Logan East Link Route Investigation Study

Transport and Main Roads, South Coast Region

11 February 2011

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Summary Report

Logan East Link Route Investigation Study - Volume 1

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Prepared for

Transport and Main Roads, South Coast Region

Prepared by

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A	21-Dec-2010	Initial Draft	John Eckersley-Maslin Project Manager	Original signed
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Acronyms

The following acronyms have been used within this Logan East Link Summary Report and Appendices:

AGTRD	Austroads Guide To Road Design
AHD	Australian Height Datum
ARI	Average Recurrence Interval
ASS	Acid Sulfate Soil
DCDB	Digital Cadastral Database
DERM	Department of Environment and Resource Management
DRO	Desired Regional Outcome
ECPS	Eastern Corridor Planning Study
EPBC	Environment Protection and Biodiversity Conservation
GCCC	Gold Coast City Council
GIS	Geographic Information Systems
GQAL	Good Quality Agricultural Land
IRTC	Intra Regional Transport Corridor
ITP	Integrated Transport Planning
KRA	Key Resource Area
LAP	Local Area Plan
LCC	Logan City Council
LEL	Logan East Link
LGA	Local Government Area
PRAC	Principal Regional Activity Centre
QFRS	Queensland Fire and Rescue Service
QT	Queensland Transport
RCDP	Road Corridor Development Planning
RCMP	Regional Coastal Management Plan
RE	Regional Ecosystem
SCMP	State Coastal Management Plan
SEQ	South East Queensland
SEQIPP	South East Queensland Infrastructure Plan and Program
SEQKPA	South East Queensland Koala Protection Area
SEQRP	South East Queensland Regional Plan
SPA	Sustainable Planning Act
SPP	State Planning Policy
SPRP	State Planning Regulatory Provisions
TMR	Transport and Main Roads
YEA	Yatala Enterprise Area

Executive Summary

AECOM Australia Pty Ltd (AECOM) was commissioned by Transport and Main Roads (TMR), South Coast Region in October 2010 to carry out the Logan East Link Route Investigation Study.

The required outcomes of the Logan East Link (LEL) project were to provide plans illustrating feasible alignments for the LEL that connected the Intra Regional Transport Corridor – Northern Section (IRTC) (east and west) to the Logan Motorway and Beenleigh - Redland Bay Road. These will form inputs into the wider ranging Northern Gold Coast Area Transport Study being undertaken by the Integrated Transport Planning (ITP) unit of TMR. A report was also required to document the decisions made during the process.

This study has built upon previous studies undertaken for the Eastern Corridor, which have been summarised in a Background Report that is included as **Appendix A**. The report included a review of the following documents:

- Eastern Corridor Planning Study (ECPS), 1992
- South Coast Motorway Southern Section Impact Assessment Study, 1995
- Intra Regional Transport Corridor – Northern Section Road Corridor Development Planning, 2010

The earlier documents provided background on previous routes considered, and the reasons for selecting certain alignments. This information was used in the development of links for the LEL study. The IRTC report identified a corridor whose northern end was positioned at the southern extent of the LEL study area (Stapylton – Jacobs Well Road). The IRTC Report documented a preferred, as well as a possible alternative requiring further investigation. These were identified as the western and eastern alignments respectively, and form the southern connection points for the LEL.

Potential alignments were identified through meetings and workshops, taking into account the findings of previous studies that had been undertaken, and the constraints identified through desktop analyses that focussed upon land use, environmental management and hydraulic impacts.

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Environmental Management

This desktop study reviewed information available on government databases and Geographic Information Systems (GIS), and identified several natural features of National and / or State significance. Of particular concern was the Carbrook Wetlands Conservation Park, which is located at the northern extent of the study, but is considered to have connectivity to a number of less significant wetlands within the area in terms of water flow and species movement. Avoidance of such wetlands was preferred, but if unavoidable it was identified that the impacts should be minimised by impacting as close to the edge of a wetland area as possible.

Koala habitat cluster areas were also identified within the study area, and the requirement for compensation noted should protected habitat be cleared, with the requirement of five new trees planted for every one removed. Several areas were also identified as Essential Habitat for the wallum froglet, noting that a Koala Management Plan and Wallum Froglet Management Plan would likely be required. Several areas of vegetation were also identified as Of Concern Regional Ecosystems, which means that they would potentially need to be offset in a suitable location.

Two historic buildings were identified within the study area between the Logan River and Beenleigh – Redland Bay Road; Fachwerk House, and the former Carbrook State School. Two aboriginal cultural heritage sites were also identified within the study area. Whilst the alignments developed aimed to avoid these areas it has been recommended that consultation be undertaken with the Aboriginal Party for the area.

Pages 8 through 25 redacted for the following reasons:
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3.0 Environmental Management

This section presents the outcome of an environmental desktop review. It describes the environmental values within the study area and their significance within the locality. Guidance is given where there are opportunities to avoid and limit environmental harm. The potential implications of introducing a new highway corridor are described in terms of environmental approvals, offsets and subsequent environmental management actions.

This section is supported by Environmental Constraints Maps G1 and G2.

This information is intended to inform where route options are (not) viable. At further design stages of the project, more detailed environmental investigations will be required in accordance with the Transport and Main Roads Road Project Environmental Processes Manual to ensure the appropriate environmental management measures and controls are achieved.

3.1 Context

The study area is found within the southern coastal lowlands of the South East Queensland biogeographic region. The Logan River and Albert River tributary are major features within the natural landscape, and support a variety of mangrove communities and estuarine wetlands. These wetlands form part of a larger vegetation mosaic extending from the Logan River north to an area generally known as the Carbrook Wetlands as far as Mount Cotton, west to Cornubia / Venman Bushland National Park, and east to Redland Bay via the Sheldon - Mount Cotton corridor.

On drier ground away from the floodplain, predominantly the south-west portion of the study area, other native vegetation communities persist, typically open eucalypt and / or melaleuca forest. Much of this vegetation is important habitat to koala.

Surrounding land is dominated by strategic cropping land, for primary production, and rural residential land uses.

3.2 Methodology

This desktop study investigates the broad environmental values of the study area, and is based on analysis of data sourced through government databases and Geographic Information Systems (GIS). In describing the environmental values of the study area the following data sources were used:

- Searches of the Department of Environment and Resource Management's (DERM) Wildlife Online database
- Searches of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Protected Matters database
- Searches of the Queensland State Heritage Register
- Review of the existing vegetation mapping for the study area including the Queensland Herbarium's Regional Ecosystem (RE) mapping
- Review of the Gold Coast City Council Nature Conservation Strategy (Vegetation and Ecological Significance) Mapping and Logan City Council Planning and Development online mapping
- GIS data layers for the following values:
    - Aboriginal Cultural Heritage
    - Register of National Estate
    - Wetlands
    - Essential Habitat
    - Regional Ecosystem and Regrowth
    - State Planning Policy (SPP) Koala Habitat Values
    - National and State parks / conservation areas
    - Strategic Cropping Land.

Investigations focused on desktop analysis of major environmental constraints that, if a major road were to proceed, have the potential to result in significant, long-term and / or irreversible impacts on the environment and cultural heritage values.

Environmentally significant areas and features were presented at Workshop 1 and 2 (as detailed within **Section 1.3**) as Environmental Constraints Mapping, and used to inform appraisal of historic and new route options.

3.3 Environmental Values

3.3.1 Wetlands and Waterways

3.3.1.1 Carbrook

The Carbrook Wetlands are found north east of the study area with some partially within and others immediately adjacent to it. They form part of a large vegetation mosaic in South East Queensland. A Directory of Important Wetlands in Australia has been compiled as part of Australia's obligations and commitments with respect to the Ramsar Convention. Carbrook Wetlands has been listed as a site of national importance in this Directory and this designated area extends across Beenleigh-Redland Bay Road and into the Carbrook golf course.

Carbrook Wetlands Conservation Park and Serpentine Creek Conservation Park) form part of the Carbrook Wetlands. These areas are referenced as W1 and W2 on Map G1**.** These protected areas in Carbrook Wetlands are dedicated under the *Nature Conservation Act 1992* (NC Act) as conservation parks. The parks are also part of the Koala Coast, a region considered to be the largest urban koala habitat in Australia.

Any proposed action or development that would cause an impact on a feature of national significance is subject to the requirements of the EPBC Act. It is highly recommended that all features of national significance be completely avoided. Preservation of the integrity of these sites must be considered during future design stages.

3.3.1.2 Eagleby

There are a series of wetlands that stretch in an east to west direction, north of Eagleby and south of the Logan River (area W3 on Map G1). These wetlands are mapped by DERM as part of the Queensland Wetlands Programme and are identified to be within a Wetland Management Area. They are therefore assessable by DERM. These wetlands also have pockets of Essential Habitat associated with them for wallum froglet, koala and black-necked stork.

Each mapped wetland unit has a general description provided by DERM that comments on its current condition and level of integrity. The wetlands north of Eagleby, as shown by the area referenced as W3 on Map G1, vary in their condition and level of modification. Those at the western end (map reference W.10 – W.14) are modified to the extent that the ecological character has changed. Those at the confluence of the rivers (map reference W.1 – W.9) and north of the river (map reference W.16, W.17, W.19 and W.20) are unmodified and support important vegetation and habitat for wildlife.

Whilst all the wetlands within the referenced area W3 on Map G1 are afforded the same level of protection by law, priority should be given to the protection of those wetlands that remain unmodified over those that have lesser ecological value and have previously been modified.

The condition of the wetlands varies with differing degrees of modification. Those at the western end of the study area north of Eagleby appear to be modified, whilst those around the confluence of the Logan and Albert Rivers appear to be less disturbed. A summary of these wetlands is given in **Table 3.1**.

Table 3.1 Wetlands In Area W3 on Map G1

Map ID	Description
W.1	Freshwater, modified wetland that has been converted, completely or mostly, to a controlled storage. Logan catchment.
W.2	Tidally influenced, estuarine wetland system with no observable modifications. Supporting RE 12.1.3 (mangroves). Logan catchment.
W.3	Tidally influenced, estuarine wetland system with no observable modifications. Supporting RE 12.1.3 (mangroves). Logan catchment.
W.4	Tidally influenced, estuarine wetland system with no observable modifications. Supporting RE 12.1.3 (mangroves). Albert catchment.
W.5	Freshwater, palustrine wetland (vegetated swamp), appears unmodified. Supporting RE 12.3.8.
W.6	Tidally influenced, estuarine wetland, no modifications observed. Part of the Albert River catchment. RE 12.1.3 (mangroves).
W.7	Palustrine, freshwater wetlands, supporting RE 12.3.5 (*Melaleuca quinquenervia* open forest). No modifications observed. *Crinia tinnula* (Wallum Froglet) Essential Habitat.
W.8	Palustrine, freshwater wetlands, supporting RE.12.3.5 (*Melaleuca quinquenervia* open forest). No modifications observed. *Crinia tinnula* (Wallum Froglet) Essential Habitat.
W.9	Palustrine, freshwater wetlands, supporting RE.12.3.5 (*Melaleuca quinquenervia* open forest). No modifications observed. *Crinia tinnula* (Wallum Froglet) Essential Habitat.
W.10	Modified palustrine wetland where size and / or hydrology has changed due to levee bank. Intermediately inundated.
W.11	Freshwater. Modified palustrine wetland where ecological character has changed due to gross mechanical disturbance e.g. cropping. RE 12.3.8.
W.12	Modified palustrine wetland where size and / or hydrology has changed due to levee bank. Intermediately inundated.
W.13	Modified palustrine wetland where size and / or hydrology has changed due to levee bank. Intermediately inundated.
W.14	Modified lacustrine wetlands that have been converted, completely or mostly, to a ring tank or other controlled storage. RE 12.3.6.
W.15	Freshwater, modified lacustrine wetlands where size and / or hydrology has changed due to levee bank.
W.16	Freshwater, palustrine wetland, from RE 12.3.8. (Of Concern). No modifications observed.
W.17	Freshwater, palustrine wetland, from RE 12.3.8. (Of Concern). No modifications observed.
W.18	Freshwater, modified lacustrine wetlands where size and / or hydrology has changed due to levee bank.
W.19	Freshwater, palustrine wetland, no modifications observed. RE 12.3.5 (Least Concern).
W.20	Tidally influenced, estuarine wetland community with no observable modifications. Supports RE 12.1.3 (mangroves) (Least Concern)
W.21	Artificial wetland (freshwater) – dam or ring tank.

Further survey work must be undertaken to determine whether these wetlands contain these species. If they are found, any work in these areas of Essential Habitat must meet the essential habitat performance requirements by adopting the acceptable solutions, or by providing another solution that meets the performance requirement. There must be demonstration of how there would be maintenance of the extent of the species by offsetting, propagation etc.

3.3.1.3 Confluence of the Logan River and Albert River

There are numerous state recognised wetlands that surround the confluence of the Logan River and Albert River. These are identified to be within a Wetland Management Area and are therefore assessable by DERM. In particular, those that line the banks of the rivers (map reference W1. – W.6) and to the north-east towards Beenleigh – Redland Bay Road (map reference W.16, W.17, W.19 and W.20) are of high ecological significance.

These wetlands have pockets of Essential Habitat possibly associated with koala and giant ironwood.

It is assumed that there is some connectivity between the wetlands in this area and those associated with the Carbrook Wetlands. This connectivity may be for fauna, flora and water quality elements. It is probable that these wetlands provide additional feeding areas for those protected migratory bird species known to be present within Carbrook and that are protected under the EPBC Act.

Approximately 5km downstream of the study area, the Logan River is protected under the Register of the National Estate as Southern and Eastern Moreton Bay (map reference R1, Map G1). Any significant adverse impact to the river and its water quality is a potential trigger under the EPBC Act.

Survey, mitigation and possible offsets would be required for Essential Habitat, as above.

It is highly recommended that there is no link that passes through these wetlands severing them from those further north east. If avoidance is not possible, the link should be placed on the edge of existing wetlands and vegetated areas.

Further survey work would determine the extent of protected species, vegetation and habitats within the area to better inform an alignment in this location.

3.3.2 Koala Habitat

3.3.2.1 South of Logan River

There are known areas of koala bushland habitat of medium and low value south of the Logan River and east of Albert River in Alberton (map references K2 and K3, Map G2). These pockets of habitat are in between residential developments and roads, and some are designated as Essential Habitat for koala. As a buffer, surrounding land is categorised as suitable for rehabilitation.

It is preferable that no major infrastructure is built through the area shown as K2 on Map G2This includes the areas mapped as Essential Habitat, Remnant Vegetation and Medium Value Bushland. If this cannot be achieved and the route is aligned in this location, significant measures will be required to ensure koala connectivity is retained and protection from road strike included. This is to ensure some connectivity remains for the existing bushland. Any removal of koala habitat will require offsetting (refer to ***Section 3.3.2.3*** *below for further explanation).*

3.3.2.2 North of Logan River and Surrounding Beenleigh - Redland Bay Road

The South East Queensland Koala Conservation State Planning Regulatory Provisions (SPRP) identifies the area north of Logan River encompassing Carbrook (map reference K4, Map G2) and Cornubia (map reference K1, Map G2) as a Priority Koala Assessable Development Area. The SPRP identifies priority koala areas that are known to be under the most significant risks.

There are also areas identified on the State Planning Policy of high bushland value and as Essential Habitat.

It is preferable that any route in this area is aligned south, close to Logan River and does not sever any pockets of koala habitat. Any removal of koala habitat will require offsetting (refer to ***Section 3.3.2.3*** *for further explanation).*

3.3.2.3 Overview of Offset Requirements

If the proposed development requires the clearing of habitat that is protected koala habitat under Queensland State legislation, this would require that the proponent provide biodiversity offsets to compensate for the loss of protected habitat. Queensland offset legislation and policy is complex, with up to three specific issue policies potentially applicable to koala offsets:

- The "Offsets for Net Gain of Koala Habitat in Southeast Queensland Policy" (Koala Offset Policy), which identifies offsets for areas mapped as koala habitat
- The "Policy for Vegetation Management Offsets" (Vegetation Offsets Policy), which outlines offsets for areas that are mapped as Essential Habitat for species listed as threatened under the NC Act
- The draft Biodiversity Offsets Policy, which specifies offsets for species listed as threatened under the NC Act.

It is only necessary to provide offsets for impacts on a particular biodiversity value such as koala habitat under one policy. Under the SPP, the remnant vegetation in the study area is mapped as koala medium and high value bushland. Areas mapped as koala medium and high quality bushland are normally subject to offsets under the Koala Offset Policy. This Koala Offset Policy aims to achieve a net gain in habitat for koalas. The policy requires that non-juvenile koala habitat trees must be offset at a ratio of 5 to 1 (for every one adult koala tree removed, five more must be planted). Any koala offset site must be protected from future development impacts by permanently securing the site for conservation purposes.

3.3.3 Significant Flora and Fauna Species and Vegetation Communities

3.3.3.1 Eagleby

As noted in **Section 3.3.1.2**, Eagleby supports a series of ephemeral wetlands on the boundary between the river floodplain and urban footprint. The majority of these wetlands are mapped as Regional Ecosystems (either Of Concern or Of Least Concern) and some also as Essential Habitat to threatened fauna species (Wallum froglet and koala). The remnant vegetation communities are:

- Ephemeral wetlands on alluvium (RE 12.3.8) Of Concern
- Broad leaved paperbark (*Melaleuca quinquenervia*) Open Forest on Alluvium (RE 12.3.5 / Essential Habitat for Wallum froglet)
- Spotted Gum / Ironbark (*C.citriodora / E.crebra / E.siderophloia*) Woodland on Metasediments (RE 12.11.5 / Essential Habitat for koala) Least Concern
- River mangrove (*Aegiceras corniculatum*) Low Open Forest on Marine Deposits (RE 12.1.3) Least Concern (Map reference W3.2, W3.3 and W3.4).

Regional Ecosystems are declared in the *Vegetation Management Regulation 2000* and are classified as:

Endangered if:

- The area of remnant vegetation for the Regional Ecosystem is less than 10% of the pre-clearing extent of the Regional Ecosystem; or
- The area of remnant vegetation for the Regional Ecosystem is 10% to 30% of the pre-clearing extent of the Regional Ecosystem and less than 10,000ha.

Of Concern if:

- The area of remnant vegetation for the Regional Ecosystem is 10% to 30% of the pre-clearing extent of the Regional Ecosystem; or
- The area of remnant vegetation for the Regional Ecosystem is more than 30% of the pre-clearing extent of the Regional Ecosystem and less than 10,000ha.

Least Concern if:

- The area of remnant vegetation for the Regional Ecosystem is more than 30% of the pre-clearing extent of the Regional Ecosystem and more than 10,000ha.

Any clearing of remnant vegetation will require approval from DERM. According to the performance criteria under the *Regional Vegetation Management Code for South East Queensland (The Code),* clearing that is greater than 0.5ha or greater than 10m wide is not permitted in Regional Ecosystems that are Endangered or Of Concern. Consequently, the clearing of this vegetation will potentially require the provision of offsets in a suitable location.

Essential Habitat is declared for known habitat of threatened species and is protected under the Queensland *Vegetation Management Act 1999*. Design development in later project stages will need to consider opportunities to avoid and minimise potential harm to these species or their habitat. Specific ecological advice should be sought with regard to designing appropriate fauna management into the project and budget. At a minimum, the movement of koalas and amphibians should be accommodated within habitat areas that are severed by the road corridor.

Development approval normally requires the provision of offsets under the Vegetation Offsets Policy to compensate for the loss of Essential Habitat. However, offsets under the more specific Koala Offset Policy (as described above) are likely to take precedence over the Vegetation Offsets Policy, as long as all impacts to biodiversity values of Essential Habitat are addressed by the former policy.

3.3.3.2 Confluence of the Logan River and Albert River

Mangrove communities line the banks of Logan and Albert Rivers as an extension of the Carbrook wetland aggregates. These are predominantly River Mangrove (*Aegiceras corniculatum*) Low Open Forest on Marine Deposits (RE 12.1.3) Least Concern.

The grey headed flying fox is likely to be found within the study area as it is listed within the EPBC and the DERM databases and is known to roost in mangroves. It is unknown at this stage whether any camps exist locally. Any trees that hold a camp of grey-headed flying foxes cannot be disturbed, and their presence must be determined through survey. Bird surveys would also need to be undertaken to determine nests as certain migratory species return to the same site annually.

It is highly recommended that there is no link that passes through these wetlands severing them from those further to the north east. If avoidance is not possible, the link should be placed on the edge of existing wetlands and vegetated areas. Survey, mitigation and possible offsets would be required for removal of regional ecosystem and essential habitat as above.

3.3.3.3 Carbrook Wetlands

The wetlands appear to be well connected forming large extents of remnant vegetation. These vegetation communities consist predominantly of:

- Ephemeral wetlands on alluvium (RE 12.3.8) Of Concern
- Broad leaved paperbark (*Melaleuca quinquenervia*) Open Forest on Alluvium (RE 12.3.5 / Essential Habitat for Wallum froglet)
- Broad-leaved Paperbark / Forest Red Gum / Swamp Box (*M.quinquenervia / E.tereticornis / L.suaveolens*) Open Forest on Alluvium (RE 12.3.6 / Essential Habitat for koala) Least Concern.
- River mangrove (*Aegiceras corniculatum*) Low Open Forest on Marine Deposits (RE 12.1.3) Least Concern (Map references W3.2, W3.3 and W3.4, Map G1).

The Carbrook Wetlands are known to support a very diverse flora and fauna, some of which have restricted distribution, and provide refuge during drought. The ephemeral swamp is utilised by many waders, including migratory species. The EPBC Act database lists a potential 36 threatened species and 26 migratory species within the entire study area. Many of these are highly likely to be supported by Carbrook and surrounding wetlands.

Any proposed action or development that would cause an impact on a feature of national significance is subject to the requirements of the EPBC Act. It is highly recommended that all features of national significance be completely avoided.

3.3.3.4 East of the Albert River and North of Logan River and surrounding Beenleigh-Redland Bay Road

The remnant vegetation in these areas is dominated by open eucalypt forest providing important koala habitat. They include the following Regional Ecosystems:

- Spotted Gum / Ironbark (*C.citriodora / E.crebra / E.siderophloia*) Woodland on Metasediments (RE 12.11.5 / Essential Habitat for koala) Least Concern
- Forest Red Gum / Pink Bloodwood / Grey Ironbark (*E.tereticornis / C.intermedia / E.siderophloia*) Open Forest on Alluvium (RE 12.3.11 / Essential Habitat for koala) Of Concern
- Broad-leaved Paperbark / Forest Red Gum / Swamp Box (*M.quinquenervia / E.tereticornis / L.suaveolens*) Open Forest on Alluvium (RE 12.3.6 / Essential Habitat for koala) Least Concern
- Ironbark / Small Fruited Grey Gum (*E.siderophloia, E. propinqua*) open forest on metamorphics +/- interbedded volcanic (RE 12.11.3) Least Concern.

As above, any clearing of remnant vegetation will require approval from DERM and must conform to the requirements of The Code. Offsets are likely to apply.

It is preferable that any route avoids bifurcating areas of Regional Ecosystem in the form of a barrier or isolates areas of remnant vegetation from other bushland. Connectivity between vegetated areas will need further consideration during future design stages.

3.3.3.5 Whole of Study Area

The search of protected matters within the EPBC Act Database has identified that there is the potential for 36 Threatened Species and 26 Migratory Species within the entire study area. However, it is highly unlikely to find the species of turtle listed within this area. The area immediately surrounding the study area supports a larger number of Threatened Species, some of which may use locations within the study area or pass through them as part of a migratory route.

This database does not allow for more localised area searches therefore the species identified may apply to any locations within the study area. More specific locations can only be verified through field survey.

The DERM Wildlife Online Search also has recorded sightings of threatened species within the study area. This includes koala, as discussed above, and wallum froglet which is listed as Vulnerable under the NC Act and has a restricted distribution, being generally confined to acid lakes and wallum swamps.

Threatened bird species include grey goshawk, square-tailed kite, freckled duck, radjah shelduck, black-necked stork, little tern, Lewin's rail and numerous other migratory birds that are Of Least Concern but use the area.

Notable flora that are threatened and are likely to be within the study area include *Marsdenia coronata, Fontainea venosa, Choricarpia subargentea, Gossia gonoclada, Persicaria elatior, Macadamia integrifolia, Planchonella eerwah,* and *Maundia triglochinoides.* Under Queensland legislation, construction is likely to require some overall project approvals and various environmental approvals for specific activities, including potential impacts to threatened flora species.

Further survey work would determine the extent of protected species, vegetation and habitats within the area to better inform measures to protect rare and threatened species.

3.3.4 Historic Buildings

Krugers Farm, located at 445-469 Beenleigh-Redland Bay Road, Carbrook, is a historic place with Indicative status, listed on the Register of National Estate (I.D 19970) and is protected under the EPBC Act. This property is also the historic place for Fachwerk House, as listed on the Queensland Heritage Register (map reference H1, Map G1). The former Carbrook State School is also listed on the Queensland Heritage Register and is located within the study area, as shown by map reference H2, Map G1.

The former Carbrook State School is also listed on the Queensland Heritage Register and is located within the study area. The former school, with its tree lined driveway and original school building located towards the rear of the site, makes a valuable contribution to the Carbrook landscape.

3.3.5 Aboriginal Sites

Two known Aboriginal cultural heritage sites containing artefacts lie within the study area, as marked by map references H3 and H4, Map G1. Additionally, an area of land owned by GCCC, but designated as 'special purpose' is also suspected by TMR of containing aboriginal artefacts. The presence of known artefacts is indicative that other areas of undisturbed land surrounding these sites may also contain artefacts of cultural heritage value.

Consultation with the Aboriginal party for the area should be initiated as part of the Project Environmental Assessment stage (RPEPM, 2004).

The Aboriginal party for the area is:

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3.3.6 Strategic Cropping Land

A proportion of the study area is defined as strategic cropping land. This land typically lies on the floodplain of the Logan and Albert Rivers surrounding Eagleby and the eastern end of the study area near Alberton. Its extent is shown on Map G1.

The Queensland Government considers that the best cropping land, defined as strategic cropping land, is a finite resource to be conserved and managed for the longer term. As a general aim, the State government relies on local government planning and approval powers to protect such land from those developments that lead to its permanent alienation or diminished productivity.

It is desirable to protect strategic cropping land from impact or severance where possible. However, where a route is proposed through strategic cropping land, the impacts and severance issue will need to be addressed in future design stages of the project. Geotechnical investigations would help to gain a better understanding of the value of the cropping land and ways to minimise disruption to primary production.

3.3.7 Acid Sulfate Soils

Acid Sulfate Soils (ASS) cover approximately 2.3 million hectares of land in Queensland and occur naturally along the coast usually where land elevation is less than 5m AHD.

Logan City Council and Gold Coast City Council have identified the majority of the land surrounding the Logan River, Albert River and east of the Pacific Motorway as an Acid Sulfate Soil Hazard Area. There are pockets of higher ground within the study area in Eagleby and Alberton that have not been identified as a hazard area.

It is preferable to avoid the disturbance of ASS due to potentially significant adverse effects the soils can have on the natural and built environment. The release of acid and metal contaminants can degrade the water quality and ecology of the local wetlands. If disturbance is planned due to development, the soils will require treatment and management to prevent acid generation, and to neutralise existing acidity. During future design stages it will be necessary to investigate the actual extent and severity of ASS conditions. Any potential for environmental impacts from ASS, and other land or water-based contaminants, can be effectively managed following the processes set out in the Road Project Environmental Processes Manual (Queensland Department of Main Roads, 2004).

3.3.8 Community

The study area includes the suburbs of Loganholme, Cornubia, Eagleby, Alberton and Stapylton. These communities support a mixture of rural residential, agriculture, mining and aquaculture land uses. The project will have both direct and indirect impacts on these stakeholders. This may include, but is not limited to, changes to noise, visual and social amenity, air quality, access, and ability to operate businesses.

Sensitive community receptors to environmental changes include schools, hospitals, cemeteries and community places. These include (but are not limited to):

- Schools within Eagleby and Eagleby Shopping Centre
- Loganholme Primary School
- Calvary Christian College and Kimberly College south of the Beenleigh - Redland Bay Road in Carbrook
- Crematorium and Memorial Garden east of Alberton.

Further detail on the current and future land uses are described in **Section 2.0**.

3.4 Summary

The study area contains, or is in proximity to, several natural features of National and / or State significance.

Those protected under Commonwealth legislation:

- Ramsar wetlands associated with Serpentine Creek Conservation Park
- Parts of the Logan River are defined as Moreton Bay and are listed on the Register of National Estate
- A historic place (Indicative) listed on the Register of National Estate
- Threatened and Migratory species.

Those protected under State legislation:

- Carbrook Conservation Park is listed under the Directory of Important Wetlands
- Two historic buildings listed on the Queensland Heritage Register
- Areas of bushland protected as Essential Habitat to koala, wallum froglet, black-necked stork and giant ironwood
- Areas of mangroves, open eucalypt forest, and ephemeral wetlands identified as Regional Ecosystem.

The study considers a number of links that pass through or close to these features. Any proposed action or development that would cause an impact on a feature of national significance is subject to the requirements of the EPBC Act. The EPBC Act is triggered and a referral required if an action will have, or is likely to have, a significant impact on Matters of National Environmental Significance as listed under Part 3 of the Act. This includes issues of national heritage places, wetlands of international importance, listed threatened species and ecological communities, and migratory species. Further environmental studies will determine whether it is recommended that a referral to the Department of Environmental, Water, Heritage and the Arts will be considered necessary for the LEL. However, it is recommended that all features of national significance be completely avoided. Mitigation through design may be possible in some designated areas where there is likely to be no significant change to the existing environment (e.g. minor improvements to existing infrastructure).

Any construction will need to follow the TMR processes, which meet the requirements of Queensland legislation. Under Queensland legislation, construction is likely to require some overall project approvals and various environmental approvals for specific activities. Further survey work of the local ecology would inform this. Appropriate design and mitigation measures can be employed to gain approvals by ensuring the likelihood of significant disturbances to protected species, habitats and areas is minimal. As an example, the design of bridges or roads that pass through wetlands should take into consideration the requirement of light for adjacent habitats to survive (e.g. mangroves). Flight paths of associated migratory birds will also need to be considered and avoided. Utilisation of existing routes and corridors is preferable.

The alignment of the LEL should also consider the potential indirect adverse impacts to threatened species and their habitat, in particular the wetlands. Any additional road or structure could result in increased surface runoff and therefore alter flows within the area and affect the water quality of watercourses. The increased flow may alter the specialised habitat that is required by the threatened species as mentioned in the sections above. Furthermore, sediment, rubbish and contaminants as a result of construction and operation of the road also have the potential to adversely impact aquatic and wetland habitats. Drainage should be carefully considered in design.

The wetlands identified within map area W3 are of lesser importance when compared to those within the Carbrook Wetlands. However, some may have direct connectivity to the Carbrook Wetlands in terms of water flow and species movement, which should be further investigated through ecological survey work. If avoidance is not possible, the alignment should preferably run as far to the edge of a designated wetland area as possible to ensure connectivity remains.

The area north of Logan River and surrounding Beenleigh - Redland Bay Road that is identified by the SPRP is a priority koala area that should be avoided. It is preferable that in this area any route is aligned south, close to Logan River and does not sever any pockets of koala habitat. South of Logan River and east of Albert River in Alberton, the pockets of koala habitat are in between residential developments and roads. In this area it is advised that any route be placed as far north towards the Logan River as possible, to ensure some connectivity remains for the existing bushland. As noted in **Section 3.3.2.3** any removal of koala habitat or severance of areas will require offsetting and mitigation.

Further assessment would be required to establish the impact on the local heritage sites values. However, it is recommended that there should be no removal or direct impact on the building structures and their surrounding features. Indirect impacts should also be considered (e.g. from noise and vibration) and a visual assessment would be required of any works in the vicinity of Carbrook State School (former).

The known Aboriginal artefacts in the study area highlight that there is potential for discovery of Aboriginal cultural heritage. It is highly recommended that consultation with the Gold Coast Native Title Group is undertaken to establish the significance of the known artefacts and whether others exist in the area and to confirm the location of the existing sites.

