then flows north to meet the Brisbane River. Tidal influence within Oxley Creek extends to a point approximately halfway along the creek frontage of the Wetlands. Refer to Figure 4.

Historical land use activities, particularly land clearing and modification have resulted in poor water quality within the waterways within the Wetlands.

Limited water quality sampling has been undertaken at Archerfield Wetlands. However, where previous sampling has occurred, results have indicated poor water quality with low levels of dissolved oxygen, high temperatures and variable levels of turbidity (Litoria 2019). PH levels were also found to be more acidic than acceptable water quality objectives. Lack of riparian vegetation could be a contributor to the turbidity of the water, as unstable banks cause sediment to enter the waterways. Lack of canopy cover over the waterways can also contribute to higher water temperature.

Waterways are subject to regulation under the Fisheries Act 1994 and the Planning Act 2016. When it comes to waterway barrier works, the mapping of the waterways takes into account the risk of the impact of waterway barriers, and the likelihood that barrier works will negatively affect the ability of fish to move within the waterways. Sections of Oxley Creek and the tidal extent of Blunder Creek are mapped as major risk, the southern Blunder Creek reach is mapped as high risk and sections of Blunder and Hanleys Creek are mapped as low risk. Regulatory provisions, such as development requirements, may apply to barrier works within mapped sections of the waterways. Refer to Figure 4 for the rated waterways for waterway barrier works.

#### Blunder Creek realignment

A section of the Blunder Creek channel to the south east of the Wetlands has been realigned north east of its original course. The channel realignment has resulted in the modification of stream bed and banks, loss of instream habitat and die-back of riparian vegetation and wetland plants. The original alignment of Blunder Creek remains subject to inundation, with areas of palustrine wetlands mapped near the original stream bed.

#### Wetland

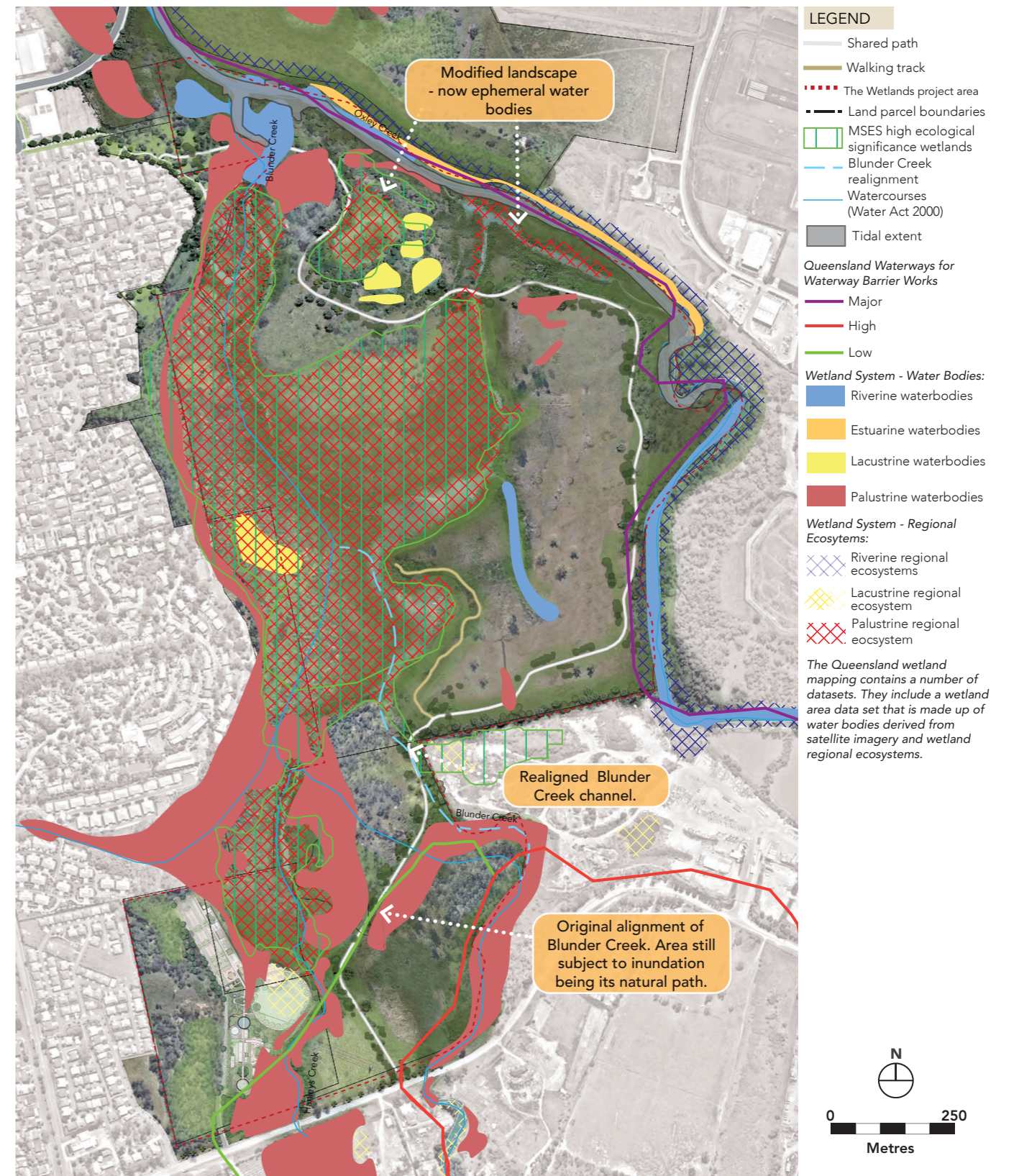
A significant proportion of the Wetlands supports a palustrine (vegetated swamp) wetland, which is also mapped as an area of very high conservation significance for non-riverine wetlands (DES, 2015) and a Matter of State Environmental Significance (MSES) high ecological significance wetland (DES, 2020). Small areas of lacustrine (lake) wetlands are also present across the Wetlands.

The main wetland body is currently mapped as Of Concern RE 12.3.8. However, the wetland (and riparian vegetation along Hanleys Creek) is mostly degraded, with little canopy cover and dominated by *Typha orientalis* and *Erythrina crista-galli*.

Activities associated with the former meat processing facility (previously located in the northwest corner of the Wetlands) have resulted in modifications to both the terrestrial landscape and the Blunder Creek northern exit point of the Wetlands. The largest of several ponds (mapped as palustrine Regional Ecosystem wetland system), artificially created for disposing of waste and runoff from factory operations, now functions as an ephemeral wetland. These modifications to the landscape have changed the hydrological function of the wetland and watercourse, as evidenced by canopy tree die-back within and surrounding the formed depressions.

#### Definitions

- **Palustrine wetlands** are vegetated, non-riverine or non-channel wetlands. They include billabongs, swamps, bogs, springs, soaks etc. and have more than 30% emergent vegetation. They are an important part of the landscape and provide habitat and breeding areas for a wide variety of species.
- **Estuarine wetlands** are those with oceanic water which is diluted with freshwater run-off from the land.
- **Riverine wetlands** are contained within a channel (e.g. river, creek or waterway) and their associated streamside vegetation. They can be natural or artificial and may connect to other wetland systems.
- **Lacustrine wetlands (lakes)** are dominated by open water, and may have fringing vegetation. In Queensland, particularly in arid and semi-arid areas, these wetlands are highly variable. Some dry out, while others stay wet for long periods, providing a refuge for many species during dry times.



**Figure 4: Wetland and waterway mapping**  
Source: Queensland Government wetland mapping (2021)

### 3.4 Landscape character zones

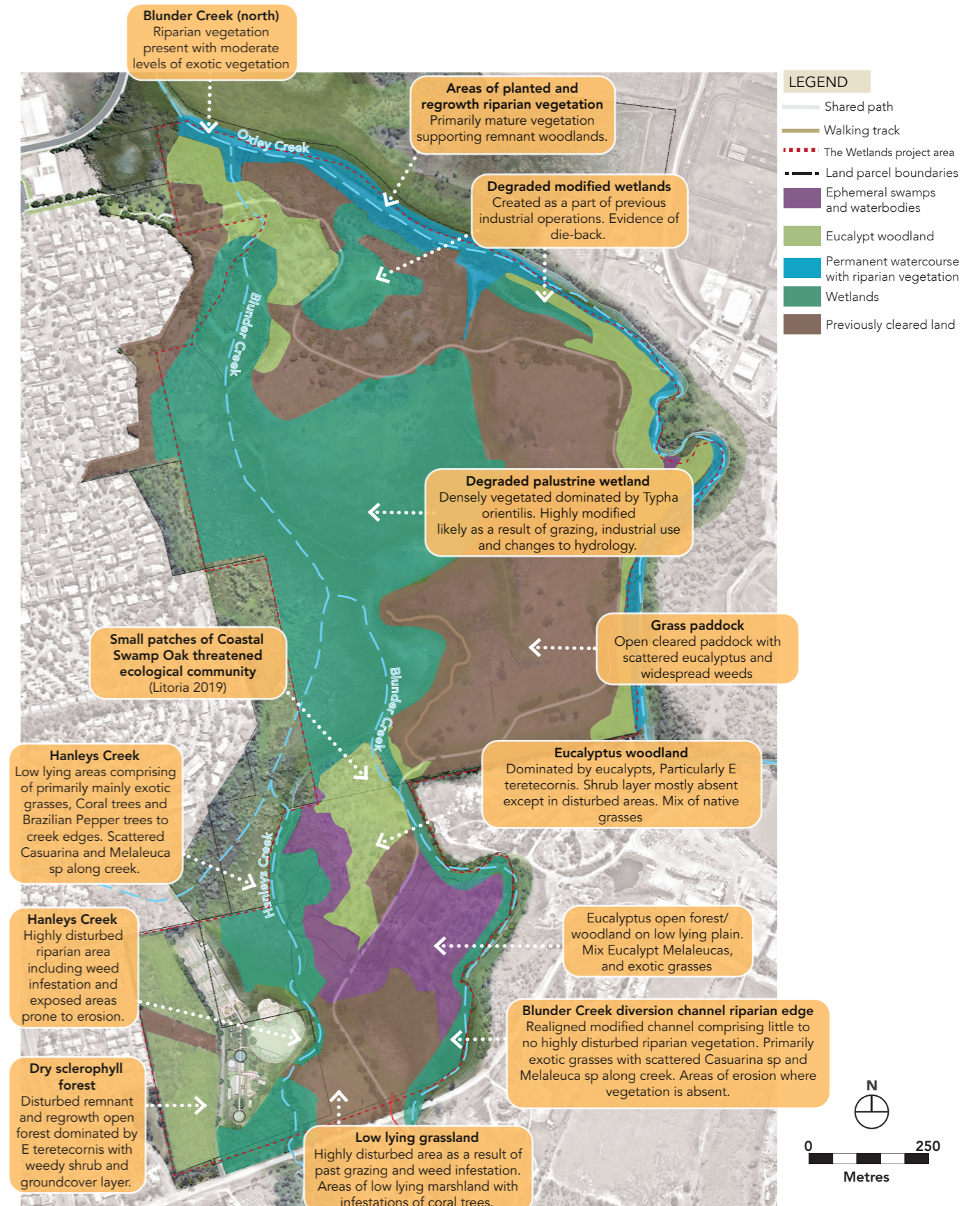
Prior to European settlement, the Wetlands likely consisted of a mosaic of native vegetation communities including eucalypt dominated woodlands, paperbark open forest, swamps and a mix of riverine, palustrine and estuarine wetlands. Human land use changes including clearing, changes to hydrology and modification of flow regimes have had a significant impact on the Wetlands (Litoria 2019).

Six landscape character zones have been identified within the Wetlands, with each supporting various flora and fauna species\*. They are described in Table 4 and mapped in Figure 5.

**Table 4 Landscape character zone descriptions**

Landscape character zone	Description
Permanent watercourse with riparian vegetation	<ul style="list-style-type: none"> <li>Supports dense clusters of aquatic surface plants.</li> <li>Riparian vegetation supporting remnant woodlands. Contains a variety of aquatic habitats (e.g. deep pools, riffles).</li> <li>Experiences tidal influence from the Brisbane River.</li> <li>Ephemeral and semi-permanent water sources.</li> <li>Soft sandy substrate suitable for burrowing.</li> </ul>
Eucalyptus Woodlands	<ul style="list-style-type: none"> <li>Dominated by eucalypts, particularly blue gums (<i>Eucalyptus tereticornis</i>).</li> <li>Shrub layer mostly absent except in disturbed areas.</li> <li>Logs, woody debris and other complex ground-level microhabitats present in high densities.</li> <li>Mix of native grass species.</li> <li>Mistletoes abundant in patches.</li> <li>Canopy layer representing the dominant vegetative strata.</li> </ul>
Wetlands	<ul style="list-style-type: none"> <li>Dense population of cumbungi (<i>Typha orientalis</i>).</li> <li>Ephemeral sections heavily infested with cockspur coral tree (<i>Erythrina crista-galli</i>).</li> <li>Holds permanent still or slow-moving bodies of fresh or brackish water and impeded water flow.</li> <li>Canopy layer absent.</li> <li>Soft sandy and muddy substrate.</li> </ul>
Ephemeral swamps and water bodies	<ul style="list-style-type: none"> <li>Situated within low-land depressions and creek overflow areas.</li> <li>Supports a dense ground and shrub layer.</li> <li>Contains aquatic and semi-aquatic plants that are absent from the surrounding ecosystems.</li> <li>Fringing woodlands with large canopy species.</li> <li>Frequently encountered between the wetland system and eucalypt woodland patches.</li> </ul>
Previously cleared land with heavy weed infestation	<ul style="list-style-type: none"> <li>Open paddocks with patches of vegetation including occasional isolated trees.</li> <li>Canopy layer absent.</li> <li>Ground-level habitats cleared and lacking structural complexity.</li> <li>Dense understory and shrub layer, consisting mostly of exotic species.</li> </ul>

\*adapted from GHD 2021



**Figure 5: Landscape character zones**  
Source: GHD (2021)



### 3.5 Habitat value

The Wetlands supports a diverse range of habitats, ranging from open paddocks to remnant eucalyptus woodlands (GHD 2021). To date, over 170 bird, 12 mammal, 5 reptile and 3 amphibian species have been recorded on site.

Mature eucalypts across the Wetlands provide nesting habitat for large avifauna and denning habitat for arboreal mammals. Breeding places recorded on site include tree hollows, bird's nests and arboreal termite mounds. The number and diversity of birds on the Wetlands indicate the important value that the Wetlands holds, even in its current modified state.

While no koalas have been recorded on site, the project area is mapped as a koala priority area with essential habitat for koalas mapped primarily within the eastern portion of the Wetlands.

No conservation significant amphibians were recorded during field surveys. However, the wallum froglet was assessed as likely to occur due to the presence of suitable habitat and mapped essential habitat along the western boundary of the Wetlands.

Table 5 summarises the current habitat values that each of the landscape character zones provide, while figure 6 maps some of the important habit features across the Wetlands.

**Table 5 Habitat value descriptions**

Landscape character zone	Habitat value	Observed avifauna
Permanent watercourse with riparian vegetation	<ul style="list-style-type: none"> <li>Foraging and habitat for amphibians and aquatic reptiles.</li> <li>Drinking sites for birds and mammals.</li> <li>Foraging and roosting habitat for microbats</li> <li>Conservation significant species e.g wallum froglet, migratory species.</li> </ul>	<ul style="list-style-type: none"> <li>Aquatic and wetland avifauna, including cormorants, pacific black ducks, purple swamphens, collared kingfishers, sacred kingfishers and buff-breasted rails.</li> <li>Raptors including whistling kites and the eastern osprey.</li> </ul>
Eucalyptus Woodlands	<ul style="list-style-type: none"> <li>Important habitat connectivity for woodland species.</li> <li>Foraging and nesting habitat for a diversity of woodland and canopy dwelling birds</li> <li>Complex ground level microhabitats.</li> <li>Refuges and basking areas for reptiles.</li> <li>Important habitat for conservation significant koala and greater glider.</li> </ul>	<ul style="list-style-type: none"> <li>Woodland birds including Australian magpie, rainbow lorikeet, sulphur crested cockatoos, blue-faced and Lewins honeyeaters, mistletoe bird and eastern koel.</li> </ul>
Wetlands	<ul style="list-style-type: none"> <li>Foraging and habitat for amphibians and aquatic reptiles.</li> <li>Drinking sites for birds and mammals.</li> <li>Breeding and foraging habitat for wetland and aquatic bird species.</li> <li>Conservation significant species – wallum froglet, migratory species such as the Latham's snipe.</li> </ul>	<ul style="list-style-type: none"> <li>Aquatic and wetland avifauna, including cormorants, pacific black ducks, purple swamphens, collared kingfishers, sacred kingfishers, buff-breasted rails and Latham's snipe.</li> </ul>
Ephemeral swamps and water bodies		
Previously cleared land with heavy weed infestation	<ul style="list-style-type: none"> <li>Provides foraging and nesting habitat for insectivores, granivorous birds.</li> <li>Foraging for herbivorous mammals, particularly macropods.</li> <li>Nesting habitat for ground-dwelling birds, e.g. masked lapwings and quails.</li> <li>Hunting areas for raptors.</li> <li>Conservation significant species – whitethroated needletail and rainbow bee eaters and wedge-tail eagle.</li> </ul>	<ul style="list-style-type: none"> <li>Insectivores including rainbow bee-eaters, tree martins, welcome swallow, glossy swiftlet, tawny grassbird and a number of finches and fairy-wren species</li> <li>Raptors including white-bellied sea eagle, pacific baza, brown falcon and wedge-tail eagle.</li> </ul>



**Figure 6: Habitat value**

Source: Department of Environment and Science (2021), GHD (2021)

### 3.6 Land use

Since European settlement within Brisbane, the Wetlands and its surrounds have been exploited for a wide range of uses. These uses and their impacts are summarised below and illustrated in Figure 7.

#### Historic land use

##### Pre-European history

The Wetlands would have provided a range of food and material resources for First Nations People. Cultural heritage artifacts have been discovered across the Wetlands and are mapped in Figure 7.

In accordance with the *Aboriginal Cultural Heritage Act Duty of Care Guidelines*, the Wetlands is considered a combination of Category 4 and 5 land. Category 4 locations include the previously disturbed areas of the former meat processing factory and decommissioned wastewater treatment plant. The less disturbed wetlands, open forests, riparian zone and grazing areas have a Category 5 rating.

A cultural heritage assessment of the Wetlands shared path and walking track was undertaken with the Yuggera Ugarapul People (the Aboriginal party for the area) in June 2021. The findings identified a relict dune comprising an elevated area containing significant cultural artifacts. Any ground disturbance works, including revegetation activities, is to avoid the relict dune (recommended buffer of 20m).

##### Meat processing factory

A meat processing factory was established in 1894 in the northern portion of the Wetlands. The factory operated until 1994, after which it was demolished with some remnant evidence of the factory remaining. Historical meat processing and abattoir activities, including using broad area and trench filling waste disposal practices, have resulted in areas of the former factory footprint being classified as contaminated land.

##### Inala Wastewater Treatment Plant

The former Inala Wastewater Treatment Plant is located within the southwestern portion of the Wetlands, north of Bowhill Road. This site operated between 1958 and 1997 to service the post-war suburb of Servicetown (now Inala). Small areas within the now-decommissioned treatment plant have been identified as potentially containing contaminated material.

Areas of potential contamination at both the former meat processing factory and treatment plant sites should be assessed prior to revegetation activities due to a risk of exposure to hazardous waste materials to workers as well as to potentially seeking alternative methods to ensure success of planting works within a modified substrate.

##### Grazing

Grazing was undertaken across the Wetlands from the late 1990s to 2020. The moderate level of grazing likely maintained the current grassland environment.

#### Current land use

##### Existing infrastructure

Existing infrastructure located within the Wetlands includes:

- High voltage transmission line – Includes an existing Powerlink Queensland Transmission Line Corridor easement parcel (Easement B on RP107335). The corridor is described as the Runcorn – Richlands (110kv) Transmission Line Corridor.
- Sewer line pipeline – within Lot 896 on SP105392, Lot 896 on SP132792 and Lot 21 on SP134057.

Plant species selection and placement during revegetation works are to ensure access to existing infrastructure easements are maintained and that any infrastructure is not impacted as vegetation matures.

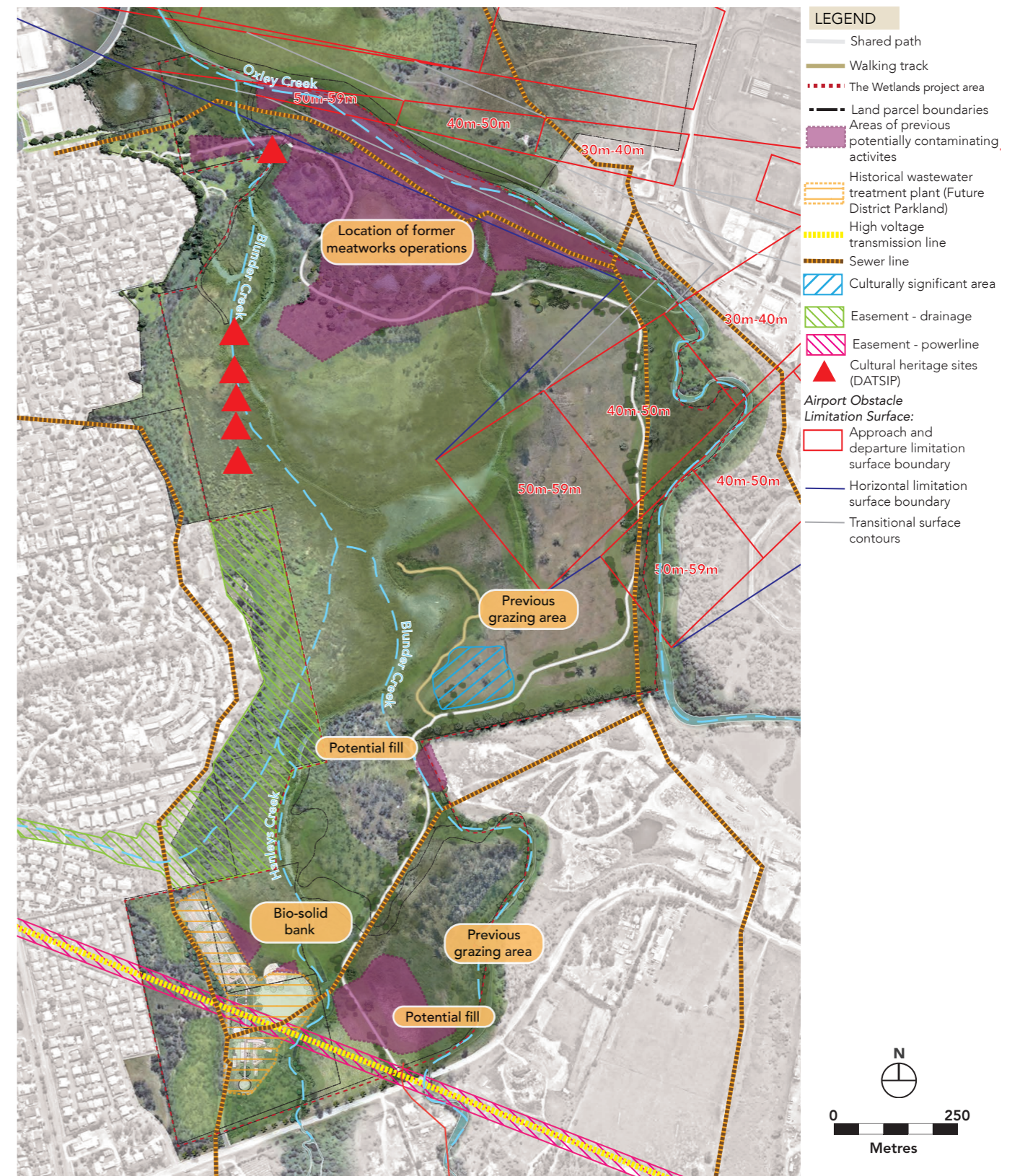
Revegetation activities located within the easements should consider the potential access requirements, height restrictions and ground disturbance restrictions.

##### Archerfield Airport

The Wetlands site is located to the southwest of Archerfield Airport. This includes obstacle surface boundaries, which define the airspace around the airport to be maintained free from obstacles to allow for safe aircraft operation. The Wetlands is also located within the airport bird and bat strike zone (0 - 3 km) overlay. Development involving landscaping or drainage works, located 0-3km of the airport, is to minimise the potential to attract birds and bats. A study was commissioned by Council in 2013 to identify constraints associated with a proposed revegetation strategy within Lot 21 SP 134057 recommending potential risk mitigation measures. The findings concluded that rehabilitation of the Wetlands has the potential to enhance fauna habitat as a result of increased food and nesting resources, and therefore may increase bird/bat strike at Archerfield Airport. Management strategies to minimise potential increase in risk of fauna strike associated with the revegetation strategy, particularly flying foxes, include refining plant species and densities, including reducing species known to be highly attractive to birds and/or bats, such as fruiting trees. Refer to Appendix 1 for plant selection within the airport affected environs.

##### District Park

The construction of a district-scale public park on the site of the decommissioned Wastewater Treatment Plant is due for completion in 2024.



**Figure 7: Historic and current land uses**

Source: Queensland Globe (2021), Brismaps (2021), GHD (2021)

### 3.7 Bushfire and flooding

#### Bushfire

Areas within the Wetlands are identified as moderate risk on Council’s Bushfire Management Areas mapping.

A Bushfire Management Plan (BMP) has been prepared for the future District Park located in the southwestern corner of the Wetlands. The BMP includes management measures for the construction of built structures to achieve an acceptable or tolerable level of risk. This includes applying separation distances of new structures from vegetation and landscape buffers of less flammable species in certain areas.

If revegetation works are proposed to occur within the southwestern allotment, adherence to the planting requirements and buffers detailed within the BMP will be required.

Additional fire and maintenance tracks may be required to provide fire and emergency vehicle access into the interior of the Wetlands. Due to the likelihood of infrequent use, these tracks may also be used as public recreational trails.

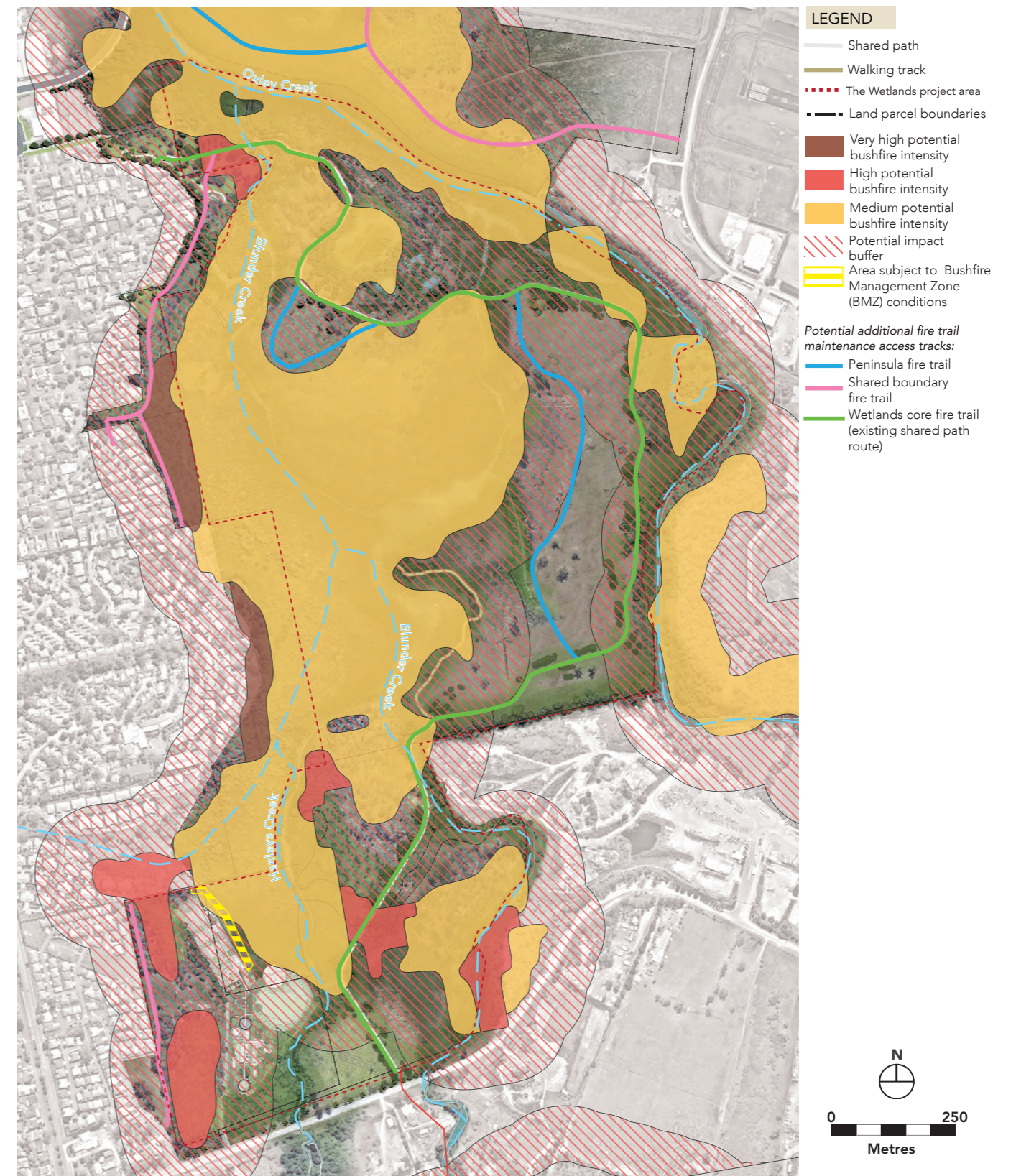
Refer to Figure 8 for mapped areas of bushfire risk.