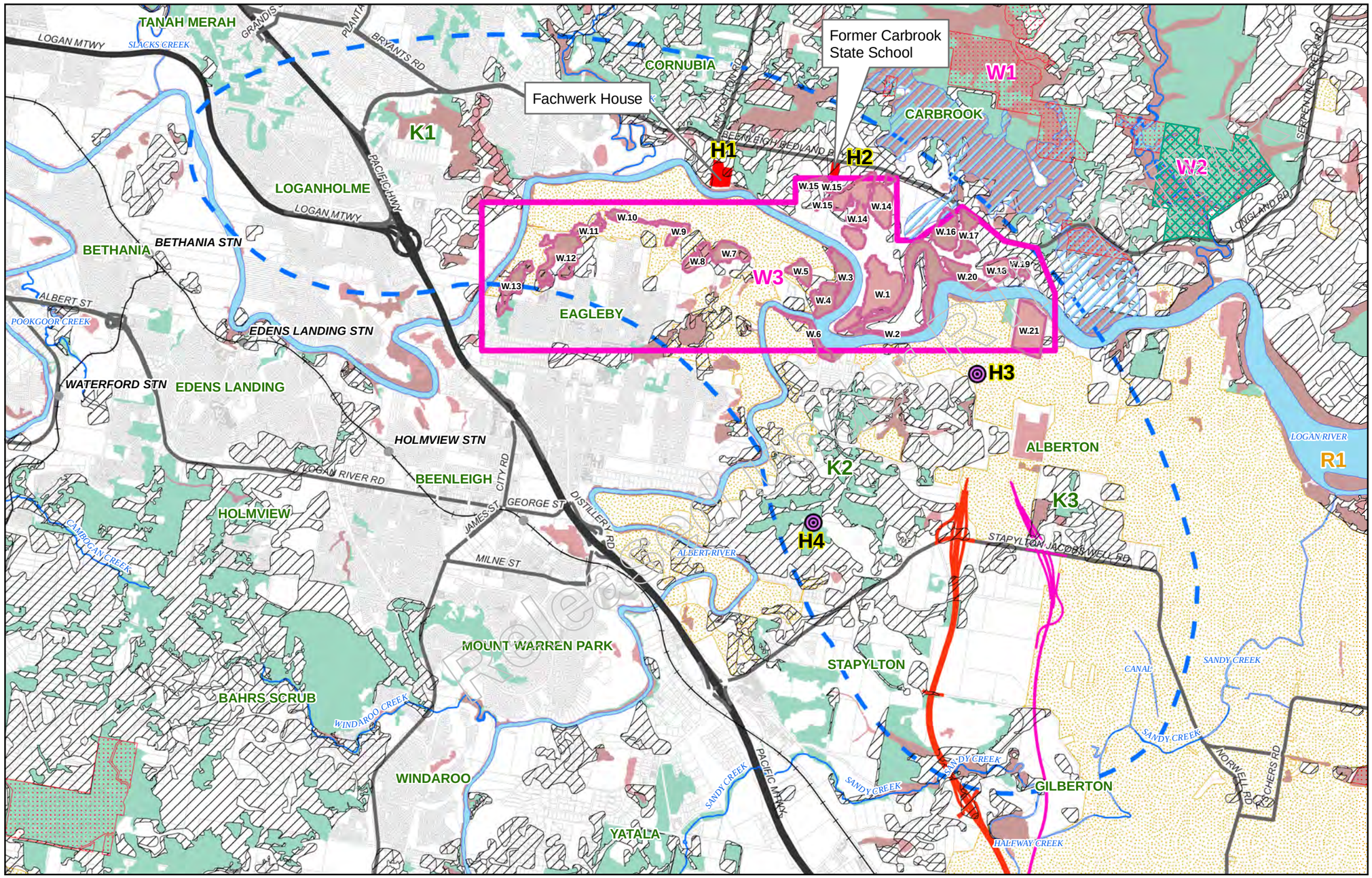
Pages 36 through 73 redacted for the following reasons:
- -
NR

Appendix B

Mapping

Pages 75 through 81 redacted for the following reasons:

NR



AECOM

www.aecom.com

N

DATUM GDA 1994, PROJECTION MGA ZONE 56

0 750 1,500 3,000

Metres

1:50,000 (when printed at A3)

- IRTC East
- IRTC West
- Study area
- Railway line
- Highway
- Main road
- Historic site
- Directory of Important Wetlands
- Wetlands
- Strategic cropping land
- Remnant vegetation
- High Value Regrowth
- Conservation Parks
- Wetlands
- Ramsar Wetlands
- Aboriginal cultural heritage artefact
- Property boundaries

Data sources:

Base Data: (c) StreetPro
DCDB, Regional Ecosystem, Strategic Cropping Land, Wetlands, Ramsar Wetlands, Historic sites, High Value Regrowth, Aboriginal Cultural Heritage - DERM, QLD 2010
IRTC Road Corridor Development Planning, AECOM 2010

Logan East Link Route Investigation

Environmental Constraints

Map 1 of 2

PROJECT ID	60186998
CREATED BY	KB
LAST MODIFIED	KB -30/11/2010
VERSION:	2

Map G1

A3 size

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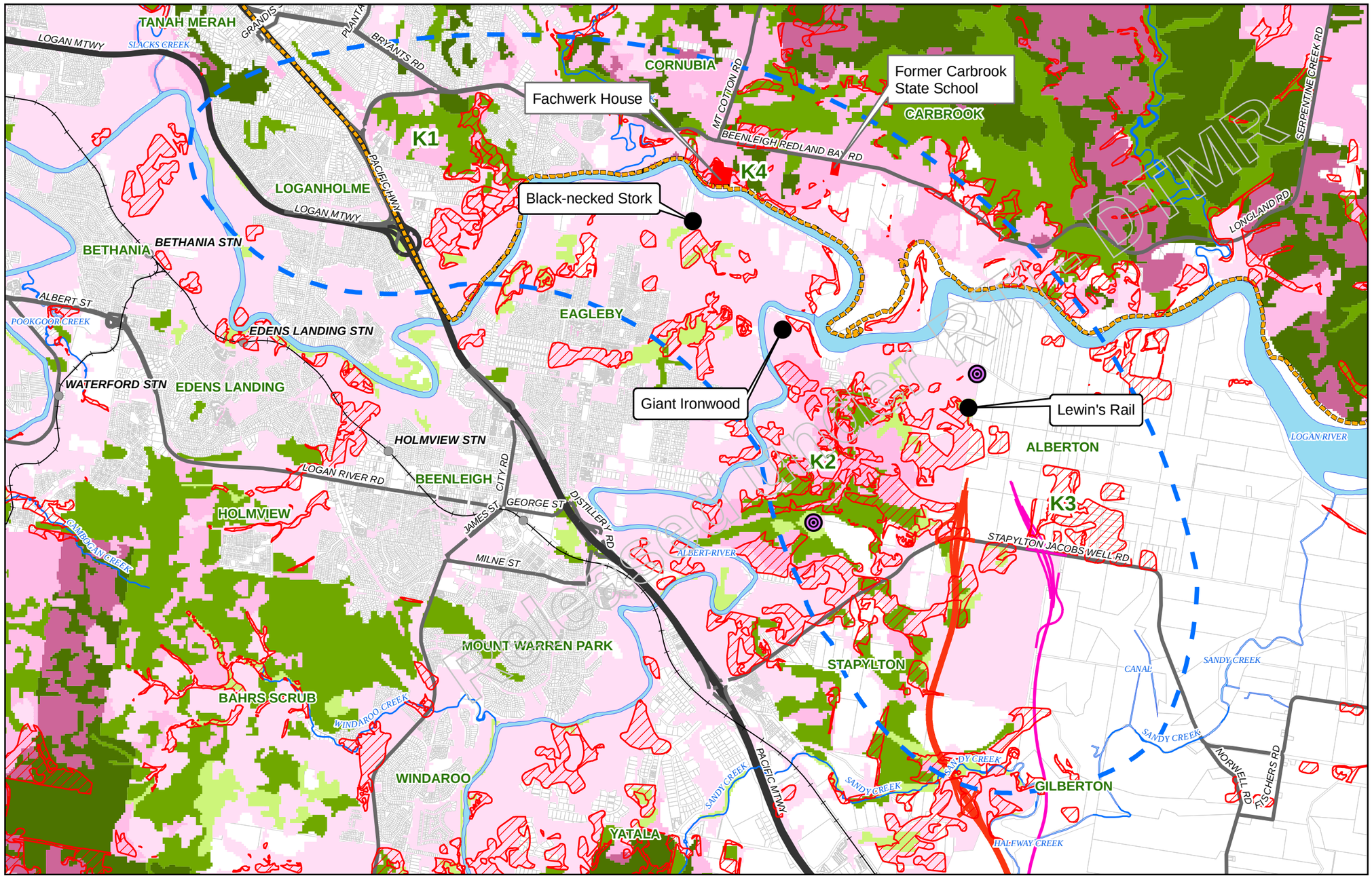

AECOM
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DATUM GDA 1994, PROJECTION MGA ZONE 56

0 750 1,500 3,000

Metres

1:50,000 (when printed at A3)

- IRTC East
- IRTC West
- Study area
- Railway line
- Highway
- Main road
- Historic site
- Vegetation Management Act Essential Species Record
- Essential Habitat

Koala Habitat Value Category (SPP and SPRP)

Bushland Habitat

- High Value Bushland
- Medium Value Bushland
- Low Value Bushland

Suitable for Rehabilitation

- High Value Rehabilitation
- Medium Value Rehabilitation
- Low Value Rehabilitation
- Priority Koala Assessable Development Areas under SPRP
- Aboriginal cultural heritage artefact
- Property boundaries

Data sources:

Base Data: (c) StreetPro
DCDB, Koala Habitat, Essential Habitat, Historic sites,
Essential Species Aboriginal Cultural Heritage - DERM, QLD 2010
Native Title - Geoscience Australia - 05/10/2010
IRTC Road Corridor Development Planning, AECOM 2010

Logan East Link Route Investigation

Environmental Constraints

Map 2 of 2

PROJECT ID	60186998
CREATED BY	KB
LAST MODIFIED	KB -13/12/2010
VERSION:	2

Map

G2

A3 size

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Pages 84 through 123 redacted for the following reasons:

NR

Transport and Main Roads

Environmental Scoping Report

Intra-Regional Transport Corridor (IRTC) Northern Connection: Beenleigh-Redland Bay Road to Stapylton-Jacobs Well Road

Project No: D10/D001/901

Connecting Queensland
www.tmr.qld.gov.au

Queensland Government

PROJECT DETAILS			
Project Name / Description	IRTC Northern Connection Beenleigh-Redland Bay Road to Stapylton-Jacobs Well Road		
Project Number	D10/D001/901	**Section / Chainage**	N/A
Local Government Area	City of Gold Coast / Logan City	**QTRIP WBS**	N/A
Road	113 (IRTC)	**DMS Reference**	N/A

REPORT PREPARATION			
I have prepared this report based on the best information available at the time. I have taken into account, to the fullest extent possible, all actual and potential environmental impacts of the project.			
Name	Deborah Glassop	**Signature**	NR
Position	Environmental Officer	**Date**	7th June 2017
REPORT REVIEW			
Name		**Signature**	
Position		**Date**	

VERSION HISTORY			
Version No.	**Date**	**Changed by**	**Nature of Amendment**

PROJECT MANAGER ACCEPTANCE			
I agree that this report has been prepared based on the project scope at the time, and accept responsibility for ensuring any future changes to the scope are appropriately assessed. I understand the potential impacts and legislative consequences of not actioning the recommendations outlined in the report.			
Name	Frank Spinella	**Signature**	
Position		**Date**	

Note: *This Environmental Scoping Report shall remain current for 12 months. A review will be required after this time should further subsequent assessment or management actions not be undertaken.*

EXECUTIVE SUMMARY

The Department of Transport and Main Roads (TMR) are currently investigating high level options to link the proposed Intra-Regional Transport Corridor (IRTC) at Stapylton-Jacobs Well Road with Beenleigh-Redland Bay Road, a project known as the IRTC northern connection.

A previous study was undertaken for this area, known as the Logan East Link (LEL) Route Investigation Study. This study included a high level (desktop) assessment of potential environmental issues within the LEL Route study area.

The project has now progressed to a stage where SCR have identified three possible options that could provide a link between the IRTC and Beenleigh Redland-Bay Road. This Environmental Scoping Report (ESR) has been developed in order to provide a "first pass" environmental assessment of the proposed IRTC Northern Connection between Beenleigh-Redland Bay Road and Stapylton-Jacobs Well Road. It is not intended to provide either a comprehensive account of environmental values within the project area or a detailed assessment of potential environmental impacts associated with the proposed works, but rather to identify key environmental issues and legislative requirements that will require additional assessment as the project progresses.

Key issues identified within this scoping study are as follows:

Project environmental assessment and management framework.

This is a critical issue for the project and will require careful consideration at the earliest stages of the planning phase of the project. The size and complexity of the proposed IRTC considered as a whole project from Beenleigh-Redland Bay Road to Nerang-Broadbeach Road may result in the project triggering external environmental assessment processes such as those associated with the federally administered Environment Protection and Biodiversity Protection Act (EPBC) or the state administered State Development and Public Works Organisation Act (SDPWO). Should external environmental assessment processes as outlined in these pieces of legislation be applicable to the planning, design and construction of the IRTC, then the project may need to follow a formal Environmental Impact Statement (EIS) process. The EIS process is significantly more time, cost and resource intensive that the internal TMR environmental assessment and management process that would normally be followed for a road construction project. This will require careful consideration once any stage of the suite of projects that comprise the IRTC reaches the concept phase.

Water and water quality.

The proposed IRTC Northern Connection falls within the Logan and Albert River Catchments and will require major crossings of both the Logan and Albert Rivers. Some options will require multiple crossings of these watercourses. The project is within and adjacent to the environmentally sensitive Carbrook wetlands area, which is listed as environmentally significant within the Directory of Important Wetlands in Australia (DIWA).

Soil and land management.

Low-lying (below 5 metres AHD) areas occur in the majority of the study area, with both Logan City Council and the City of Gold Coast having identified the majority of the land east of the Pacific Motorway and surrounding the Logan and Alberts rivers as acid sulfate soil hazard areas. These areas are likely to contain potential or actual acid sulphate soils. Excavation and exposure of these soils could result in their oxidation and subsequent release of contaminants such as acids and metals into the surrounding environment. Given the proximity of environmentally sensitive areas such as the Carbrook wetlands, appropriate management and treatment of acid sulphate soils will be required. There are also a number of potentially contaminated sites listed on the Environmental Management Register (EMR) within the study area, notably in the vicinity of Beenleigh-Bay Road.

Flora and Fauna.

The Logan and Albert River Floodplains and Carbrook wetlands are known to support a diverse array of flora species, including those protected under state legislation. Carbrook wetlands is a gazetted (protected under the provisions of the Nature Conservation Act) conservation park, and it will therefore be important to minimise impacts on this area where possible. The Carbrook and Eagleby wetlands are also known to provide habitat to many species of waders and waterbirds, including migratory species which are protected under the federally administered Environment Protection and Biodiversity Conservation Act (EPBC). In addition, a number of frog species have also been previously recorded within the Carbrook wetlands, including the legislatively protected wallum froglet, which has a limited distribution due to its preference for acidic lakes and wallum swamps. Areas of drier eucalypt and melaleuca forest away from the Logan and Albert River floodplains may also provide habitat for koalas.

Public amenity and health.

The proposed IRTC northern connection is likely to have both direct and indirect impacts on the receiving environment via changes to noise, visual and social amenity, air quality, property access and property severance. Severance of access routes both within individual properties and to the existing local road network are likely. The IRTC northern connection would be classified as a "new road – access controlled" for the purposes of operational (road traffic) noise impact assessment, and as such road traffic noise criterion levels will be significantly lower than for the upgrade of an existing road, particularly where existing ambient noise levels are low.

Cultural heritage.

A Cultural Heritage Risk Assessment (CHRA) has been undertaken for the study area, which indicates a high risk of the project impacting on Aboriginal Cultural Heritage (Category 5 under the Cultural Heritage Guidelines). Previous studies undertaken in this area indicate that there are known sites of Aboriginal Cultural Heritage within the study area. A formal Cultural Heritage Management Plan (CHMP) as per part 7 of the Aboriginal Cultural Heritage Act may be required for the project. In addition, there are two sites of historical cultural heritage significance (listed on the Queensland Heritage Register) within the study area on Beenleigh-Redland Bay Road.

Conclusions and recommendations.

A number of potential environmental issues will require additional investigation once the project reaches the concept phase. These include potential impacts on the Carbrook wetlands, potential impacts on legislatively protected flora and fauna species, and potential for the project to impact on areas of Aboriginal Cultural Heritage Significance.

From an Options Analysis perspective, at this point in time there is no discernible difference between the three options from an environmental impact perspective. All three options have environmental constraints which will require additional assessment and management as the project progresses.

The most critical issue for the IRTC Northern Connection from an environmental management perspective is its relationship to the future IRTC corridor. Construction of the IRTC between Beenleigh-Redland Bay Road and Nerang-Broadbeach Road could potentially trigger external environmental assessment processes that the IRTC Northern Connection as a "stand alone" project would not. This will require careful consideration, given that external environmental assessment processes such as the Environmental Impact Statement (EIS) process under the EPBC Act or SDPWO Act are significantly more time, cost and resource intensive than internal TMR environmental assessment and management processes.

1 INTRODUCTION

Background

The Intra-Regional Transport Corridor (IRTC) is a future road corridor that will eventually form the primary arterial road between Logan, the rapidly expanding northern and established southern suburbs of the Gold Coast. Road Corridor Development Planning (RCDP) has been undertaken for the IRTC in order to establish the extent of the road corridor and protect it from future development. In 2010, the road corridor requirements for the northern section of the IRTC (the section between Beattie Road Coomera to the south and Stapylton-Jacobs Well Road in the north) were determined.

Once the RCDP process was finalised for the northern section of the IRTC, an additional study was undertaken to investigate possible routes to link the IRTC with the Pacific Motorway (M1), Logan Motorway and Beenleigh-Redland Bay Road. This study was known as the Logan East Link (LEL) Route Investigation Study, and the outcome of the study was to establish feasible alignments for the LEL that connected the IRTC (Northern Section) to the Logan Motorway and Beenleigh-Redland Bay Road. These alignments were developed to provide input into the higher level Northern Gold Coast Area Transport Study.

The Logan East Link Route Investigation Study concluded that the LEL is likely to provide an alternative transport corridor to the M1, thus encouraging commuters to avoid using the Pacific Motorway for short commuter trips.

The suburbs of Beenleigh, Loganholme and Eagleby are identified as future growth areas, and as such timely provision of new road infrastructure in these suburbs via the IRTC will be important to their growth. In addition, the Yatala Enterprise Area located to the south of the study area is predicted to be a major industrial and economic development region for the northern Gold Coast and Logan City. Future access to this area via a major transport route with connections to surrounding road networks will be vital to the development of the area.

South Coast Region (SCR) has recently developed three potential options which would provide a new road link connecting Stapylton-Jacobs Well Road with Beenleigh-Redland Bay Road. This project is known as the IRTC Northern Connection. This scoping study has been developed in order to provide a high level assessment of potential environmental impacts associated with each of these three options and establish an environmental assessment and management framework for the project.

Project Scope

As discussed above, the project comprises the construction of a "northern connector" of the proposed IRTC, linking the current northern limit of the future road corridor at Stapylton-Jacobs Well Road with the existing Beenleigh-Redland Bay Road. There are three potential routes (or options) for the Connector.

At the time of writing, the project is still in the pre-concept phase, and so a detailed scope of works is not available. The high level LEL study indicates that the IRTC northern connection would likely comprise a 100 metre wide road corridor, which would allow for a 60 metre wide road (general traffic lanes) together with HOV lanes, landscaped median, future public transit facility and a service road. The LEL study indicated that the road corridor width was unlikely to exceed a maximum of 100 metres. The three options are shown in Appendix 1.

2 ENVIRONMENTAL FACTORS & RISK IDENTIFICATION

2.1 WATER

Factors Identification - *Factors present, or potentially present, within / near to the project footprint*

- ☐ Freshwater water body
- ☒ Marine water body
- ☐ Groundwater / Aquifers
- ☒ Significant water body

The proposed project falls within the Logan and Albert River Catchments. Watercourses within the catchment are the Logan River, Albert River, Native Dog Creek and Serpentine Creek (both tributaries of the Logan River). The confluence of the Logan and Albert Rivers occurs at the eastern end of the Eagleby floodplains and is subject to heavy flooding. The Logan River ultimately flows in Southern Moreton Bay. All major watercourses within the project area are tidal.

The Carbrook wetlands aggregation occurs mainly to the north east of the study area but also extends across Beenleigh Redland Bay Road in the vicinity of the Carbrook golf course. The Carbrook wetlands aggregation is included in the Directory of Important Wetlands in Australia (DIWA) and is considered to be of national importance. While it does not have the significance of a RAMSAR wetland (which have international significance and are therefore protected under the provisions of the federally administered Environment Protection and Biodiversity Conservation Act (EPBC) it is still an area of environmental significance. There is also a series of wetlands at Eagleby, located on the western banks of the Albert River to the north of Staplyton-Jacobs Well Road.

Most of the project area is low lying (less than 5 m ASL). Flooding of low lying areas occurs as a result of localised rainfall in the catchment of Native Dog Creek, with the Melaleuca wetlands and swampy grasslands being inundated for between two and four months of the year. Most of the study area is within a Coastal Management District, and is also mapped as a coastal hazard area (erosion prone area).

The project area is not within a declared fish habitat area. Department of Agriculture and Fisheries (DAF) mapping shows the Logan and Albert Rivers as grey (tidal areas) for which a development approval is nearly always required (see legislation section for more details). There are also numerous other drainage lines and minor watercourses within the study area that may be impacted by the proposed works.

The study also highlighted areas that were especially sensitive to reduction in waterway / floodplain conveyance area – especially the floodplain between the Eagleby residential area and the Logan River, and the floodplain southeast of the Albert / Logan River confluence.

Aspects & Impacts - *Proposed project aspects with the potential to impact on factors identified*

Planning & Design – All three proposed options pass through the Logan and Albert River floodplains, and require significant bridge structures to accommodate flood flows. Option 2 in particular would require multiple crossings of the Logan River.

The DIWA listing for the Carbrook wetlands lists alteration of the existing hydrological regime and subsequent loss of ephemeral grassy wetlands as a major threat to the integrity of the wetland which should be avoided when considering any future development proposals (including road construction) in the area.

The emphasis during planning and design should therefore be to design the required bridge structures to minimise impacts on both water flow and water quality that may occur as a result of the proposed project. More detailed assessment of both potential impacts to surrounding water bodies and appropriate mitigation measures to address these impacts should be developed as part of the REF for the proposed project.

Construction & Operation – During construction the emphasis should be on minimising impacts to water quality in surrounding watercourses and wetlands. Prior to construction, baseline water quality monitoring should be undertaken to establish existing water quality and determine appropriate water quality parameters for the construction phase. An appropriate and site specific erosion and sediment control plan will be required to minimise amounts of sediment-laden runoff entering surrounding watercourses. This will be especially important when working within or adjacent to the environmentally sensitive Carbook wetlands area.

☒ Potential Legislative Requirements (refer to Section 3 for more information). (i) General Environmental Duty under the Environmental Protection Act, (ii) Operational Works Permits for Tidal Works, Works within a Coastal Management District and constructing or raising waterway barrier works under the Fisheries Act, (iii) Destroying vegetation, excavating or placing fill in, or taking or interfering with water within a watercourse under the provisions of the Water Act.

2.2 SOIL / LAND MANAGEMENT

Factors Identification - *Factors present, or potentially present, within / near to the project footprint*

☒ Problem Soils (e.g. erodible, saline, ASS)
☐ Steep / Hilly terrain
☒ Significant areas
☒ Contaminated land

The project area is situated within and adjacent to the floodplains of the Albert and Logan Rivers. Water pH is generally acidic, and pools of standing water in the area have previously been found to contain very high concentrations of iron and manganese, indicating acid sulfate soils. Both Logan City and the City of Gold Coast have identified the majority of land surrounding the Logan River, Albert River and east of the Pacific Motorway as an ASS hazard area.

Department of Infrastructure, Local Government and Planning mapping indicates that the majority of the study area is classified as a "coastal hazard erosion prone area".

As discussed in section 2.1 above, all options to construct the proposed IRTC Northern Connection require significant bridge structures,

CTPI

There are a number of properties within the study area listed on the Queensland Environmental Management Register (EMR) as currently or historically supporting "notifiable" (potentially land contaminating) activities. These properties are mostly located adjacent to or in the vicinity of existing state-controlled roads (Stapylton-Jacobs Well and Beenleigh-Redland Bay Road).

Aspects & Impacts - *Proposed project aspects with the potential to impact on factors identified*

Planning & Design - As discussed above, acid sulphate soils are highly likely to occur within the project area. Excavation and exposure of these soils could result in their oxidation and subsequent release of contaminants (sulphuric acid, iron and aluminium) which could harm the environmentally sensitive receiving environment.

During the design phase, detailed and site specific investigations will be required in high risk areas (below 5m AHD) to determine locations of ASS and PASS. These investigations should be carried out as per the current QASSIT guidelines (Guidelines for the sampling and analysis of lowland acid sulphate soils in Queensland – October 1998). An appropriate and site specific ASS management plan should be developed to manage and treat any ASS appropriately.

Given the proximity of sensitive water bodies such as the Carbrook wetlands and Logan and Albert Rivers to the proposed project, consideration should be given to appropriate treatment of stormwater runoff to reduce the sediment load entering surrounding creeks and drainage lines. Diversion of stormwater runoff through grassed swales prior to discharge to watercourses will provide primary treatment of the runoff and reduce sediment load. The design will also need to consider

the placement of sediment basins (both temporary and permanent) as a further measure to reduce impacts on adjacent watercourses and environmentally sensitive areas.

With respect to contaminated land, excavation works associated with the construction of the proposed IRTC Northern Connection may disturb any contaminants present in the soil. A search of the EMR and CLR should be undertaken as part of the REF for the proposed project to determine whether any areas of contamination occur within the project area. Should this be the case, further investigation should occur to identify whether any of these areas will be disturbed by construction of the IRTC northern connection and develop appropriate management measures for these areas if required.

Construction and Operation – During construction, the emphasis will be on the appropriate management of "problem" soils such as ASS and minimising erosion of disturbed areas. Areas disturbed during earthworks have an increased erosion potential, and sediment leaving the project area may enter surrounding watercourses. An appropriate and site specific erosion and sediment control plan will be required in order to minimise impacts on the receiving environment. Acid sulphate soils will require management as per the ASS management plan developed during the design phase to avoid release of contaminants (acids and metals) into the surrounding environment.

☒ Potential Legislative Requirements (refer to Section 3) (i) General Environmental Duty under the Environmental Protection Act, (ii) Operational Works Permits for removal of contaminated soil under the Environmental Protection Act.

2.3 FLORA

Factors Identification - *Factors present, or potentially present, within / near to the project footprint*

☒ Significant species ☒ Significant vegetation / ecosystems ☒ Pest Plants	The Logan and Albert Rivers and their associated floodplains form a major part of the landscape in the study area, and support mangrove communities (lining the banks of the Logan and Albert Rivers), estuarine wetlands and open eucalypt forest. The Carbrook wetlands area contains a variety of vegetation communities including permanent freshwater ponds, shrub swamps and freshwater (seasonally flooded) swamp forest. The area is known to support a very diverse flora, including some species which have a restricted distribution. Legislatively protected species have been recorded as occurring within the Carbrook wetlands. There is a gazetted Conservation Park (protected under the provisions of the Nature Conservation Act) in the vicinity of the study area – Carbrook Wetlands Conservation Park 1 (515NPW869). A portion of this conservation park is located just to the east of the study area on the southern side of Beenleigh-Redland Bay Road), but it is unlikely to be directly impacted by any of the current options to construct the IRTC northern connection. A desktop search was undertaken of Department of Environment and Heritage Protection (DEHP) regional ecosystem mapping to establish the presence or absence of significant vegetation (regional ecosystems or RE's) within the study area. Regional Ecosystem mapping for the project area indicates the presence of mapped "of concern" remnant vegetation in a number of areas, notably where Beenleigh-Redland Bay Road intersects with both Mount Cotton Road and Ferry Road. In addition, most of the project is mapped as a "high risk area" on DEHP's protected plants flora survey trigger mapping.

Aspects & Impacts - *Proposed project aspects with the potential to impact on factors identified*

Planning & Design –

During planning and design, the emphasis should be on establishing whether there are any legislatively protected flora species or areas of significant vegetation within the study area, and progressing the design in a way that minimises

impacts on these species or areas where possible. A field survey to ground truth the presence or absence of protected species (including marine plants protected under the Fisheries Act) will be required once the project reaches the concept phase.

The Directory of Important Wetlands Australia (DIWA) listing for the Carbrook wetlands aggregation lists clearing of existing remnant vegetation and loss of grassy wetland areas as a major threat to the overall ecological integrity of the wetlands. It will therefore be important to minimise impacts on the wetlands area where possible, in particular in the vicinity of CTPI.

While none of the current options will impact on the legislatively protected Carbrook wetlands Conservation Park, should the alignment of CTPI impacts on the park could occur.

Construction – During construction, the emphasis will be on ensuring any vegetation clearing does not extend past defined clearing limits, and ensuring that effective erosion and sediment controls are in place to avoid indirect impacts on native vegetation. It will also be necessary to undertake a weed survey prior to construction to establish whether any declared weeds are present within the construction zone and develop an appropriate plan to manage any declared weed infestations.

☒ Potential Legislative Requirements (refer to Section 3) (i) Clearing permit for the removal of "endangered" or "near threatened" species from areas of remnant vegetation under the Nature Conservation Act, ((ii) Clearing permit for the removal of marine plants under the Fisheries Act (iii) Requirement to remove C1 and C2 pests from land under the Land Protection Act.

2.4 FAUNA

Factors Identification - *Factors present, or potentially present, within / near to the project footprint*

☒ Significant species
☒ Habitat / Breeding places
☒ Wildlife corridors
☐ Pest animals

As discussed in 2.3 above, the Carbrook wetlands area is known to support a very diverse flora and fauna and likely provides a refuge for fauna species during drought periods. The ephemeral grassy swamps of the Carbrook wetlands are utilised by many waders and waterbirds, including migratory species which are protected under the federally administered EPBC Act.

Historical records for the Carbrook wetlands also indicate a high diversity of mammal species, including the koala (protected under both state and federal legislation) and a number of bat species. As discussed in 2.3 above, mangroves line the banks of the Albert and Logan Rivers, which may provide roosting sites for the federally protected grey-headed flying fox. A number of frog species have also been previously recorded within the Carbrook wetlands including the legislatively protected wallum froglet which has a limited distribution due to its preference for acid lakes and wallum swamp.

The Eagleby wetlands (situated on the western banks of the Albert River) are located just south of where Option 2 would cross the Albert River. Logan City Council's publication "Threatened wildlife of Logan" indicates that the Eagleby wetlands area may support a number of legislatively protected bird species, including the Black-Necked Stork, Freckled Duck and Lewin's Rail. The Australian painted snipe (classified as "vulnerable" under both state and federal legislation) has also been recorded within Eagleby wetlands.

DNRM Regulated Vegetation Mapping for the study area indicates that there are patches of essential habitat for both the koala and the wallum froglet that would be impacted by all three potential options for the IRTC northern connection. The largest of these patches are associated with the Carbrook wetlands where it extends across the existing Beenleigh-Redland Bay into CTPI.

The South East Queensland Koala Conservation State Planning Policy (Koala SPP)

	mapping also indicates areas of koala habitat within the project area. These mainly occur to the south of the Logan River and the east of the Albert River CTPI and to the north and south of Beenleigh-Redland Bay CTPI. Areas of drier eucalypt and melaleuca forest away from the Logan and Albert River floodplains may also provide koala habitat. The area north of the Logan River is also mapped as a priority koala assessable development area. Check legislative status of this now. In relation to fauna movement, the Carbrook wetlands area could be considered a southern extension of the Mount Cotton – Venman Bushland National Park bushland corridor and is an important lowland retreat for many bird species during their seasonal migrations. Tentative corridor linkages also exist to the west of the study area (to Cornubia Forest) and to the east of the study area to Redland Bay via the Sheldon-Mount Cotton corridor. The DIWA listing for the Carbrook wetlands lists severing of existing wildlife corridor linkages listed as a major threat to the ecological integrity of the wetlands.

Aspects & Impacts - *Proposed project aspects with the potential to impact on factors identified*

Planning & Design – During planning and design, the emphasis should be on establishing whether there are any legislatively protected fauna species or their habitat / breeding areas within or adjacent to the study area, and progressing the design in a way that minimises impacts on these species or areas where possible. A field survey to ground truth the presence or absence of protected fauna species will be required as part of the detailed REF for the proposed project.

The presence of mapped koala habitat within the project area may trigger a requirement for the project to comply with the SEQ Koala Memorandum of Agreement (MoA). See section 3.0 – Legislation – for more details.

New bridges will be required CTPI the Albert and Logan Rivers. Both of these watercourses are mapped as grey (tidal – major impact) within DAF's mapping and so development approvals (for waterway barrier works) are highly likely to be required. An aquatic ecological field survey will be required as part of the detailed REF for the proposed project to identify the presence of fish in these watercourses and appropriate mitigation measures will be required in order to minimise potential impacts on fish movement.

Construction – During construction, the emphasis will be on minimising impacts to adjacent environmentally sensitive areas (Logan and Albert Rivers and the Carbrook wetlands). Aquatic fauna could be impacted if sediment leaving the construction site enters surrounding watercourses. As discussed in 2.2 above, an appropriate and site specific erosion and sediment control plan will be required in order to minimise impacts on the receiving environment.

The wallum froglet is an "acid frog". This species require acidic conditions (pH 4-5.5) to breed, and previous studies undertaken within the Carbrook wetlands indicate that water in the project area is acidic. These species could be impacted indirectly through changes in the pH of runoff waters from the construction site, especially where lime is used to neutralise disturbed acid sulphate soils. The acid sulphate soil management plan for the project should include measures to avoid pH changes to surrounding watercourses.