#### Flooding

Brisbane City Council’s Flood Awareness Map identifies the Wetlands as being within a high likelihood (5.0% annual chance) of flooding, with some areas being mapped as low to medium likelihood (0.2% and 1% annual chance) (Brisbane City Council 2020).

More than 90% of the Wetlands is below 6m Australian Height Datum (AHD).

The Wetlands is subject to flooding from Oxley Creek, Blunder Creek, Hanleys Creek and the Brisbane River. However, the maximum flood velocities across the Wetlands are generally low (less than 1.5m/s). The dominant source of flooding of the Wetlands is Brisbane River backwater flooding. During high rainfall periods, flash flooding can occur within the Wetlands, with the floodwaters originating from both Hanleys and Blunder Creek. This flash flooding is localised flooding and subsides relatively quickly. Floodwater entering the Wetlands from Oxley Creek and the Brisbane River is usually associated with larger flood events, in this type of flood event the water takes a longer period time to leave the Wetlands.



**Figure 8: Bushfire risk**

Source: State Planning Provisions Bushfire Hazards mapping (2021)

# 4 Archerfield Wetlands Vegetation Management

Human land use changes, including land clearing, modifications to landform and hydrology as well as poor water quality, have had a significant impact on the natural functioning of the site. Despite this, the site still has high conservation value even in its degraded state.

Vegetation management across the site must aim to protect and enhance the ecological values that currently exist, whilst also contributing to a quality nature-based recreation destination.

In consideration of the Wetlands existing conditions in Section 3, natural habitat management targets and actions have been identified that will help achieve the aim to protect and enhance the values of the Wetlands.

## 4.1 Natural habitat management targets

<b>Natural habitat resilience and diversity</b>	Create vegetation resilience and diversity that can support endangered and vulnerable plants and ecosystems.
<b>Natural habitat composition and structure</b>	Maintain or enhance the existing natural habitat, in terms of structure and composition (both native and non-native) to maintain the important habitat it provides for the existing native wildlife population (in particular the diverse avifaunal population). Where a specific RE has been identified to be restored back to its remnant RE, restoration works is to be undertaken in accordance with the state benchmark for the specific RE.
<b>Habitat</b>	Maintain and enhance existing habitat values across the Wetlands that support resilient ecosystems and preserve the existing native faunal populations within the Wetlands.
<b>Wetlands and waterways</b>	Enhance aquatic function and riparian habitat within wetlands and along waterways within the Wetlands.
<b>Waterways</b>	Enhance aquatic function and riparian habitat along waterways within the Wetlands.
<b>Landscape Character</b>	Maintain and enhance the existing diversity of landscape character zones across the Wetlands to support floral and faunal biodiversity and to provide a quality nature-based recreation destination.
<b>Asset and Infrastructure protection</b>	Protect existing assets including infrastructure and access to infrastructure within and adjacent to the Wetlands.
<b>Safety</b>	Ensure that the Wetlands is safe for workers, volunteers and visitors.

Figure 9 provides an overview of the opportunities and constraints identified within the Wetlands, and will guide the corridor restoration approach.



Figure 9: Opportunities and constraints

## 4.2 Vegetation management actions

### Vegetation resilience and diversity

- Reinstatement of quality healthy condition ecosystem vegetation structures, where appropriate.
- Widen and connect riparian vegetation through adjacent buffer planting.
- Introduce pockets of rainforest vegetation where there are gaps in riparian vegetation.
- Reinstatement of the TEC of coastal swamp oak (*Casuarina glauca*) within existing regrowth area, including a 30m buffer area.
- Reintroduce endangered vegetation species such as *Gossia sp.* in appropriate locations.
- Create a healthy and connected riparian corridor that supports a variety of riparian and/or rainforest dependant species.
- Control exotic vines throughout site to protect existing native vegetation.
- Targeted control of non-value habitat Category 3 herbaceous weeds for example annual ragweed, groundsel bush, prickly pear, fireweed and Singapore daisy.
- Targeted control of Para grass (*Urochloa mutica*) (Council Pest Vegetation -NALL).

### Vegetation structure

- Staged removal of lantana thicket, balloon cotton bush and dense exotic grasses and replacement of equivalent native vegetation structure (creating low-mid-and upper strata) to ensure no net loss of habitat availability for existing fauna who rely on the existing vegetation structure.
- Staged removal of exotic canopy species including coral trees, camphor laurel and Chinese elm and replacement of equivalent native vegetation to maintain existing shaded canopy structure and soil retaining root systems.

### Habitat

- Retain and protect existing native trees, stag trees and logs (including fallen trees).
- Control water hyacinth and *Salvinia sp.* to increase open water habitat conditions.
- Control feral animals (by Council) to protect existing native fauna.
- Enhance essential koala habitat and wildlife movement routes by creating a healthy and connected woodland corridor.
- Increase diversity of birdlife across the Wetlands by reinstating quality environments.
- Maintain open grassland structure through active management to maintain existing habitats for those species that depend on the grassland environment.
- Maintain and increase dense mid-story vegetation thicket that provides habitat and protection (e.g. for small birds and reptiles) from predators.
- Retain and protect habitat trees and roosting sites including stag and hollow bearing trees.
- Retain important ground refuges and complex ground level habitats by retaining logs and debris on site.
- Discourage introduction of aggressive bird species such as noisy miners, butcherbirds and magpies by retaining existing vegetation structure (e.g avoiding short grassed areas and encouraging clumps of thorny shrubs and vines within the vegetation structure).
- Monitor and evaluate faunal populations within the Wetlands to measure effectiveness of the rehabilitation efforts over time.
- Ensure domestic dogs are kept on-leash within the Wetlands.
- Encourage the introduction of artificial habitat such as nest boxes and refuge poles to enhance habitat.

### Wetlands

- Undertake wetland buffer planting and restoration that support the wallum froglet and other important wetland-dependent local and migratory species.
- Establish artificial wetlands to provide additional floral and faunal habitat opportunities.

### Waterways

- Widen and connect quality riparian vegetation along Oxley Creek to improve waterway health.
- Reduce bank erosion and sediment entering waterways by stabilising exposed banks with quality riparian vegetation corridors along Blunder and Hanleys creeks.
- Protect existing natural waterway paths and movement to allow natural flows.

### Landscape Character

- Vegetation control, regeneration and planting work to ensure diversity and extent of existing landscape character zones are maintained through appropriate removal strategies and plant selection for each zone.

### Asset and Infrastructure protection

- Select appropriate plant species near airport environs to mitigate bird and bat strike risk.
- Provide adequate vegetation setbacks and plant species selection in proximity to existing and proposed underground and above ground infrastructure, infrastructure easements and maintenance access locations.
- Consider locations of future tracks and trails and associated infrastructure.
- Ensure duty of care with regards to Category 4 and 5 activities undertaken under the Aboriginal Cultural Heritage Act 2003 Duty of Care Guidelines to protect known or potential cultural heritage assets and artifacts.

### Safety

- Undertake a risk assessment when planting in identified potential contaminated land areas to ensure safety of workers.
- Undertake a soil condition assessment when planting in identified potential contaminated land areas to ensure soil stability and sufficient substrate to support healthy root structure and plant growth.
- Ensure appropriate vegetation setbacks and breaks are in place to minimise bushfire risk.
- Undertake flood modeling where required to ensure no worsening of flooding as a result of revegetation work.
- Undertake an ongoing fire-ant program to reduce the spread and impact of fire ants.

## 5 Landscape Management Units

A diverse range of vegetation communities, habitats, land-form and hydrological regimes currently exist throughout the Wetlands. Restoration and management approaches will therefore need to be applied to these varying landscapes within the Wetlands to achieve the vegetation restoration and management objectives and targets.

As such, eight Landscape Management Units (LMUs) have been applied to the Wetlands. These LMUs have been derived from the information presented in the previous Section 3 "Existing Environment" and include:

- LMU1 - Former meatworks extent
- LMU2 - Riparian and riparian buffer
- LMU3 - Open grassland
- LMU4 - Wetland
- LMU5 - Woodland
- LMU6 - Hanleys Creek
- LMU7 - Blunder Creek south
- LMU8 - Dry sclerophyll open forest

Effective restoration takes time and planning. The restoration and management approaches for the proposed LMUs aim to ensure that the Wetland values are preserved and enhanced across the Wetlands over both short and long-term periods. This will be achieved by specifically addressing weed management regimes, identifying proposed revegetation locations and selecting appropriate species for each LMU.

Figure 10 illustrates the extent of the LMUs, which are described in further detail in the following section.

Both the proposed short and long-term vegetation management projects are considered within each of the LMU sections. The short-term projects are standalone projects that have been identified as the first or priority steps in enhancing the Wetlands. It is proposed that once these projects have been implemented and the vegetation established, then the long-term projects would commence. Appendix 1 and 2 illustrate these short-medium-term revegetation and management projects across the Wetlands (within each of the LMU's) and will aid in providing a "ready reckoner" should revegetation and vegetation management opportunities arise.

Appendix 3 details the proposed plant species for revegetation activities within each of the LMUs.



Figure 10: Landscape management units

## 5.1 LMU1 - Former meatworks extent

**Area: 14.6 ha**

**Current condition:**

Highly modified landscape due to historical land use activities, including trenched and mounded areas, exotic plant species and areas of subsurface waste materials.

**Target condition:**

Short-term - Existing vegetation structure to be maintained to retain important habitat and landscape character.

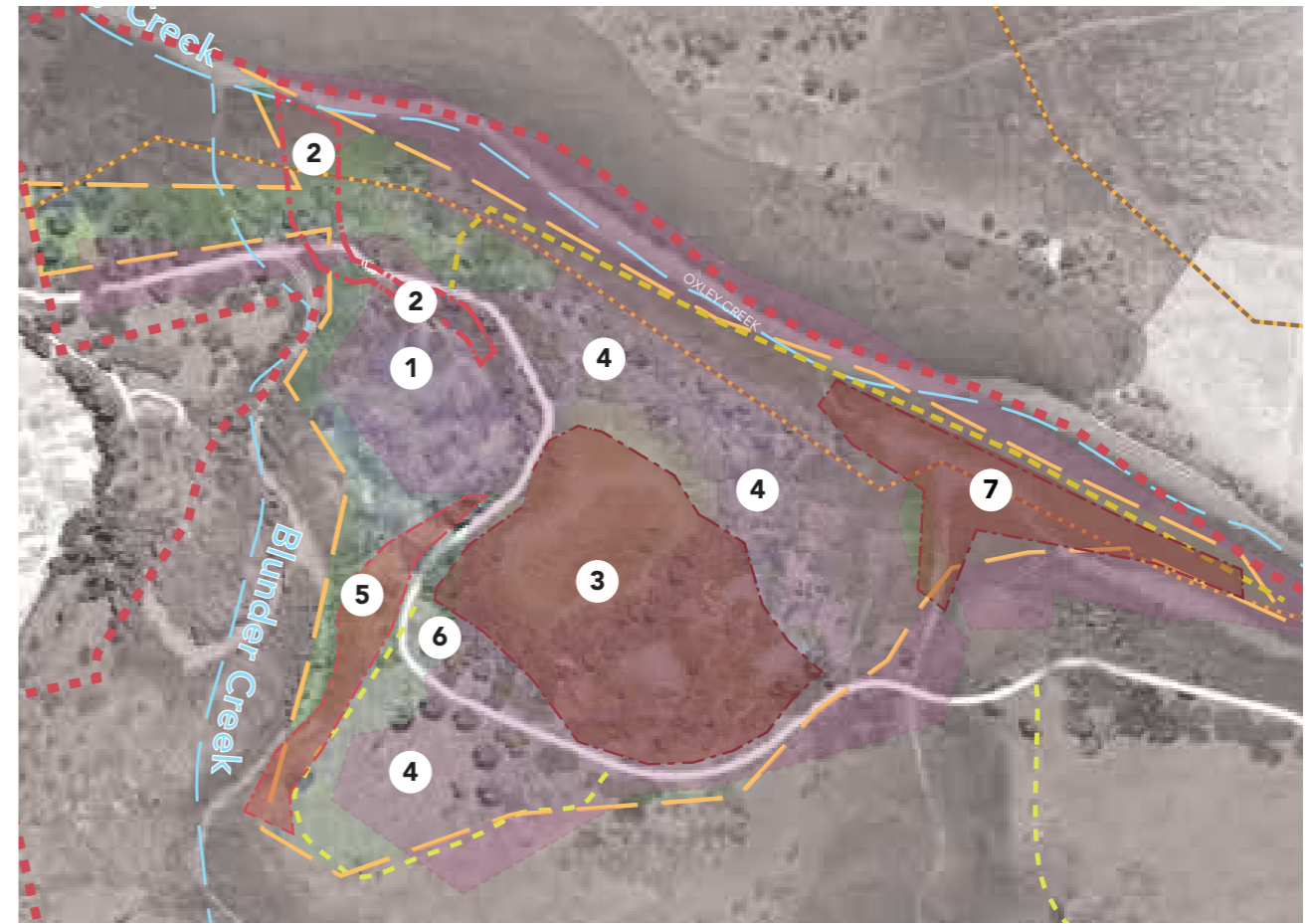
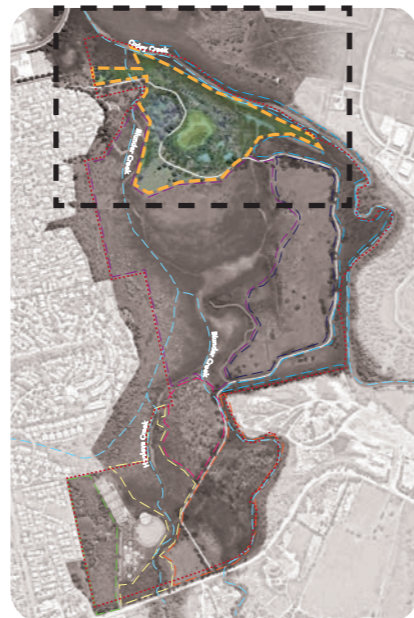
Long-term - Replacement of weed species with native alternatives, that replicate existing vegetation structure.

**Management actions:**

- Extend management track network to provide maintenance access across site and to provide additional walking trails.
- Existing grassland area to be retained and managed to maintain various grassland height structures, including control of saplings where required.
- Dense shrub/mid-story patches of vegetation to remain as habitat and refuge areas. Staged weed replacement strategy to ensure no net loss of dense mid-story vegetation.
- Enhancement of modified wetlands to provide habitat for wetland and water birds. This may include developing open water areas for migratory wetland birds in existing modified water bodies.
- Riparian planting to banks of Blunder Creek and its tributaries. Achieve RE 12.3.7 where possible along the creek banks and 12.3.8 and 12.3.11 within wetland and woodland areas respectively.
- Option to include artificial habitat such as nest boxes, noting that fixtures are to be specifically selected and placed for target fauna species.

**Considerations**

- Potential safety hazard for planting in areas of contamination. No dig options may be required in some areas.
- Soil testing may be required in Area 3.
- Modified soil profile may not be suitable for new planting in areas.
- Located within airport constraints. Refer Appendix 3 for approved airport environ species and densities.
- Existing exotic vegetation structure has a high habitat value.
- Sewer line located along northern boundary.
- Tidal nature of northern section of Blunder Creek.
- Potential cultural heritage artifacts in undisturbed areas.



**Figure 11: LMU1 - Former meatworks extent**

- Proposed short-medium-term revegetation areas
- Proposed long-term revegetation areas
- Proposed maintenance and walking tracks

<b>1</b>	Existing bank fill with debris. Area to remain in its current condition with no intervention and limited access.
<b>2</b>	Riparian planting to Blunder Creek completed 2023 to assist in waterway health and bank stabilisation (pre-clearing RE 12.3.7). Approx. 0.3ha.
<b>3</b>	Opportunity to enhance existing artificial wetland and surrounds by planting appropriate species that are able to withstand long periods of both inundation and dry (primarily to pre-clearing RE 12.3.8 with 12.3.7c). Approx. 3.5 ha with planting area approx. 1.5 ha around open water.
<b>4</b>	Trenched areas to remain primarily grassland structure with scattered dense shrubs. Maintain various grassland heights for habitat. Existing shrub density and structure to be maintained through staged weed replacement and native grassland infill planting with scrub clumps.
<b>5</b>	Opportunity to vegetate northern wetland edge adjacent to firetrail (primarily to pre-clearing RE 12.3.11). Approx. 1 ha with planting area Approx. 1.5 ha around open water.
<b>6</b>	Stag tree to be retained and protected.
<b>7</b>	Opportunity to enhance modified waterbody to encourage waterbirds (primarily to pre-clearing RE 12.3.8). Approx. 2.2 ha with planting area approx. 1 ha around open water.

## 5.2 LMU2 - Riparian and riparian buffer

**Area: 11.8 ha**

**Current condition:**

- Riparian vegetation between 10 to 30 m wide along the bank of Oxley Creek.
- Primarily native vegetation with patches of weed trees including *Cinnamomum* sp and exotic vines such as Cats Claw Creeper.
- Absence of mid-shrub layer in areas.
- Northern riparian zone comprises combination of planted and regrowth vegetation.

**Target condition:**

Short-term - Resilient and healthy connected riparian corridor along waterways and enhancement of habitat.

Long-term - Replacement of weed species with native alternatives that replicate existing vegetation structure.

**Management actions:**

- Control exotic vines within riparian vegetation.
- Staged dense exotic shrub replacement to ensure no loss of mid-story vegetation, which also aids in stabilising riparian bank structure (where required).
- Create connected woodland corridor adjacent to riparian vegetation to create a wide vegetated corridor that has the opportunity to support koala and glider habitat. Allow view-lines to Oxley Creek where possible from shared path, with areas of dense shrub layer/scrub in between to support habitat.
- Plant pockets of rainforest plant species in open areas within riparian zone and increase mid-shrub layer.
- Reinstatement of endangered riparian plant species, for example *Gossia* sp.
- Provide shade over shared pathway where possible.

**Considerations**

- Existing sewer pipe and manholes require access.
- Existing sewer maintenance track and access track from adjacent industrial property to be kept clear.
- Future Greenway bridge location to be kept clear of vegetation.
- Located within airport constraints. Refer to Appendix 3 for approved airport environ species.
- Existing exotic vegetation structure has high habitat value.
- Riparian vegetation partly mapped as essential koala habitat.
- Minimum 3.5 m setback of vegetation from edge of shared path, with mowed turf to path edges.
- Consider fleshy dense groundcovers to turf and path edges, where possible to reduce fire risk.

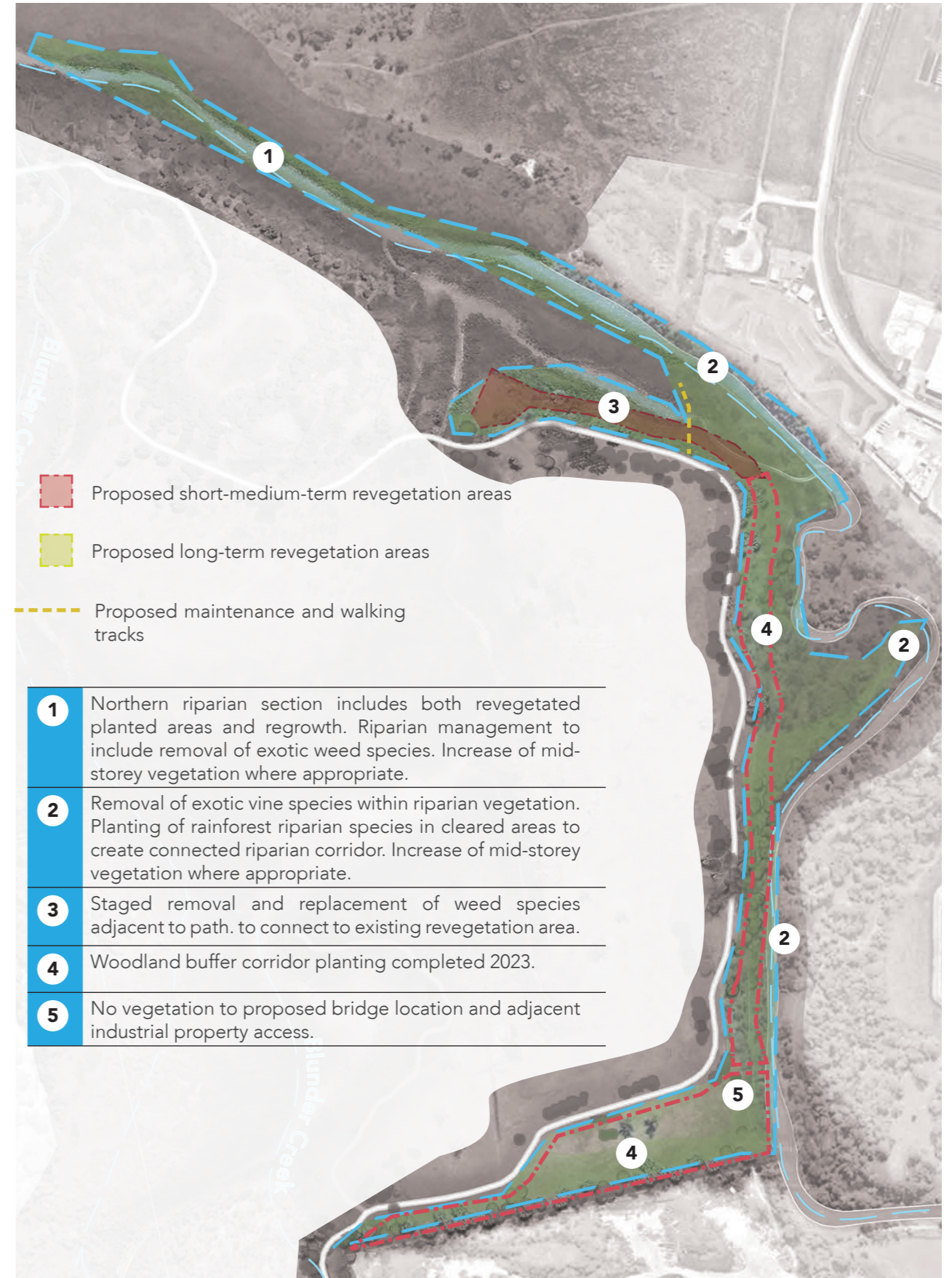


Figure 12: LMU2 - Riparian and riparian buffer



### 5.3 LMU3 - Open grassland

**Area: 17.4 ha**

**Current condition:**

Open grassland with scattered Eucalypts and large stag trees. Vegetation comprises primarily exotic pasture grasses and dense patches of woody shrub weeds.

**Target condition:**

Short-term - Existing open grassland vegetation structure to be maintained to maintain important habitats.

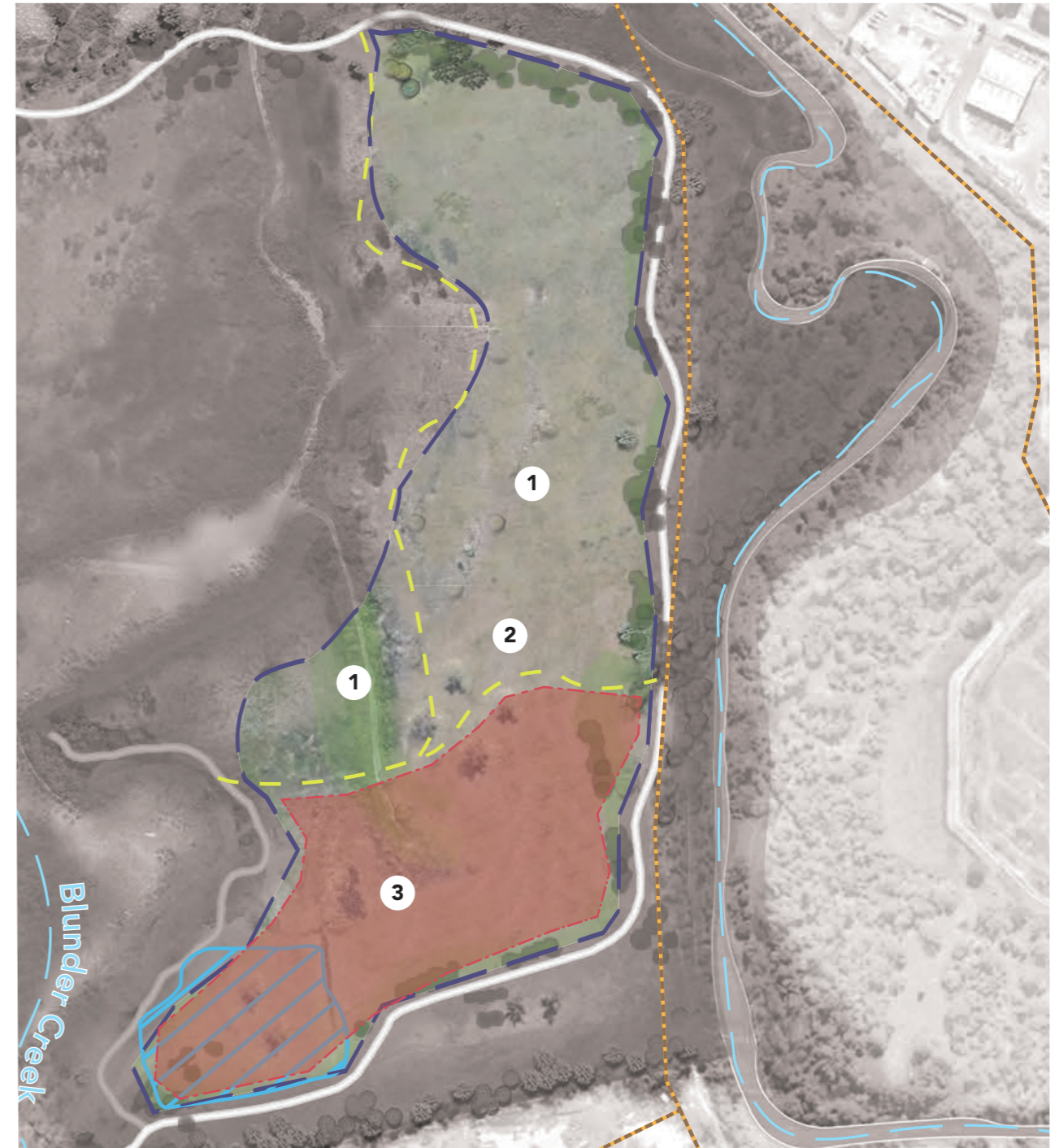
Long-term - Staged replacement of weed species with native grassland alternatives that replicate existing habitat conditions, whilst still retaining existing open grassland landscape.

**Management actions:**

- Extend management track network to provide maintenance access across site and to provide additional walking trails.
- Existing native trees to be retained. However, emergent saplings to be controlled to maintain existing open grassland vegetation structure. Grassland structure can reach RE 12.3.11 Condition Class 4 status (Queensland Herbarium) by introducing primarily native grasses with dense clumps of scattered shrubs.
- Grassland area to be retained and maintained as required to maintain existing open grassland vegetation structure. A slashing or burning routine to ideally be undertaken in mosaic patterns at different times across the Wetlands to provide a difference in grass length. Retain medium-tall grassland areas to avoid the introduction of noisy miner birds (ie avoid short turf where possible).
- Mid-story (exotic) vegetation to remain as habitat and refuge areas, with a long-term staged weed replacement strategy to ensure no net loss (or gain) of mid-story vegetation.
- Weed control to exclude balloon cotton bush and lantana until long-term dense shrub weed replacement strategy has been developed.