☒ Potential Legislative Requirements (refer to Section 3) (i) Referral to Federal Department of Sustainability, Environment, Water, Population and Communities for potential impacts on a threatened species and / or impacts on listed migratory species, (ii) Compliance with the SEQ Koala SPP / MoA, (iii) Operational Works Permits for constructing or raising waterway barrier works under the Fisheries Act.

2.5 PUBLIC AMENITY / HEALTH

Factors Identification - *Factors present, or potentially present, within / near to the project footprint*

☒ Residential areas	The study area includes the suburbs of Carbrook, Eagleby, Alberton and Stapylton.

☒ Commercial areas ☒ Public facilities ☒ Structures ☒ Aesthetic values	The land tenure is mostly freehold, with small areas of conservation park (Carbrook wetlands) plus other reserves and outdoor recreational areas. Both the Logan and Albert Rivers have had a considerable impact on the nature of land use within the study area as they form a physical barrier and also shape surrounding land use through the presence of their floodplains, which are mostly used for rural residential and agricultural purposes plus open space / recreation as discussed above. The confluence of the Logan and Albert Rivers occurs at the eastern end of the Eagleby flood plains (western extent of the study area) and is prone to heavy flooding. This has confined the development of the Eagleby urban area and provided good quality agricultural land in the flood plain area. Any road through this could potentially impact on the current functionality of this land. In addition, land on the southern side of the Logan River is currently mapped as a "draft SEQ priority agricultural area". With respect to emerging and future land use and planning in the study area, the suburbs of Beenleigh and Loganholme (western side of the Pacific Motorway) and Eagleby (eastern side of the Pacific Motorway) have been identified as future growth areas within South East Queensland. In addition, the Yatala Enterprise Area (YEA) to the south of the study area is predicted to be a major industrial and economic development area in the future.

Aspects & Impacts - *Proposed project aspects with the potential to impact on factors identified*

Planning & Design – The proposed IRTC northern connection is likely to have both direct and indirect impacts on the surrounding areas via changes to noise, visual and social amenity, air quality and property access and property severance. All three options to construct this road pass through parcels of privately owned land. This will result in severance of existing access routes both within individual properties and to the existing local road network. Additionally, the IRTC is intended to be a limited access road, and as such no properties will be allowed direct access to it. Additional infrastructure (over / underpasses) will be required to ensure that local access is maintained. Consultation with directly affected property owners will be required during the concept and design phases of the project.

The IRTC northern connector is a greenfield project and as such would be classified as a "new road - access controlled" as per the TMR Transport Noise Management Code of Practice Volume 1 (2013) for the purposes of operational (road traffic noise) impact assessment. The road traffic noise criterion levels for new roads are significantly lower than for the upgrade of an existing road, particularly where the existing ambient noise levels are below 55 dB(A) L_{A10} (18 hour). Potential noise impacts on outdoor educational and passive recreation areas within the study area may also require consideration. However given the rural residential / agricultural nature of the study area, noise barriers may not be a cost effective option to mitigate road traffic noise. A comprehensive road traffic noise assessment (RTNA) will be required once the project reaches the concept phase.

With respect to landscape and visual amenity, construction of a new state controlled road in the study area will result in some adverse impacts to the scenic amenity of the area, especially when considered in context of the existing rural residential / agricultural / open space land use. Potential impacts could be reduced via appropriate use of screening plantings / revegetation.

While construction of the IRTC northern connection will generate additional vehicle emissions during the operational phase of the project, these are not anticipated to have a significant impact on local air quality.

Construction – During the construction phase, the emphasis will be on minimising construction-related noise, vibration and air quality impacts on adjacent sensitive receptors. Residential properties in the study area may be exposed to construction-related impacts such as increased noise and / or vibration or deterioration of air quality.

Activities such as pile driving and the use of heavy construction equipment will generate noise and vibration during

construction. The construction contractor will need to develop an environmental management plan for the project site that takes into consideration the proximity of noise and vibration sensitive receptors to construction activities and details appropriate strategies to manage impacts on these receptors.

Dust may be generated during construction from a number of activities including vegetation and topsoil removal, transport of construction and waste materials and wind erosion from stockpiles and unsealed areas. The construction contractor will be required to develop and implement appropriate strategies to minimise impacts on adjacent sensitive receptors.

☒ Potential Legislative Requirements (refer to Section 3) (i) General Environmental Duty under the Environmental Protection Act.

2.6 CULTURAL HERITAGE

Factors Identification - *Factors present, or potentially present, within / near to the project footprint*

☒ Indigenous heritage

☒ Historical heritage

A cultural heritage risk assessment (CHRA) has recently been undertaken for the project by South Coast Region. The CHRA indicates that there is a high risk of the project impacting on Aboriginal Cultural Heritage, and the CHRA therefore classified the project as Category 5 (High Risk) under the Cultural Heritage Guidelines. There are two Aboriginal Parties for the project area: Jagera Daran Pty Ltd and Gold Coast Native Title Group (Jabree Limited).

The LEL study report included a desktop aboriginal cultural heritage assessment, and this assessment identified two sites of potential Aboriginal Cultural Heritage significance within the study area. NR

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Both the recently completed CHRA and the previous desktop assessment (LEL desktop study) indicate the presence of two sites of historical cultural heritage significance (and therefore protected under the provisions of the Queensland Heritage Act) within the study area. These are the former Carbrook State School and Fachwerk Farmhouse located at 597 and 445 Beenleigh-Redland Bay Road respectively. NR

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Aspects & Impacts - *Proposed project aspects with the potential to impact on factors identified*

Planning & Design – Given that this is a greenfield project in an area of known cultural heritage significance, it is highly likely that there are areas of previously undiscovered and undisturbed aboriginal cultural heritage within the study area. The presence of known artefacts in the area is indicative that other areas of undisturbed land in the study area may support areas or artefacts of aboriginal cultural heritage significance. Consultation should be undertaken with the relevant aboriginal parties for the area (Jagera Daran Pty Ltd and the Gold Coast Native Title Group) as part of the detailed REF for the project to establish whether there are indigenous cultural heritage values within the study area that may be impacted upon by the proposed works. A Cultural Heritage Management Plan (CHMP) may be required in order for DTMR to meet their obligations under the Aboriginal Cultural Heritage Act 2003.

An additional search of the Queensland Heritage Register will also be required as part of the detailed REF for the proposed project to establish whether there are any sites or areas of historical cultural heritage value that may be impacted upon by the proposed works in addition to the two sites identified above

Construction – During construction, DTMR has a Duty of Care under the Aboriginal Cultural Heritage Act. If any cultural heritage material (sites or artefacts) finds occur during construction, the contractor will be required to stop work and report the find to DTMR immediately.
☒ Potential Legislative Requirements (refer to Section 3) (i) Compliance with the General Duty of Care under the Aboriginal Cultural Heritage Act.

3 POTENTIAL LEGISLATIVE REQUIREMENTS

Section 3.0 has been developed with reference to the legislation, policies and standards in force as at June 2017. However, due to the long term nature of this project, these are likely to change over the life of the project. A full review of legislation and policy requirements should be undertaken once the project reaches the concept phase to ensure that all relevant legislative requirements are addressed and appropriate approvals are obtained.

LEGISLATION	General description and relevance to this project	Further action required (if any)
Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)	The *Environment Protection and Biodiversity Conservation Act* (EPBC) is a federally administered act which provides protection to matters of national environmental significance (MNES). Anyone wanting to undertake an action that may have a significant impact on a MNES is required to submit a referral to the federal Department of Sustainability, Environment, Water, Population and Communities (SEWPaC). SEWPaC then make a decision as to whether the project is deemed a "controlled" or "non controlled" action. Where a project is deemed to be a "controlled action", further assessment and approval under EPBC is required. As discussed in section 2.1 and 2.4 and above, this scoping report has identified two MNES which may be impacted by the proposed project. These are: - Potential for significant impacts on a listed migratory species and - Potential for significant impacts on a listed threatened species. The Carbrook and to a lesser extent the Eagleby wetlands are a known habitat area for species of waterbirds / waders listed under the JAMBA / CAMBA international agreements. While the proposed project will not impact greatly on the designated wetland area, there is still potential for the project to disturb habitat that is used by federally protected migratory species. The koala and grey-headed flying fox are both listed as "Vulnerable" under EPBC. As discussed in 2.4 above, the mangrove communities that line the banks of the Albert and Logan Rivers may support populations of grey headed flying fox, and areas of drier eucalypt and melaleuca forest in the study area may	Careful consideration of the implications of Section 74A (split referrals) of the EPBC Act will be required once any section of the suite of projects that comprise the proposed IRTC reach the concept phase. It may be preferable to seek advice from SEWPaC prior to undertaking any detailed environmental assessments for the IRTC, as designation of the project as a controlled action under EPBC may trigger the requirement to undertake a formal EIS for the project.

	provide koala habitat. For the purposes of this Environmental Scoping Report, the potential for the IRTC Northern Connection to require referral to SEWPAC under the provisions of EPBC has been considered in isolation from the bulk of the future IRTC (between Stapylton-Jacobs Well Road and Nerang-Broadbeach Road). That is, the ESR assumes that the project will be designed, constructed and maintained as a stand-alone project. However, as discussed in section 1.0 above, the northern connection project connects to the future IRTC, and this raises the question of whether it can be considered as a stand-alone project for the purposes of assessment under EPBC. High level environmental assessments undertaken as part of the road corridor development planning (RCDP) process for both the northern (Stapylton-Jacobs Well Road to Beattie Road) and southern (Beattie Road to Nerang-Broadbeach Road) sections of the future IRTC also include preliminary assessment as to the likelihood of the IRTC (i) requiring referral to the federal government under the provisions of EPBC and (ii) being deemed a "controlled action" under EPBC. These assessments concluded that both sections would require referral, and that the southern section in particular could be deemed a controlled action. Section 74A of the EPBC Act makes specific provisions which allow the federal environment minister to refuse to accept a referral made under EPBC if it is deemed to be part of a larger action. That is, it is possible that the IRTC (including the northern connection project) may have to be referred to the federal government as a single referral / project, covering the entire route from Beenleigh-Redland Bay in the north to Nerang-Broadbeach Road in the south. This is a critical factor in terms of deciding the future environmental assessment and management framework for the project. SEWPaC has developed a policy statement on this issue: http://www.environment.gov.au/system/files/resources/9af4f5a0-6a4b-4322-9dd1-ddbb9710d682/files/epbc-act-policy-staged-developments.pdf The policy statement indicates that at this point in time, split referrals are not	

	necessarily rejected automatically, and that where a project is referred to the federal government that appears to be part of a larger action, the minister will "consider whether to accept a split referral where it is likely to promote the objectives of the EPBC Act". In practical terms, this means that the federal environment minister may accept a split referral where there are practical or financial circumstances relating to the design, timeframe or geography of a project that make split referrals a suitable approach. The IRTC could fit this approach, as time and cost constraints will likely result in it being designed and constructed using a staged approach. This will require careful consideration once the project reaches the concept phase, as determination of a project as a "controlled action" under EPBC can result in significant time and cost constraints.	
State Development and Public Works Organisation Act 1971	The purpose of the State Development and Public Works Organisation Act (SDPWO Act) is to facilitate timely, coordinated and environmentally responsible infrastructure planning and development to support Queensland's economic and social progress. The SDPWO Act is currently administered by the Department of State Development. The SDPWO Act provides for the appointment of a Coordinator-General and gives them a number of powers, including the power to manage major infrastructure projects and declare a project to be a "coordinated project" and therefore coordinate the environmental impact assessment process. The SDPWO Act is not "triggered" by a certain level of potential environmental impact as for the EPBC Act. Rather, TMR could actively seek declaration of the project as being of State Significance if it thought there was benefit in the IRTC being planned, designed and constructed as a State Significant Project. The Coordinator General does however have the power under the SDPWO Act to "call in" any state government department infrastructure project where they feel that timely decisions are not being made on a key project. Declaration of a project as a "State Significant Project" under the SDPWO Act is dependent on a number of factors, including employment opportunities provided	Consideration should be given early in the planning stages for the proposed IRTC as to whether there would be benefit in TMR seeking declaration of the project as being of State Significance under the provisions of the SPPWO Act.

	by the project, potential environmental impacts, complexity of state, local and commonwealth requirements and the strategic significance of the project to the region. Should TMR decide to seek declaration of the project as being of State Significance, a formal Environmental Impact Statement (EIS) would be required. This would significantly change the environmental assessment process for the project from the internal TMR processes, particularly with respect to timeframes (it takes 12-18 months to complete an EIS under the SDPWO Act EIS process) and the level of consultation required at each stage of the EIS process. It is important to note that there is a bilateral agreement in place between the Commonwealth and the State of Queensland relating to environmental assessment and approvals which provides for accreditation of Queensland processes for approval of proposed projects that would otherwise have been assessed by the federal government under the EPBC Act. The EIS process as prescribed by the SDPWO Act is one of these accredited processes, which effectively means that if an EIS is developed for the project under the provisions of the SDPWO Act, this would also be assessed by the federal government to determine potential impacts under the provisions of EPBC, meaning that only one EIS would need to be developed for the project.	
Sustainable Planning Act 2009.	The purpose of the *Sustainable Planning Act* (SPA) is to achieve ecological sustainability by managing the development process and coordinating and integrating planning at the local, regional and State levels. Under the provisions of SPA, a number of activities associated with the project may require development permits through the Integrated Development Assessment System (IDAS). These include material change of use approvals (such as for Environmentally Relevant Activities and permits to remove contaminated land) and operational works approvals (such as works within watercourses, waterway barrier works and vegetation clearing).	Further investigation will be required during the concept phase to establish permits, approvals and policies under the SPA that may be relevant to the project.
Koala Conservation Policy and Memorandum of	The proposed project falls within the South East Queensland Koala Protection area (SEQ KPA) which includes Noosa, the Sunshine Coast, Moreton Bay,	With respect to the Koala MOA, additional assessment will be required to establish

Agreement between DERM and TMR in relation to government supported transport infrastructure within the SEQKPA (Koala MOA).	Brisbane, Ipswich, Logan, Redland and Gold Coast City Council area. Where a proposed project within the SEQ KPA intersects with a mapped koala habitat area as per the koala conservation State Planning Policy (SPP) mapping, the project must comply with the *Memorandum of Agreement between DERM and TMR in relation to government supported transport infrastructure within the SEQKPA* (Koala MOA) unless an exemption applies. Under the provisions of the koala MOA, TMR are obliged to consider potential impacts on koala populations during the design phase of the project. The project will be required to avoid (where possible) areas of mapped koala habitat. Where the project cannot avoid areas of mapped koala habitat, it should endeavour to align the corridor so that it intersects areas with the lowest possible koala habitat values, to the extent it is practical to do so. The project should also incorporate koala movement infrastructure and koala safety fencing where appropriate. Where impacts to koala habitat areas cannot be avoided, offsets must be provided to mitigate impacts on areas of mapped "bushland" habitat and high and medium value "suitable for rehabilitation" habitat. As discussed in section 2.4 above, the proposed IRTC northern connection is likely to impact on areas mapped as both low and medium value bushland habitat. Therefore it is likely that offsets will be required for this project.	whether the project needs to comply with the koala MOA (requires clearing of more than 125 koala habitat trees or 0.5 hectares of mapped koala habitat). If compliance is required, an appropriate methodology should be developed in order to comply with the koala MOA and establish appropriate offsets where required.
Coastal Protection and Management Act 1995.	The Coastal Protection and Management Act protects and conserves the coastal environmental, including it's resources and biodiversity. It also ensures that decisions about land use and development in coastal areas are made in a way that protects life and property from the threat of coastal hazards. Assessable development under this act requires a development approval under the provisions of the Sustainable Planning Act. As discussed in 2.1 and 2.2 above, most of the study area is mapped as being within a coastal management district, and is also mapped as a coastal hazard (erosion prone) area. Prescribed tidal works (sections 14 and 15 of the Coastal Protection management regulation) and royalty payments for the removal of quarry material	Further assessment will be required during the concept phase to establish which permits, approvals and policies under the Coastal Protection and Management Act may be relevant to the project.

	from tidal waters may be triggered by the proposed project. However, TMR has a number of exemptions in place which negates the requirement to pay fees for the removal or quarry material from today waters, and the majority of TMR projects are unlikely to be considered as prescribed tidal works unless they are related to boating infrastructure.	
Environmental Protection Act 1994.	The purpose of the *Environmental Protection Act* is to protect the environment while allowing for ecologically sustainable development. In general terms, the project must comply with section 319 of the Environmental Protection Act (the "General Environmental Duty") and not undertake activities that cause or are likely to cause environmental harm unless all reasonable and practical measures are taken to prevent or minimise the harm. There are also a number of issue specific Environmental Protection Policies (EPP's) that the project will need to comply with. These include the EP(Air) Policy 1997, EP(Noise) Policy 1997, EP(Waste Management) Policy 2000 and EP(Water) Policy 1997. In co-ordination with the Sustainable Planning Act, The Environmental Protection Act provides for licensing and approval of Environmentally Relevant Activities (ERA's). ERA's are activities that require specific regulation because of the likelihood that they could cause environmental harm. To carry out an ERA a registration certificate must be obtained prior to commencing the activity. A number of ERA's (such as ERA 8 – chemical storage, ERA43 – Concrete Batching and ERA 57 – Regulated Waste Transport) may potentially apply to the project. Disposal and removal of contaminated soil from sites listed on the Contaminated Land or Environmental Management Registers (see section 2.1 above) will require a disposal permit.	Further assessment will be required during the concept phase to establish which permits, approvals and policies under the Environmental Protection Act may be relevant to the project.
Aboriginal Cultural Heritage Act 2003.	The *Aboriginal Cultural Heritage Act* protects and conserves aboriginal cultural heritage within Queensland. Under this act, a person who carries out an activity must take "all reasonable and practical measures to ensure the activity does not harm indigenous cultural heritage". This is known as the Aboriginal Cultural	Once the project reaches the start of the Concept Phase, consultation will be required with the relevant aboriginal parties for the project area and a Cultural Heritage Plan

	Heritage Duty of Care. DTMR must comply with the Duty Of Care for the proposed IRTC northern connection project. As discussed in 2.6 above, a Cultural Heritage Risk Assessment (CHRA) has been undertaken for the study area, which classified the project at Category 5 (high risk). Additional assessment, including consultation with the relevant aboriginal parties for the area, will be required once the project reaches the concept phase. As discussed in section 2.6 above, if the project is deemed a "controlled action" under the EPBC Act and an EIS is required, this will trigger a requirement for a compulsory Cultural Heritage Management Plan (CHMP) as per part 7 of the Aboriginal Cultural Heritage Act. This is a statutory process and involves a statutory notification period during which the land user (in this case TMR) must notify the relevant Cultural Heritage Body and / or Aboriginal Party of their intention to develop a CHMP. Notification recipients are then given 30 days in which to respond to the notification, which is followed by an 84 day consultation and negotiation period. While a formal Part 7 CHMP as outlined above takes more time to develop than an informal (and voluntary) Cultural Heritage Agreement (CHMA), it has the advantage that once approved, it will provide TMR with certainty that they are acting lawfully with respect to the ACH Act and meeting all requirements under the Cultural Heritage Duty of Care.	should be developed. As discussed, this may need to be a formal Part 7 CHMP if the EIS requirement under EPBC is triggered.
Queensland Heritage Act 1992.	The objective of the *Queensland Heritage Act* is to protect Queensland's historical (European) cultural heritage for the benefit of the community and future generations. Under the provisions of this Act, an individual who discovers an aspect of historical cultural heritage is required to notify the DEHP minister as soon as possible. A Cultural Heritage Risk Assessment (CHRA) was undertaken for the IRTC Northern Connection project, which identified two sites of historical cultural heritage significance (listed on the Queensland Heritage Register) within the study area, both of which are located on Beenleigh-Redland Bay Road.	Further investigation will be required once the project reaches the concept phase, including a search of the Queensland Heritage Register.

Nature Conservation Act 1992.	The purpose of the *Nature Conservation Act* is the conservation of nature through an integrated and comprehensive conservation strategy for the whole of the State. Under the provision of the NCA, permits are required from the Department of Environment and Heritage Protection (DEHP) where a proposed activity involves the taking of "endangered, "near threatened" or "least concern" native plants in the wild. TMR have an approved Compliance Management Plan (CMP) under section 477H of the Transport Infrastructure Act 1994 that allows TMR and it's contractors to clear plants protected under the Nature Conservation Act in areas that have been previously cleared. This CMP is valid until the end of March 2018. As discussed in section 2.3 above, most of the project area is mapped as "high risk" on DEHP's protected plants flora survey trigger mapping.	During the concept phase, flora surveys will be required to establish whether any flora species protected under the Nature Conservation Act occur within the project area and appropriate management measures will be required to minimise impacts on protected species if they are present.
Vegetation Management Act 1999.	The purpose of the *Vegetation Management Act* is to conserve remnant vegetation. The VMA regulates the clearing of vegetation that is mapped as an "endangered", "of concern" or "least concern" Regional Ecosystem (RE). Clearing of native vegetation as defined under the VMA is usually assessable development under the provisions of the Sustainable Planning Act (SPA) and Sustainable Planning Regulation (SPR). However, as per Schedule 24 (Part 1, item 1(16) and Schedule 2 (Part 1, Item 10), clearing of native vegetation for the purposes of community infrastructure is not assessable development. Therefore providing that clearing of native vegetation only occurs within the road corridor, approval under the SPA is not required. Regional Ecosystem Mapping also indicates areas where essential habitat for significant fauna species may occur (see 2.4 above). The proposed IRTC northern connection may impact on areas of mapped essential habitat for both the wallum froglet and koala.	Given the presence of mapped essential habitat for the wallum froglet and koala within the study area, field investigations will be required during the concept phase to establish whether these species are present in the study area.
Fisheries Act 1994.	The *Fisheries Act* manages and protects fish habitats, fisheries resources and aquaculture. Operational work that requires approval includes:	Further investigation will be required once the project reaches the concept phase in order to establish which approvals under the Fisheries

	- Tidal work or work within a coastal management district. - Constructing or raising waterway barrier works. - Works in a declared fish habitat and - Removal or damage of marine plants. Given the nature and location of this project (i.e. major bridge construction in a tidal area), it will trigger the requirement for a number of approvals under the Fisheries Act – notably waterway barrier works permits and approval to remove marine plants. Tidal works permits may also be required.	Act will be required for the project.
Land Protection (Pest and Stock Route Management) Act 2002.	The *Land Protection Act* aims to control and manage invasive pests (weeds and pest animals) in Queensland. Plants and animals can be declared serious (Class 1 and 2) or potentially serious (Class 3) pests under this legislation. Landholders are required to keep land clear of Class 1 and 2 pests, and can be required to remove C3 pests if found adjacent to environmentally significant areas. Weed identification and an appropriate management plan will be required during construction.	Ground-truthing of weed populations within the project area will be required prior to construction.
Water Act 2000.	The purpose of the *Water Act* is to promote sustainable management and efficient use of water and other resources by establishing a system for the planning, allocation and use of water. Approval will be required for a number of activities, including: - Destroying vegetation, excavation and placement of fill within watercourses (Riverine Protection Permit required). - Taking or interfering with water(including interfering with flow) and - Taking quarry material from the bed or banks of a watercourse. DTMR currently have exemption from obtaining riverine protection permits provided that the project complies with the "Guideline – Activities in a watercourse, lake or spring carried out by an entity". Permits may be required if the taking of water or quarry material is required.	Further investigation will be required during the concept phase into current legislative requirements under the Water Act.

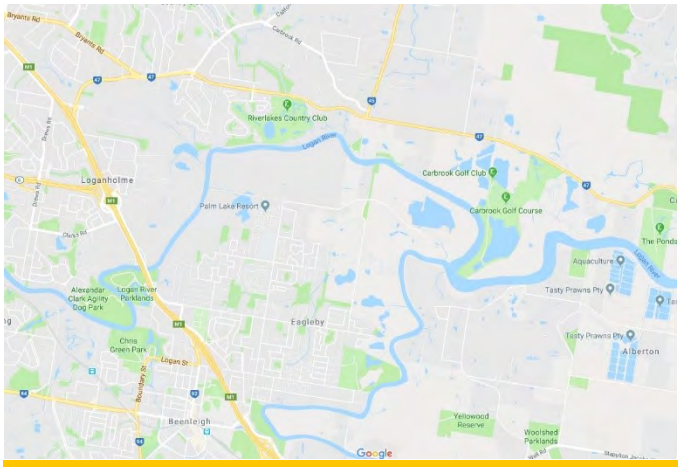
4. CONCLUSIONS AND RECOMMENDATIONS.

This ESR has been developed to provide a high level desktop assessment of potential environmental impacts associated with each of the three potential options to link Beenleigh-Redland Bay Road with the future IRTC at Stapylton-Jacobs Well Road. A number of potential environmental issues will require additional investigation once the project reaches the concept phase, including potential impacts on the Carbrook wetlands, potential impacts on legislatively protected flora and fauna species, and potential for the project to impact on areas of Aboriginal Cultural Heritage Significance.

From an Options Analysis perspective, at this point in time there is no discernible difference between the three options from an environmental impact perspective. All three options have environmental constraints which will require additional assessment and management as the project progresses.

The most critical issue for the IRTC Northern Connection from an environmental management perspective is its relationship to the rest of the IRTC corridor. Construction of the IRTC between Beenleigh-Redland Bay Road and Nerang-Broadbeach Road could potentially trigger external environmental assessment processes than the IRTC Northern Connection as a "stand alone" project would not. This will require careful consideration, given that external environmental assessment processes such as the Environmental Impact Statement (EIS) process under the EPBC Act or SDPWO Act are significantly more time, cost and resource intensive than internal TMR environmental assessment and management processes.

Appendix 1 – IRTC Northern Connection Options 1-3



Northern Extension of Coomera Connector

Corridor Protection Report

October 2018

Contract No: TMRSCR 148/17

For Department of Transport and Main Roads

Prepared by : HDR Pty Limited

HDR Project No: 10093495

Document Status

Revision	Date Issued	Reason for Issue	Prepared By	Reviewed By	Approved By
DRAFT_1	12/09/2018	Draft for Client Comment	S. Thakar	T. Fisher M. Fairweather	M. Fairweather
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In preparing this report, HDR relied, in whole or in part, on data and information provided by the Client and third parties, which information has not been independently verified by HDR and which HDR has assumed to be accurate, complete, reliable, and current. Therefore, while HDR has utilized its best efforts in preparing this report, HDR does not warrant or guarantee the conclusions set forth in this report which are dependent or based upon data, information or statements supplied by third parties or the client.

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Contents

Pages 155 through 156 redacted for the following reasons:

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Executive Summary

Background

The Coomera Connector project (formerly known as the Intra-Regional Transport Corridor, or IRTC) has been identified by the Department of Transport and Main Roads (DTMR) in response to existing and emerging capacity issues on the Pacific Motorway (M1). The intention of the Coomera Connector is to ease congestion, improve efficiency, resilience and safety on the M1, and the wider Gold Coast road network and to manage detrimental impacts on the National Land Transport Network. Completion of this connection will result in greater capacity for growth within the transport network, improve the longevity of the M1 and ensure it is protected into the future as the main inter-regional corridor for Southern Queensland and as a key part of the National Land Transport Network.

An existing corridor has been gazetted for a future state-controlled north-south corridor on the northern Gold Coast, east of the Pacific Motorway (M1) between Stapylton-Jacobs Well Road at Stapylton and Nerang-Broadbeach Road in Nerang. This corridor is wide enough for up to 6 traffic lanes and is expected to include provision for public transport and paths for walking and cycling.

HDR Pty Ltd was appointed by DTMR to undertake more a detailed consideration of aspects of the proposed corridor from Stapylton-Jacobs Well Road to the Pacific Motorway (this study), with the following objectives:

- Analyse planning and engineering aspects of a potential Coomera Connector corridor between:
    - Stapylton-Jacobs Well Road, and
    - the existing Logan Motorway / Pacific Motorway interchange, and/or
    - Beenleigh-Redland Bay Road.
- Enable a corridor to be preserved for the Coomera Connector from Stapylton-Jacobs Well Road to a northern network connection.

This report is supported by previously completed studies of this corridor that identified a range of possible options.

- Logan East Link Route Investigation Study (AECOM, 2011), which included:
    - Eastern Corridor Planning Study (ECPS), 1992
    - South Coast Motorway Southern Section Impact Assessment Study, 1995
    - Intra Regional Transport Corridor – Northern Section Road Corridor Development Planning, 2010

Development of Preferred Scheme

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Pages 158 through 171 redacted for the following reasons:

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2.6 Environmental

The following reports (refer Appendix A Environmental and Cultural Heritage Reports) and analysis have been conducted by DTMR:

- An Environmental Scoping Report (ESR) (Department of Transport and Main Roads, 2017) in June 2017
- A Cultural Heritage Risk Assessment (CHRA) (Department of Transport and Main Roads, 2016).

In addition, a review of the study area was undertaken using spatial analysis (refer Appendix A for the Spatial Analysis Maps). HDR identified the following key environmental aspects:

- Project Environmental Assessment and Management Framework - project could potentially impact on Matters of National Environmental significance protected under the EPBC, and additional assessment is required to determine whether this is the case.
- Flora and Fauna – The study area includes floodplains and wetlands, which may include protected fauna and flora such as migratory birds, various frog species, potential koala habitat, and a diverse array of flora species.
- Water and Water Quality – the corridor falls within the Logan and Albert River's catchments, including crossings of those rivers. Also, the project is within and adjacent to the environmentally sensitive Carbrook wetlands area.
- Soil and Land Management – low lying areas occur in the majority of the study area which likely contain potential or actual acid sulphate soils. The study area has vast area of strategic cropping land parcels.
- Public Amenity and Health – likely direct and indirect noise, visual and social amenity, air quality, property access and property severance changes.
- Cultural Heritage – a high risk of impacting on Aboriginal Cultural Heritage

Pages 174 through 190 redacted for the following reasons:
- -
NR

4 Technical Assessment

NR

4.2 Environmental

In considering a preferred option for each of the elements as noted in Section 2.8, the review of spatial maps, environmental and cultural heritage reports by DTMR was undertaken, in line with the Project Environmental Assessment and Management Framework. The framework and the environmental and cultural heritage reports will require further and careful consideration from the beginning of the next phase of development, including potential field based environmental assessments to identify key environmental and cultural heritage issues.

NR

Pages 192 through 206 redacted for the following reasons:
- -
NR

Appendix A Environmental and Cultural Heritage Reports

Transport and Main Roads

Environmental Scoping Report

Intra-Regional Transport Corridor (IRTC) Northern Connection: Beenleigh-Redland Bay Road to Stapylton-Jacobs Well Road

Project No: D10/D001/901

Connecting Queensland
www.tmr.qld.gov.au

Queensland Government

PROJECT DETAILS			
Project Name / Description	IRTC Northern Connection Beenleigh-Redland Bay Road to Stapylton-Jacobs Well Road		
Project Number	D10/D001/901	**Section / Chainage**	N/A
Local Government Area	City of Gold Coast / Logan City	**QTRIP WBS**	N/A
Road	113 (IRTC)	**DMS Reference**	N/A

REPORT PREPARATION			
I have prepared this report based on the best information available at the time. I have taken into account, to the fullest extent possible, all actual and potential environmental impacts of the project.			
Name	Deborah Glassop	**Signature**	NR
Position	Environmental Officer	**Date**	7th June 2017
REPORT REVIEW			
Name		**Signature**	
Position		**Date**	

VERSION HISTORY			
Version No.	**Date**	**Changed by**	**Nature of Amendment**

PROJECT MANAGER ACCEPTANCE			
I agree that this report has been prepared based on the project scope at the time, and accept responsibility for ensuring any future changes to the scope are appropriately assessed. I understand the potential impacts and legislative consequences of not actioning the recommendations outlined in the report.			
Name	Frank Spinella	**Signature**	
Position		**Date**	

Note: *This Environmental Scoping Report shall remain current for 12 months. A review will be required after this time should further subsequent assessment or management actions not be undertaken.*

EXECUTIVE SUMMARY

The Department of Transport and Main Roads (TMR) are currently investigating high level options to link the proposed Intra-Regional Transport Corridor (IRTC) at Stapylton-Jacobs Well Road with Beenleigh-Redland Bay Road, a project known as the IRTC northern connection.

A previous study was undertaken for this area, known as the Logan East Link (LEL) Route Investigation Study. This study included a high level (desktop) assessment of potential environmental issues within the LEL Route study area.

The project has now progressed to a stage where SCR have identified three possible options that could provide a link between the IRTC and Beenleigh Redland-Bay Road. This Environmental Scoping Report (ESR) has been developed in order to provide a "first pass" environmental assessment of the proposed IRTC Northern Connection between Beenleigh-Redland Bay Road and Stapylton-Jacobs Well Road. It is not intended to provide either a comprehensive account of environmental values within the project area or a detailed assessment of potential environmental impacts associated with the proposed works, but rather to identify key environmental issues and legislative requirements that will require additional assessment as the project progresses.