**Considerations**

- Future location of tracks and trail to be considered.
- Stag trees to be retained and protected.
- Protection of existing burrows and nests within grassland.
- Relict dune to be kept clear with a 20 m buffer area around.
- Locations within airport constraints. Refer to Appendix 3 for approved airport environ species.
- Existing exotic (grassland and shrub) vegetation structure has high habitat value.
- Wild grassland landscapes are in decline around Queensland, some which would have likely been actively managed pre-European era.
- Minimum 3.5 m setback of vegetation from edge of shared path, with mowed turf to path edges.



**Figure 13: LMU3 - Open grassland**

- Proposed short-medium-term revegetation areas
- Proposed long-term revegetation areas
- Proposed maintenance and walking tracks
- Relict dune

- 1 Grassland structure to be maintained. No net loss or increase to canopy density. A staged slashing of grass to create varying grass heights and scattered dense herbaceous shrubs or replacement with native grasses and shrubs as required to maintain grassland habitat in its current structure.
- 2 Weed control across grassland to exclude exotic pasture grasses, Balloon Cotton Bush and Lantana. These are to be retained as nesting habitat for small granivorous birds until a suitable staged dense shrub vegetation replacement program is developed (long-term).
- 3 Opportunity to remove sections of exotic vegetation and replace with native grasses and scattered clumps of shrubs (primarily to pre-clearing RE 12.3.11). Existing Eucalyptus regrowth. Approx. 6 ha.

## 5.4 LMU4 - Wetland

**Area: 31.2 ha**

**Current condition:**

Degraded modified wetland, dominated by *Typha* sp. with absent canopy. Patches of salvinia and water hyacinth within open water area.

**Target condition:**

Short-term - Development of vegetated wetland buffer to increase biodiversity and wetland resilience as well as foraging and habitat areas for amphibians, aquatic reptiles and aquatic birds.

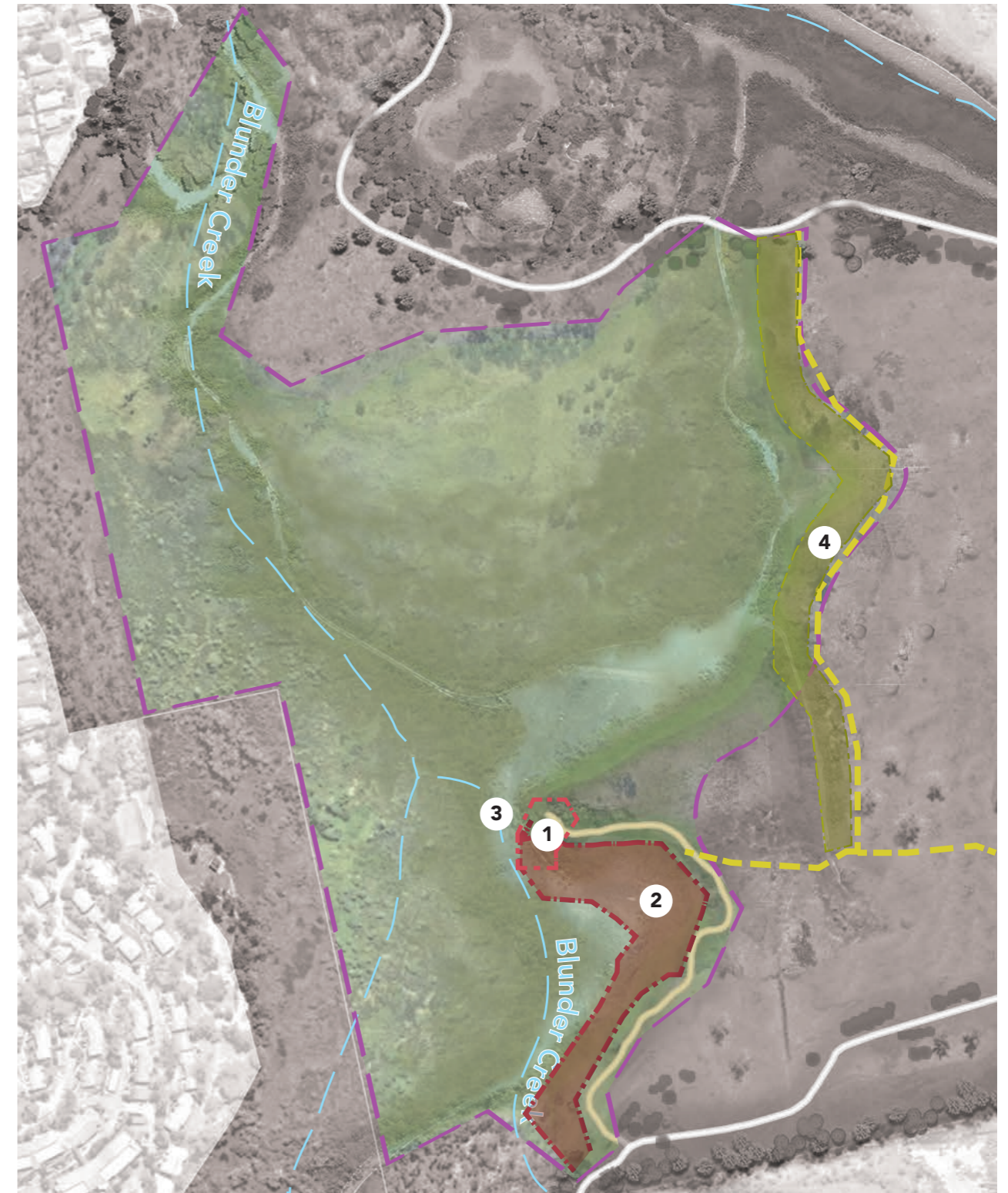
Long-term - Ongoing wetland buffer enhancement as well as an ongoing water hyacinth and salvinia removal program.

**Management actions:**




- Planting of wetland buffer to include fringing wetland trees, shrubs and grasses/sedges (approximately 15-30 m wide) planted in both dense and sparse patches to allow for intact areas for habitat as well as allowing for views into and across the wetland.
- Buffer planting to be planted to meet both 12.3.8 and 12.3.11RE condition.
- Shade and native edge planting to walking track.

**Considerations**

- Access to wetland area for revegetation purposes.
- Consideration of location of any future tracks and trails.
- Existing native vegetation and stag trees to be retained and protected.
- Located within airport constraints. Refer to Appendix 3 for approved airport environ species.
- Provision of clear sight-lines into the wetlands for visitors at key locations.
- Species selection and planting set out to provide suitable habitat for aquatic species such as the wallum froglet, as well as other amphibians, aquatic reptiles and aquatic birds.
- Minimum 3.5 m setback of vegetation from edge of path, with mowed turf to path edges.



**Figure 14: LMU4 - Wetland**

	Proposed short-medium-term revegetation areas		Proposed maintenance and walking tracks
	Proposed long-term revegetation areas		
<b>1</b>	Wetland buffer planting completed 2023.		
<b>2</b>	Opportunity for wetland /walking track buffer planting. Approx. 0.7 ha.		
<b>3</b>	Ongoing salvinia and water hyacinth control program to open water area.		
<b>4</b>	Opportunity for wetland buffer planting (subject to maintenance track) . Approx. 1.6ha.		

## 5.5 LMU5 - Woodland

**Area:** Approximately 5.1 ha

**Current condition:**

Woodland with *Eucalyptus teretecornis* as dominant canopy species with shrub layer mostly absent, with a mix of native and exotic grasses with scattered patches of lantana.

**Target condition:**

Short-term - Reinstatement of *Casuarina* TEC (RE 12.3.3/12.3.20 (90/10)) with existing vegetation structure maintained to support existing habitats.

Long-term - Replacement of weed species with native alternatives that replicate existing vegetation structure.

**Management actions:**

- Control of exotic vines.
- Infill planting to reinstate coastal swamp oak (*Casuarina glauca*) TEC (including the 30 m buffer area to edges for potentially impacting activities (DoEE 2018)) to allow it to reach protected status over time.
- Riparian planting along Hanleys Creek, including staged removal of coral trees and Brazilian pepper trees along Hanleys Creek and native riparian tree replacement (e.g. *Melaleuca* sp.) to stabilise creek bank edges and provide shade over waterway.
- Dense shrub/mid-story vegetation to remain as habitat and refuge areas. Staged weed replacement strategy to ensure no net loss of dense mid-story vegetation.
- Option to include artificial habitat such as nest boxes, noting that fixtures are to be specifically selected and placed for target fauna species.


**Considerations**

- Mapped as essential koala habitat.
- Existing exotic vegetation structure has a high habitat value.
- Limited access to woodland area for restoration.



**Figure 15: LMU5 - Woodland**

 Proposed short-medium-term revegetation areas

 Proposed long-term revegetation areas

- |          |  |
|----------|--|
| <b>1</b> | Infill planting within woodland/Hanleys Creek edge to replicate and reinstate <i>Casuarina glauca</i> TEC structure and buffer (to RE 12.3.3/12.3.20 (90/10)). (pre-clearing RE 12.3.11/12.3.6). Approx. 3.5 ha. |
| <b>2</b> | Staged removal and replacement of coral trees with <i>Melaleuca</i> sp. Option to include <i>Casuarina</i> sp. and <i>Lophostemon</i> sp. Include vines.   |

## 5.6 LMU6 - Hanleys Creek

**Area: 6.8 ha**

**Current condition:**

Highly disturbed, low-lying riparian area with sections of exposed creek bank, prone to erosion.

Vegetation comprising primarily of dense coral trees and Brazilian pepper trees with scattered Casuarina sp and Melaleuca sp. along the creek edges.

Understorey comprises primarily a dense mix of taro, cumbungi and para grass.

**Target condition:**

Short-term - Connected riparian vegetation and improvement to channel condition with no net loss of canopy cover to enhance waterway function and habitat and to reduce erosion and sediment. Removal of para grass.

Long-term - Replacement of weed species with native alternatives that replicate existing vegetation structure.

**Management actions:**

- Riparian planting along Hanleys Creek, including staged removal of coral trees and Brazilian pepper trees along Hanleys Creek and native riparian tree replacement (e.g. Melaleuca sp.) to stabilise creek bank edges and provide shade over waterway. Removal of para grass.
- Long-term staged revegetation to achieve RE 12.3.8/12.3.6 status.

**Considerations**

- Limited access to Hanleys Creek for restoration.
- Existing coral trees and Brazilian pepper trees currently provide canopy cover and bank stability along Hanleys Creek. Replacement canopy cover to be conducted through succession planting.
- Exotic vines and scrub currently provide important habitat.
- Overhead powerlines and easement.
- Located within a low-lying area which is highly subject to periods of inundation
- Planting and/or natural recruitment restoration to have mitigation measures put in place to reduce exposed banks and soil entering water bodies.



**Figure 16: LMU6 - Hanleys Creek**

 Proposed short-medium-term revegetation areas

 Proposed long-term revegetation areas

- 1** Riparian planting along Hanleys Creek, including staged removal of coral trees and Brazilian pepper trees along Hanleys Creek and native riparian tree replacement (e.g. Melaleuca sp.) to stabilise creek bank edges and provide shade over waterway (pre-clearing RE 12.3.8/12.3.6. Approx. 1.1 ha.

## 5.7 LMU7 - Blunder Creek South

**Area:** 10.6 ha

**Current condition:**

Highly disturbed, low-lying area with sections of exposed banks along modified creek, and areas of marshland and exotic pasture grassland.

**Target condition:**

Short-term - Connected riparian vegetation and improvement to channel condition along Blunder Creek, and wetland vegetation planting along the eastern length of the shared path. Existing vegetation structure within woodland and grassland area to be maintained to preserve important habitats.

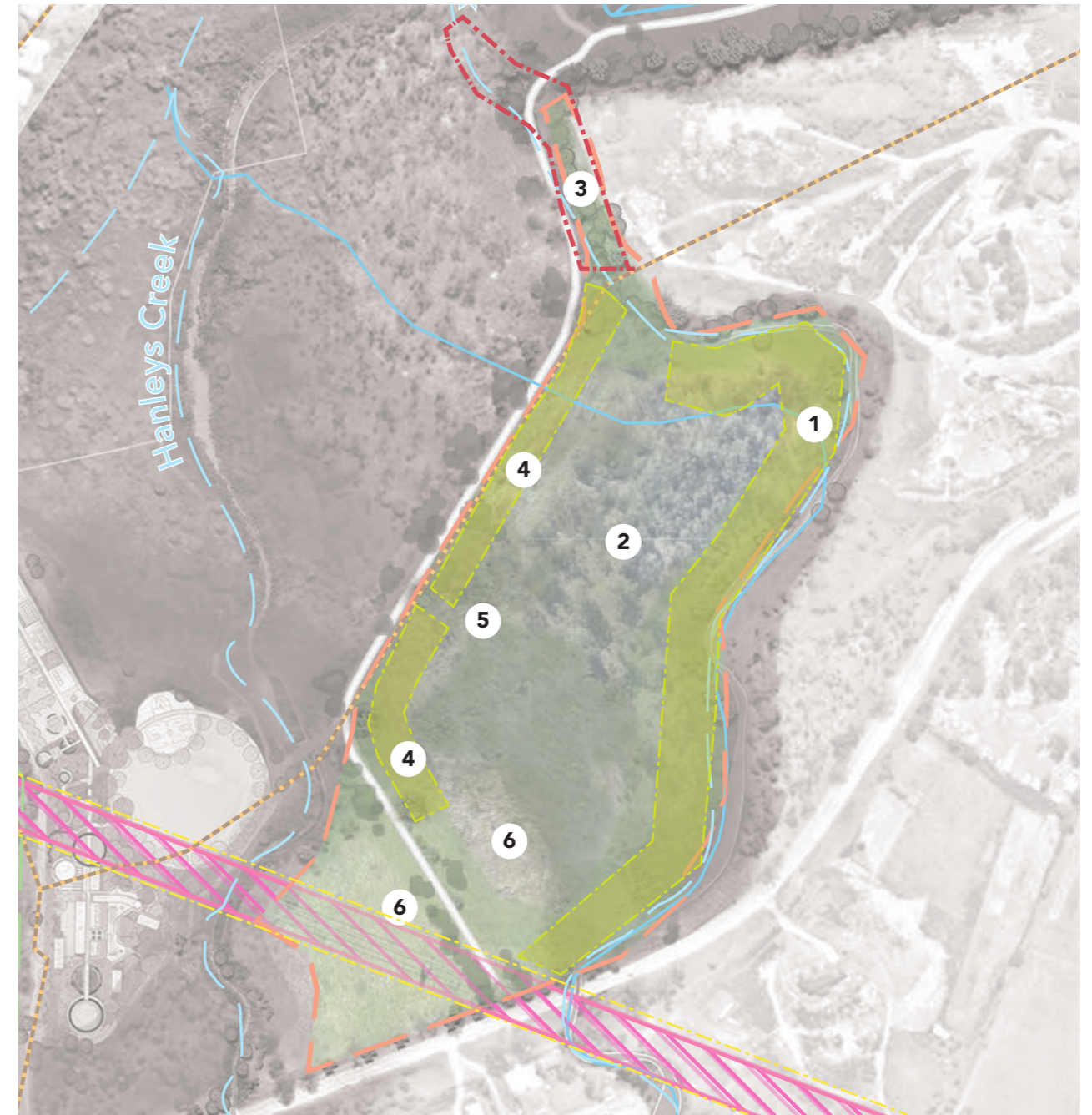
Long-term - Staged replacement of weed species with native alternatives that replicate existing habitat conditions.