Key issues identified within this scoping study are as follows:

Project environmental assessment and management framework.

This is a critical issue for the project and will require careful consideration at the earliest stages of the planning phase of the project. The size and complexity of the proposed IRTC considered as a whole project from Beenleigh-Redland Bay Road to Nerang-Broadbeach Road may result in the project triggering external environmental assessment processes such as those associated with the federally administered Environment Protection and Biodiversity Protection Act (EPBC) or the state administered State Development and Public Works Organisation Act (SDPWO). Should external environmental assessment processes as outlined in these pieces of legislation be applicable to the planning, design and construction of the IRTC, then the project may need to follow a formal Environmental Impact Statement (EIS) process. The EIS process is significantly more time, cost and resource intensive that the internal TMR environmental assessment and management process that would normally be followed for a road construction project. This will require careful consideration once any stage of the suite of projects that comprise the IRTC reaches the concept phase.

Water and water quality.

The proposed IRTC Northern Connection falls within the Logan and Albert River Catchments and will require major crossings of both the Logan and Albert Rivers. Some options will require multiple crossings of these watercourses. The project is within and adjacent to the environmentally sensitive Carbrook wetlands area, which is listed as environmentally significant within the Directory of Important Wetlands in Australia (DIWA).

Soil and land management.

Low-lying (below 5 metres AHD) areas occur in the majority of the study area, with both Logan City Council and the City of Gold Coast having identified the majority of the land east of the Pacific Motorway and surrounding the Logan and Alberts rivers as acid sulfate soil hazard areas. These areas are likely to contain potential or actual acid sulphate soils. Excavation and exposure of these soils could result in their oxidation and subsequent release of contaminants such as acids and metals into the surrounding environment. Given the proximity of environmentally sensitive areas such as the Carbrook wetlands, appropriate management and treatment of acid sulphate soils will be required. There are also a number of potentially contaminated sites listed on the Environmental Management Register (EMR) within the study area, notably in the vicinity of Beenleigh-Bay Road.

Flora and Fauna.

The Logan and Albert River Floodplains and Carbrook wetlands are known to support a diverse array of flora species, including those protected under state legislation. Carbrook wetlands is a gazetted (protected under the provisions of the Nature Conservation Act) conservation park, and it will therefore be important to minimise impacts on this area where possible. The Carbrook and Eagleby wetlands are also known to provide habitat to many species of waders and waterbirds, including migratory species which are protected under the federally administered Environment Protection and Biodiversity Conservation Act (EPBC). In addition, a number of frog species have also been previously recorded within the Carbrook wetlands, including the legislatively protected wallum froglet, which has a limited distribution due to its preference for acidic lakes and wallum swamps. Areas of drier eucalypt and melaleuca forest away from the Logan and Albert River floodplains may also provide habitat for koalas.

Public amenity and health.

The proposed IRTC northern connection is likely to have both direct and indirect impacts on the receiving environment via changes to noise, visual and social amenity, air quality, property access and property severance. Severance of access routes both within individual properties and to the existing local road network are likely. The IRTC northern connection would be classified as a "new road – access controlled" for the purposes of operational (road traffic) noise impact assessment, and as such road traffic noise criterion levels will be significantly lower than for the upgrade of an existing road, particularly where existing ambient noise levels are low.

Cultural heritage.

A Cultural Heritage Risk Assessment (CHRA) has been undertaken for the study area, which indicates a high risk of the project impacting on Aboriginal Cultural Heritage (Category 5 under the Cultural Heritage Guidelines). Previous studies undertaken in this area indicate that there are known sites of Aboriginal Cultural Heritage within the study area. A formal Cultural Heritage Management Plan (CHMP) as per part 7 of the Aboriginal Cultural Heritage Act may be required for the project. In addition, there are two sites of historical cultural heritage significance (listed on the Queensland Heritage Register) within the study area on Beenleigh-Redland Bay Road.

Conclusions and recommendations.

A number of potential environmental issues will require additional investigation once the project reaches the concept phase. These include potential impacts on the Carbrook wetlands, potential impacts on legislatively protected flora and fauna species, and potential for the project to impact on areas of Aboriginal Cultural Heritage Significance.

From an Options Analysis perspective, at this point in time there is no discernible difference between the three options from an environmental impact perspective. All three options have environmental constraints which will require additional assessment and management as the project progresses.

The most critical issue for the IRTC Northern Connection from an environmental management perspective is its relationship to the future IRTC corridor. Construction of the IRTC between Beenleigh-Redland Bay Road and Nerang-Broadbeach Road could potentially trigger external environmental assessment processes that the IRTC Northern Connection as a "stand alone" project would not. This will require careful consideration, given that external environmental assessment processes such as the Environmental Impact Statement (EIS) process under the EPBC Act or SDPWO Act are significantly more time, cost and resource intensive than internal TMR environmental assessment and management processes.

1 INTRODUCTION

Background

The Intra-Regional Transport Corridor (IRTC) is a future road corridor that will eventually form the primary arterial road between Logan, the rapidly expanding northern and established southern suburbs of the Gold Coast. Road Corridor Development Planning (RCDP) has been undertaken for the IRTC in order to establish the extent of the road corridor and protect it from future development. In 2010, the road corridor requirements for the northern section of the IRTC (the section between Beattie Road Coomera to the south and Stapylton-Jacobs Well Road in the north) were determined.

Once the RCDP process was finalised for the northern section of the IRTC, an additional study was undertaken to investigate possible routes to link the IRTC with the Pacific Motorway (M1), Logan Motorway and Beenleigh-Redland Bay Road. This study was known as the Logan East Link (LEL) Route Investigation Study, and the outcome of the study was to establish feasible alignments for the LEL that connected the IRTC (Northern Section) to the Logan Motorway and Beenleigh-Redland Bay Road. These alignments were developed to provide input into the higher level Northern Gold Coast Area Transport Study.

The Logan East Link Route Investigation Study concluded that the LEL is likely to provide an alternative transport corridor to the M1, thus encouraging commuters to avoid using the Pacific Motorway for short commuter trips.

The suburbs of Beenleigh, Loganholme and Eagleby are identified as future growth areas, and as such timely provision of new road infrastructure in these suburbs via the IRTC will be important to their growth. In addition, the Yatala Enterprise Area located to the south of the study area is predicted to be a major industrial and economic development region for the northern Gold Coast and Logan City. Future access to this area via a major transport route with connections to surrounding road networks will be vital to the development of the area.

South Coast Region (SCR) has recently developed three potential options which would provide a new road link connecting Stapylton-Jacobs Well Road with Beenleigh-Redland Bay Road. This project is known as the IRTC Northern Connection. This scoping study has been developed in order to provide a high level assessment of potential environmental impacts associated with each of these three options and establish an environmental assessment and management framework for the project.

Project Scope

As discussed above, the project comprises the construction of a "northern connector" of the proposed IRTC, linking the current northern limit of the future road corridor at Stapylton-Jacobs Well Road with the existing Beenleigh-Redland Bay Road. There are three potential routes (or options) for the Connector.

CTPI

At the time of writing, the project is still in the pre-concept phase, and so a detailed scope of works is not available. The high level LEL study indicates that the IRTC northern connection would likely comprise a 100 metre wide road corridor, which would allow for a 60 metre wide road (general traffic lanes) together with HOV lanes, landscaped median, future public transit facility and a service road. The LEL study indicated that the road corridor width was unlikely to exceed a maximum of 100 metres. The three options are shown in Appendix 1.

2 ENVIRONMENTAL FACTORS & RISK IDENTIFICATION

2.1 WATER

Factors Identification - *Factors present, or potentially present, within / near to the project footprint*

- ☐ Freshwater water body
- ☒ Marine water body
- ☐ Groundwater / Aquifers
- ☒ Significant water body

The proposed project falls within the Logan and Albert River Catchments. Watercourses within the catchment are the Logan River, Albert River, Native Dog Creek and Serpentine Creek (both tributaries of the Logan River). The confluence of the Logan and Albert Rivers occurs at the eastern end of the Eagleby floodplains and is subject to heavy flooding. The Logan River ultimately flows in Southern Moreton Bay. All major watercourses within the project area are tidal.

The Carbrook wetlands aggregation occurs mainly to the north east of the study area but also extends across Beenleigh Redland Bay Road in the vicinity of the Carbrook golf course. The Carbrook wetlands aggregation is included in the Directory of Important Wetlands in Australia (DIWA) and is considered to be of national importance. While it does not have the significance of a RAMSAR wetland (which have international significance and are therefore protected under the provisions of the federally administered Environment Protection and Biodiversity Conservation Act (EPBC) it is still an area of environmental significance. There is also a series of wetlands at Eagleby, located on the western banks of the Albert River to the north of Staplyton-Jacobs Well Road.

Most of the project area is low lying (less than 5 m ASL). Flooding of low lying areas occurs as a result of localised rainfall in the catchment of Native Dog Creek, with the Melaleuca wetlands and swampy grasslands being inundated for between two and four months of the year. Most of the study area is within a Coastal Management District, and is also mapped as a coastal hazard area (erosion prone area).

The project area is not within a declared fish habitat area. Department of Agriculture and Fisheries (DAF) mapping shows the Logan and Albert Rivers as grey (tidal areas) for which a development approval is nearly always required (see legislation section for more details). There are also numerous other drainage lines and minor watercourses within the study area that may be impacted by the proposed works.

The study also highlighted areas that were especially sensitive to reduction in waterway / floodplain conveyance area – especially the floodplain between the Eagleby residential area and the Logan River, and the floodplain southeast of the Albert / Logan River confluence.

Aspects & Impacts - *Proposed project aspects with the potential to impact on factors identified*

Planning & Design – All three proposed options pass through the Logan and Albert River floodplains, and require significant bridge structures to accommodate flood flows. Option 2 in particular would require multiple crossings of the Logan River.

The DIWA listing for the Carbrook wetlands lists alteration of the existing hydrological regime and subsequent loss of ephemeral grassy wetlands as a major threat to the integrity of the wetland which should be avoided when considering any future development proposals (including road construction) in the area.

The emphasis during planning and design should therefore be to design the required bridge structures to minimise impacts on both water flow and water quality that may occur as a result of the proposed project. More detailed assessment of both potential impacts to surrounding water bodies and appropriate mitigation measures to address these impacts should be developed as part of the REF for the proposed project.

Construction & Operation – During construction the emphasis should be on minimising impacts to water quality in surrounding watercourses and wetlands. Prior to construction, baseline water quality monitoring should be undertaken to establish existing water quality and determine appropriate water quality parameters for the construction phase. An appropriate and site specific erosion and sediment control plan will be required to minimise amounts of sediment-laden runoff entering surrounding watercourses. This will be especially important when working within or adjacent to the environmentally sensitive Carbook wetlands area.

☒ Potential Legislative Requirements (refer to Section 3 for more information). (i) General Environmental Duty under the Environmental Protection Act, (ii) Operational Works Permits for Tidal Works, Works within a Coastal Management District and constructing or raising waterway barrier works under the Fisheries Act, (iii) Destroying vegetation, excavating or placing fill in, or taking or interfering with water within a watercourse under the provisions of the Water Act.

2.2 SOIL / LAND MANAGEMENT

Factors Identification - *Factors present, or potentially present, within / near to the project footprint*

☒ Problem Soils (e.g. erodible, saline, ASS)
☐ Steep / Hilly terrain
☒ Significant areas
☒ Contaminated land

The project area is situated within and adjacent to the floodplains of the Albert and Logan Rivers. Water pH is generally acidic, and pools of standing water in the area have previously been found to contain very high concentrations of iron and manganese, indicating acid sulfate soils. Both Logan City and the City of Gold Coast have identified the majority of land surrounding the Logan River, Albert River and east of the Pacific Motorway as an ASS hazard area.

Department of Infrastructure, Local Government and Planning mapping indicates that the majority of the study area is classified as a "coastal hazard erosion prone area".

As discussed in section 2.1 above, all options to construct the proposed IRTC Northern Connection require significant bridge structures,

CTPI

There are a number of properties within the study area listed on the Queensland Environmental Management Register (EMR) as currently or historically supporting "notifiable" (potentially land contaminating) activities. These properties are mostly located adjacent to or in the vicinity of existing state-controlled roads (Stapylton-Jacobs Well and Beenleigh-Redland Bay Road).

Aspects & Impacts - *Proposed project aspects with the potential to impact on factors identified*

Planning & Design - As discussed above, acid sulphate soils are highly likely to occur within the project area. Excavation and exposure of these soils could result in their oxidation and subsequent release of contaminants (sulphuric acid, iron and aluminium) which could harm the environmentally sensitive receiving environment.

During the design phase, detailed and site specific investigations will be required in high risk areas (below 5m AHD) to determine locations of ASS and PASS. These investigations should be carried out as per the current QASSIT guidelines (Guidelines for the sampling and analysis of lowland acid sulphate soils in Queensland – October 1998). An appropriate and site specific ASS management plan should be developed to manage and treat any ASS appropriately.

Given the proximity of sensitive water bodies such as the Carbrook wetlands and Logan and Albert Rivers to the proposed project, consideration should be given to appropriate treatment of stormwater runoff to reduce the sediment load entering surrounding creeks and drainage lines. Diversion of stormwater runoff through grassed swales prior to discharge to watercourses will provide primary treatment of the runoff and reduce sediment load. The design will also need to consider

the placement of sediment basins (both temporary and permanent) as a further measure to reduce impacts on adjacent watercourses and environmentally sensitive areas.

With respect to contaminated land, excavation works associated with the construction of the proposed IRTC Northern Connection may disturb any contaminants present in the soil. A search of the EMR and CLR should be undertaken as part of the REF for the proposed project to determine whether any areas of contamination occur within the project area. Should this be the case, further investigation should occur to identify whether any of these areas will be disturbed by construction of the IRTC northern connection and develop appropriate management measures for these areas if required.

Construction and Operation – During construction, the emphasis will be on the appropriate management of "problem" soils such as ASS and minimising erosion of disturbed areas. Areas disturbed during earthworks have an increased erosion potential, and sediment leaving the project area may enter surrounding watercourses. An appropriate and site specific erosion and sediment control plan will be required in order to minimise impacts on the receiving environment. Acid sulphate soils will require management as per the ASS management plan developed during the design phase to avoid release of contaminants (acids and metals) into the surrounding environment.

☒ Potential Legislative Requirements (refer to Section 3) (i) General Environmental Duty under the Environmental Protection Act, (ii) Operational Works Permits for removal of contaminated soil under the Environmental Protection Act.

2.3 FLORA

Factors Identification - *Factors present, or potentially present, within / near to the project footprint*

☒ Significant species ☒ Significant vegetation / ecosystems ☒ Pest Plants	The Logan and Albert Rivers and their associated floodplains form a major part of the landscape in the study area, and support mangrove communities (lining the banks of the Logan and Albert Rivers), estuarine wetlands and open eucalypt forest. The Carbrook wetlands area contains a variety of vegetation communities including permanent freshwater ponds, shrub swamps and freshwater (seasonally flooded) swamp forest. The area is known to support a very diverse flora, including some species which have a restricted distribution. Legislatively protected species have been recorded as occurring within the Carbrook wetlands. There is a gazetted Conservation Park (protected under the provisions of the Nature Conservation Act) in the vicinity of the study area – Carbrook Wetlands Conservation Park 1 (515NPW869). A portion of this conservation park is located just to the east of the study area on the southern side of Beenleigh-Redland Bay Road), but it is unlikely to be directly impacted by any of the current options to construct the IRTC northern connection. A desktop search was undertaken of Department of Environment and Heritage Protection (DEHP) regional ecosystem mapping to establish the presence or absence of significant vegetation (regional ecosystems or RE's) within the study area. Regional Ecosystem mapping for the project area indicates the presence of mapped "of concern" remnant vegetation in a number of areas, notably where Beenleigh-Redland Bay Road intersects with both Mount Cotton Road and Ferry Road. In addition, most of the project is mapped as a "high risk area" on DEHP's protected plants flora survey trigger mapping.

Aspects & Impacts - *Proposed project aspects with the potential to impact on factors identified*

Planning & Design –

During planning and design, the emphasis should be on establishing whether there are any legislatively protected flora species or areas of significant vegetation within the study area, and progressing the design in a way that minimises

impacts on these species or areas where possible. A field survey to ground truth the presence or absence of protected species (including marine plants protected under the Fisheries Act) will be required once the project reaches the concept phase.

The Directory of Important Wetlands Australia (DIWA) listing for the Carbrook wetlands aggregation lists clearing of existing remnant vegetation and loss of grassy wetland areas as a major threat to the overall ecological integrity of the wetlands. It will therefore be important to minimise impacts on the wetlands area where possible, in particular in the vicinity of CTPI.

While none of the current options will impact on the legislatively protected Carbrook wetlands Conservation Park, should the alignment of CTPI impacts on the park could occur.

Construction – During construction, the emphasis will be on ensuring any vegetation clearing does not extend past defined clearing limits, and ensuring that effective erosion and sediment controls are in place to avoid indirect impacts on native vegetation. It will also be necessary to undertake a weed survey prior to construction to establish whether any declared weeds are present within the construction zone and develop an appropriate plan to manage any declared weed infestations.

☒ Potential Legislative Requirements (refer to Section 3) (i) Clearing permit for the removal of "endangered" or "near threatened" species from areas of remnant vegetation under the Nature Conservation Act, ((ii) Clearing permit for the removal of marine plants under the Fisheries Act (iii) Requirement to remove C1 and C2 pests from land under the Land Protection Act.

2.4 FAUNA

Factors Identification - *Factors present, or potentially present, within / near to the project footprint*

☒ Significant species
☒ Habitat / Breeding places
☒ Wildlife corridors
☐ Pest animals

As discussed in 2.3 above, the Carbrook wetlands area is known to support a very diverse flora and fauna and likely provides a refuge for fauna species during drought periods. The ephemeral grassy swamps of the Carbrook wetlands are utilised by many waders and waterbirds, including migratory species which are protected under the federally administered EPBC Act.

Historical records for the Carbrook wetlands also indicate a high diversity of mammal species, including the koala (protected under both state and federal legislation) and a number of bat species. As discussed in 2.3 above, mangroves line the banks of the Albert and Logan Rivers, which may provide roosting sites for the federally protected grey-headed flying fox. A number of frog species have also been previously recorded within the Carbrook wetlands including the legislatively protected wallum froglet which has a limited distribution due to its preference for acid lakes and wallum swamp.

The Eagleby wetlands (situated on the western banks of the Albert River) are located just south of where Option 2 would cross the Albert River. Logan City Council's publication "Threatened wildlife of Logan" indicates that the Eagleby wetlands area may support a number of legislatively protected bird species, including the Black-Necked Stork, Freckled Duck and Lewin's Rail. The Australian painted snipe (classified as "vulnerable" under both state and federal legislation) has also been recorded within Eagleby wetlands.

DNRM Regulated Vegetation Mapping for the study area indicates that there are patches of essential habitat for both the koala and the wallum froglet that would be impacted by all three potential options for the IRTC northern connection. The largest of these patches are associated with the Carbrook wetlands where it extends across the existing Beenleigh-Redland Bay into CTPI.

The South East Queensland Koala Conservation State Planning Policy (Koala SPP)

	mapping also indicates areas of koala habitat within the project area. These mainly occur to the south of the Logan River and the east of the Albert River CTPI and to the north and south of Beenleigh-Redland Bay CTPI. Areas of drier eucalypt and melaleuca forest away from the Logan and Albert River floodplains may also provide koala habitat. The area north of the Logan River is also mapped as a priority koala assessable development area. Check legislative status of this now. In relation to fauna movement, the Carbrook wetlands area could be considered a southern extension of the Mount Cotton – Venman Bushland National Park bushland corridor and is an important lowland retreat for many bird species during their seasonal migrations. Tentative corridor linkages also exist to the west of the study area (to Cornubia Forest) and to the east of the study area to Redland Bay via the Sheldon-Mount Cotton corridor. The DIWA listing for the Carbrook wetlands lists severing of existing wildlife corridor linkages listed as a major threat to the ecological integrity of the wetlands.

Aspects & Impacts - *Proposed project aspects with the potential to impact on factors identified*

Planning & Design – During planning and design, the emphasis should be on establishing whether there are any legislatively protected fauna species or their habitat / breeding areas within or adjacent to the study area, and progressing the design in a way that minimises impacts on these species or areas where possible. A field survey to ground truth the presence or absence of protected fauna species will be required as part of the detailed REF for the proposed project.

The presence of mapped koala habitat within the project area may trigger a requirement for the project to comply with the SEQ Koala Memorandum of Agreement (MoA). See section 3.0 – Legislation – for more details.

New bridges will be required CTPI the Albert and Logan Rivers. Both of these watercourses are mapped as grey (tidal – major impact) within DAF's mapping and so development approvals (for waterway barrier works) are highly likely to be required. An aquatic ecological field survey will be required as part of the detailed REF for the proposed project to identify the presence of fish in these watercourses and appropriate mitigation measures will be required in order to minimise potential impacts on fish movement.

Construction – During construction, the emphasis will be on minimising impacts to adjacent environmentally sensitive areas (Logan and Albert Rivers and the Carbrook wetlands). Aquatic fauna could be impacted if sediment leaving the construction site enters surrounding watercourses. As discussed in 2.2 above, an appropriate and site specific erosion and sediment control plan will be required in order to minimise impacts on the receiving environment.

The wallum froglet is an "acid frog". This species require acidic conditions (pH 4-5.5) to breed, and previous studies undertaken within the Carbrook wetlands indicate that water in the project area is acidic. These species could be impacted indirectly through changes in the pH of runoff waters from the construction site, especially where lime is used to neutralise disturbed acid sulphate soils. The acid sulphate soil management plan for the project should include measures to avoid pH changes to surrounding watercourses.

☒ Potential Legislative Requirements (refer to Section 3) (i) Referral to Federal Department of Sustainability, Environment, Water, Population and Communities for potential impacts on a threatened species and / or impacts on listed migratory species, (ii) Compliance with the SEQ Koala SPP / MoA, (iii) Operational Works Permits for constructing or raising waterway barrier works under the Fisheries Act.

2.5 PUBLIC AMENITY / HEALTH

Factors Identification - *Factors present, or potentially present, within / near to the project footprint*

☒ Residential areas	The study area includes the suburbs of Carbrook, Eagleby, Alberton and Stapylton.

☒ Commercial areas ☒ Public facilities ☒ Structures ☒ Aesthetic values	The land tenure is mostly freehold, with small areas of conservation park (Carbrook wetlands) plus other reserves and outdoor recreational areas. Both the Logan and Albert Rivers have had a considerable impact on the nature of land use within the study area as they form a physical barrier and also shape surrounding land use through the presence of their floodplains, which are mostly used for rural residential and agricultural purposes plus open space / recreation as discussed above. The confluence of the Logan and Albert Rivers occurs at the eastern end of the Eagleby flood plains (western extent of the study area) and is prone to heavy flooding. This has confined the development of the Eagleby urban area and provided good quality agricultural land in the flood plain area. Any road through this could potentially impact on the current functionality of this land. In addition, land on the southern side of the Logan River is currently mapped as a "draft SEQ priority agricultural area". With respect to emerging and future land use and planning in the study area, the suburbs of Beenleigh and Loganholme (western side of the Pacific Motorway) and Eagleby (eastern side of the Pacific Motorway) have been identified as future growth areas within South East Queensland. In addition, the Yatala Enterprise Area (YEA) to the south of the study area is predicted to be a major industrial and economic development area in the future.

Aspects & Impacts - *Proposed project aspects with the potential to impact on factors identified*

Planning & Design – The proposed IRTC northern connection is likely to have both direct and indirect impacts on the surrounding areas via changes to noise, visual and social amenity, air quality and property access and property severance. All three options to construct this road pass through parcels of privately owned land. This will result in severance of existing access routes both within individual properties and to the existing local road network. Additionally, the IRTC is intended to be a limited access road, and as such no properties will be allowed direct access to it. Additional infrastructure (over / underpasses) will be required to ensure that local access is maintained. Consultation with directly affected property owners will be required during the concept and design phases of the project.

The IRTC northern connector is a greenfield project and as such would be classified as a "new road - access controlled" as per the TMR Transport Noise Management Code of Practice Volume 1 (2013) for the purposes of operational (road traffic noise) impact assessment. The road traffic noise criterion levels for new roads are significantly lower than for the upgrade of an existing road, particularly where the existing ambient noise levels are below 55 dB(A) L_{A10} (18 hour). Potential noise impacts on outdoor educational and passive recreation areas within the study area may also require consideration. However given the rural residential / agricultural nature of the study area, noise barriers may not be a cost effective option to mitigate road traffic noise. A comprehensive road traffic noise assessment (RTNA) will be required once the project reaches the concept phase.

With respect to landscape and visual amenity, construction of a new state controlled road in the study area will result in some adverse impacts to the scenic amenity of the area, especially when considered in context of the existing rural residential / agricultural / open space land use. Potential impacts could be reduced via appropriate use of screening plantings / revegetation.

While construction of the IRTC northern connection will generate additional vehicle emissions during the operational phase of the project, these are not anticipated to have a significant impact on local air quality.

Construction – During the construction phase, the emphasis will be on minimising construction-related noise, vibration and air quality impacts on adjacent sensitive receptors. Residential properties in the study area may be exposed to construction-related impacts such as increased noise and / or vibration or deterioration of air quality.

Activities such as pile driving and the use of heavy construction equipment will generate noise and vibration during

construction. The construction contractor will need to develop an environmental management plan for the project site that takes into consideration the proximity of noise and vibration sensitive receptors to construction activities and details appropriate strategies to manage impacts on these receptors.

Dust may be generated during construction from a number of activities including vegetation and topsoil removal, transport of construction and waste materials and wind erosion from stockpiles and unsealed areas. The construction contractor will be required to develop and implement appropriate strategies to minimise impacts on adjacent sensitive receptors.

☒ Potential Legislative Requirements (refer to Section 3) (i) General Environmental Duty under the Environmental Protection Act.

2.6 CULTURAL HERITAGE

Factors Identification - *Factors present, or potentially present, within / near to the project footprint*

☒ Indigenous heritage

☒ Historical heritage

A cultural heritage risk assessment (CHRA) has recently been undertaken for the project by South Coast Region. The CHRA indicates that there is a high risk of the project impacting on Aboriginal Cultural Heritage, and the CHRA therefore classified the project as Category 5 (High Risk) under the Cultural Heritage Guidelines. There are two Aboriginal Parties for the project area: Jagera Daran Pty Ltd and Gold Coast Native Title Group (Jabree Limited).

The LEL study report included a desktop aboriginal cultural heritage assessment, and this assessment identified two sites of potential Aboriginal Cultural Heritage significance within the study area. NR

NR

Both the recently completed CHRA and the previous desktop assessment (LEL desktop study) indicate the presence of two sites of historical cultural heritage significance (and therefore protected under the provisions of the Queensland Heritage Act) within the study area. These are the former Carbrook State School and Fachwerk Farmhouse located at 597 and 445 Beenleigh-Redland Bay Road respectively. NR

NR

Aspects & Impacts - *Proposed project aspects with the potential to impact on factors identified*

Planning & Design – Given that this is a greenfield project in an area of known cultural heritage significance, it is highly likely that there are areas of previously undiscovered and undisturbed aboriginal cultural heritage within the study area. The presence of known artefacts in the area is indicative that other areas of undisturbed land in the study area may support areas or artefacts of aboriginal cultural heritage significance. Consultation should be undertaken with the relevant aboriginal parties for the area (Jagera Daran Pty Ltd and the Gold Coast Native Title Group) as part of the detailed REF for the project to establish whether there are indigenous cultural heritage values within the study area that may be impacted upon by the proposed works. A Cultural Heritage Management Plan (CHMP) may be required in order for DTMR to meet their obligations under the Aboriginal Cultural Heritage Act 2003.

An additional search of the Queensland Heritage Register will also be required as part of the detailed REF for the proposed project to establish whether there are any sites or areas of historical cultural heritage value that may be impacted upon by the proposed works in addition to the two sites identified above

Construction – During construction, DTMR has a Duty of Care under the Aboriginal Cultural Heritage Act. If any cultural heritage material (sites or artefacts) finds occur during construction, the contractor will be required to stop work and report the find to DTMR immediately.
☒ Potential Legislative Requirements (refer to Section 3) (i) Compliance with the General Duty of Care under the Aboriginal Cultural Heritage Act.

3 POTENTIAL LEGISLATIVE REQUIREMENTS

Section 3.0 has been developed with reference to the legislation, policies and standards in force as at June 2017. However, due to the long term nature of this project, these are likely to change over the life of the project. A full review of legislation and policy requirements should be undertaken once the project reaches the concept phase to ensure that all relevant legislative requirements are addressed and appropriate approvals are obtained.

LEGISLATION	General description and relevance to this project	Further action required (if any)
Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)	The *Environment Protection and Biodiversity Conservation Act* (EPBC) is a federally administered act which provides protection to matters of national environmental significance (MNES). Anyone wanting to undertake an action that may have a significant impact on a MNES is required to submit a referral to the federal Department of Sustainability, Environment, Water, Population and Communities (SEWPaC). SEWPaC then make a decision as to whether the project is deemed a "controlled" or "non controlled" action. Where a project is deemed to be a "controlled action", further assessment and approval under EPBC is required. As discussed in section 2.1 and 2.4 and above, this scoping report has identified two MNES which may be impacted by the proposed project. These are: - Potential for significant impacts on a listed migratory species and - Potential for significant impacts on a listed threatened species. The Carbrook and to a lesser extent the Eagleby wetlands are a known habitat area for species of waterbirds / waders listed under the JAMBA / CAMBA international agreements. While the proposed project will not impact greatly on the designated wetland area, there is still potential for the project to disturb habitat that is used by federally protected migratory species. The koala and grey-headed flying fox are both listed as "Vulnerable" under EPBC. As discussed in 2.4 above, the mangrove communities that line the banks of the Albert and Logan Rivers may support populations of grey headed flying fox, and areas of drier eucalypt and melaleuca forest in the study area may	Careful consideration of the implications of Section 74A (split referrals) of the EPBC Act will be required once any section of the suite of projects that comprise the proposed IRTC reach the concept phase. It may be preferable to seek advice from SEWPaC prior to undertaking any detailed environmental assessments for the IRTC, as designation of the project as a controlled action under EPBC may trigger the requirement to undertake a formal EIS for the project.

	provide koala habitat. For the purposes of this Environmental Scoping Report, the potential for the IRTC Northern Connection to require referral to SEWPAC under the provisions of EPBC has been considered in isolation from the bulk of the future IRTC (between Stapylton-Jacobs Well Road and Nerang-Broadbeach Road). That is, the ESR assumes that the project will be designed, constructed and maintained as a stand-alone project. However, as discussed in section 1.0 above, the northern connection project connects to the future IRTC, and this raises the question of whether it can be considered as a stand-alone project for the purposes of assessment under EPBC. High level environmental assessments undertaken as part of the road corridor development planning (RCDP) process for both the northern (Stapylton-Jacobs Well Road to Beattie Road) and southern (Beattie Road to Nerang-Broadbeach Road) sections of the future IRTC also include preliminary assessment as to the likelihood of the IRTC (i) requiring referral to the federal government under the provisions of EPBC and (ii) being deemed a "controlled action" under EPBC. These assessments concluded that both sections would require referral, and that the southern section in particular could be deemed a controlled action. Section 74A of the EPBC Act makes specific provisions which allow the federal environment minister to refuse to accept a referral made under EPBC if it is deemed to be part of a larger action. That is, it is possible that the IRTC (including the northern connection project) may have to be referred to the federal government as a single referral / project, covering the entire route from Beenleigh-Redland Bay in the north to Nerang-Broadbeach Road in the south. This is a critical factor in terms of deciding the future environmental assessment and management framework for the project. SEWPaC has developed a policy statement on this issue: http://www.environment.gov.au/system/files/resources/9af4f5a0-6a4b-4322-9dd1-ddbb9710d682/files/epbc-act-policy-staged-developments.pdf The policy statement indicates that at this point in time, split referrals are not	

	necessarily rejected automatically, and that where a project is referred to the federal government that appears to be part of a larger action, the minister will "consider whether to accept a split referral where it is likely to promote the objectives of the EPBC Act". In practical terms, this means that the federal environment minister may accept a split referral where there are practical or financial circumstances relating to the design, timeframe or geography of a project that make split referrals a suitable approach. The IRTC could fit this approach, as time and cost constraints will likely result in it being designed and constructed using a staged approach. This will require careful consideration once the project reaches the concept phase, as determination of a project as a "controlled action" under EPBC can result in significant time and cost constraints.	
State Development and Public Works Organisation Act 1971	The purpose of the State Development and Public Works Organisation Act (SDPWO Act) is to facilitate timely, coordinated and environmentally responsible infrastructure planning and development to support Queensland's economic and social progress. The SDPWO Act is currently administered by the Department of State Development. The SDPWO Act provides for the appointment of a Coordinator-General and gives them a number of powers, including the power to manage major infrastructure projects and declare a project to be a "coordinated project" and therefore coordinate the environmental impact assessment process. The SDPWO Act is not "triggered" by a certain level of potential environmental impact as for the EPBC Act. Rather, TMR could actively seek declaration of the project as being of State Significance if it thought there was benefit in the IRTC being planned, designed and constructed as a State Significant Project. The Coordinator General does however have the power under the SDPWO Act to "call in" any state government department infrastructure project where they feel that timely decisions are not being made on a key project. Declaration of a project as a "State Significant Project" under the SDPWO Act is dependent on a number of factors, including employment opportunities provided	Consideration should be given early in the planning stages for the proposed IRTC as to whether there would be benefit in TMR seeking declaration of the project as being of State Significance under the provisions of the SPPWO Act.

	by the project, potential environmental impacts, complexity of state, local and commonwealth requirements and the strategic significance of the project to the region. Should TMR decide to seek declaration of the project as being of State Significance, a formal Environmental Impact Statement (EIS) would be required. This would significantly change the environmental assessment process for the project from the internal TMR processes, particularly with respect to timeframes (it takes 12-18 months to complete an EIS under the SDPWO Act EIS process) and the level of consultation required at each stage of the EIS process. It is important to note that there is a bilateral agreement in place between the Commonwealth and the State of Queensland relating to environmental assessment and approvals which provides for accreditation of Queensland processes for approval of proposed projects that would otherwise have been assessed by the federal government under the EPBC Act. The EIS process as prescribed by the SDPWO Act is one of these accredited processes, which effectively means that if an EIS is developed for the project under the provisions of the SDPWO Act, this would also be assessed by the federal government to determine potential impacts under the provisions of EPBC, meaning that only one EIS would need to be developed for the project.	
Sustainable Planning Act 2009.	The purpose of the *Sustainable Planning Act* (SPA) is to achieve ecological sustainability by managing the development process and coordinating and integrating planning at the local, regional and State levels. Under the provisions of SPA, a number of activities associated with the project may require development permits through the Integrated Development Assessment System (IDAS). These include material change of use approvals (such as for Environmentally Relevant Activities and permits to remove contaminated land) and operational works approvals (such as works within watercourses, waterway barrier works and vegetation clearing).	Further investigation will be required during the concept phase to establish permits, approvals and policies under the SPA that may be relevant to the project.
Koala Conservation Policy and Memorandum of	The proposed project falls within the South East Queensland Koala Protection area (SEQ KPA) which includes Noosa, the Sunshine Coast, Moreton Bay,	With respect to the Koala MOA, additional assessment will be required to establish

Agreement between DERM and TMR in relation to government supported transport infrastructure within the SEQKPA (Koala MOA).	Brisbane, Ipswich, Logan, Redland and Gold Coast City Council area. Where a proposed project within the SEQ KPA intersects with a mapped koala habitat area as per the koala conservation State Planning Policy (SPP) mapping, the project must comply with the *Memorandum of Agreement between DERM and TMR in relation to government supported transport infrastructure within the SEQKPA* (Koala MOA) unless an exemption applies. Under the provisions of the koala MOA, TMR are obliged to consider potential impacts on koala populations during the design phase of the project. The project will be required to avoid (where possible) areas of mapped koala habitat. Where the project cannot avoid areas of mapped koala habitat, it should endeavour to align the corridor so that it intersects areas with the lowest possible koala habitat values, to the extent it is practical to do so. The project should also incorporate koala movement infrastructure and koala safety fencing where appropriate. Where impacts to koala habitat areas cannot be avoided, offsets must be provided to mitigate impacts on areas of mapped "bushland" habitat and high and medium value "suitable for rehabilitation" habitat. As discussed in section 2.4 above, the proposed IRTC northern connection is likely to impact on areas mapped as both low and medium value bushland habitat. Therefore it is likely that offsets will be required for this project.	whether the project needs to comply with the koala MOA (requires clearing of more than 125 koala habitat trees or 0.5 hectares of mapped koala habitat). If compliance is required, an appropriate methodology should be developed in order to comply with the koala MOA and establish appropriate offsets where required.
Coastal Protection and Management Act 1995.	The Coastal Protection and Management Act protects and conserves the coastal environmental, including it's resources and biodiversity. It also ensures that decisions about land use and development in coastal areas are made in a way that protects life and property from the threat of coastal hazards. Assessable development under this act requires a development approval under the provisions of the Sustainable Planning Act. As discussed in 2.1 and 2.2 above, most of the study area is mapped as being within a coastal management district, and is also mapped as a coastal hazard (erosion prone) area. Prescribed tidal works (sections 14 and 15 of the Coastal Protection management regulation) and royalty payments for the removal of quarry material	Further assessment will be required during the concept phase to establish which permits, approvals and policies under the Coastal Protection and Management Act may be relevant to the project.

	from tidal waters may be triggered by the proposed project. However, TMR has a number of exemptions in place which negates the requirement to pay fees for the removal or quarry material from today waters, and the majority of TMR projects are unlikely to be considered as prescribed tidal works unless they are related to boating infrastructure.	
Environmental Protection Act 1994.	The purpose of the *Environmental Protection Act* is to protect the environment while allowing for ecologically sustainable development. In general terms, the project must comply with section 319 of the Environmental Protection Act (the "General Environmental Duty") and not undertake activities that cause or are likely to cause environmental harm unless all reasonable and practical measures are taken to prevent or minimise the harm. There are also a number of issue specific Environmental Protection Policies (EPP's) that the project will need to comply with. These include the EP(Air) Policy 1997, EP(Noise) Policy 1997, EP(Waste Management) Policy 2000 and EP(Water) Policy 1997. In co-ordination with the Sustainable Planning Act, The Environmental Protection Act provides for licensing and approval of Environmentally Relevant Activities (ERA's). ERA's are activities that require specific regulation because of the likelihood that they could cause environmental harm. To carry out an ERA a registration certificate must be obtained prior to commencing the activity. A number of ERA's (such as ERA 8 – chemical storage, ERA43 – Concrete Batching and ERA 57 – Regulated Waste Transport) may potentially apply to the project. Disposal and removal of contaminated soil from sites listed on the Contaminated Land or Environmental Management Registers (see section 2.1 above) will require a disposal permit.	Further assessment will be required during the concept phase to establish which permits, approvals and policies under the Environmental Protection Act may be relevant to the project.
Aboriginal Cultural Heritage Act 2003.	The *Aboriginal Cultural Heritage Act* protects and conserves aboriginal cultural heritage within Queensland. Under this act, a person who carries out an activity must take "all reasonable and practical measures to ensure the activity does not harm indigenous cultural heritage". This is known as the Aboriginal Cultural	Once the project reaches the start of the Concept Phase, consultation will be required with the relevant aboriginal parties for the project area and a Cultural Heritage Plan

	Heritage Duty of Care. DTMR must comply with the Duty Of Care for the proposed IRTC northern connection project. As discussed in 2.6 above, a Cultural Heritage Risk Assessment (CHRA) has been undertaken for the study area, which classified the project at Category 5 (high risk). Additional assessment, including consultation with the relevant aboriginal parties for the area, will be required once the project reaches the concept phase. As discussed in section 2.6 above, if the project is deemed a "controlled action" under the EPBC Act and an EIS is required, this will trigger a requirement for a compulsory Cultural Heritage Management Plan (CHMP) as per part 7 of the Aboriginal Cultural Heritage Act. This is a statutory process and involves a statutory notification period during which the land user (in this case TMR) must notify the relevant Cultural Heritage Body and / or Aboriginal Party of their intention to develop a CHMP. Notification recipients are then given 30 days in which to respond to the notification, which is followed by an 84 day consultation and negotiation period. While a formal Part 7 CHMP as outlined above takes more time to develop than an informal (and voluntary) Cultural Heritage Agreement (CHMA), it has the advantage that once approved, it will provide TMR with certainty that they are acting lawfully with respect to the ACH Act and meeting all requirements under the Cultural Heritage Duty of Care.	should be developed. As discussed, this may need to be a formal Part 7 CHMP if the EIS requirement under EPBC is triggered.
Queensland Heritage Act 1992.	The objective of the *Queensland Heritage Act* is to protect Queensland's historical (European) cultural heritage for the benefit of the community and future generations. Under the provisions of this Act, an individual who discovers an aspect of historical cultural heritage is required to notify the DEHP minister as soon as possible. A Cultural Heritage Risk Assessment (CHRA) was undertaken for the IRTC Northern Connection project, which identified two sites of historical cultural heritage significance (listed on the Queensland Heritage Register) within the study area, both of which are located on Beenleigh-Redland Bay Road.	Further investigation will be required once the project reaches the concept phase, including a search of the Queensland Heritage Register.

Nature Conservation Act 1992.	The purpose of the *Nature Conservation Act* is the conservation of nature through an integrated and comprehensive conservation strategy for the whole of the State. Under the provision of the NCA, permits are required from the Department of Environment and Heritage Protection (DEHP) where a proposed activity involves the taking of "endangered, "near threatened" or "least concern" native plants in the wild. TMR have an approved Compliance Management Plan (CMP) under section 477H of the Transport Infrastructure Act 1994 that allows TMR and it's contractors to clear plants protected under the Nature Conservation Act in areas that have been previously cleared. This CMP is valid until the end of March 2018. As discussed in section 2.3 above, most of the project area is mapped as "high risk" on DEHP's protected plants flora survey trigger mapping.	During the concept phase, flora surveys will be required to establish whether any flora species protected under the Nature Conservation Act occur within the project area and appropriate management measures will be required to minimise impacts on protected species if they are present.
Vegetation Management Act 1999.	The purpose of the *Vegetation Management Act* is to conserve remnant vegetation. The VMA regulates the clearing of vegetation that is mapped as an "endangered", "of concern" or "least concern" Regional Ecosystem (RE). Clearing of native vegetation as defined under the VMA is usually assessable development under the provisions of the Sustainable Planning Act (SPA) and Sustainable Planning Regulation (SPR). However, as per Schedule 24 (Part 1, item 1(16) and Schedule 2 (Part 1, Item 10), clearing of native vegetation for the purposes of community infrastructure is not assessable development. Therefore providing that clearing of native vegetation only occurs within the road corridor, approval under the SPA is not required. Regional Ecosystem Mapping also indicates areas where essential habitat for significant fauna species may occur (see 2.4 above). The proposed IRTC northern connection may impact on areas of mapped essential habitat for both the wallum froglet and koala.	Given the presence of mapped essential habitat for the wallum froglet and koala within the study area, field investigations will be required during the concept phase to establish whether these species are present in the study area.
Fisheries Act 1994.	The *Fisheries Act* manages and protects fish habitats, fisheries resources and aquaculture. Operational work that requires approval includes:	Further investigation will be required once the project reaches the concept phase in order to establish which approvals under the Fisheries

	- Tidal work or work within a coastal management district. - Constructing or raising waterway barrier works. - Works in a declared fish habitat and - Removal or damage of marine plants. Given the nature and location of this project (i.e. major bridge construction in a tidal area), it will trigger the requirement for a number of approvals under the Fisheries Act – notably waterway barrier works permits and approval to remove marine plants. Tidal works permits may also be required.	Act will be required for the project.
Land Protection (Pest and Stock Route Management) Act 2002.	The *Land Protection Act* aims to control and manage invasive pests (weeds and pest animals) in Queensland. Plants and animals can be declared serious (Class 1 and 2) or potentially serious (Class 3) pests under this legislation. Landholders are required to keep land clear of Class 1 and 2 pests, and can be required to remove C3 pests if found adjacent to environmentally significant areas. Weed identification and an appropriate management plan will be required during construction.	Ground-truthing of weed populations within the project area will be required prior to construction.
Water Act 2000.	The purpose of the *Water Act* is to promote sustainable management and efficient use of water and other resources by establishing a system for the planning, allocation and use of water. Approval will be required for a number of activities, including: - Destroying vegetation, excavation and placement of fill within watercourses (Riverine Protection Permit required). - Taking or interfering with water(including interfering with flow) and - Taking quarry material from the bed or banks of a watercourse. DTMR currently have exemption from obtaining riverine protection permits provided that the project complies with the "Guideline – Activities in a watercourse, lake or spring carried out by an entity". Permits may be required if the taking of water or quarry material is required.	Further investigation will be required during the concept phase into current legislative requirements under the Water Act.

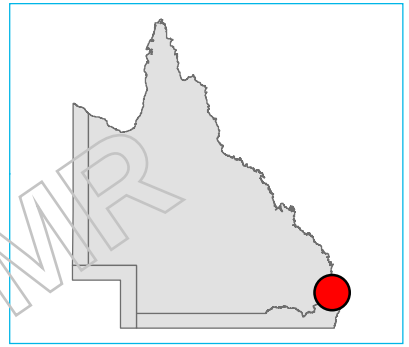
4. CONCLUSIONS AND RECOMMENDATIONS.

This ESR has been developed to provide a high level desktop assessment of potential environmental impacts associated with each of the three potential options to link Beenleigh-Redland Bay Road with the future IRTC at Stapylton-Jacobs Well Road. A number of potential environmental issues will require additional investigation once the project reaches the concept phase, including potential impacts on the Carbrook wetlands, potential impacts on legislatively protected flora and fauna species, and potential for the project to impact on areas of Aboriginal Cultural Heritage Significance.

From an Options Analysis perspective, at this point in time there is no discernible difference between the three options from an environmental impact perspective. All three options have environmental constraints which will require additional assessment and management as the project progresses.

The most critical issue for the IRTC Northern Connection from an environmental management perspective is its relationship to the rest of the IRTC corridor. Construction of the IRTC between Beenleigh-Redland Bay Road and Nerang-Broadbeach Road could potentially trigger external environmental assessment processes than the IRTC Northern Connection as a "stand alone" project would not. This will require careful consideration, given that external environmental assessment processes such as the Environmental Impact Statement (EIS) process under the EPBC Act or SDPWO Act are significantly more time, cost and resource intensive than internal TMR environmental assessment and management processes.

Appendix 1 – IRTC Northern Connection Options 1-3



Legend

- Draft_Corridor
- Essential Habitat

Koala Habitat Value

HabVal

- HV Bushland
- HV Other
- MV Bushland
- MV Other
- LV Bushland
- LV Other
- Non Habitat
- Water

C:\Users\jclaridge\Documents\HDR_Road\G001_Koala.mxd 1/05/2018

Draft Fauna Habitat Mapping

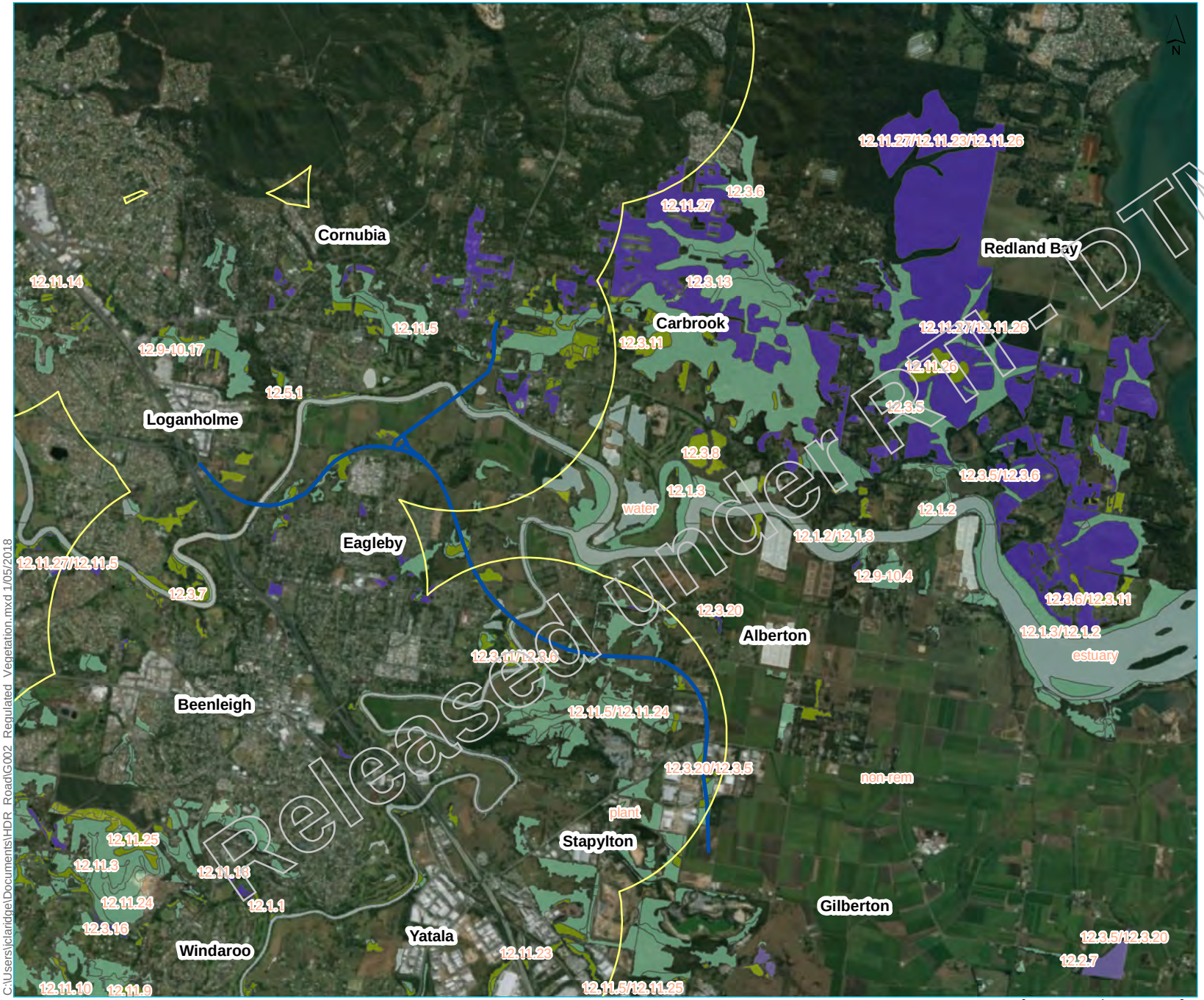
HDR - IRTC
Draft Spatial Analysis
1/05/2018

EMM

Source: EMM (2018); DFSI (2017); LPI (2015); GA (2015); LPMA (2011)

0 1 2 km

GDA 1994 MGA Zone 56



Legend

- Draft_Corridor
- Flora Survey Trigger Mapping Area

BD_SYMBOL

- E-dom
- E-subdom
- O-dom
- O-subdom
- Not of Concern
- Plantation
- Water

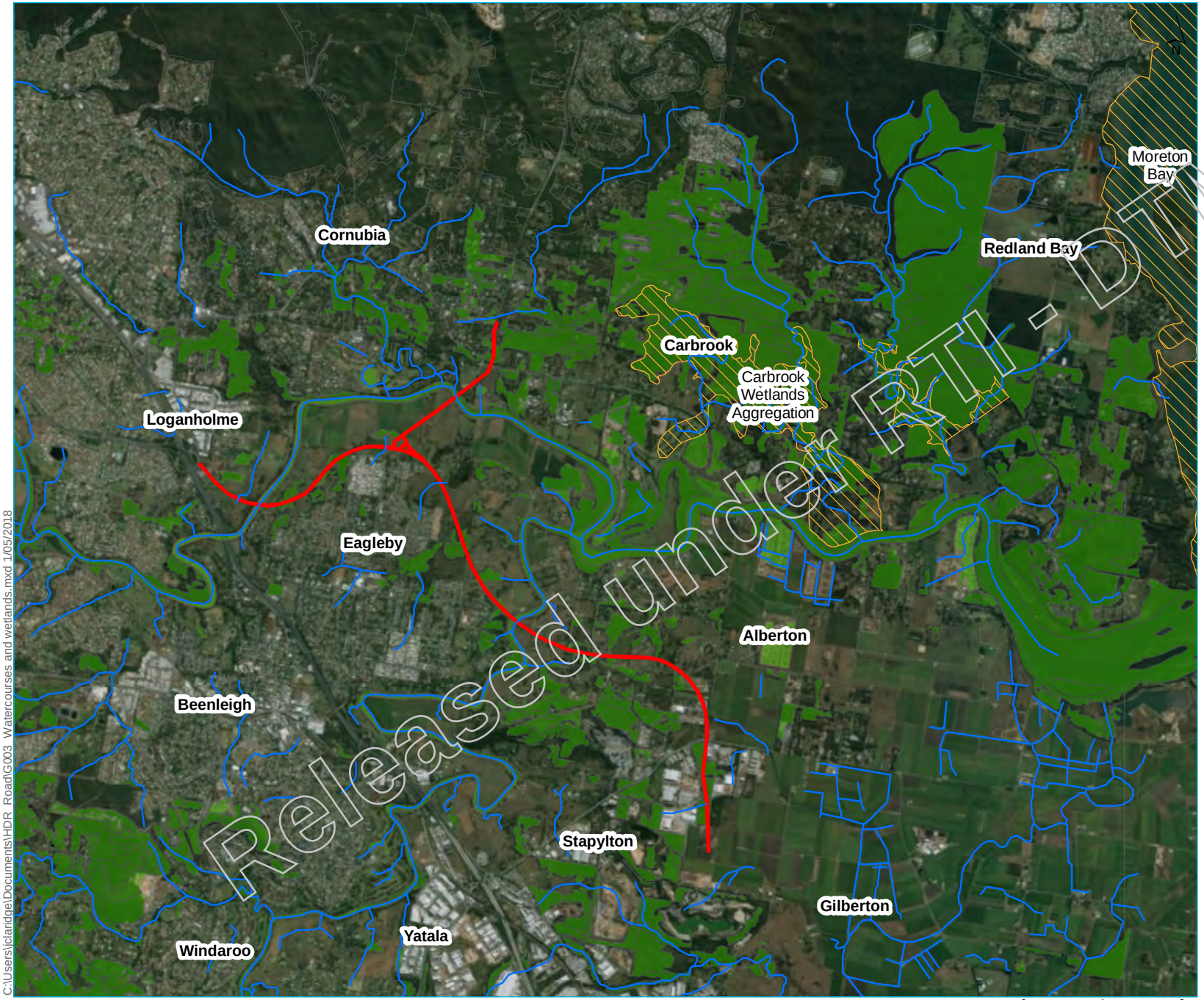
Draft Vegetation and Flora Habitat Mapping

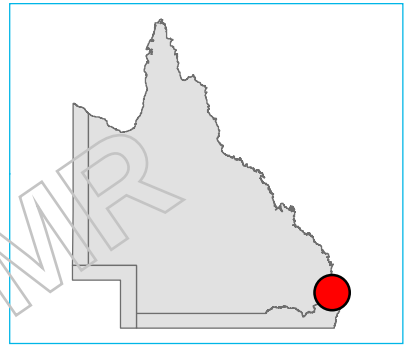
HDR - IRTC
Draft Spatial Analysis
1/05/2018

EMM

C:\Users\jclaridge\Documents\HDR_Road\G002_Regulated_Vegetation.mxd 1/05/2018

Source: EMM (2018); DFSI (2017); LPI (2015); GA (2015); LPMA (2011)





Legend

- Draft_Corridor
- Watercourse
- Directory of Important Wetlands
- Remnant Vegetation
- non-remnant

Draft Watercourses and Wetlands Mapping

HDR - IRTC
Draft Spatial Analysis
1/05/2018

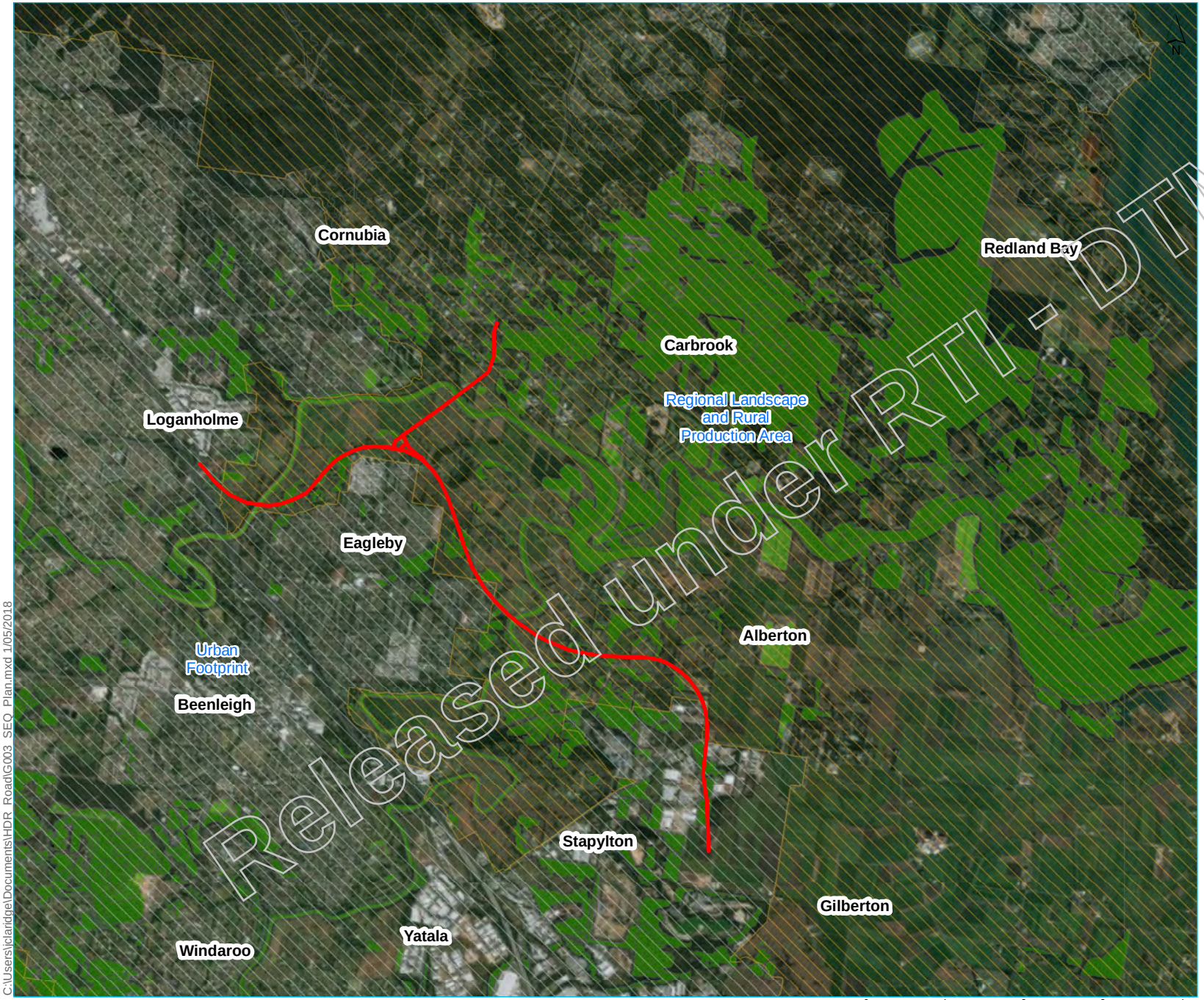
EMM

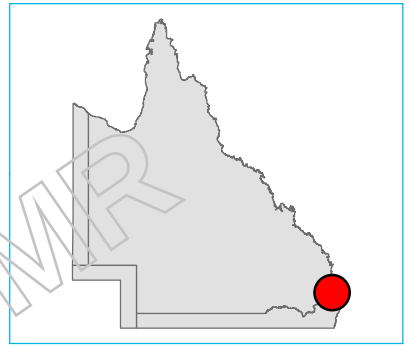
C:\Users\jclaridge\Documents\HDR_Road\G003_Watercourses and wetlands.mxd 1/05/2018

Source: EMM (2018); DFSI (2017); LPI (2015); GA (2015); LPMA (2011)

0 1 2 km

GDA 1994 MGA Zone 56





Legend

- Draft_Corridor
- Urban Footprint
- Rural Living Area
- Regional Landscape and Rural Production Area
- Remnant Vegetation
- non-remnant

Draft Regional Planning Mapping

HDR - IRTC
Draft Spatial Analysis
1/05/2018

EMM

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Source: EMM (2018); DFSI (2017); LPI (2015); GA (2015); LPMA (2011)

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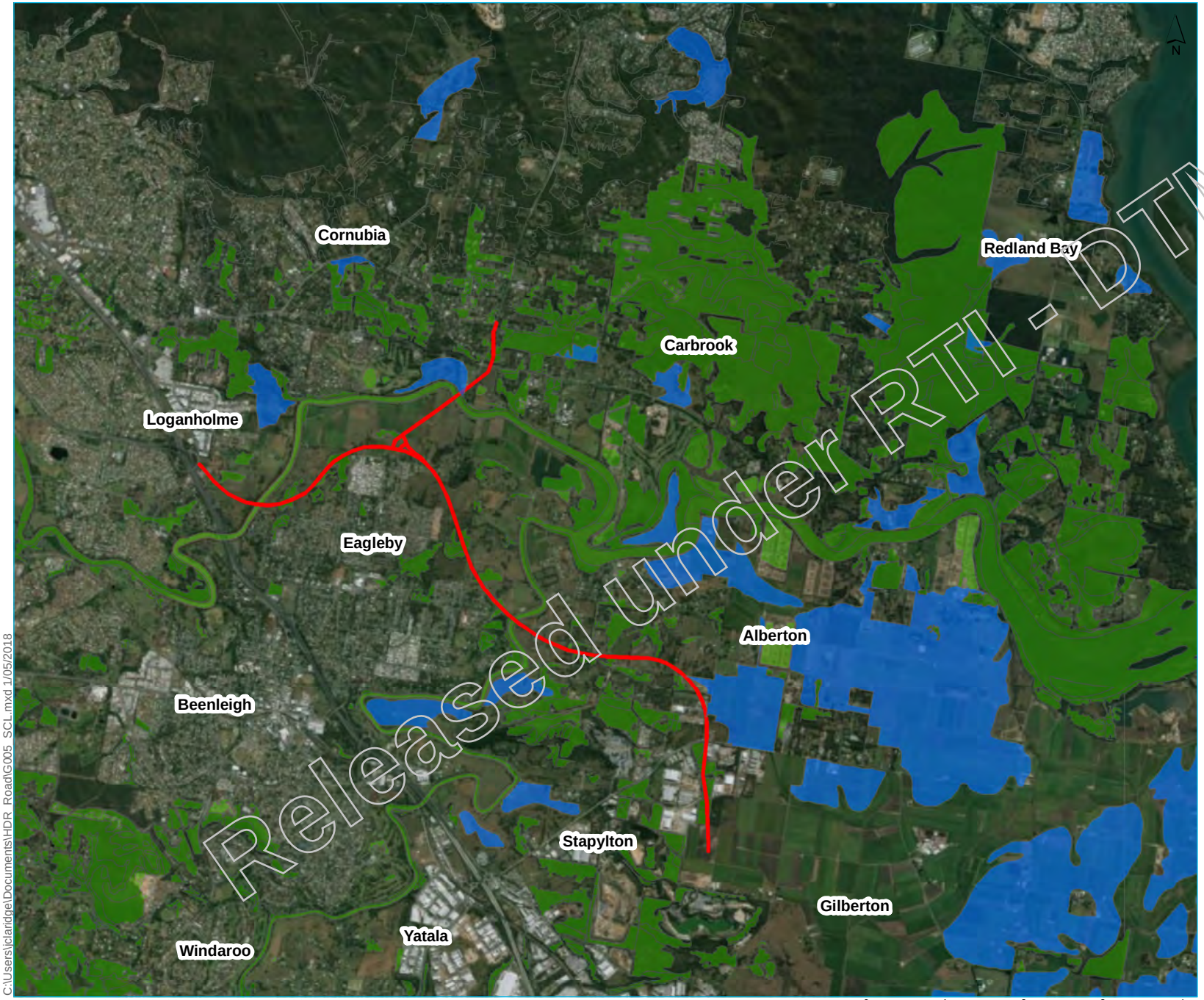
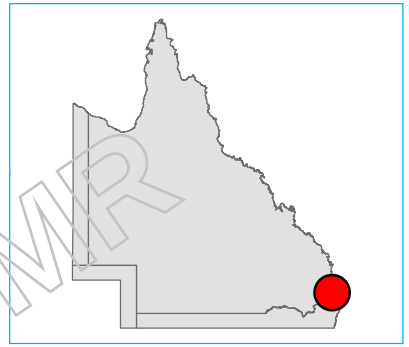
GDA 1994 MGA Zone 56





Legend

- Strategic Cropping Land
- Draft Corridor
- Remnant Vegetation
- non-remnant

Draft Strategic Cropping Mapping

HDR - IRTC
Draft Spatial Analysis
1/05/2018

EMM

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Source: EMM (2018); DFSI (2017); LPI (2015); GA (2015); LPMA (2011)

0 1 2 3 4 km

GDA 1994 MGA Zone 56

Pages 240 through 251 redacted for the following reasons:
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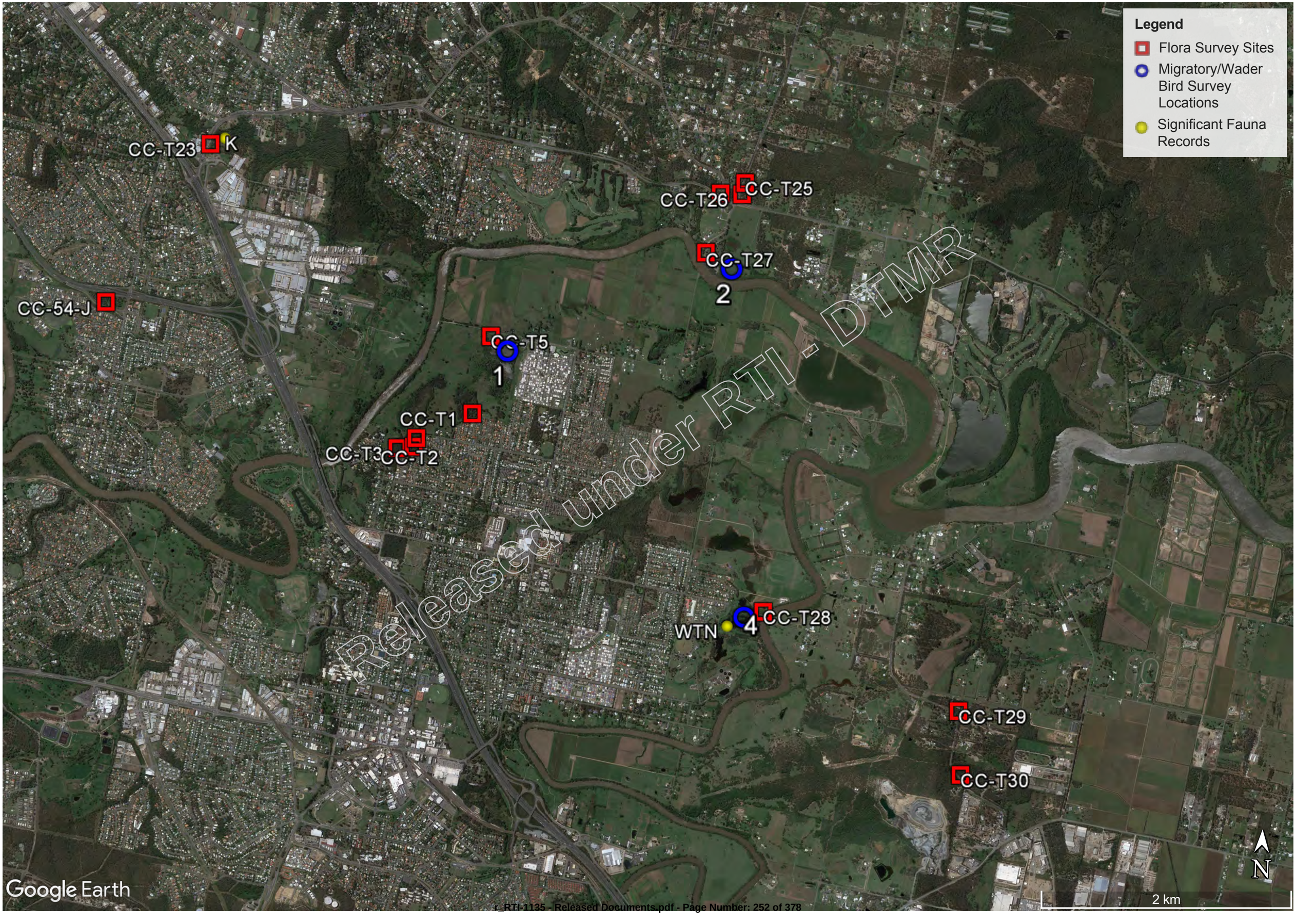
NR


Legend
Flora Survey Sites
Migratory/Wader Bird Survey Locations
Significant Fauna Records
CC-T23
K
CC-T26
CC-T25
CC-T27
2
CC-54-J
CC-T5
1
CC-T1
CC-T3
CC-T2
WTN
4
CC-T28
CC-T29
CC-T30
N
2 km
Google Earth
Released under RTI - DTMR

SITE FORM **FIELD SITE EPBC MEANDER/INSPECTION FOR THREATENED SPECIES & COMMUNITIES. RE CONFIRM.**

Location

Site No. T2 **Recorder:** TR **Date:** 11-2-19

Purpose COOMERA CONNECTOR EPBC FLORA/COMMUNITY SEARCHES. COMMUNITY RE CODING/CHECKING. NATIVE FLORA SPECIES LIST COMPILATION.