**Management actions:**

- Create a connected riparian corridor along Blunder Creek diversion channel that connects Oxley Creek riparian area to Bowhill Road.
- Mid-story and grassland vegetation to remain as habitat and refuge areas within woodland and grassland area. Long-term weed replacement strategy to replicate existing vegetation structure and achieve appropriate associated REs.
- Grassland area to be retained and slashed as required to maintain existing open grassland vegetation structure. Slashing routine to ideally be undertaken at different times across grassland to allow different heights of grasses.

**Considerations**

- Potential safety hazard for planting in some areas of filled material.
- Modified soil profile in filled material areas may not be suitable for new planting.
- Existing exotic vegetation structure has high habitat value. Exotic grasses provide important habitat and refuge for ground birds including the buff breasted rail.
- Blunder Creek diversion channel and woodland area mapped as essential koala habitat.
- Overhead powerlines and easement setbacks and access.
- Existing sewer pipe and manholes require setbacks and access.
- Low lying wet area (original Blunder Creek alignment) adjacent to path often subject to periods of inundation.
- Limited access to areas of woodland and Blunder Creek diversion for restoration.



**Figure 17: LMU7 - Blunder Creek South**

 Proposed short-medium-term revegetation areas

 Proposed long-term revegetation areas

<b>1</b>	Riparian planting along Blunder Creek to include a 20m connected riparian corridor (pre-clearing RE 12.3.6). Approx. 1.6 ha.
<b>2</b>	Woodland area vegetation structure to remain (pre-clearing RE 12.3.11). Removal of para grass.
<b>3</b>	Blunder Creek diversion riparian planting completed 2023
<b>4</b>	Shared path edge planting - Low lying regeneration area subject to inundation (pre-clearing RE 12.3.11/12.3.6). Approx. 0.8 ha.
<b>5</b>	Lowest point, may require more wetland vegetation.
<b>6</b>	Grassland area to be slashed as required. Removal of para grass.

## 5.8 LMU8 - Dry Sclerophyll Open Forest

**Area:** 4.7 ha

**Current condition:**

Disturbed remnant and regrowth open forest dominated by *Eucalyptus tereticornis* with suppressed *Eucalyptus siderophloia* and *Corymbia intermedia* to the southern section and *Corymbia tessellaris* and *Angophora leiocarpa* to the northern section of the LMU. Patches of exotic shrubs, vines and groundcovers.

**Target condition:**

Short-term - Existing vegetation structure maintained to support existing habitats.

Long-term - Staged replacement of weed species with native alternatives that replicate existing habitat conditions.

**Management actions:**

- Control/removal of exotic species that have little habitat value including ochna, exotic vines, senna and easter cassia.
- Dense shrub/mid-story vegetation to remain as habitat and fauna refuge areas. Staged weed replacement strategy (in particular lantana) to ensure no net loss of dense mid-story vegetation over time.

**Considerations**


- Existing exotic vegetation structure has high habitat value. Exotic grasses and dense shrubs provide habitat and refuge for wildlife.
- Southern section mapped as essential koala habitat.
- Northern section mapped as essential koala habitat and wallum froglet habitat.
- Overhead powerlines and easement.



## LMU8 - Blunder Creek South



**Figure 18: LMU8 - Blunder Creek South**

 Proposed short-medium-term revegetation areas

 Proposed long-term revegetation areas

**1** Control of exotic species that have little habitat value with staged native replacement over long-term (pre-clearing RE 12.9-10.7 south and 12.5.2 north).

**2** Cleared vegetation under powerline easement.

# Appendix 1

## Proposed short-medium-term revegetation projects

Over 6 ha of land has been identified as short-term revegetation projects, with an additional area of approximately 4.5 ha for infill planting work within existing vegetated areas. Refer to Figure 19 which provides an overall plan of the proposed short-medium-term revegetation and infill planting projects across the Wetlands.

### Proposed short-medium-term revegetation projects

The table below describes each of the proposed short-medium-term revegetation areas, desired condition and proposed densities. The proposed vegetation densities are in accordance with the flood assessment recommendations (Water Technology 2023) and Council's Natural Channel Design Guidelines - Table 2.5. The notes section following the table provides additional information pertaining to each of the revegetation areas.

Area	Revegetation Location	Size (ha)	Description	Desired condition	Vegetation Densities
A	LMU1 - Blunder Creek north	0.3	Approx. 10 m wide riparian planting to creek bank.	RE 12.3.7 (riparian). (project complete)	N/A
B	LMU2 - Cleanaway buffer	2	Woodland (koala) planting with understorey	RE 12.3.11/12.3.8, (project complete)	N/A
C	LMU2 - Woodland buffer	0.9	Woodland (koala) and riparian planting	RE 12.3.11/, 12.3.7 (project complete)	N/A
D	LMU7 - Blunder Creek wetland edge	0.2	Approx. 10 m wide wetland/riparian revegetation along Blunder Creek diversion channel.	RE 12.3.6/12.3.8 12.3. (project complete)	N/A
E	LMU4 -Wetland buffer	0.1	Revegetation at wetland lookout.	RE 12.3.8/ (project complete)	N/A
F	LMU4 - Wetland buffer - Lot 21 SP134057	0.7	Revegetation work between Wetland and walking track. Maintain open structure with primarily wetland shrubs and groundcovers.	RE 12.3.8/12.3.11 (to edges). Refer revegetation notes.	T=1/ 40m2 S=1/ 25m2 GC=2/1m2
G	LMU3 - Grassland - Lot 4 SP213415	6	Removal of exotic vegetation and native grassland planting to path perimeter and staged removal and replacement of exotic shrubs only to centre - to replace like for like structure with dense native shrub clumps. Approx 2-3ha of planting	RE 12.3.11 (to edges). Refer revegetation notes.	S=1/ 25m2 GC=2/1m
H	LMU1 - Modified Waterbody- Lot 21 SP134057	5	Removal of exotic shrubs, and infill planting of native wetland grasses and dense shrub clumps	RE 12.3.8/12.3.11. Refer revegetation notes.	S=1/25 m2 GC= 3/1m2
I	LMU1 - Modified Waterbody- Lot 21 SP134057	1.6	Removal of exotic shrub vegetation and infill planting of native wetland, grassland and shrub clumps.	RE 12.3.8/12.3.11. Refer revegetation notes.	S=1/25 m2 GC= 3/1m2
J	LMU1 - Wetland edge and buffer- Lot 21 SP134057	1	Wetland edge and buffer planting. Removal of exotic shrubs, and infill planting of native wetland grasses and dense shrub clumps.	RE 12.3.8/12.3.11 (to edges). Refer revegetation notes.	T=1/ 40m2 S=1/ 16m2 GC=2/1m2
K	LMU1 - Grassland Lot 21 SP134057		Removal of exotic shrub vegetation and infill planting of native grassland and shrub clumps	RE 12.3.11 (to edges). Refer revegetation notes.	S=1/ 25m2 GC=2/1m

T - Trees      S - Subcanopy and shrubs      GC - Groundcover, grasses and understorey



Figure 19: Proposed short-medium-term revegetation and infill planting projects

**Proposed short-medium-term revegetation notes:**

**Revegetation Areas A and J**

Riparian planting to Blunder Creek will assist in improving waterway health and assist with bank erosion and sediment loss through bank stabilization.

- Densities do not account for existing vegetation and should be adjusted accordingly.
- Groundcover density can be increased where erosion is apparent.
- Long-stem planting can be used where bank stability is an issue.
- Wide variety of species included to increase biodiversity.
- Include dense shrubs and vines (even if outside of RE) to increase habitat provision.
- Proposed delivery models could include offsets, community planting, grant funding, capital funding.

**Revegetation Areas B and C**

Woodland planting to create wide connected vegetated corridor that supports koala and glider habitat.

- Recommend planting in phases, focusing on planting tree and shrub species first before infill planting grass and understory species once trees have begun to establish.
- Aim for 50% of canopy trees as eucalypts to support koala habitat.
- A variety of shrub species can be included for increased biodiversity.
- Include dense understory (including shrubs and vines (even if outside of RE) to increase habitat provision where appropriate).
- Note: Airport overlay and sewer pipe within planting area.

**Revegetation Areas G and K**

Grassland revegetation to include dense pockets of trees and shrubs in between existing groundcovers and grasses.

- Maintain open structure where required
- A variety of shrub species can be included for increased biodiversity.
- Include dense under-story (including shrubs and vines (even if outside of RE) to increase habitat provision
- Proposed delivery models could include community planting, grant funding, capital funding.

**Revegetation Areas E, F, H and I**

Wetland revegetation to include dense pockets of trees and shrubs in between low wetland groundcovers and rushes.

- Recommended to plant high proportion of Melaleuca sp. as tree species in pockets.
- Where density of tree species is reduced to provide open structure, increase density of ground covers.
- Maintain open structure where required
- Proposed delivery models could include community planting, grant funding, capital funding.

**Revegetation Area D**

Wetland and riparian revegetation to include dense pockets of trees and shrubs in between low wetland/riparian groundcovers and rushes.

- Densities do not account for existing vegetation and should be adjusted accordingly.
- Groundcover density can be increased where erosion is apparent.
- Long-stem planting can be used where bank stability is an issue.
- Wide variety of species included to increase biodiversity.
- Note: Sewer pipe location within planting area
- Note: Potential historic fill area may contain construction and demolition waste material and poor soil/ growing conditions in some locations.

**Proposed short-medium-term infill planting projects**

Areas have been identified within the Wetlands where there is opportunity to plant infill plant species within existing vegetated areas to achieve a specific desired environmental condition. Refer Figure 19.

The table below describes each of the short-medium-term proposed infill planting areas and target condition. The notes section at the bottom of the table provides additional information for each of the infill planting areas, including specific details pertaining to the planting methodology and potential delivery models for each area.

Area	Revegetation Location	Area	Description	Target Condition	Densities
R	LMU6 - Hanleys Creek - Lot 4 SP213415	1.1 ha	Pre-clearing RE 12.3.8/12.3.6. Staged tree replacement of coral trees and Brazilian pepper trees along Hanleys Creek to assist in improving shade cover and stabile riparian bank edge.	To replace existing vegetation structure along riparian edge with native species. Refer infill planting notes.	Density to remain as per existing.
S	LMU5 - Woodland - Hanleys Creek- Lot 21 SP134057 and Lot 30 SP184383	3.5 ha	Existing condition represents 12.3.11/12.3.6. Infill planting to replicate Casuarina glauca TEC vegetation structure.	Achieve RE 12.3.3/12.3.20 (90/10). Refer infill planting notes.	As per TEC

**Proposed short-medium-term infill planting revegetation notes:**

**Infill planting Area S**

Infill planting to woodland area to achieve coastal swamp oak (Casuarina glauca) Forest of New South Wales and South East Queensland TEC.

- To reach TEC threshold, it is necessary for understory vegetation to be predominantly native species and as such an assessment of current weeds and the creation of integrated weed management plan is recommended.
- Lantana provides important habitat in this location, and therefore a staged weed control approach to replace like for like habitat will be required.
- Recommend planting in phases, focusing on planting tree and shrub species first before infill planting grass and understory species once trees have begun to establish.
- Conservation advice (incorporating listing advice) of the coastal swamp oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community' should be referred to to help guide revegetation efforts.
- Proposed delivery models could include community planting, grant funding, capital funding.

**Infill planting Area R**

Riparian replacement planting to Hanleys Creek will assist in reducing invasive weed species along the creek whilst maintaining canopy structure, habitat and stabilisation to creek bank.

- Staged approach to tree replacement though stem injection of larger trees and removal of juveniles. Weed species to be replaced by riparian trees including Melaleuca sp, Casuarina sp and Glochidion sp. Shrub and groundcover planting can be implemented slowly over a longer-term.



## Appendix 2

### Proposed ongoing vegetation management

Ongoing vegetation management is proposed across the Wetlands to enhance the ecological values. Management tracks have been proposed in locations that will assist in providing access across the Wetlands. It is proposed that these tracks are able to be used by the public as part of a recreational trail network.

The table below outlines an ongoing vegetation management regime across the wetlands that supports the objectives of this Plan.