Location: **Northern portions of Herses Park, Eagleby – Northern sections of Lots 600**

GPS coordinates centre plot/meander: **Zone** 56 **E** 520034 **N** 6936676 **Datum:** MGA94z56

Vegetation structure

Stratum	Est.Height interval	Est. cover density (D,M,S,V)
E	-	-
T1	16-22m	D-M
T2	4-8m	M
S1	1-4m	S
G	<1m	S

Structural formation: (including height)
Tall open forest-woodland

Ecologically dominant layer: T1

Refer Walker & Hopkins 1998 Tables 14a, 15 &

Plant species

Record relative dominance for each stratum;
d – dominant; ***c*** – codominant; ***a*** – associated; ***s*** – suppressed.

Str.	Rel. dom	Scientific Name
T1	C	Eucalyptus seeana
T1	C	Eucalyptus siderophloia
T1	A	Eucalyptus tereticornis
T1	S	Corymbia intermedia
T2	S	Melaleuca quinquenervia
T2	S	Lophostemon suaveolens
T2	S	Jagera pseudorhus
T2	S	Cupaniopsis anacardioides
T2	S	Glochidion Sumatranum, G. ferdinandi
T2	S	Alphitonia excelsa
T2/S1	A	Acacia spp (A. disparrima,A. leiocalyx, A. melanoxylon)
S1	A	Cyclophyllum coprosmoides
S1	S	Trema tomentosa
G	C	Exotic grasses (Cynodon dactylon, Setaria spp., Panicum maximum, Paspalum spp.).
G	A	Lantana camara (dense patches in areas)
G	S	Ottochloa gracillima
G	C	Parsonsia straminea (abundant in areas)
G	S	Maclura cochinchinensis
G	S	Lomandra longifolia, L. filiformis
G	S	Asparagus spp.

THREATENED FLORA OR COMMUNITY	PRESENT?
EPBC THREATENED FLORA SPECIES	No
POTENTIAL KOALA HABITAT	Marginal due to E. tereticornis. No connectivity. No scats/scratches
EPBC LOWLAND RAINFOREST TEC	No
EPBC COASTAL SWAMP OAK FOREST TEC	No

OTHER COMMENTS
Some Hollow Bearing Trees and arboreal termite mounds noted.

INCIDENTAL EPBC SIGHTINGS
-

Geology, landform and other notes

Geology mapping:	DNRM (2002 & 2005) Geological Survey of QLD, SEQLD Region Geoscience Data Set/GCCC 2005 Geological inventory of the goldcoast
Geology code and rock types:	DCf. Neranleigh-Fernvale beds. Mudstone, shale, arenite, chert, jasper, basic metavolcanics, pillow lava, conglomerate.
Landform:	Flat
Field observation and notes:	Fallen debris and leaf litter common. Access track traverses through the community. Weeds are sporadic although significant clumps Lantana occurs throughout. Parsonsia straminae common throughout smothering the ground and shrub layer. Garden waste common proximate to eastern allotments.
Landzone:	11

Applied RE code

RE code:	As mapped. RE12.11.27 – Eucalyptus seeana and Corymbia intermedia woodland on metamorphics +/- interbedded volcanics

Images

Typical Remnant RE12.11.27 of the site

Typical Remnant RE12.11.27 of the site

Parsonsia straminae abundant in areas

Dense patch of Lantana

SITE FORM **FIELD SITE EPBC MEANDER/INSPECTION FOR THREATENED SPECIES & COMMUNITIES. RE CONFIRM.**

Location

Site No. T3 **Recorder:** TR **Date:** 11-2-19

Purpose COOMERA CONNECTOR EPBC FLORA/COMMUNITY SEARCHES. COMMUNITY RE CODING/CHECKING. NATIVE FLORA SPECIES LIST COMPILATION.

Location: **Central and lower portions of Herses Park, Eagleby**

GPS coordinates centre plot/meander: **Zone** 56 **E** 520030 **N** 6936624 **Datum:** MGA94z56

Vegetation structure

Stratum	Est.Height interval	Est. cover density (D,M,S,V)
E	-	-
T1	16-22m	D-M
T2	4-8m	M
S1	1-4m	S
G	<1m	S

Structural formation: (including height)
Tall open forest-woodland

Ecologically dominant layer: T1

Refer Walker & Hopkins 1998 Tables 14a, 15 &

Plant species

Record relative dominance for each stratum;
d – dominant; ***c*** – codominant; ***a*** – associated; ***s*** – suppressed.

Str.	Rel. dom	Scientific Name
T1	C	Eucalyptus tereticornis
T1	C	Eucalyptus siderophloia
T1	A	Eucalyptus seeana
T1	S	Corymbia intermedia
T2	S	Melaleuca quinquenervia
T2	S	Callistemon salignus
T2	S	Lophostemon suaveolens
T2	S	Jagera pseudorhus
T2	S	Cupaniopsis anacardioides
T2	S	Glochidion sumatranum
T2	S	Alphitonia excelsa
T2/S1	A	Acacia spp (A. disparrima,A. leiocalyx, A. melanoxylon)
S1	A	Cyclophyllum coprosmoides
S1	S	Leptosptemum spp.
S1	S	Trema tomentosa
G	C	Exotic grasses (Cynodon dactylon, Setaria spp., Panicum maximum, Paspalum spp.).
G	A	Lantana camara (dense patches in areas)
G	S	Ottochloa gracillima
G	S	Dianella caerulea
G	C	Parsonsia straminea (abundant in areas)
G	S	Lomandra longifolia, L. filiformis, L. hystrix
G	S	Asparagus spp.
G	S	Ageratum houstoniaum
G	S	Ageratina adenophora

THREATENED FLORA OR COMMUNITY	PRESENT?
EPBC THREATENED FLORA SPECIES	No
POTENTIAL KOALA HABITAT	Marginal due to E. tereticornis. No connectivity. No scats/scratches
EPBC LOWLAND RAINFOREST TEC	No
EPBC COASTAL SWAMP OAK FOREST TEC	No

OTHER COMMENTS
Hollow bearing trees noted.

INCIDENTAL EPBC SIGHTINGS
-

Geology, landform and other notes

Geology mapping:	DNRM (2002 & 2005) Geological Survey of QLD, SEQLD Region Geoscience Data Set/GCCC 2005 Geological inventory of the goldcoast
Geology code and rock types:	Qha/2. ALLUVIAL AND COLLUVIAL DEPOSITS. Second river terrace; sand, silt, clay gravel
Landform:	Flat
Field observation and notes:	Similar to the adjacent T2 site although Eucalyptus tereticornis is the co-dominate canopy species along with Eucalyptus siderophloia. Mapped extent of RE12.3.11 is slightly inaccurate with RE12.3.5 more reflective of the southern portions of Herses Park which lacks a Eucalypt canopy layer and is dominated by Melaleuca quinquenervia.
Landzone:	3

Applied RE code

RE code:	As mapped. RE12.3.11 – Eucalyptus tereticornis +/- Eucalyptus siderophloia, Corymbia intermedia open forest on alluvial plains usually near coast although the mapping extent of the RE community is slightly inaccurate.

Images

Typical Remnant RE12.3.11 of the site

Typical Remnant RE12.3.11 of the site

Typical Remnant RE12.3.11 of the site

Area mapped as RE12.3.11 although is more reflective of RE12.3.5

SITE FORM **FIELD SITE EPBC MEANDER/INSPECTION FOR THREATENED SPECIES & COMMUNITIES. RE CONFIRM.**

Location

Site No. T4 **Recorder:** TR **Date:** 11-2-19

Purpose COOMERA CONNECTOR EPBC FLORA/COMMUNITY SEARCHES. COMMUNITY RE CODING/CHECKING. NATIVE FLORA SPECIES LIST COMPILATION.

Location: **Paperbark Forest of Herses Park – within and surrounding Lot 999 SP233860**

GPS coordinates centre plot/meander: **Zone** 56 **E** 519989 **N** 6936600 **Datum:** MGA94z56

Vegetation structure

Stratum	Est.Height interval	Est. cover density (D,M,S,V)
E	18-24m	S
T1	10-18m	D-M
T2	4-8m	S
S1	2-4m	S
G	<2m	D

Structural formation: (including height)
Mid-high to tall open forest

Ecologically dominant layer: T1

Refer Walker & Hopkins 1998 Tables 14a, 15 &

THREATENED FLORA OR COMMUNITY	PRESENT?
EPBC THREATENED FLORA SPECIES	No
POTENTIAL KOALA HABITAT	No
EPBC LOWLAND RAINFOREST TEC	No
EPBC COASTAL SWAMP OAK FOREST TEC	No

INCIDENTAL EPBC SIGHTINGS

-

OTHER COMMENTS

Likely Amphibian habitat during wet period.

Plant species

Record relative dominance for each stratum;
d – dominant; ***c*** – codominant; ***a*** – associated; ***s*** – suppressed.

Str.	Rel. dom	Scientific Name
T1	D	Melaleuca quinquenervia
E/T1	S	Eucalyptus tereticornis
T1	S	Eucalyptus siderophloia
T1	S	Eucalyptus seeana
T2	S	Lophostemon suaveolens
T2	S	Melicope elleryana
T2	S	Callistemon salignus
T2/S1	S	Acacia spp (A. disparrima, A. melanoxylon, A. fimbriata)
T2	S	Casuarina glauca
T2	S	Jagera pseudorhus
T2	S	Glochidion Sumatranum, G. ferdinandi
S/G	S	Parsonsia straminea
S1	S	Lantana camara
S1	S	Breynia oblongifolia
S1	S	Leptostermum spp.
S1	S	Macaranga tanarius
S1	S	Cupaniopsis anacardioides
S1	S	Trema tomentosa
S1	S	Archontophoenix cunninghamiana
G	S	Pratian purpurascens
G	A	Phragmites australis
G	A	Typha orientalis
G	S	Lomandra longifolia, L. hystrix
G	C	Exotic grasses (Chloris gayana, Cynodon dactylon, Setaria spp., Panicum maximum, Paspalum spp., Anoxopus compressus).
G	A	Blechnum indicum
G	S	Ottochloa gracillima
G	A	Oplismenus aemulus
G	S	Cyperus spp.
G	S	Juncus spp.
G	S	Persicaria attenuata, P. decipiens
G	S	Dianella caerulea
G	C	Sphagneticola trilobata
G	S	Eclipta prostrata
G	S	Ludwigia spp.
G	S	Cuphea carthagenesis
G	S	Centella asiatica
G	S	Ageratina adenophora
G	S	Ageratum houstonianum
G	S	Eleocharis spp.
G	S	Alternanthera denticulata
G	S	Pteridium esculentum
G	S	Solanum mauritianum

Geology, landform and other notes

Geology mapping:	DNRM (2002 & 2005) Geological Survey of QLD, SEQLD Region Geoscience Data Set/GCCC 2005 Geological inventory of the goldcoast
Geology code and rock types:	Qha/2. ALLUVIAL AND COLLUVIAL DEPOSITS. Second river terrace; sand, silt, clay gravel
Landform:	Flat with several drainage lines and depressed areas subject to ponding.
Field observation and notes:	Scattered emergent E. tereticornis occurring. Ground layer is the dominant layer which primarily contains exotic grasses and Typha/Phragmites. Singapore Daisy dominates the understory within the western areas of the mapped RE community. Small boardwalk occurs along the access track over a small drainage line which was dry at the time of survey. Ground ranging from wet to dry underfoot depending upon channelling and ponding. Swamp Forest.
Landzone:	3

Applied RE code

RE code:	As mapped. RE12.3.5 – Melaleuca quinquenervia open forest on coastal alluvium

Images

Typical Remnant RE12.3.5 of the site

Typical Remnant RE12.3.5 of the site

Singapore Daisy dominates the western sections

Boardwalk occurring along the access track

SITE FORM **FIELD SITE EPBC MEANDER/INSPECTION FOR THREATENED SPECIES & COMMUNITIES. RE CONFIRM.**

Location

Site No. T5 **Recorder:** TR **Date:** 11-2-19

Purpose COOMERA CONNECTOR EPBC FLORA/COMMUNITY SEARCHES. COMMUNITY RE CODING/CHECKING. NATIVE FLORA SPECIES LIST COMPILATION.

Location: **Large lake within Herses Drainage Reserve west of Palm Lake Resort and South of Eagleby Road, Eagleby**

GPS coordinates centre plot/meander: **Zone** 56 **E** 520669 **N** 6937501 **Datum:** MGA94z56

Vegetation structure

Stratum	Est.Height interval	Est. cover density (D,M,S,V)
E	~22m	S
T1	6-12m	D-M
T2	4-6m	S
S1	2-4m	S
G	0-2m	D

Structural formation: (including height)
Mid-high to tall open forest – Open Water

Ecologically dominant layer: G

Refer Walker & Hopkins 1998 Tables 14a, 15 &

THREATENED FLORA OR COMMUNITY	PRESENT?
EPBC THREATENED FLORA SPECIES	No
POTENTIAL KOALA HABITAT	No
EPBC LOWLAND RAINFOREST TEC	No
EPBC COASTAL SWAMP OAK FOREST TEC	No

INCIDENTAL EPBC SIGHTINGS

Common Greenshank, Red-necked Avocet, Black-winged Stilt, White-bellied Sea-eagle, Lathams Snipe, Cattle Egret, Glossy Ibis, Rainbow Bee-eater.

OTHER COMMENTS

Hollow Bearing Tree.

Plant species

Record relative dominance for each stratum;
d – dominant; ***c*** – codominant; ***a*** – associated; ***s*** – suppressed.

Str.	Rel. dom	Scientific Name
T1	D	Melaleuca quinquenervia (abundant along lake fringe)
E	S	Eucalyptus tereticornis (large tree proximate to Eagleby Road containing hollows)
T1	S	Pinus elliottii (along eastern fringes)
T2	S	Callistemon salignus
T2/S1	S	Acacia spp
T2	S	Casuarina glauca
T2	S	Macaranga tanarius
T2	S	Cinnamomum camphora
T2	S	Glochidion sumatranum
S/G	S	Parsonsia straminea
S1	S	Lantana camara
G	A	Phragmites australis
G	C	Typha orientalis (large clumps dominates in areas)
G	C	Exotic grasses (Cynodon dactylon, Setaria spp., Panicum maximum, Paspalum spp., Anoxopus compressus) [adundant along northern fringe]
G	S	Philydrum lanuginosum
G	S	Schoenoplectus spp.
G	S	Ottochloa gracillima
G	S	Sporobolus virginicus
G	S	Oplismenus aemulus
G	S	Cyperus spp.
G	S	Juncus spp.
G	S	Persicaria attenuata, P. decipiens
G	S	Ludwigia spp.
G	S	Cuphea carthagenesis
G	S	Eleocharis spp.
G	S	Alternanthera denticulata
G	S	Solanum mauritianum

Geology, landform and other notes

Geology mapping:	DNRM (2002 & 2005) Geological Survey of QLD, SEQLD Region Geoscience Data Set/GCCC 2005 Geological inventory of the goldcoast
Geology code and rock types:	Qha/2. ALLUVIAL AND COLLUVIAL DEPOSITS. Second river terrace; sand, silt, clay gravel
Landform:	Flat
Field observation and notes:	Lake largely dried out due to the lack of recent rainfall resulting in significant areas of exposed mud. Vegetation limited to the fringes which was dominated by exotic grasses, typha and phragmites within the lower strata. Paperbarks dominated the small tree layer, in particularly along the southern fringe. A drainage channel occurs in the northwestern corner of the lake which connects to the Albert River. It is noted that the channel was dry at the time of survey due to the low levels of the lake. A large number of waterbirds was noticed utilising the lake which included several EPBC listed Marine and/or Migratory species. A large White-bellied Sea-eagle and 2 Black Kites were recorded above the lake. Two dead Pelicans were recorded on the lake.
Landzone:	3

Applied RE code

RE code:	As mapped RE12.3.8 – Swamps with Cyperus spp., Schoenoplectus spp. and Eleocharis spp. RE12.3.5 – Melaleuca quinquenervia open forest on coastal alluvium along the southern edges of the lake

Images

Large lake within Herses Drainage Reserve

Large lake within Herses Drainage Reserve

Northern fringes dominated by exotic grasses

Southern fringes reflective of RE12.3.5

SITE FORM **FIELD SITE EPBC MEANDER/INSPECTION FOR THREATENED SPECIES & COMMUNITIES. RE CONFIRM.**

Location

Site No. CC-T23 **Recorder:** TR/LT **Date:** 16.10.19

Purpose COOMERA CONNECTOR EPBC FLORA/COMMUNITY SEARCHES. COMMUNITY RE CODING/CHECKING. NATIVE FLORA SPECIES LIST COMPILATION.

Location: **Corner of Cairns St and Beenleigh -Redland Bay Rd, Loganholme – within and surrounding Lots 38 & 39 on RP88336**

GPS coordinates centre plot/meander: **Zone** 56 **E** 518333 **N** 6938880 **Datum:** MGA94z56

Vegetation structure

Stratum	Est.Height interval	Est. cover density (D,M,S,V)
E	-	-
T1	12-16m	D-M
T2	4-6m	S
S1	2-4m	S
G	<2m	D

Structural formation: (including height)
Tall open forest-forest

Ecologically dominant layer: T1

Refer Walker & Hopkins 1998 Tables 14a, 15 &

THREATENED FLORA OR COMMUNITY	PRESENT?
EPBC THREATENED FLORA SPECIES	No
POTENTIAL KOALA HABITAT	Yes
EPBC LOWLAND RAINFOREST TEC	No
EPBC COASTAL SWAMP OAK FOREST TEC	No
EPBC COASTAL FLOODPLAIN EUCALYPT FOREST TEC	Potential north of Lot 38

INCIDENTAL EPBC SIGHTINGS
Koala

OTHER COMMENTS
Some Hollow Bearing Trees noted Crows nest in large Blue Gum Fox Den Ibis carcasses

Plant species

Record relative dominance for each stratum;
d – dominant; ***c*** – codominant; ***a*** – associated; ***s*** – suppressed.

Str.	Rel. dom	Scientific Name
T1	A	Eucalyptus tereticornis
T1	D	Corymbia intermedia
T1	D	Eucalyptus siderophloia
T1	S	Eucalyptus carnea
T1	S	Melaleuca bracteata
T1	S	Lophostemon suaveolens
T1	D	Corymbia citriodora
T1	S	Corymbia henryi
T2	S	Corymbia torelliana
T2	S	Alphitonia excelsa
T2	S	Lophostemon confertus
T2	S	Pinus elliottii
T2	S	Melaleuca linariifolia
T2	S	Euclyptus microcorys (single tree along cairns street)
T2/S1	S	Callistemon salignus, Callistemon viminalis
T2/S1	A	Acacia spp (A. disparrima, A. leiocalyx, A. podalyriifolia)
S/G	A	Parsonsia straminea (smothering trees and shrubs)
S1	S	Grevillea robusta
S1	S	Cinnamomum camphora
S1	S	Syzygium oleosum
S1	D	Lantana camara (large patches in areas)
S1	S	Schefflera actinophylla
S1	S	Koelreuteria paniculata
S1	S	Cupaniopsis anacardioides
S1	S	Senna pendula var. glabrata
S1	S	Epidendrum ibaguense
S1	S	Solanum torvum
G	A	L. filiformis, L. hystrix
G	D	Exotic grasses (Setaria viridis. Chloris gayana, Megathyrsus maximus, Paspalum spp., Anoxopus compressus).
G	A	Ottochloa gracillima
G	S	Asparagus aethiopicus
G	S	Ochna serrulata
G	S	Juncus spp.
G	S	Nephrolepis exaltata (dense patch near ornamental plantings)
G	S	Goodenia rotundifolia
G	A	Sphagneticola trilobata
G	S	Entolasia stricta
G	S	Pteridium esculentum
G	S	Kalanchoe daigremontiana

Geology, landform and other notes

Geology mapping:	DNRM (2002 & 2005) Geological Survey of QLD, SEQLD Region Geoscience Data Set/GCCC 2005 Geological inventory of the goldcoast
Geology code and rock types:	Qha/2. ALLUVIAL AND COLLUVIAL DEPOSITS. Second river terrace; sand, silt, clay gravel DCf. Neranleigh-Fernvale beds. Mudstone, shale, arenite, chert, jasper, basic metavolcanics, pillow lava,
Landform:	Predominantly flat with gradual decline towards the north-east, and drainage line.
Field observation and notes:	Non/remnant/disturbed areas within centre of site, probably where house previously situated, rubbish and debris. Ornamental species noted: Schefflera arboricola, Dypsis lutescens, Mangifera indica, Ficus benjamina, Syagrus romanzoffiana, Elymus repens, Megathyrsus maximus, Murraya paniculate, Philodendron bipinnatifidum, Bougainvillea spp.Lots to the north may have potential Draft EPBC Coastal Floodplain Eucalypt Forest TEC. Adult Male Koala and other evidence of koala use across the site.
Landzone:	9-10

Applied RE code

RE code:	As mapped. RE12.9-10.17b – Eucalyptus acmenoides, E. major, E. siderphloia +/- Corymbia citriodora subsp. variegata open forest on sedimentary rocks Non-remnant/disturbed areas within the centre of both lots

Images

RE 12.9-10.17b within western portion of site

Non-Remnant Vegetation/Ornamental plantings/rubbish & debris within centre of site

RE12.9-10-17b within eastern portion of site

SITE FORM **FIELD SITE EPBC MEANDER/INSPECTION FOR THREATENED SPECIES & COMMUNITIES. RE CONFIRM.**

Location

Site No. CC-T24 **Recorder:** TR/LT **Date:** 16.10.19

Purpose COOMERA CONNECTOR EPBC FLORA/COMMUNITY SEARCHES. COMMUNITY RE CODING/CHECKING. NATIVE FLORA SPECIES LIST COMPILATION.

Location: **Road Reserve Corner of Beenleigh-Redland Bay Rd and Mount Cotton Rd – adjacent lot 63 on SP164836**

GPS coordinates centre plot/meander: **Zone** 56 **E** 522472 **N** 6938676 **Datum:** MGA94z56

Vegetation structure

Stratum	Est.Height interval	Est. cover density (D,M,S,V)
E	-	-
T1	12-16m	D-M
T2	4-6m	S
S1	2-4m	S
G	<2m	D

Structural formation: (including height)
Tall open forest-forest

Ecologically dominant layer: T1

Refer Walker & Hopkins 1998 Tables 14a, 15 &

THREATENED FLORA OR COMMUNITY	PRESENT?
EPBC THREATENED FLORA SPECIES	No
POTENTIAL KOALA HABITAT	Yes
EPBC LOWLAND RAINFOREST TEC	No
EPBC COASTAL SWAMP OAK FOREST TEC	No
EPBC COASTAL FLOODPLAIN EUCALYPT FOREST DRAFT TEC	Potential external CC- east

INCIDENTAL EPBC SIGHTINGS
Koala Scratches

OTHER COMMENTS
Some Hollow Bearing Trees noted.

Plant species

Record relative dominance for each stratum;
d – dominant; ***c*** – codominant; ***a*** – associated; ***s*** – suppressed.

Str.	Rel. dom	Scientific Name
T1	D	Eucalyptus propinqua
T1	S	Melaleuca quinquenervia
T1	A	Eucalyptus tereticornis
T1	D	Eucalyptus siderophloia
T1	S	Eucalyptus seeana
T1	D	Corymbia intermedia
T1	A	Corymbia citriodora
T1	S	Melalueca bracteata
T2	S	Lophostemon confertus
T2	S	Melaleuca linariifolia
T2	S	Allocasuarina littoralis (dominant in patch along Beenleigh-Redland Bay Rd)
T2	S	Corymbia torelliana
T2	S	Lophostemon suaveolens
T2	S	Callistemon viminalis
T2/S1	A	Acacia spp (A. disparrima,A. melanoxylon, A. fimbriata, A. concurrens)
S1	S	Syagrus romanzoffiana
S1	S	Koelreuteria paniculata
S/G	A	Parsonsia straminea (smothering trees and shrubs)
S1	A	Petalostigma triloculare
S1	S	Schefflera actinophylla
S1	A	Lantana camara
S1	S	Cupaniopsis anacardioides
S1	S	Acacia concurrens
S1	S	Epidendrum ibaguense (large patch along Beenleigh-Redland Bay Rd)
S1	S	Murraya paniculata
S1	S	Senna pendula var. glabrata
G	A	Lomandra. filiformis
G	D	Exotic grasses (Elymus repens, Megathyrsus maximus, Pennisetum clandestinum)
G	S	Asparagus aethiopicus
G	A	Goodenia rotundifolia
G	S	Brachychiton acerifolius
G	S	Crassocephalum crepidioides
G	S	Ottochloa gracillima
G	S	Goodenia rotundifolia
G	S	Breynia oblongifolia
G	S	Eusterphus latifolius
G	S	Ochna serrulata
G	S	Leucopogon juniperinus
G	S	Passiflora edulis
G	S	Kalanchoe daigremontiana
G	S	Entolasia stricta
G	S	Smilax australis
G	S	Ipomoea indica
G	S	Dianella caerulea
G	S	Ageratum houstonianum
G	S	Nephrolepis exaltata

Geology, landform and other notes

Geology mapping:	DNRM (2002 & 2005) Geological Survey of QLD, SEQLD Region Geoscience Data Set/GCCC 2005 Geological inventory of the goldcoast
Geology code and rock types:	DCf. Neranleigh-Fernvale beds. Mudstone, shale, arenite, chert, jasper, basic metavolcanics, pillow lava, conglomerate.
Landform:	Generally flat with steep slope down to Beenleigh-Redland Bay Rd.
Field observation and notes:	Approximately 50m of roadside along Beenleigh-Redland Bay Rd dominated by Allocasuarina littoralis
Landzone:	11

Applied RE code

RE code:	As mapped. RE12.11.5 – Corymbia citriodora subsp. variegata woodland to open forest +/- Eucalyptus siderophloia /E. crebra, E. carnea, E. acmenoides, E. propinqua on metamorphics +/- interbedded volcanics

Images

RE12.11.5 Eastern portion of the site.

~50m linear patch within road reserve along Beenleigh-Redland Bay Rd dominated by Allocasuarina littoralis

RE 12.11.5 western portion of site, within road reserve along Beenleigh-Redland Bay Rd

SITE FORM **FIELD SITE EPBC MEANDER/INSPECTION FOR THREATENED SPECIES & COMMUNITIES. RE CONFIRM.**

Location

Site No. CC-T25 **Recorder:** TR/LT **Date:** 16.10.19

Purpose COOMERA CONNECTOR EPBC FLORA/COMMUNITY SEARCHES. COMMUNITY RE CODING/CHECKING. NATIVE FLORA SPECIES LIST COMPILATION.

Location: **Road Reserve, Mount Cotton Road, Carbrook – adjacent lot 1 on RP163853**

GPS coordinates centre plot/meander: **Zone** 56 **E** 522591 **N** 6938826 **Datum:** MGA94z56

Vegetation structure

Stratum	Est.Height interval	Est. cover density (D,M,S,V)
E	-	-
T1	12-16m	D-M
T2	4-6m	S
S1	2-4m	S
G	<2m	D

Structural formation: (including height)
Tall open forest-forest

Ecologically dominant layer: T1

Refer Walker & Hopkins 1998 Tables 14a, 15 &

THREATENED FLORA OR COMMUNITY	PRESENT?
EPBC THREATENED FLORA SPECIES	No
POTENTIAL KOALA HABITAT	marginal
EPBC LOWLAND RAINFOREST TEC	No
EPBC COASTAL SWAMP OAK FOREST TEC	No
EPBC COASTAL FLOODPLAIN EUCALYPT FOREST TEC	Potential within lot

INCIDENTAL EPBC SIGHTINGS

-

OTHER COMMENTS

Some Hollow Bearing Trees noted.
Arboreal termite mound

Plant species

Record relative dominance for each stratum;
d – dominant; ***c*** – codominant; ***a*** – associated; ***s*** – suppressed.