Area	Management location	Size	Details	Method	Frequency
L	Whole site (LMU1-LMU8)		Control of all exotic vines and selected exotic species only including: annual ragweed, groundsel bush, prickly pear, Leuceana sp. para grass, fireweed, Cassia sp and Singapore daisy.	TBA. Refer ongoing management notes.	TBA
M	LMU4- open water area - Lot 21 SP134057	1.6 ha	Removal of aquatic weeds including water hyacinth and the Salvinia sp.	Combination of mechanical removal and biocontrol methods. Refer ongoing management notes.	Annual
N	LMU1, LMU3, LMU7- open grassland areas- Lot 21 SP134057 and Lot4 SP213415	6.4 ha	Slashing of grass for fire and weed management.  Intent is to replicate intense grazing habits with a variety of heights.  Include removal of all sapling/emergents (native and non-native) to maintain grassland.	Slashing (short mowing) of 1/3 of area (2.1ha), using a flail mower head mounted on a 6 or 8 ton rubber tracked excavator (to reduce risk to wildlife). Slashing to be done at a slower rate and with extended reach from the machine to assist in avoiding and backing out from any boggy areas and to allow more time for wildlife to move. Refer ongoing management notes.	Annually (with total area mown over 3 year period to generate a mosaic of grassland heights at one time).  Frequency may be reduced - adaptive management regime required, depending on growth rates and habitat outcomes.

#### Ongoing management notes

##### Management Area L

Ongoing weed control of selected species to improve ecological function of site, whilst retaining important habitat structure.

- Avoid habitat nesting areas.
- Avoid overspray onto native species.
- Avoid herbicide spray near wetlands and waterways.

##### Management Area N

Maintaining various grassland structure to retain habitat for fauna species that rely on the existing open landscape. Long-term condition is primarily native grassland with vegetation representative of remnant ecosystem 12.3.11 Condition Class 4 status (Queensland Herbarium).

- Grassland area to maintain different grassland heights at all times to provide a variety of grassland fauna habitats.
- Grassland may contain areas of unstable ground, that may cause bogging of machinery, as well as waste items (for removal from site) and logs (for relocated on site) that will be encountered during slashing.
- Slashing in grassland may pose a fire risk due to the slashing head encountering steel or rock items during operations as well as a risk to native fauna, including reptiles, smaller mammals and ground dwelling/ nesting birds. Provide a fauna spotter with 4WD vehicle with access to a 1000lt water cart for duration of slashing work to provide additional safety for the machine operator, wildlife and the public.
- Additional work/services will be required to spot treat unwanted vegetation regrowth.



Figure 20: Proposed ongoing vegetation management plan

## Appendix 3

### Revegetation plant species list

The adjacent table provides suitable plant species to be planted within the Wetlands. The plant species list has been derived from consultation with Archerfield Airport, Council and Oxley Creek Catchment Association, as well as from previous ecological reports and RE mapping. Further ongoing consultation with additional stakeholders may allow for additional plant species.

Some of the plant species may not be readily available commercially. There is an opportunity to propagate and grow selected plants or undertake appropriate seed collection and propagation techniques (by suitably qualified persons) to create a unique and diverse floral environment.

In order to achieve the objectives of the Plan, the following weed control and revegetation management techniques are recommended at the Wetlands:

- Manual/mechanical weed control is preferred over herbicide application where practical to avoid risk of overspray, residuals entering the soil profile and water bodies effects on herbicide on faunal species such as amphibians and birds, particularly in low lying areas, high habitat areas and near waterways and water bodies. Where herbicides cannot be avoided, preference is to utilise aquatically approved surfactants to minimise risks to wildlife.
- Preference for donut mulching around tree planting areas thereby reducing the need for regular herbicide application around newly planted vegetation, while still allowing some weed growth in between the plantings, which can provide soil stabilisation and shade over new planting until the newly planted trees are large enough to out compete the weed species.
- Mulch is to be avoided near watercourses or areas prone to regular inundation, unless used in conjunction with organic soil saver/jute mesh or similar. Large areas of mulch is to be avoided.
- Revegetation work is to preferably occur after or before the wet season (April-October) thereby avoiding long periods of wet feet of saplings prior to plant establishment and to avoid loss of plant material (including plants, mulch, open soil and tree guards) during flood events.
- Preference for a wide plant species selection to be incorporated into proposed vegetation projects to promote vegetation diversity and resilience.

#### Proposed revegetation species list for Archerfield Wetlands.

Key:

**Type:** T - Tree S - Shrub GC - Grass/groundcover /sedge

**Habit:** UB - Upper bank M/LB - Mid/lower bank WE - Wetland edge

**AP:** Archerfield Airport approved species including recommended density per hectare (x/Ha)

Species	Common Name	Type	RE	Notes	Habit	AP
<i>Acacia concurrens</i>	Black wattle	S	12.3.6, 12.3.11, 12.9-10.7a	Good pioneer species.	UB	Y 200/Ha
<i>Acacia disparrima</i>	Hickory wattle	S	12.9-10.7a, 12.5.2a, 12.3.7, 12.3.6, 12.3.7, 12.3.11, 12.9-10.7a, 12.3.3d	Dominant pioneer. Frequent species in TEC.	UB	
<i>Acacia fimbriata</i>	Brisbane wattle	S	12.3.6		UB	
<i>Acacia leiocalyx</i>	Early black wattle	S	12.3.11, 12.5.2a, 12.9-10.7a, 12.3.3, 12.3.6	Dominant pioneer.	UB	
<i>Acacia maidenii</i>	Maiden's wattle	S	12.3.11, 12.3.6	Good pioneer species.	UB, M/LB	
<i>Alectryon connatus</i>	Alectryon	T/S	12.3.11, 12.3.6	Uncommon nursery plant but common in catchment. Host plant to several species of blue butterflies. Winter food source for fruit-eating birds.	UB	Y 800/Ha
<i>Alectryon tomentosa</i>	Hairy alectryon	T/S	12.3.11, 12.3.6	Winter food source for fruit-eating birds. Host plant to several species of blue butterflies. Frequent species in TEC shrub layer.	UB, M/LB	Y 640/Ha
<i>Allocasuarina littoralis</i>	Black she-oak	T	12.3.6, 12.3.11, 12.5.2a, 12.9-10.7a		UB	Y 640/Ha
<i>Alloterospis semialata</i>	Cockatoo grass		12.3.11, 12.3.6, 12.9-10.7a, 12.5.2a		UB	Y
<i>Alphitonia excelsa</i>	Red ash	T	12.3.6, 12.5.2a, 12.3.7c, 12.3.3d, 12.3.11, 12.9-10.7a	Dominant pioneer. Butterfly host plant.	UB	Y 200/Ha
<i>Alstonia constricta</i>	Bitter bark	S	12.3.7		UB	Y 800/Ha
<i>Angophora leiocarpa</i>	Rusty gum	T	12.5.2a, 12.9-10.7a, 12.3.11, 12.3.3d		UB	Y 160/Ha
<i>Angophora subvelutina</i>	Broad-leaved apple	T	12.3.3, 12.3.11, 12.3.7		UB, M/LB	Y 160/Ha
<i>Aphananthe philippinensis</i>	Rough-leaved elm	T/S	12.3.6, 12.3.7, 12.3.11	Key species in riparian areas. Fruit food source for birds.	M/LB	Y 800/Ha
<i>Argyrodendron trifoliolatum</i>	White booyong	T		Riparian rainforest.	UB, M/LB	Y 640/Ha
<i>Auranticarpa rhombifolia</i>	Diamond leaf pittosporum	T	12.3.11, 12.3.6	Flowers attract nectar feeding birds and insects.	UB, M/LB	Y 640/Ha
<i>Austrosteenisia blackii</i>	Blood vine	V		Rainforest vine.	UB, M/LB	Y
<i>Banksia robur</i>	Swamp banksia	S	12.3.8, 12.3.6	Bird attracting.	UB, M/LB	N

Species	Common Name	Type	RE	Notes	Habit	AP
<i>Baumea articulata</i>	Jointed twigrush	G	12.3.8, 12.3.6	Wetland. Frog habitat. Provides food and shelter for water birds.	WE	Y
<i>Baumea juncea</i>	Bare twigrush					
<i>Baumea rubiginosa</i>	Soft twigrush					
<i>Bolboschoenus fluviatilis</i>	Marsh club rush	G	12.3.8	Wetland.	WE	Y
<i>Bridelia exaltata</i>	Scrub ironbark	T	12.3.11, 12.3.6	Dry rainforest.	UB	Y 640/Ha
<i>Breynia oblongifolia</i>	Coffee bush	S	12.3.6, 12.9-10.7a, 12.3.11, 12.3.7, 12.3.3d	Key species in drier areas.	UB	Y 800/Ha
<i>Capparis arborea</i>	Brush caper berry	S	12.3.11, 12.3.6	Fruit food source for wildlife. Butterfly host plant.	UB	N
<i>Capillipedium spicigerum</i>	Scented-top grass	G	12.3.11, 12.3.6, 12.3.7, 12.9-10.7a, 12.3.3d	Native grassland replacement.	UB, M/ LB	Y
<i>Cayratia clematidea</i>	Slender grape	V	12.3.11, 12.3.6			Y
<i>Carex appressa</i>	Tall sedge	G	12.3.11, 12.3.6, 12.3.8	Butterfly host plant. Frog habitat.	M/LB	Y
<i>Casuarina glauca</i>	Swamp oak	T	12.3.8, 12.3.6, 12.3.11, 12.9-10.7a	Dominant species in TEC. Wetland and riparian edge. Seed attracts birds (esp. black cockatoo). Stabilising roots. Can tolerate saline.	M/LB, WE	Y 160/Ha
<i>Casuarina cunninghamiana</i>	River oak	T	12.3.7		M/LB	
<i>Clematicissus opaca</i>	Forest grape	V	12.3.6, 12.3.11			Y
<i>Clerodendrum floribundum/tormentosa</i>	Lolly bush	S	12.3.11, 12.3.6, 12.9-10.7a	Fruit and flowers attract birds. Dry rainforest.	UB	Y 800/Ha
<i>Commelina diffusa</i>	Native wandering jew	G			M/LB	Y
<i>Commersonia bartramia</i>	brown kurrajong	S	12.3.6	Good pioneer. Dry rainforest.	UB, M/ LB	Y 800/Ha
<i>Cordyline petiolaris/rubra</i>	Palm lily	S			UB, M/ LB	Y 800/Ha
<i>Corymbia citriodora subsp. variegata</i>	Spotted gum	T	12.3.11	Secondary koala food tree.	UB	Y 160/Ha
<i>Corymbia intermedia</i>	Pink bloodwood	T	12.3.6, 12.3.11, 12.5.2a, 12.9-10.7a, 12.3.7	Canopy. Frequent species in TEC. Secondary koala food tree.	UB	Y 160/Ha
<i>Corymbia tessellaris</i>	Moreton Bay ash	T	12.3.3 12.3.7	Koala tree.	UB	
<i>Crinum pedunculatum</i>	Crinum lily	G	12.3.6, 12.3.8	Frog habitat. can tolerate salt.	WE	Y
<i>Cryptocarya triplinervis</i>	Three-veined laurel	T	12.3.11, 12.3.7, 12.3.6	Key species in riparian areas. Bird and butterfly plant. Good Schinus sp replacement plant.	UB, M/ LB	Y 640/Ha
<i>Cupaniopsis parvifolia</i>	Small-leaved tuckeroo	T	12.3.11, 12.3.7, 12.3.6	Key species in riparian areas. Bird and butterfly plant.	UB	Y 640/Ha
<i>Cymbopogon refractus</i>	Barbed-wire grass	G	12.3.6, 12.3.11, 12.9-10.7a, 12.5.2.a, 12.3.3d	Butterfly host plant.	UB	Y
<i>Cyperus trinervis/polystachyos/exaltus</i>	sedge	G	12.3.8, 12.3.7, 12.3.6	Wetland.	WE	Y

Species	Common Name	Type	RE	Notes	Habit	AP
<i>Dianella brevipedunculata</i>	Flax lily	G	12.3.6		UB	Y
<i>Dianella caerulea</i>	Blue flax lily	G	12.3.6, 12.3.11, 12.9-10.7a, 12.5.2.a, 12.3.3d	Fruit attracts birds. Flower nectar feeds insects.	UB, M/ LB	Y
<i>Dianella longifolia</i>	Flax lily	G	12.3.6, 12.3.11, 12.5.2.a, 12.3.3d	Fruit attracts birds. Flower nectar feeds insects.	UB, M/ LB	Y
<i>Dianella revoluta</i>	Flax lily	G	12.3.11, 12.9-10.7a		UB, M/ LB	Y
<i>Dodonaea triquetra</i>	Forest hop bush	S	12.3.6, 12.3.11		UB	Y 800/Ha
<i>Diospyros fasciculosa</i>	Grey ebony	T	12.3.7		UB, M/ LB	Y 640/Ha
<i>Echinostephia (Stephania) aculeata</i>	Prickly snake-vine	V			UB	Y
<i>Eleocharis cylindrostachys/dulcis</i>	Hairgrass sedge	G	12.3.8, 12.3.6	Stabilising roots.	WE	Y
<i>Elaeocarpus obovatus</i>	Hard quandong	T	12.3.11, 12.3.7, 12.3.6	Key species in riparian areas. Fruit and flowers feed range of wildlife. Salt tolerant.	UB	Y 160/Ha
<i>Entolasia stricta</i>	Wiry panic grass	G	12.3.11, 12.3.6, 12.5.2a, 12.9-10.7a		UB	Y
<i>Eucalyptus crebra</i>	Narrow-leaved ironbark	T	12.5.2a, 12.3.7c, 12.3.3	Not widely spread naturally. prefers good drainage. Key koala food tree.	UB	Y 160/Ha
<i>Eucalyptus microcorys</i>	Tallowwood	T	12.3.6, 12.3.11	Not naturally found in OC - but key koala food tree.	UB	
<i>Eucalyptus molucanna</i>	Gum Topped Box	T	12.3.6, 12.3.11	Secondary koala food tree. Dry Schlerophyll, adaptable soil, salt tolerant.	UB	
<i>Eucalyptus siderophloia</i>	Grey ironbark	T	12.3.11, 12.5.2a, 12.9-10.7a	Secondary koala food tree. Wet forest, hardy, slow growing.	UB	
<i>Eucalyptus tereticornis</i>	Old blue gum	T	12.3.6, 12.3.11, 12.5.2a, 12.9-10.7a, 12.3.7, 12.3.7c, 12.3.3d	Key canopy species. Locally significant, koala tree riparian and woodland. Dominant species in TEC canopy. Note: this species is self recruiting on site and may not be required in all reveg areas as plantstock.	UB, M/ LB	Y 160/Ha
<i>Eustrephus latifolius</i>	Wombat berry		12.3.6, 12.3.11, 12.9-10.7a			Y
<i>Ficinia nodosa</i>	Knobby club rush	G	12.3.8	Wetland. Can tolerate salt.	WE	Y
<i>Ficus coronata</i>	Creek sandpaper fig	T	12.3.11, 12.3.7, 12.3.6	Key species in riparian areas. Fruit attracts birds. Host to common and purple moonbeam butterflies. Frequent species in TEC canopy.	UB, M/ LB	Y 160/Ha
<i>Ficus macropylla/obliqua/opposita/rubiginosa</i>	Fig sp	T	12.3.6, 12.3.11	Note: F opposita- Fruit attracts birds and salt tolerant.		N
<i>Fimbristylis dichotoma</i>	Eight day grass	G	12.3.6, 12.3.11, 12.9-10.7a, 12.3.7c, 12.3.3d	Tolerates salt.	UB, M/ LB	Y