Str.	Rel. dom	Scientific Name
T1	A	Melaleuca quinquenervia (dominant within the lot and around dam)
T1	A	Eucalyptus tereticornis
T1	A	Eucalyptus siderophloia
T1	S	Corymbia intermedia
T1	S	Corymbia citriodora
T1	S	Allocasuarina littoralis
T2	S	Lophostemon confertus
T2	S	Lophostemon suaveolens
T2	S	Callistemon salignus
T2	S	Glochidion Sumatranum,
T2	S	Syagrus romanzoffiana
S/G	A	Parsonsia straminea (smothering trees and shrubs)
S1	S	Alphitonia excelsa
S1	A	Lantana camara (dense patches in areas)
S1	S	Acacia. disparrima
S1	S	Koelreuteria paniculata
G	A	Lomandra longifolia, L. filiformis
G	D	Exotic grasses (Chloris gayana, Setaria viridis).
G	A	Lepidosperma laterale
G	S	Asparagus aethiopicus
G	S	Ottochloa gracillima
G	S	Eustrephus latifolius
G	S	Entolasia stricta
G	S	Dianella caerulea
G	S	Sphagneticola trilobata (dominant around dam)
G	S	Cyperus spp.
G	S	Persicaria attenuata
G	S	Senna pendula var. glabrata
G	S	Persicaria decipiens
G	S	Ageratum houstonianum (dominant around dam)
G	S	Nymphaea caerulea (dam area)
G	S	Philydrum lanuginosum (dam area)

Geology, landform and other notes

Geology mapping:	DNRM (2002 & 2005) Geological Survey of QLD, SEQLD Region Geoscience Data Set/GCCC 2005 Geological inventory of the goldcoast
Geology code and rock types:	Qha/2. ALLUVIAL AND COLLUVIAL DEPOSITS. Second river terrace; sand, silt, clay gravel DCf. Neranleigh-Fernvale beds. Mudstone, shale, arenite, chert, jasper, basic metavolcanics, pillow lava, conglomerate.
Landform:	Steep Slope from Mount Cotton Road to east. Dam and drainage lines within lots to east.
Field observation and notes:	Road reserve recently cleared, mulch on ground. Dam within lot suitable for common amphibian and waterfowl, Species noted around the dam: Nymphaea caerulea, Philydrum lanuginosum, Melaleuca quinquenerva, Sphagneticola trilobata, Ageratum houstonianum
Landzone:	11/3

Applied RE code

RE code:	Road Reserve mapped. RE12.11.27 – Eucalyptus racemosa subsp. racemose and/or E.seeana and Corymbia intermedia woodland on metamorphics +/- interbedded volcanics Lot mapped as RE12.3.11 - Eucalyptus tereticornis +/- Eucalyptus siderophloia, Corymbia intermedia open forest on alluvial plains usually near coast; and RE12.3.6 - Melaleuca quinquenervia +/- Eucalyptus tereticornis, Lophostemon suaveolens, Corymbia intermedia open forest on coastal alluvial plains

Images

Mapped RE 12.11.27 on western side of Mount Cotton Road, absent understorey, road reserve has been cleared

RE12.11.27 on eastern side of Mount Cotton Road, portions within road reserve cleared

	
RE12.11.27 within the road reserve	RE12.3.11 within the road reserve & within lots


Dam within the lot and Mapped RE12.3.6

SITE FORM **FIELD SITE EPBC MEANDER/INSPECTION FOR THREATENED SPECIES & COMMUNITIES. RE CONFIRM.**

Location

Site No. CC-T26 **Recorder:** TR/LT **Date:** 16.10.19

Purpose COOMERA CONNECTOR EPBC FLORA/COMMUNITY SEARCHES. COMMUNITY RE CODING/CHECKING. NATIVE FLORA SPECIES LIST COMPILATION.

Location: **Road Reserve along Mount Cotton Road, Carbrook – adjacent lot 1 on RP139922**

GPS coordinates centre plot/meander: **Zone** 56 **E** 522566 **N** 693756 **Datum:** MGA94z56

Vegetation structure

Stratum	Est.Height interval	Est. cover density (D,M,S,V)
E	-	-
T1	12-16m	D-M
T2	4-6m	S
S1	2-4m	S
G	<2m	D

Structural formation: (including height)
Tall open forest-forest

Ecologically dominant layer: T1

Refer Walker & Hopkins 1998 Tables 14a, 15 &

THREATENED FLORA OR COMMUNITY	PRESENT?
EPBC THREATENED FLORA SPECIES	No
POTENTIAL KOALA HABITAT	Yes
EPBC LOWLAND RAINFOREST TEC	No
EPBC COASTAL SWAMP OAK FOREST TEC	No
EPBC COASTAL FLOODPLAIN EUCALYPT FOREST TEC	Potential RE12.3.11

INCIDENTAL EPBC SIGHTINGS
Evidence of Koala use (Scratches)

OTHER COMMENTS
Some Hollow Bearing Trees noted. Glider chew marks

Plant species

Record relative dominance for each stratum;
d – dominant; ***c*** – codominant; ***a*** – associated; ***s*** – suppressed.

Str.	Rel. dom	Scientific Name
T1	S	Eucalyptus tereticornis
T1	D	Eucalyptus siderophloia
T1	A	Eucalyptus propinqua
T1	D	Corymbia intermedia
T1	S	Corymbia citriodora
T1	A	Melaleuca quinquenervia (increasing dominance within lots, along drainage line)
T2	S	Lophostemon suaveolens
T2	S	Callistemon salignus
T2	S	Araucaria bidwillii
T2	S	Archontophoenix cunninghamiana
S1	S	Acacia disparrima
S/G	A	Parsonsia straminea (smothering trees and shrubs)
S/G	A	Neonotonia wightii (Smothering trees and shrubs)
S1	S	Schefflera actinophylla
S1	S	Cupaniopsis anacardioides
S1	S	Grevillea robusta
S1	S	Cinnamomum camphora
G	A	Lomandra hystrix
G	D	Exotic grasses (Melinis, munutiflora, Panicum maximum, Paspalum spp.)
G	S	Ipomoea cairica
G	S	Crassocephalum crepidioides
G	S	Eclipta prostrata
G	S	Philodendron bipinnatifidum
G	S	Maclura cochinchinensis
G	S	Solanum torvum

Geology, landform and other notes

Geology mapping:	DNRM (2002 & 2005) Geological Survey of QLD, SEQLD Region Geoscience Data Set/GCCC 2005 Geological inventory of the goldcoast
Geology code and rock types:	DCf. Neranleigh-Fernvale beds. Mudstone, shale, arenite, chert, jasper, basic metavolcanics, pillow lava, conglomerate
Landform:	Road Reserve steep slope from Mount Cotton Road, Drainage line along the boundary of two lots.
Field observation and notes:	Hollow bearing trees available, evidence of koala use, glider chew marks, drainage line through lots, melaleuca quinqenervia increasing dominance with corymbia citriodora within lower lying areas within the lot and around the dam within the adjacent lot. Potential EPBC Coastal Floodplain Eucalypt Forest TEC, within lots- do not have access.
Landzone:	11/3

Applied RE code

RE code:	Road Reserve mapped as. RE12.11.27 – Eucalyptus racemosa subsp. racemosa and/or E. seeana and Corymbia intermedia woodland on metamorphics +/- interbedded volcanics RE 12.3.11 - Eucalyptus tereticornis +/- Eucalyptus siderophloia, Corymbia intermedia open forest on alluvial plains usually near coast

Images

RE12.3.11 within road reserve and looking eastward into the residential lot

RE12.3.11 within road reserve

Mapped 12.11.27 from road reserve

SITE FORM **FIELD SITE EPBC MEANDER/INSPECTION FOR THREATENED SPECIES & COMMUNITIES. RE CONFIRM.**

Location

Site No. CC-T27 **Recorder:** TR/LT **Date:** 16.10.19

Purpose COOMERA CONNECTOR EPBC FLORA/COMMUNITY SEARCHES. COMMUNITY RE CODING/CHECKING. NATIVE FLORA SPECIES LIST COMPILATION.

Location: **Riparian Area of Logan River - Skinners Park, Carbrook- adjacent Lot 1 on RP92841**

GPS coordinates centre plot/meander: **Zone** 56 **E** 522254 **N** 6938240 **Datum:** MGA94z56

Vegetation structure

Stratum	Est.Height interval	Est. cover density (D,M,S,V)
E	>16m	D
T1	12-16m	D-M
T2	4-6m	S
S1	2-4m	S
G	<2m	D

Structural formation: (including height)
Tall open forest-forest

Ecologically dominant layer: T1

Refer Walker & Hopkins 1998 Tables 14a, 15 &

THREATENED FLORA OR COMMUNITY	PRESENT?
EPBC THREATENED FLORA SPECIES	No
POTENTIAL KOALA HABITAT	No
EPBC LOWLAND RAINFOREST TEC	No
EPBC COASTAL SWAMP OAK FOREST TEC	No
EPBC COASTAL FLOODPLAIN EUCALYPT FOREST TEC	No

INCIDENTAL EPBC SIGHTINGS
-

OTHER COMMENTS
Hollows present

Plant species

Record relative dominance for each stratum;
d – dominant; ***c*** – codominant; ***a*** – associated; ***s*** – suppressed.

Str.	Rel. dom	Scientific Name
T1	S	Melaleuca quinquenervia
E/T1	D	Eucalyptus tereticornis
E/T1	D	Eucalyptus siderophloia
T1	S	Corymbia citriodora
T2	S	Schefflera actinophylla
T2	S	Araucaria bidwillii
T2	S	Syragrus romanzoffiana
T2	D	Ficus obliqua
T2	S	Melaleuca bracteata
T2	S	Tipuana tipu
S1	S	Cupaniopsis anacardioides
S1	S	Senna pendula var. glabarata
S1	S	Schefflera arboricola
S1	S	Murraya paniculata
S1	S	Lantana camara
S1	D	Syzygium luehmannii
S1	A	Avicennia marina (dominant in riparian area)
G	S	Phragmites australis
G	A	Sporobolus virginicus
G	D	Exotic grasses (Elymus repens, Megathyrsus maximus)
G	A	Agave Americana (ornamental planting)
G	S	Bromeliaceae spp.
G	S	Liriope spp.
G	S	Doryanthes excelsa
G	S	Passiflora edulis
G	S	Syngonium podophyllum
G	S	Philodendron bipinnatifidum
G	S	Austromyrtus dulcis
G	S	Sphagneticola trilobata
G	S	Asparagus aethiopicus
G	S	Nephrolepis exaltata

Geology, landform and other notes

Geology mapping:	DNRM (2002 & 2005) Geological Survey of QLD, SEQLD Region Geoscience Data Set/GCCC 2005 Geological inventory of the goldcoast
Geology code and rock types:	Residential lot: Qha/2. ALLUVIAL AND COLLUVIAL DEPOSITS. Second river terrace; sand, silt, clay gravel conglomerate Skinners Park: DCf. Neranleigh-Fernvale beds. Mudstone, shale, arenite, chert, jasper, basic metavolcanics, pillow lava,
Landform:	Gentle slope towards Logan River
Field observation and notes:	Ornamental plantings within the lot and park area with native canopy Riparian area along logan river, narrow dominated by grey mangrove, Avicennia marina
Landzone:	1

Applied RE code

RE code:	As mapped. RE12.1.3 – Mangrove shrubland to low closed forest on marine clay plains and estuaries Non-remnant within lot and park area

Images

Skinners Park looking towards CC alignment footprint

Non-remnant Native canopy, mangroves and ornamental species within residential lot

RE12.1.3 within riparian area along Logan River

SITE FORM **FIELD SITE EPBC MEANDER/INSPECTION FOR THREATENED SPECIES & COMMUNITIES. RE CONFIRM.**

Location

Site No. CC-T28 **Recorder:** TR/LT **Date:** 16.10.19

Purpose COOMERA CONNECTOR EPBC FLORA/COMMUNITY SEARCHES. COMMUNITY RE CODING/CHECKING. NATIVE FLORA SPECIES LIST COMPILATION.

Location: **Eagleby Wetlands, accessed by River Hills Rd and Sueinnes Street, Eagleby – lot 999 on SP191992**

GPS coordinates centre plot/meander: **Zone** 56 **E** 522859 **N** 6935417 **Datum:** MGA94z56

Vegetation structure

Stratum	Est.Height interval	Est. cover density (D,M,S,V)
E	15-18m	S
T1	8-15m	M-S
T2	4-8m	S
S1	1.5-4m	S
G	<1.5m	D

Structural formation: (including height)
Mid-high to tall woodland

Ecologically dominant layer: G

Refer Walker & Hopkins 1998 Tables 14a, 15 &

THREATENED FLORA OR COMMUNITY	PRESENT?
EPBC THREATENED FLORA SPECIES	No
POTENTIAL KOALA HABITAT	Limited. Area fragmented.
EPBC LOWLAND RAINFOREST TEC	No
EPBC COASTAL SWAMP OAK FOREST TEC	No. Too disturbed and dominated by weeds.
EPBC COASTAL FLOODPLAIN EUCALYPT FOREST TEC	No

INCIDENTAL EPBC SIGHTINGS

Great Egret

OTHER COMMENTS

-

Plant species

Record relative dominance for each stratum;
d – dominant; ***c*** – codominant; ***a*** – associated; ***s*** – suppressed.

Str.	Rel. dom	Scientific Name
E/T2	S	*Eucalyptus tereticornis*
T1	S	*Corymbia citriodora*
T1/T2	C-S	*Casuarina glauca*
T2	S	*Aviennia marina*
T2	S	*Aegiceras corniculatum*
S1	S	*Excoecaria agallocha*
T2	S	*Cupaniopsis anacardioides*
S1	S	*Mallotus philippensis*
T2	S	*Alphitonia excelsa*
T2/S1	S	*Acacia disparrima, A. melanoxylon*
S1	S	*Melaleuca bracteata*
T2	S	*Macaranga tanarius*
S1	S	*Persoonia stradbrokensis*
S1	S	*Callistemon viminalis*
S1	S	*Suaeda australis*
S1	S	*Schinus terebinthifolia*
G	D	Exotic grasses (*Megathyrsus maximus, Setaria sphacelata, Chloris gayana, Eragrostis spp., Cynodon dactylon*)
G	A-S	Exotic weeds (*Lantana camara, Ageratum houstonianum, Conzya bonaeriensis, Bidens pilosa, Ageratina adenophora, Phytolacca octandra, Cirsium vulgare, Solanum spp.*)
G	S	*Lomandra longifolia*
G/S1	S	*Legnephora moorei, Parsonsia straminea*
G	S	*Commelina spp.*
G	S	*Cyperus spp.*
G/S1	S	Landscape plantings

Geology, landform and other notes

Geology mapping:	DNRM (2002 & 2005) Geological Survey of QLD, SEQLD Region Geoscience Data Set/GCCC 2005 Geological inventory of the goldcoast
Geology code and rock types:	Qhe-9543 Estuarine channels and banks; sandy mud, muddy sand, minor gravel Qha/2. ALLUVIAL AND COLLUVIAL DEPOSITS. Second river terrace; sand, silt, clay gravel
Landform:	Flat until the banks of Albert River where it drops off
Field observation and notes:	The site adjoins Eagleby Wetlands along the Albert River. Areas within the alignment have been significantly disturbed over the years with mature trees scarce. The occasional *E. tereticornis* and *C. citriodora* was noted, although scarce. The ground layer is dominated by exotic grasses and weeds with some areas of *Casuarina glauca* regrowth occurring. Although not as common as what's on the other side of the river, mangrove and marine plants were noted sporadically along the banks. Areas proximate to the Osprey platform are maintained with landscape plantings.
Landzone:	1/3

Applied RE code

RE code:	Along Albert River mapped. RE12.1.3 – Mangrove shrubland to low closed forest on marine clay plains and estuaries, although the extent of mapping is slightly inaccurate due to the absence of mangroves. Category X_non-remnant for the remaining areas.

Images

SITE FORM **FIELD SITE EPBC MEANDER/INSPECTION FOR THREATENED SPECIES & COMMUNITIES. RE CONFIRM.**

Location

Site No. CC-T29 **Recorder:** TR/LT **Date:** 16.10.19

Purpose COOMERA CONNECTOR EPBC FLORA/COMMUNITY SEARCHES. COMMUNITY RE CODING/CHECKING. NATIVE FLORA SPECIES LIST COMPILATION.

Location: **Road Reserve, Rotary Park Road , between Burows Rd and Gem Court– adjacent Lots 1 & 2 on RP123600**

GPS coordinates centre plot/meander: **Zone** 56 **E** 524449 **N** 6934695 **Datum:** MGA94z56

Vegetation structure

Stratum	Est.Height interval	Est. cover density (D,M,S,V)
E	22-26m	S
T1	14-22m	D-M
T2	3-14m	S
S1	1.5-3m	S
G	<1.5m	D-S

Structural formation: (including height)
Tall to very tall open forest

Ecologically dominant layer: T1

Refer Walker & Hopkins 1998 Tables 14a, 15 &

THREATENED FLORA OR COMMUNITY	PRESENT?
EPBC THREATENED FLORA SPECIES	No
POTENTIAL KOALA HABITAT	Yes
EPBC LOWLAND RAINFOREST TEC	No
EPBC COASTAL SWAMP OAK FOREST TEC	No
EPBC COASTAL FLOODPLAIN EUCALYPT FOREST TEC	No

INCIDENTAL EPBC SIGHTINGS
Cattle Egret

OTHER COMMENTS
Hollow Bearing Trees noted.

Plant species

Record relative dominance for each stratum;
d – dominant; ***c*** – codominant; ***a*** – associated; ***s*** – suppressed.

Str.	Rel. dom	Scientific Name
E/T1	C	*Eucalyptus siderophloia*
T1	S	*E. crebra*
E/T1	A-S	*E. tereticornis*
T1	S	*E. seeana*
T1	C	*Corymbia citriodora*
E/T1	C	*C. intermedia*
T2	S	*C. tessellaris*
T1/T2	A-S	*Lophostemon confertus*
T2	S	*L. suaveolens*
T2	S	*Melaleuca quinquenervia*
T2	S	*Callistemon salignus*
T2	S	*Allocasuarina littoralis*
T2/S1	S	*Acacia disparrima, A. longifolia*
T2	S	*Alphitonia excelsa*
T2	S	*Cupaniopsis anacardioides*
S1	S	*Alyxia ruscifolia*
T2	S	*Corymbia torelliana*
S1	S	*Myrsine variabilis*
S1/G	S-D	*Parsonsia straminea*
G	S	*Leucopogon spp.*
G	S	*Eustrephus latifolius, Smilax australis, Stephania japonica,*
G	S	*Themeda triandra, Cymbopogon refractus, Ottochloa gracillima*
S1	S	*Schefflera actinophylla, Koelreuteria paniculate, Cinnamomum camphora, Syagrus romanzoffiana*
G	A-S	Exotic grasses (*Megathyrsus maximus, Setaria sphacelate, Melinis repens, M. minutiflora, Paspalum spp.*)
G	A-S	Exotic weeds (*Lantana camara, Ochna serrulata, Ageratum houstonianum, Ageratina adenophora, Senna pendula var. glabrata*)
G	S	*Lomandra filiformis, L. confertifolia*
G	S	*Pteridium esculentum*
G	S	*Dianella caerulea*
G	S	*Lepidosperma laterale*

Geology, landform and other notes

Geology mapping:	DNRM (2002 & 2005) Geological Survey of QLD, SEQLD Region Geoscience Data Set/GCCC 2005 Geological inventory of the goldcoast
Geology code and rock types:	DCf. Neranleigh-Fernvale beds. Mudstone, shale, arenite, chert, jasper, basic metavolcanics, pillow lava, conglomerate.
Landform:	The site is flat.
Field observation and notes:	The canopy layer is co-dominated by *Eucalyptus siderophloia*. *Corymbia intermedia* and *C. citriodora* with *Lophostemon confertus* and *E. tereticornis* also common in areas. An ecotone of exotic grasses and weeds occurs along the fringe of the bush and the roads. *Parsonsia straminea* dominates the ground in areas and is commonly noted climbing trees. Given the abundance of *E. siderophloia, C. intermedia* and *C. citriodora* recorded within the canopy layer, mapped RE12.11.5/RE12.11.24 is considered accurate.
Landzone:	11

Applied RE code

RE code:	As mapped. RE12.11.5 – Corymbia citriodora subsp. variegata woodland to open forest +/- Eucalyptus siderophloia/E. crebra, E. carnea, E. acmenoides, E. propinqua on metamorphics +/- interbedded volcanics RE12.11.24 - Eucalyptus carnea, E. tindaliae, Corymbia intermedia +/- E. siderophloia or E. crebra woodland on metamorphics +/- interbedded volcanics

Images

SITE FORM **FIELD SITE EPBC MEANDER/INSPECTION FOR THREATENED SPECIES & COMMUNITIES. RE CONFIRM.**

Location

Site No. CC-T30 **Recorder:** TR/LT **Date:** 16.10.19

Purpose COOMERA CONNECTOR EPBC FLORA/COMMUNITY SEARCHES. COMMUNITY RE CODING/CHECKING. NATIVE FLORA SPECIES LIST COMPILATION.

Location: **Road Reserve, Rotary Park Road, Alberton – Adjacent lot 8 on RP6845**

GPS coordinates centre plot/meander: **Zone** 56 **E** 524486 **N** 6934191 **Datum:** MGA94z56

Vegetation structure

Stratum	Est.Height interval	Est. cover density (D,M,S,V)
E	22-26m	S
T1	14-22m	D-M
T2	3-14m	S
S1	1.5-3m	S
G	<1.5m	D-S

Structural formation: (including height)
Tall to very tall open forest

Ecologically dominant layer: T1

Refer Walker & Hopkins 1998 Tables 14a, 15 &

THREATENED FLORA OR COMMUNITY	PRESENT?
EPBC THREATENED FLORA SPECIES	No
POTENTIAL KOALA HABITAT	Yes
EPBC LOWLAND RAINFOREST TEC	No
EPBC COASTAL SWAMP OAK FOREST TEC	No
EPBC COASTAL FLOODPLAIN EUCALYPT FOREST TEC	No

INCIDENTAL EPBC SIGHTINGS

Scratches indicative of Koalas recorded.

OTHER COMMENTS

Hollow Bearing Trees noted. Dams likely to provide amphibian habitat.

Plant species

Record relative dominance for each stratum;
d – dominant; ***c*** – codominant; ***a*** – associated; ***s*** – suppressed.

Str.	Rel. dom	Scientific Name
E/T1	C	*Eucalyptus siderophloia*
T1	S	*E. crebra*
E/T1	A-S	*E. tereticornis*
T1	S	*E. acmenoides*
T1	C	*Corymbia citriodora*
E/T1	C	*C. intermedia*
T1	S	*Lophostemon confertus*
T2	S	*L. suaveolens*
T2	S	*Melaleuca quinquenervia*
T2	S	*Callistemon salignus*
T2	S	*Allocasuarina littoralis*
T2/S1	S	*Acacia disparrima, A. podalyriifolia*
T2	S	*Alphitonia excelsa*
T2	S	*Cupaniopsis anacardioides*
T2	S	*Glochidion ferdinandii*
S1	S	*Jagera pseudorhus*
G	S	*Breynia oblongifolia*
G	S	*Leucopogon spp.*
G	S	*Parsonsia straminea, Eustrephus latifolius, Smilax australis, Stephania japonica, Geitonoplesium cymosum*
G	S	*Cymbopogon refractus, Ottochloa gracillima, Entolasia stricta*
S1	S	*Schefflera actinophylla, Koelreuteria paniculate, Syagrus romanzoffiana*
G	D-S	*Lantana camara* [dense patches in areas]
G	A-S	Exotic grasses (*Megathyrsus maximus, Setaria sphacelate, Melinis minutiflora, Paspalum spp., Cynodon dacylon*)
G	A-S	Exotic weeds (*Bryophyllum delagoense, Ochna serrulata, Ageratum houstonianum, Asparagus spp., Senna pendula var. glabrata, Solanum spp., Opuntia spp. etc.*)
G	S	*Lomandra filiformis*
G	S	*Pteridium esculentum*
G	S	*Dianella caerulea*
		Around dams (*Centella asiatica, Nymphaea caerulea, Eleaocharis spp., Persicaria spp., Cyperus spp., Pistia stratiotes etc.*)
G	S	*Lepidosperma laterale*

Geology, landform and other notes

Geology mapping:	DNRM (2002 & 2005) Geological Survey of QLD, SEQLD Region Geoscience Data Set/GCCC 2005 Geological inventory of the goldcoast
Geology code and rock types:	DCf. Neranleigh-Fernvale beds. Mudstone, shale, arenite, chert, jasper, basic metavolcanics, pillow lava, conglomerate.
Landform:	The site is flat, gently sloping towards the dams.
Field observation and notes:	The canopy layer is co-dominated by *Eucalyptus siderophloia*. *Corymbia intermedia* and *C. citriodora* with *E. tereticornis* also common in areas. Several areas are dominated by patches of Lantana camara. Two dams were noted further in the property which contained typical aquatic and semi-aquatic species (i.e. water lilys, sedges etc.). Given the abundance of *E. siderophloia*, *C. intermedia* and *C. citriodora* recorded within the canopy layer, mapped areas of RE12.11.5/RE12.11.24 is considered accurate. Category X/non-remnant areas occurs within previously cleared and disturbed areas.
Landzone:	11

Applied RE code

RE code:	As mapped. RE12.11.5 – Corymbia citriodora subsp. variegata woodland to open forest +/- Eucalyptus siderophloia/E. crebra, E. carnea, E. acmenoides, E. propinqua on metamorphics +/- interbedded volcanics RE12.11.24 - Eucalyptus carnea, E. tindaliae, Corymbia intermedia +/- E. siderophloia or E. crebra woodland on metamorphics +/- interbedded volcanics Some areas of Category X / non-remnant.

Images

Site	1	
Location	Eagleby Rd, Lake & Logan River	
Date	1st & 2nd October 2018	
Survey	Dawn / Morning	
Surveyor	BS	
Common name	**Scientific name**	**MNES Status and Marine (Quantity)**
Wood Duck	*Chenonetta jubata*	
Pacific Black Duck	*Anas superciliosa*	
Grey Teal	*Anas gracilis*	
Hardhead	*Aythya australis*	
Australasian Grebe	*Tachybaptus novaehollandiae*	
Crested Pigeon	*Ocyphaps lophotes*	
Shining Bronze-cuckoo	*Chrysococcyx lucidus*	
Purple Swamphen	*Porphyrio melanotus*	
Pied Butcherbird	*Cracticus nigrogularis*	
Australasian Fig Bird	*Malurus lamberti*	
Willie Wagtail	*Rhipidura leucophrys*	
Magpie Lark	*Grallina cyanoleuca*	Marine
Torresian Crow	*Corvus orru*	
Tawny Grassbird	*Megalurus timoriensis*	
Golden-headed Cisticola	*Cisticola exilis*	
Dusky Moorhen	*Gallinula tenebrosa*	
Masked Lapwing	*Vanellus miles*	
Great Cormorant	*Phalacrocoracidae*	
Australian Pelican	*Pelecanus conspicillatus*	Marine
Great Egret	*Ardea alba*	Marine
Black-shouldered Kite	*Elanus axillaris*	
Forest Kingfisher	*Todiramphus macleayii*	Marine
Galah	*Eolophus roseicapilla*	
Noisy Friarbird	*Philemon corniculatus*	
White Breasted Woodswallow	*Artamus leucorynchus*	
Tree Martin	*Petrochelidon nigricans*	
White-necked Heron	*Ardea pacifica*	
Silver Eye	*Zosterops lateralis*	Marine
Little Egret	*Egretta garzetta*	Marine
Red-kneed Dotterel	*Erythrogonys cinctus*	
Pied Stilt	*Himantopus leucocephalus*	Marine
Little Pied Cormorant	*Microcarbo melanoleucos*	
Cattle Egret	*Ardea ibis*	Marine
Glossy Ibis	*Plegadis falcinellus*	Marine Migratory – Bonn (2)
Intermediate Egret	*Ardea intermedia*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Laughing Kookaburra	*Dacelo novaeguineae*	
Sacred Kingfisher	*Todiramphus sanctus*	Marine
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Superb Fairywren	*Malurus cyaneus*	
Brown Honeyeater	*Lichmera indistincta*	
Striated Pardalote	*Pardalotus striatus*	

Rainbow Bee-eater	*Merops ornatus*	Marine
Variegated Fairywren	*Malurus lamberti*	
Red - Backed Fairywren	*Malurus melanocephalus*	
Welcome Swallow	*Hirundo neoxena*	Marine
Black Swan	*Cygnus atratus*	
Chestnut Teal	*Anas castanea*	
Peaceful Dove	*Geopelia placida*	
Australasian Darter	*Anhinga novaehollandiae*	
Pied Currawong	*Strepera graculina*	
Red-necked Avocet	*Recurvirostra novaehollandiae*	Marine
Sharp-tailed Sandpiper	*Calidris acuminata*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA (2)

Summary		
Total number of species		52
Total number of Matters of National Environmental Significance (MNES) species		15
Common name	**Scientific name**	**MNES Status**
Rainbow Bee-eater	*Merops ornatus*	Marine
Magpie Lark	*Grallina cyanoleuca*	Marine
Red-necked Avocet	*Recurvirostra novaehollandiae*	Marine
Australian Pelican	*Pelecanus conspicillatus*	Marine
Great Egret	*Ardea alba*	Marine
Sharp-tailed Sandpiper	*Calidris acuminata*	Marine Migratory – BONN, JAMBA, CAMBA, ROKAMBA
Cattle Egret	*Ardea ibis*	Marine
Forest Kingfisher	*Todiramphus macleayii*	Marine
Silver Eye	*Zosterops lateralis*	Marine
Glossy Ibis	*Plegadis falcinellus*	Marine Migratory - Bonn
Intermediate Egret	*Ardea intermedia*	Marine
Little Egret	*Egretta garzetta*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Sacred Kingfisher	*Todiramphus sanctus*	Marine
Welcome Swallow	*Hirundo neoxena*	Marine

Site	1	
Location	Eagleby Rd, Lake & Logan River	
Date	2nd April 2020	
Survey	Afternoon	
Surveyor	TR	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Pacific Black Duck	*Anas superciliosa*	
Australian Wood Duck	*Chenonetta jubata*	
Grey Teal	*Anas gracilis*	
Eurasian Coot	*Fulica atra*	
Purple Swamphen	*Porphyrio melanotus*	
Dusky Moorhen	*Gallinula tenebrosa*	
Wandering Whistling Duck	*Dendrocygna arcuata*	Marine
Welcome Swallow	*Hirundo neoxena*	Marine
Noisy Miner	*Manorina melanocephala*	
Australasian Darter	*Anhinga novaehollandiae*	
Pied Cormorant	*Phalacrocorax varius*	
Black Swan	*Cygnus atratus*	
Common Myna	*Acridotheres tristis*	
Grey Butcherbird	*Cracticus torquatus*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Masked Lapwing	*Vanellus miles*	
Superb Fairywren	*Malurus cyaneus*	
Australian Magpie	*Cracticus tibicen*	
Golden-headed Cisticola	*Cisticola exilis*	
Sacred Kingfisher	*Todiramphus sanctus*	Marine
Torresian Crow	*Corvus orru*	
Magpie -lark	*Manorina melanocephala*	Marine
Great Egret	*Ardea alba*	Marine
Cattle Egret	*Ardea ibis*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Straw-necked Ibis	*Threskiornis spinicollis*	Marine
Willie – Wagtail	*Rhipidura leucophrys*	

Summary		
Total number of species		27
Total number of Matters of National Environmental Significance (MNES) species		7
Common name	**Scientific name**	**MNES Status**
Welcome Swallow	*Hirundo neoxena*	Marine
Sacred Kingfisher	*Todiramphus sanctus*	Marine
Cattle Egret	*Ardea ibis*	Marine
Straw-necked Ibis	*Threskiornis spinicollis*	Marine
Magpie -lark	*Manorina melanocephala*	Marine
Great Egret	*Ardea alba*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine

Site	1	
Location	Eagle lake Rd, Lake & Logan River	
Date	5th & 6th November 2018	
Survey	Dawn / Morning	
Surveyor	BS	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Pacific Black Duck	*Anas superciliosa*	
Chestnut Teal	*Anas castanea*	
Hardhead	*Aythya australis*	
Australasian Grebe	*Tachybaptus novaehollandiae*	
Crested Pigeon	*Ocyphaps lophotes*	
Pacific Koel	*Eudynamys orientalis*	
Dusky Moorhen	*Gallinula tenebrosa*	
Torresian Crow	*Corvus orru*	
Fairy Martin	*Petrochelidon ariel*	
Brown Quail	*Coturnix ypsilophora*	
Pied Stilt	*Himantopus leucocephalus*	Marine
Little Egret	*Egretta garzetta*	Marine
Sulphur-crested Cockatoo	*Cacatua galerita*	
Variegated Fairywren	*Malurus lamberti*	
Noisy Miner	*Manorina melanocephala*	
Willie Wagtail	*Rhipidura leucophrys*	
Royal Spoonbill	*Platalea regia*	
Australasian Darter	*Anhinga novaehollandiae*	
Mistletoebird	*Dicaeum hirundinaceum*	
Red-backed Fairywren	*Malurus melanocephalus*	
Marsh Sandpiper	*Tringa stagnatilis*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA (2)
Magpie Goose	*Anseranus semipalmata*	Marine
Sharp-tailed Sandpiper	*Calidris acuminata*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA (8)
Rufous Whistler	*Pachycephala rufiventris*	
Red-necked Avocet	*Recurvirostra novaehollandiae*	Marine
Mangrove Gerygone	*Gerygone levigaster*	
Rainbow Bee-eater	*Merops ornatus*	Marine
Great Cormorant	*Phalacrocoracidae*	
Golden Whistler	*Pachycephala pectoralis*	
Rufous Fantail	*Rhipidura rufifrons*	
Australasian Swamphen	*Porphyrio melanotus*	
Welcome Swallow	*Hirundo neoxena*	Marine
White-breasted Woodswallow	*Artamus leucorynchus*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Grey Teal	*Anas gracilis*	
Australasian Fig Bird	*Malurus lamberti*	
Great Egret	*Ardea alba*	Marine
Peaceful Dove	*Geopelia placida*	
Masked Lapwing	*Vanellus miles*	