Species	Common Name	Type	RE	Notes	Habit	AP
<i>Flagellaria indica</i>	Supplejack, whip vine	V		Riparian vine forest.	UB, M/LB	Y
<i>Flindersia australis/schottiana</i>	Crow's ash	T	12.3.6, 12.3.11	Flowers attract nectar feeding wildlife. Can tolerate salt.	UB	Y 160/Ha
<i>Gahnia aspera</i>	Saw sedge	G	12.3.6, 12.3.7c, 12.3.11	Butterfly host plant. Birds feed on seeds. Shelter for small birds. Frog habitat.	UB, M/LB	Y
<i>Gahnia sieberia/clarkei</i>	Red/tall saw sedge	G	12.3.8, 12.3.6	Wetland, Butterfly host plant. Birds feed on seeds. Frog habitat.	WE	Y
<i>Geitonoplesium cymosum</i>	Scrambling lilly	G/V	12.3.11, 12.3.6		UB	Y
<i>Glochidion ferdinandi</i>	Cheese tree	T	12.3.11, 12.3.6, 12.3.7	Fruit and flowers attract birds.	UB, M/LB	Y 800/Ha
<i>Glochidion sumatranum</i>	Umbrella cheese tree	T	12.3.6, 12.3.11	Frequent species in TEC canopy. Fruit and flowers attracts birds.	UB, M/LB	Y 640/Ha
<i>Grevillea robusta</i>	Silky oak	T		Riparian. Note this is self recruiting on site.	UB, M/LB	Y 160/Ha
<i>Guioa semi-glauca</i>	Native quince	T	12.3.11, 12.3.6	Frequent species in TEC.	UB, M/LB	Y 640/Ha
<i>Hardenbergia violacea</i>	Native sarsaparilla	G	12.3.6, 12.3.11, 12.9-10.7a		UB	Y
<i>Heteropogon contortus</i>	Black spear grass	G	12.3.3, 12.9-10.7a, 12.5.2.a	Salt tolerant.	UB, MB	Y
<i>Hibiscus heterophyllus</i>	Native rosella	S	12.3.6, 12.3.11	Fast growing, Small bird habitat. Lantana replacement.	UB, M/LB	Y 800/Ha
<i>Hovea acutifolia</i>	Hovea	S	12.5.2a	Airport preferred substitute.	UB, M/LB	Y 800/Ha
<i>Hymenosporum flavum</i>	Native frangipani	T			UB	Y 640/Ha
<i>Imperata cylindrica</i>	Blady grass	G	12.3.6, 12.3.11, 12.5.2a, 12.9-10.7a, 12.3.7c, 12.3.3	Fruit attracts birds. Flower nectar feeds insects. Frequent species in TEC ground layer.	UB, M/LB	Y
<i>Indigofera australis</i>	Native Indigo	S		Sub tropical rainforest. Well drained soil.	UB	Y 800/Ha
<i>Jacksonia scoparia</i>	Dogwood	S	12.3.3, 12.3.6, 12.9-10.7a	Airport preferred substitute.	UB, M/LB	Y 800/Ha
<i>Jagera pseudorhus</i>	Foambark	T	12.3.11, 12.3.7, 12.3.6	Key species in riparian areas, Fruit attracts many birds.	UB	Y 640/Ha
<i>Juncus usitatus</i>	Juncus	G	12.3.8, 12.3.6, 12.3.7c	Wetland, Frog habitat. Provides food and shelter for water birds.	WE	Y
<i>Leersia hexandra</i>	Swamp rice grass	G	12.3.8	Wetland. can tolerate salt. Quick to spread.	WE	Y
<i>Lepidosperma laterale</i>	Variable sword sedge	G	12.3.6, 12.3.11, 12.5.2.a		UB	Y
<i>Lepironia articulata</i>	Grey rush	G	12.3.7c, 12.3.8, 12.3.6	Wetland.	WE	Y
<i>Leptospermum brachyandrum</i>	May Bush	T	12.3.7c	Likely to only be present in this RE on the Wetlands. Locally significant.	M/LB, WE	Y 640/Ha
<i>Leptospermum polygalifolium</i>	Wild may	S	12.3.6, 12.3.11	Nectar-rich flowers feed various wildlife.	UB	Y 200/Ha
<i>Lomandra filiformis</i>	Wattle mat rush	G	12.3.11		M/LB	Y

Species	Common Name	Type	RE	Notes	Habit	AP
<i>Lomandra hystrix</i>	Green mat rush	G	12.3.7, 12.3.6, 12.3.11	Butterfly host plant. Frog habitat. Wildlife feeds on seeds.	M/LB	Y
<i>Lomandra longifolia</i>	Mat rush	G	12.3.6, 12.3.11, 12.9-10.7a, 12.5.2.a	Butterfly host plant. Wildlife feeds on seeds. Stabilising roots.	UB, M/LB	Y
<i>Lomandra multiflora subsp. conferta</i>	Many-flowered mat rush	G	12.5.2a, 12.3.11	Butterfly host plant. Wildlife feeds on seeds. Stabilising roots.	UB, M/LB	Y
<i>Lophostemon confertus</i>	Brush box	T	12.9-10.7a, 12.3.6, 12.3.11	Locally significant. Secondary koala food tree. Has been successful along shared path.	UB, M/LB	Y 160/Ha
<i>Lophostemon suaveolens</i>	Swamp box	T	12.3.6, 12.3.11, 12.5.2a, 12.9-10.7a, 12.3.7, 12.3.3	Key species in wet areas. Nectar-rich flowers. Minor koala food source. Dominant species in TEC sub-canopy.	M/LB	Y 160/Ha
<i>Maclura cochinchinensis</i>	Cockspur thorn	S	12.3.7, 12.5.2a, 12.9-10.7a, 12.3.11		UB, M/LB	Y 800/Ha
<i>Malaisia scandens</i>	Burney vine	V			UB	Y 800/Ha
<i>Mallotus claoxyloides</i>	Green kamala	S	12.3.11, 12.3.6		UB, M/LB	Y 640/Ha
<i>Mallotus philippensis</i>	Red kamala	T	12.3.11, 12.3.7, 12.3.6	Key species in riparian areas.	UB, M/LB	Y 640/Ha
<i>Melaleuca bracteata</i>	Black tea-tree	T	12.3.6, 12.3.11, 12.3.7	Nectar-rich flowers. Salt tolerant.	M/LB	N
<i>Melaleuca irbyana</i>	Swamp tea-tree	T	12.3.8, 12.3.6, 12.3.3d	Endangered species.	M/LB	
<i>Melaleuca nodosa</i>	Ball Honey Myrtle	T	12.5.2a	Salt tolerant.	UB	
<i>Melaleuca linariifolia</i>	Snow-in-summer	T	12.3.6, 12.3.11, 12.3.7	Key species in wet areas.	UB, M/LB	Y 160/Ha
<i>Melaleuca quinquenervia</i>	Broad-leaved paperbark	T	12.3.6, 12.3.11, 12.5.2a, 12.3.7c, 12.3.8	Canopy. Key species in wet areas. Nectar-rich flowers feed various wildlife. Dominant species in TEC sub-canopy. Secondary koala food tree.	UB, M/LB	Y 160/Ha
<i>Melaleuca salicina</i>	Willow bottlebrush	T	12.3.6, 12.3.11, 12.9-10.7a	Nectar-rich flowers feed various wildlife.	UB, M/LB	
<i>Melaleuca viminalis</i>	Bottlebrush	S	12.3.11, 12.3.7, 12.3.6	Key species in riparian areas.	UB, M/LB	Y 160/Ha
<i>Melia azedarach</i>	White cedar	T	12.3.6, 12.3.11, 12.3.7	Fruit food source for birds.	UB, M/LB	Y 160/Ha
<i>Melicope elleryana</i>	Pink Euodia	T	12.3.6		UB, M/LB	
<i>Morinda jasminoides</i>	Morinda	G/V	12.3.6, 12.3.11	Bird and butterfly plant.	UB, M/LB	
<i>Notelaea longifolia</i>	Native olive	S	12.3.6, 12.3.11	Fruit attracts birds. Butterfly host plant. Dry Schlerophyll.	UB	Y 800/Ha
<i>Oplismenus aemulus</i>	Creeping shade grass	G	12.3.7, 12.3.6, 12.3.11, 12.9-10.7a		UB, M/LB	Y
<i>Ottochloa gracillima</i>	Native grass	G	12.3.11, 12.9-10.7a	Butterfly plant.	UB, M/LB	Y
<i>Panicum effusum</i>	Hairy panic	G	12.3.6, 12.3.11	Tolerates salt.	UB	Y
<i>Parsonia straminea</i>	Monkey rope	V	12.3.6, 12.3.11, 12.9-10.7a, 12.3.7		UB	Y
<i>Paspalum scrobiculatum</i>	Ditch millet	G	12.3.11		UB	Y

Species	Common Name	Type	RE	Notes	Habit	AP
<i>Persicaria attenuata</i>	Smartknot weed	G	12.3.8	Wetland.	WE	Y
<i>Philydrum lanuginosum</i>	Woolly frogmouth	G	12.3.8, 12.3.6	Frog habitat. Waterbird food and habitat.	WE	Y
<i>Pittosporum revolutum/multiflorum</i>	Rough-fruited pittosporum/Wallaby apple	S	12.3.6, 12.3.11	Bird and bee attracting. P multiflorum has thorns.	UB	Y 200/Ha
<i>Planchonella australis</i>	Black apple	T	12.3.11, 12.3.7, 12.3.6	Rainforest type species. Is present near site (Atlas of Living Australia) Good to incorporate.	UB	N
<i>Poa labillardieri</i>	River tussock grass	G	12.3.6	Frog habitat.	M/LB	Y
<i>Podocarpus elatus</i>	Brown pine	T		Vine forest.	UB, M/LB	Y 640/Ha
<i>Polyscias elegans</i>	Celerywood	T	12.3.6, 12.3.11, 12.3.7	Fast growing. Fruit attracts birds.	UB, M/LB	Y 800/Ha
<i>Pultenaea villosa</i>	Hairy bush pea	S		Airport pref substitute.	UB, M/LB	Y 200/Ha
<i>Rhodomyrtus psidioides</i>	Native guava	S	12.3.11, 12.3.6	Conservation significant species.	UB	Y 800/Ha
<i>Rubus parvifolius</i>	Native raspberry	S	12.3.6, 12.9-10.7a	Lantana replacement.	UB, M/LB	Y
<i>Schoenus brevifolius/validus</i>	Bog rush	G	12.3.8		WE	Y
<i>Schoenoplectus subulatus/mucrunatus</i>	Club rush	G	12.3.8	Wetland, food source for waterbirds. Frog habitat.	WE	Y
<i>Smilax australis</i>	Barbwire vine	G/V	12.3.6, 12.3.11, 12.9-10.7a, 12.3.7	Flowers and fruit attract birds. Small bird habitat. Butterfly host plant. Lantana replacement plant.	UB, M/LB	Y
<i>Sannantha similis</i>	Twiggy myrtle	S		Tolerates wet. Salt tolerant.	UB, M/LB	Y 800/Ha
<i>Streblus brunonianus</i>	Whalebone tree	T	12.3.11, 12.3.7, 12.3.6	Key species in riparian areas. Fruit attracts bird.	UB, M/LB	Y
<i>Stephania japonica</i>	Snake vine	V	12.3.6, 12.3.11, 12.9-10.7a		UB	Y
<i>Syzygium francisii</i>	Giant water gum	T				N
<i>Themeda triandra/australis</i>	Kangaroo grass	G	12.3.6, 12.5.2a, 12.9-10.7a, 12.3.7c, 12.3.3, 12.3.11	Butterfly host plant. Seed eating birds.	UB	Y
<i>Toechima tenax</i>	Pitted-leaf steelwood	T	12.3.11, 12.3.6		UB, M/LB	Y 640/Ha
<i>Trema tomentosa</i>	Native peach	S	12.3.6, 12.3.11	Lantana replacement plant.	UB, M/LB	Y 800/Ha

### Conservation significant plant species predicted to occur within a 2 km radius of Archerfield Wetlands

The table below conservation significant plant species that occur or are predicted to occur within a 2km radius of the Wetlands. The table also includes the revegetation areas in which these plant species could occur.

Species	Common Name	RE
<i>Arthraxon hispidus</i>	Hairy joint-grass	12.3.11
<i>Bosistoa transversa</i>	Three-leaved bosistoa	12.3.16
<i>Corchorus cunninghamii</i>	Native jute	12.3.11
<i>Cryptocarya foetida</i>	Stinking cryptocarya	12.3.7, 12.3.11
<i>Cryptostylis hunteriana</i>	Leafless tongue-orchid	12.3.11
<i>Cupaniopsis shirleyana</i>	Wedge-leaf tuckeroo	12.3.7, 12.3.11
<i>Dichanthium setosum</i>	Bluegrass	12.3.11
<i>Fontainea venosa</i>	Southern Blushwood	12.3.7, 12.3.11
<i>Gossia gonoclada</i>	Angle-stemmed myrtle	12.3.7, 12.3.11
<i>Macadamia integrifolia</i>	Macadamia Nut	12.3.7, 12.3.16
<i>Macadamia tetraphylla</i>	Rough-shelled bush nut	12.3.7
<i>Phaius australis</i>	Lesser Swamp-orchid	12.3.8, 12.3.20
<i>Rhodamnia rubescens</i>	Scrub turpentine	12.3.11,12.3.16
<i>Rhodomyrtus psidioides</i>	Native guava	12.3.11,12.3.16
<i>Samadera bidwillii</i>	Quassia	12.3.7, 12.3.11
<i>Thesium australe</i>	Austral toadflax	12.3.7, 12.3.11