Australian Pelican	*Pelecanus conspicillatus*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Glossy Ibis	*Plegadis falcinellus*	Marine Migratory – Bonn (4)
Cattle Egret	*Ardea ibis*	Marine
Australian Magpie	*Cracticus tibicen*	
Brown Honeyeater	*Lichmera indistincta*	
Sacred Kingfisher	*Todiramphus sanctus*	Marine
Grey Fantail	*Rhipidura albiscapa*	

Summary		
Total number of species		47
Total number of Matters of National Environmental Significance (MNES) species		13
Common name	**Scientific name**	**MNES Status**
Little Egret	*Egretta garzetta*	Marine
Marsh Sandpiper	*Tringa stagnatilis*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA
Pied Stilt	*Himantopus leucocephalus*	Marine
Magpie Goose	*Anseranas semipalmata*	Marine
Australian Pelican	*Pelecanus conspicillatus*	Marine
Welcome Swallow	*Hirundo neoxena*	Marine
Sharp-tailed Sandpiper	*Calidris acuminata*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA
Australian Ibis	*Threskiornis moluccus*	Marine
Glossy Ibis	*Plegadis falcinellus*	Marine Migratory - Bonn
Sacred Kingfisher	*Todiramphus sanctus*	Marine
Cattle Egret	*Ardea ibis*	Marine
Rainbow Bee-eater	*Merops ornatus*	Marine
Great Egret	*Ardea alba*	Marine

Site	1	
Location	Eagleby Rd, Lake & Logan River	
Date	8th and 9th January 2019	
Survey	Dawn / Morning	
Surveyor	TR	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Brown Falcon	*Falco berigora*	
Sacred Kingfisher	*Todiramphus sanctus*	Marine
Royal Spoonbill	*Platalea regia*	
Hardhead	*Aythya australis*	
Chestnut - Breasted Mannikin	*Lonchura castaneothorax*	
Twany Grassbird	*Megalurus timoriensis*	
Fairy Martin	*Petrochelidon ariel*	
Cattle Egret	*Bubulcus ibis*	Marine
Welcome Swallow	*Hirundo neoxena*	Marine
Chestnut Teal	*Anas castanea*	
Brown Honeyeater	*Lichmera indistincta*	
Superb Fairywren	*Malurus cyaneus*	
Peaceful Dove	*Geopelia placida*	
Intermediate Egret	*Ardea intermedia*	Marine
Marsh Sandpiper	*Tringa stagnatilis*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA (4)
Glossy Ibis	*Plegadis falcinellus*	Marine Migratory - Bonn
Australian Pelican	*Pelecanus conspicillatus*	
Great Egret	*Ardea alba*	Marine
Little Black Cormorant	*Phalacrocorax sulcirostris*	
Latham's Snipe	*Gallinago hardwickii*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA (1)
Pacific Black Duck	*Anas superciliosa*	
Gray Teal	*Anas gracilis*	
Wood Duck	*Chenonetta jubata*	
Black Swan	*Cygnus atratus*	
Grey Butcherbird	*Cracticus torquatus*	
Eurasian Coot	*Fulica atra*	
Dusky Moorhen	*Gallinula tenebrosa*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Sulphur - Crested Cockatoo	*Cacatua galerita*	
Little Pied Cormorant	*Microcarbo melanoleucos*	
Sharp - Tailed Sandpiper	*Calidris acuminata*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA (12)
Australasian Grebe	*Tachybaptus novaehollandiae*	
Pied Butcherbird	*Cracticus nigrogularis*	
Laughing Kookaburra	*Dacelo novaeguineae*	
Silver Eye	*Zosterops lateralis*	Marine
Crested Pigeon	*Ocyphaps lophotes*	

Masked Lapwing	*Vanellus miles*	
Red – Necked Avocet	*Recurvirostra novaehollandiae*	Marine
Pied Stilt	*Himantopus himantopus*	Marine
Willie – Wagtail	*Rhipidura leucophrys*	
Magpie – Lark	*Grallina cyanoleuca*	Marine
Australian Magpie	*Cracticus tibicen*	
Scaly - Breasted Lorikeet	*Trichoglossus chlorolepidotus*	
Striped Honeyeater	*Plectorhyncha lanceolata*	
Australasian Fig Bird	*Malurus lamberti*	
Australasian Swamphen	*Porphyrio melanotus*	
Pied Currawong	*Strepera graculina*	

Summary		
Total number of species		47
Total number of Matters of National Environmental Significance (MNES) species		13
Common name	**Scientific name**	**MNES Status**
Glossy Ibis	*Plegadis falcinellus*	Marine Migratory - Bonn
Great Egret	*Ardea alba*	Marine
Latham's Snipe	*Gallinago hardwickii*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA
Sharp - Tailed Sandpiper	*Calidris acuminata*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA
Red – Necked Avocet	*Recurvirostra novaehollandiae*	Marine
Marsh Sandpiper	*Tringa stagnatilis*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA
Cattle Egret	*Bubulcus ibis*	Marine
Intermediate Egret	*Ardea intermedia*	Marine
Sacred Kingfisher	*Todiramphus sanctus*	Marine
Welcome Swallow	*Hirundo neoxena*	Marine
Silver Eye	*Zosterops lateralis*	Marine
Pied Stilt	*Himantopus himantopus*	Marine
Magpie – Lark	*Grallina cyanoleuca*	Marine

Site	1	
Location	Eagleby Rd, Lake & Logan River	
Date	8th July 2020	
Survey	Afternoon	
Surveyor	TR	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Pacific Black Duck	*Anas superciliosa*	
Australian Wood Duck	*Chenonetta jubata*	
Purple Swamphen	*Porphyrio melanotus*	
Dusky Moorhen	*Gallinula tenebrosa*	
Welcome Swallow	*Hirundo neoxena*	Marine
Noisy Miner	*Manorina melanocephala*	
Australasian Darter	*Anhinga novaehollandiae*	
Common Myna	*Acridotheres tristis*	
Grey Butcherbird	*Cracticus torquatus*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Masked Lapwing	*Vanellus miles*	
Superb Fairywren	*Malurus cyaneus*	
Australian Magpie	*Cracticus tibicen*	
Torresian Crow	*Corvus orru*	
Magpie -lark	*Manorina melanocephala*	Marine
Great Egret	*Ardea alba*	Marine
Cattle Egret	*Ardea ibis*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Willie – Wagtail	*Rhipidura leucophrys*	

Summary		
Total number of species		19
Total number of Matters of National Environmental Significance (MNES) species		5
Common name	**Scientific name**	**MNES Status**
Welcome Swallow	*Hirundo neoxena*	Marine
Cattle Egret	*Ardea ibis*	Marine
Magpie -lark	*Manorina melanocephala*	Marine
Great Egret	*Ardea alba*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine

Site	1	
Location	Eagleby Rd, Lake & Logan River	
Date	13th May 2020	
Survey	Afternoon	
Surveyor	TR	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Pacific Black Duck	*Anas superciliosa*	
Australian Wood Duck	*Chenonetta jubata*	
Grey Teal	*Anas gracilis*	
Eurasian Coot	*Fulica atra*	
Purple Swamphen	*Porphyrio melanotus*	
Black-necked Stork	*Ephippiorhynchus asiaticus*	
Comb-crested Jacana	*Irediparra gallinacea*	
Australian Pelican	*Pelecanus conspicillatus*	Marine
Dusky Moorhen	*Gallinula tenebrosa*	
Wandering Whistling Duck	*Dendrocygna arcuata*	Marine
Welcome Swallow	*Hirundo neoxena*	Marine
Noisy Miner	*Manorina melanocephala*	
Australasian Darter	*Anhinga novaehollandiae*	
Pied Cormorant	*Phalacrocorax varius*	
Little Black Cormorant	*Phalacrocorax sulcirostris*	
Black Swan	*Cygnus atratus*	
Common Myna	*Acridotheres tristis*	
Grey Butcherbird	*Cracticus torquatus*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Masked Lapwing	*Vanellus miles*	
Superb Fairywren	*Malurus cyaneus*	
Australian Magpie	*Cracticus tibicen*	
Golden-headed Cisticola	*Cisticola exilis*	
Torresian Crow	*Corvus orru*	
Magpie -lark	*Manorina melanocephala*	Marine
Great Egret	*Ardea alba*	Marine
Cattle Egret	*Ardea ibis*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Straw-necked Ibis	*Threskiornis spinicollis*	Marine
Willie – Wagtail	*Rhipidura leucophrys*	

Summary		
Total number of species		30
Total number of Matters of National Environmental Significance (MNES) species		8
Common name	**Scientific name**	**MNES Status**
Welcome Swallow	*Hirundo neoxena*	Marine
Australian Pelican	*Pelecanus conspicillatus*	Marine
Wandering Whistling Duck	*Dendrocygna arcuata*	Marine
Cattle Egret	*Ardea ibis*	Marine
Straw-necked Ibis	*Threskiornis spinicollis*	Marine
Magpie -lark	*Manorina melanocephala*	Marine
Great Egret	*Ardea alba*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine

Site	1	
Location	Eagleby Rd, Lake & Logan River (lake completely dry)	
Date	14th January 2020	
Survey	Mid-Afternoon	
Surveyor	TR	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Pacific Black Duck	*Anas superciliosa*	
Welcome Swallow	*Hirundo neoxena*	Marine
Noisy Miner	*Manorina melanocephala*	
Scaly – Breasted Lorikeet	*Trichoglossus chlorolepidotus*	
Common Myna	*Acridotheres tristis*	
Grey Butcherbird	*Cracticus torquatus*	
Brown Honeyeater	*Lichmera indistincta*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Masked Lapwing	*Vanellus miles*	
Australian Magpie	*Cracticus tibicen*	
Magpie -lark	*Manorina melanocephala*	Marine
Great Egret	*Ardea alba*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Willie – Wagtail	*Rhipidura leucophrys*	

Summary		
Total number of species		14
Total number of Matters of National Environmental Significance (MNES) species		4
Common name	**Scientific name**	**MNES Status**
Welcome Swallow	*Hirundo neoxena*	Marine
Magpie -lark	*Manorina melanocephala*	Marine
Great Egret	*Ardea alba*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine

Site	1	
Location	Eagleby Rd, South Lake	
Date	15th & 16th April 2019	
Survey	Dawn / Morning	
Surveyor	BS	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Wood Duck	*Chenonetta jubata*	
Grey Teal	*Anas gracilis*	
Australasian Grebe	*Tachybaptus novaehollandiae*	
Crested Pigeon	*Ocyphaps lophotes*	
Dusky Moorhen	*Gallinula tenebrosa*	
Australasian Swamphen	*Porphyrio melanotus*	
Pied Stilt	*Himantopus leucocephalus*	Marine
Masked Lapwing	*Vanellus miles*	
Australian Pelican	*Pelecanus conspicillatus*	Marine
Great Egret	*Ardea alba*	Marine
Cattle Egret	*Ardea ibis*	Marine
Intermediate Egret	*Ardea intermedia*	Marine
Glossy Ibis	*Plegadis falcinellus*	Marine Migratory – Bonn (1)
Little Black Cormorant	*Phalacrocorax sulcirostris*	
Australian Hobby	*Falco longipennis*	
Black Swan	*Cygnus atratus*	
Red – Kneed Dotterel	*Erythrogonys cinctus*	
Black - Fronted Dotterel	*Elseyornis melanops*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Red - Backed Fairywren	*Malurus melanocephalus*	
Australian Magpie	*Cracticus tibicen*	
Willie – Wagtail	*Rhipidura leucophrys*	
Magpie – Lark	*Grallina cyanoleuca*	Marine
Torresian Crow	*Corvus orru*	
Fairy Martin	*Petrochelidon ariel*	
White – Breasted Woodswallow	*Artamus leucorynchus*	
Pied Butcherbird	*Cracticus nigrogularis*	
Eurasian Coot	*Fulica atra*	
Australasian Darter	*Anhinga novaehollandiae*	
Hardhead	*Aythya australis*	
Spotted Dove	*Spilopelia chinensis*	
Buff - Banded Rail	*Gallirallus philippensis*	Marine
Royal Spoonbill	*Platalea regia*	
Australian Reed Warbler	*Acrocephalus australis*	Marine
Rainbow Bee – Eater	*Merops ornatus*	Marine
Forest Kingfisher	*Todiramphus macleayii*	Marine
Scaly - Breasted Lorikeet	*Trichoglossus chlorolepidotus*	

Summary		
Total number of species		40
Total number of Matters of National Environmental Significance (MNES) species		11
Common name	**Scientific name**	**MNES Status**
Glossy Ibis	*Plegadis falcinellus*	Marine Migratory - Bonn
Great Egret	*Ardea alba*	Marine
Australian Reed Warbler	*Acrocephalus australis*	Marine
Pied Stilt	*Himantopus leucocephalus*	Marine
Australian Pelican	*Pelecanus conspicillatus*	Marine
Magpie – Lark	*Grallina cyanoleuca*	Marine
Buff - Banded Rail	*Gallirallus philippensis*	Marine
Rainbow Bee – Eater	*Merops ornatus*	Marine
Intermediate Egret	*Ardea intermedia*	Marine
Forest Kingfisher	*Todiramphus macleayii*	Marine
Cattle Egret	*Ardea ibis*	Marine

Site	1	
Location	Eagleby Rd, Lake (lake full again) & Logan River	
Date	17th & 27th February 2020	
Survey	Afternoon	
Surveyor	TR	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Pacific Black Duck	*Anas superciliosa*	
Australian Wood Duck	*Chenonetta jubata*	
Grey Teal	*Anas gracilis*	
Eurasian Coot	*Fulica atra*	
Purple Swamphen	*Porphyrio melanotus*	
Welcome Swallow	*Hirundo neoxena*	Marine
Noisy Miner	*Manorina melanocephala*	
Australasian Darter	*Anhinga novaehollandiae*	
Black-faced Cuckoo-shrike	*Coracina novaehollandiae*	Marine
Black Swan	*Cygnus atratus*	
Common Myna	*Acridotheres tristis*	
Grey Butcherbird	*Cracticus torquatus*	
White-breasted Woodswallow	*Artamus leucorynchus*	
Glossy Ibis	*Plegadis falcinellus*	Marine
Brown Honeyeater	*Lichmera indistincta*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Masked Lapwing	*Vanellus miles*	
Superb Fairywren	*Malurus cyaneus*	
Australian Magpie	*Cracticus tibicen*	
Golden-headed Cisticola	*Cisticola exilis*	
Sacred Kingfisher	*Todiramphus sanctus*	Marine
Torresian Crow	*Corvus orru*	
Magpie -lark	*Manorina melanocephala*	Marine
Great Egret	*Ardea alba*	Marine
Cattle Egret	*Ardea ibis*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Willie – Wagtail	*Rhipidura leucophrys*	

Summary		
Total number of species		27
Total number of Matters of National Environmental Significance (MNES) species		8
Common name	**Scientific name**	**MNES Status**
Welcome Swallow	*Hirundo neoxena*	Marine
Black-faced Cuckoo-shrike	*Coracina novaehollandiae*	Marine
Glossy Ibis	*Plegadis falcinellus*	Marine
Sacred Kingfisher	*Todiramphus sanctus*	Marine
Cattle Egret	*Ardea ibis*	Marine
Magpie -lark	*Manorina melanocephala*	Marine
Great Egret	*Ardea alba*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine

Site	1	
Location	Eagleby Rd, Luke & Logan River	
Date	18th & 19th September 2018	
Survey	Dawn / Morning	
Surveyor	BS	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Pacific Black Duck	*Anas superciliosa*	
Grey Teal	*Anas gracilis*	
Hardhead	*Aythya australis*	
Dusky Moorhen	*Gallinula tenebrosa*	
Australasian Swamphen	*Porphyrio melanotus*	
Pied Stilt	*Himantopus leucocephalus*	Marine
Red – Kneed Dotterel	*Erythrogonys cinctus*	
Little Pied Cormorant	*Microcarbo melanoleucos*	
Red – Backed Fairywren	*Malurus melanocephalus*	
Buff – Banded Rail	*Gallirallus philippensis*	Marine
Spotless Crake	*Porzana tabuensis*	Marine
Red – Necked Avocet	*Recurvirostra novaehollandiae*	Marine
Sharp – Tailed Sandpiper	*Calidris acuminata*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA (2)
Latham's Snipe	*Gallinago hardwickii*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA (2)
Welcome Swallow	*Hirundo neoxena*	Marine
Spotted Dove	*Spilopelia chinensis*	
White – Faced Heron	*Egretta novaehollandiae*	
Straw – Necked Ibis	*Threskiornis spinicollis*	Marine
Rufous Whistler	*Pachycephala rufiventris*	
Scaly – Breasted Lorikeet	*Trichoglossus chlorolepidotus*	
Sulphur – Crested Cockatoo	*Cacatua galerita*	
Grey Butcherbird	*Cracticus torquatus*	
Australasian Figbird	*Sphecotheres vieilloti*	
Grey Fantail	*Rhipidura albiscapa*	
Variegated Fairywren	*Malurus lamberti*	
Black Swan	*Cygnus atratus*	
Brown Quail	*Coturnix ypsilophora*	
Eurasian Coot	*Fulica atra*	
Intermediate Egret	*Ardea intermedia*	Marine
Glossy Ibis	*Plegadis falcinellus*	Marine Migratory – Bonn (1)
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Pink - Eared Duck	*Malacorhynchus membranaceus*	
Royal Spoonbill	*Platalea regia*	
Masked Lapwing	*Vanellus miles*	
Australian Pelican	*Pelecanus conspicillatus*	Marine

Cattle Egret	*Ardea ibis*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Superb Fairywren	*Malurus cyaneus*	
Brown Honeyeater	*Lichmera indistincta*	
Willie – Wagtail	*Rhipidura leucophrys*	
Magpie – Lark	*Grallina cyanoleuca*	Marine
Fairy Martin	*Petrochelidon ariel*	
Chestnut Teal	*Anas castanea*	

Summary		
Total number of species		43
Total number of Matters of National Environmental Significance (MNES) species		14
Common name	**Scientific name**	**MNES Status**
Spotless Crake	*Porzana tabuensis*	Marine
Red – Necked Avocet	*Recurvirostra novaehollandiae*	Marine
Sharp-tailed Sandpiper	*Calidris acuminata*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA
Latham's Snipe	*Gallinago hardwickii*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA
Intermediate Egret	*Ardea intermedia*	Marine
Glossy Ibis	*Plegadis falcinellus*	Marine Migratory – Bonn
Straw – Necked Ibis	*Threskiornis spinicollis*	Marine
Cattle Egret	*Ardea ibis*	Marine
Pied Stilt	*Himantopus leucocephalus*	Marine
Buff – Banded Rail	*Gallirallus philippensis*	Marine
Magpie – Lark	*Grallina cyanoleuca*	Marine
Welcome Swallow	*Hirundo neoxena*	Marine
Australian Pelican	*Pelecanus conspicillatus*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine

Site	1	
Location	Eagleby Rd, Lake & Logan River	
Date	18th March 2020	
Survey	Afternoon	
Surveyor	TR	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Pacific Black Duck	*Anas superciliosa*	
Australian Wood Duck	*Chenonetta jubata*	
Grey Teal	*Anas gracilis*	
Eurasian Coot	*Fulica atra*	
White-bellied Sea-eagle	*Haliaeetus leucogaster*	Marine
Purple Swamphen	*Porphyrio melanotus*	
Welcome Swallow	*Hirundo neoxena*	Marine
Noisy Miner	*Manorina melanocephala*	
Australasian Darter	*Anhinga novaehollandiae*	
Black Swan	*Cygnus atratus*	
Common Myna	*Acridotheres tristis*	
Grey Butcherbird	*Cracticus torquatus*	
Brown Honeyeater	*Lichmera indistincta*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Masked Lapwing	*Vanellus miles*	
Superb Fairywren	*Malurus cyaneus*	
Australian Magpie	*Cracticus tibicen*	
Golden-headed Cisticola	*Cisticola exilis*	
Sacred Kingfisher	*Todiramphus sanctus*	Marine
Torresian Crow	*Corvus orru*	
Magpie -lark	*Manorina melanocephala*	Marine
Great Egret	*Ardea alba*	Marine
Cattle Egret	*Ardea ibis*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Silvereye	*Zosterops lateralis*	Marine
Willie – Wagtail	*Rhipidura leucophrys*	

Summary

Total number of species		25
Total number of Matters of National Environmental Significance (MNES) species		8
Common name	**Scientific name**	**MNES Status**
Welcome Swallow	*Hirundo neoxena*	Marine
Sacred Kingfisher	*Todiramphus sanctus*	Marine
White-bellied Sea-eagle	*Haliaeetus leucogaster*	Marine
Cattle Egret	*Ardea ibis*	Marine
Silvereye	*Zosterops lateralis*	Marine
Magpie -lark	*Manorina melanocephala*	Marine
Great Egret	*Ardea alba*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine

Site	1	
Location	Eagleby Rd, South Lake	
Date	21st & 22nd February 2019	
Survey	Dawn / Morning	
Surveyor	TR	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Black - Fronted Dotterel	*Elseyornis melanops*	
Masked Lapwing	*Vanellus miles*	
Red – Necked Avocet	*Recurvirostra novaehollandiae*	Marine
Pied Stilt	*Himantopus himantopus*	Marine
Crested Pigeon	*Ocyphaps lophotes*	
Torresian Crow	*Corvus orru*	
Magpie – Lark	*Grallina cyanoleuca*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Marsh Sandpiper	*Tringa stagnatilis*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA (1)
Black Swan	*Cygnus atratus*	
Dusky Moorhen	*Gallinula tenebrosa*	
Hardhead	*Aythya australis*	
Chestnut Teal	*Anas castanea*	
Grey Teal	*Anas gracilis*	
Cattle Egret	*Bubulcus ibis*	Marine
White - Bellied Sea Eagle	*Haliaeetus leucogaster*	Marine
Willie – Wagtail	*Rhipidura leucophrys*	
Pacific Black Duck	*Anas superciliosa*	
Sharp - Tailed Sandpiper	*Calidris acuminata*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA (6)
Pied Butcherbird	*Cracticus nigrogularis*	
Australasian Fig Bird	*Malurus lamberti*	
Wood Duck	*Chenonetta jubata*	
Little Black Cormorant	*Phalacrocorax sulcirostris*	
Australasian Grebe	*Tachybaptus novaehollandiae*	
Eurasian Coot	*Fulica atra*	
Australian Magpie	*Cracticus tibicen*	
Superb Fairywren	*Malurus cyaneus*	
Intermediate Egret	*Ardea intermedia*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Royal Spoonbill	*Platalea regia*	
Great Egret	*Ardea alba*	Marine
White-necked Heron	*Ardea pacifica*	
Australian Pelican	*Pelecanus conspicillatus*	Marine

Summary		
Total number of species		46
Total number of Matters of National Environmental Significance (MNES) species		12
Common name	**Scientific name**	**MNES Status**
Intermediate Egret	*Ardea intermedia*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Great Egret	*Ardea alba*	Marine
Cattle Egret	*Bubulcus ibis*	Marine
White - Bellied Sea Eagle	*Haliaeetus leucogaster*	Marine
Sharp - Tailed Sandpiper	*Calidris acuminata*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA
Red – Necked Avocet	*Recurvirostra novaehollandiae*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Marsh Sandpiper	*Tringa stagnatilis*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA
Magpie – Lark	*Grallina cyanoleuca*	Marine
Pied Stilt	*Himantopus himantopus*	Marine
Australian Pelican	*Pelecanus conspicillatus*	Marine

Site	1	
Location	Eagleby Rd, Lake & Logan River	
Date	22nd October 2019	
Survey	Dawn / Morning	
Surveyor	BS	
Common name	**Scientific name**	**MNES Status and Marine (Quantity)**
Wood Duck	*Chenonetta jubata*	
Pacific Black Duck	*Anas superciliosa*	
Grey Teal	*Anas gracilis*	
Crested Pigeon	*Ocyphaps lophotes*	
Shining Bronze-cuckoo	*Chrysococcyx lucidus*	
Purple Swamphen	*Porphyrio melanotus*	
Pied Butcherbird	*Cracticus nigrogularis*	
Australasian Fig Bird	*Malurus lamberti*	
Willie Wagtail	*Rhipidura leucophrys*	
Magpie Lark	*Grallina cyanoleuca*	Marine
Torresian Crow	*Corvus orru*	
Tawny Grassbird	*Megalurus timoriensis*	
Golden-headed Cisticola	*Cisticola exilis*	
Dusky Moorhen	*Gallinula tenebrosa*	
Masked Lapwing	*Vanellus miles*	
Little Black Cormorant	*Phalacrocoracidae*	
Australian Pelican	*Pelecanus conspicillatus*	Marine
Great Egret	*Ardea alba*	Marine
Black-shouldered Kite	*Elanus axillaris*	
Forest Kingfisher	*Todiramphus macleayii*	Marine
Noisy Friarbird	*Philemon corniculatus*	
White Breasted Woodswallow	*Artamus leucorynchus*	
Tree Martin	*Petrochelidon nigricans*	
Silver Eye	*Zosterops lateralis*	Marine
Little Egret	*Egretta garzetta*	Marine
Red-kneed Dotterel	*Erythrogonys cinctus*	
Pied Stilt	*Himantopus leucocephalus*	Marine
Little Pied Cormorant	*Microcarbo melanoleucos*	
Cattle Egret	*Ardea ibis*	Marine
Glossy Ibis	*Plegadis falcinellus*	Marine Migratory – Bonn (2)
Intermediate Egret	*Ardea intermedia*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Superb Fairywren	*Malurus cyaneus*	
Brown Honeyeater	*Lichmera indistincta*	
Striated Pardalote	*Pardalotus striatus*	
Rainbow Bee-eater	*Merops ornatus*	Marine
Red - Backed Fairywren	*Malurus melanocephalus*	
Welcome Swallow	*Hirundo neoxena*	Marine
Black Swan	*Cygnus atratus*	
Australasian Darter	*Anhinga novaehollandiae*	
Red-necked Avocet	*Recurvirostra novaehollandiae*	Marine

Sharp-tailed Sandpiper	*Calidris acuminata*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA (2)

Summary		
Total number of species		43
Total number of Matters of National Environmental Significance (MNES) species		15
Common name	**Scientific name**	**MNES Status**
Rainbow Bee-eater	*Merops ornatus*	Marine
Magpie Lark	*Grallina cyanoleuca*	Marine
Red-necked Avocet	*Recurvirostra novaehollandiae*	Marine
Pied Stilt	*Himantopus leucocephalus*	Marine
Australian Pelican	*Pelecanus conspicillatus*	Marine
Great Egret	*Ardea alba*	Marine
Sharp-tailed Sandpiper	*Calidris acuminata*	Marine Migratory – BONN, JAMBA, CAMBA, ROKAMBA
Cattle Egret	*Ardea ibis*	Marine
Silver Eye	*Zosterops lateralis*	Marine
Glossy Ibis	*Plegadis falcinellus*	Marine Migratory - Bonn
Intermediate Egret	*Ardea intermedia*	Marine
Little Egret	*Egretta garzetta*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Forest Kingfisher	*Todiramphus macleayii*	Marine
Welcome Swallow	*Hirundo neoxena*	Marine

Site	1	
Location	Eagleby Rd, Luke & Logan River	
Date	24th September 2019	
Survey	Dawn / Morning	
Surveyor	BS	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Pacific Black Duck	*Anas superciliosa*	
Grey Teal	*Anas gracilis*	
Hardhead	*Aythya australis*	
Dusky Moorhen	*Gallinula tenebrosa*	
Australasian Swamphen	*Porphyrio melanotus*	
Pied Stilt	*Himantopus leucocephalus*	Marine
Red – Kneed Dotterel	*Erythrogonys cinctus*	
Little Pied Cormorant	*Microcarbo melanoleucos*	
Red – Backed Fairywren	*Malurus melanocephalus*	
Buff – Banded Rail	*Gallirallus philippensis*	Marine
Spotless Crake	*Porzana tabuensis*	Marine
Red – Necked Avocet	*Recurvirostra novaehollandiae*	Marine
Latham's Snipe	*Gallinago hardwickii*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA (2)
Welcome Swallow	*Hirundo neoxena*	Marine
Spotted Dove	*Spilopelia chinensis*	
White – Faced Heron	*Egretta novaehollandiae*	
Straw – Necked Ibis	*Threskiornis spinicollis*	Marine
Rufous Whistler	*Pachycephala rufiventris*	
Sulphur – Crested Cockatoo	*Cacatua galerita*	
Grey Butcherbird	*Cracticus torquatus*	
Australasian Figbird	*Sphecotheres vieilloti*	
Grey Fantail	*Rhipidura albiscapa*	
Variegated Fairywren	*Malurus lamberti*	
Crested pigeon	*Ocyphaps lophotes*	
Black Swan	*Cygnus atratus*	
Brown Quail	*Coturnix ypsilophora*	
White-bellied Sea-Eagle	*Haliaeetus leucogaster*	Marine
Eurasian Coot	*Fulica atra*	
Intermediate Egret	*Ardea intermedia*	Marine
Glossy Ibis	*Plegadis falcinellus*	Marine Migratory – Bonn (1)
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Silvereye	*Zosterops lateralis*	Marine
Royal Spoonbill	*Platalea regia*	
Masked Lapwing	*Vanellus miles*	
Australian Pelican	*Pelecanus conspicillatus*	Marine
Cattle Egret	*Ardea ibis*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Superb Fairywren	*Malurus cyaneus*	

Common name	Scientific name	MNES Status and Migratory (Quantity)
Willie – Wagtail	*Rhipidura leucophrys*	
Magpie – Lark	*Grallina cyanoleuca*	Marine
Fairy Martin	*Petrochelidon ariel*	
Black-necked Stork	*Ephippiorhynchus asiaticus*	
Chestnut Teal	*Anas castanea*	
Australian Magpie	*Gymnorhina tibicen*	

Summary		
Total number of species		44
Total number of Matters of National Environmental Significance (MNES) species		15
Common name	**Scientific name**	**MNES Status**
Spotless Crake	*Porzana tabuensis*	Marine
Red – Necked Avocet	*Recurvirostra novaehollandiae*	Marine
Latham's Snipe	*Gallinago hardwickii*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA
Intermediate Egret	*Ardea intermedia*	Marine
Glossy Ibis	*Plegadis falcinellus*	Marine Migratory – Bonn
Straw – Necked Ibis	*Threskiornis spinicollis*	Marine
Silvereye	Zosterops lateralis	Marine
Cattle Egret	*Ardea ibis*	Marine
Pied Stilt	*Himantopus leucocephalus*	Marine
Buff – Banded Rail	*Gallirallus philippensis*	Marine
Magpie – Lark	*Grallina cyanoleuca*	Marine
White-bellied Sea-Eagle	Haliaeetus leucogaster	Marine
Welcome Swallow	*Hirundo neoxena*	Marine
Australian Pelican	*Pelecanus conspicillatus*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine

Site	1	
Location	Eagleby Rd, South Lake/ Logan River	
Date	26th & 27th March 2019	
Survey	Dawn / Morning	
Surveyor	TR	
Common name	**Scientific name**	**Status**
Wood Duck	*Chenonetta jubata*	
Pacific Black Duck	*Anas superciliosa*	
Dusky Moorhen	*Gallinula tenebrosa*	
Australasian Swamphen	*Porphyrio melanotus*	
Pied Stilt	*Himantopus himantopus*	Marine
Masked Lapwing	*Vanellus miles*	
Gull - Billed Tern	*Gelochelidon nilotica*	
Australasian Darter	*Anhinga novaehollandiae*	
Australasian Fig Bird	*Malurus lamberti*	
Grey Fantail	*Rhipidura albiscapa*	
Comb - Crested Jacana	*Irediparra gallinacea*	
Australian Reed Warbler	*Acrocephalus australis*	Marine
Glossy Ibis	*Plegadis falcinellus*	Marine Migratory – Bonn (1)
Little Egret	*Egretta garzetta*	Marine
Sulphur - Crested Cockatoo	*Cacatua galerita*	
Australian Pelican	*Pelecanus conspicillatus*	Marine
Australian Magpie	*Cracticus tibicen*	
Great Egret	*Ardea alba*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Cattle Egret	*Ardea ibis*	Marine
Marsh Sandpiper	*Tringa stagnatilis*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA (2)
Latham's Snipe	*Gallinago hardwickii*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA (2)
Red – Necked Avocet	*Recurvirostra novaehollandiae*	Marine
Rainbow Bee – Eater	*Merops ornatus*	Marine
Magpie – Lark	*Grallina cyanoleuca*	Marine
Chestnut Teal	*Anas castanea*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Torresian Crow	*Corvus orru*	
Red – Kneed Dotterel	*Erythrogonys cinctus*	
Common Myna	*Acridotheres tristis*	
Welcome Swallow	*Hirundo neoxena*	Marine
Royal Spoonbill	*Platalea regia*	
Australasian Grebe	*Tachybaptus novaehollandiae*	
Forest Kingfisher	*Todiramphus macleayii*	Marine
Red - Backed Fairywren	*Malurus melanocephalus*	
Plumed Whistling - Duck	*Dendrocygna eytoni*	
Peaceful Dove	*Geopelia placida*	
Black Swan	*Cygnus atratus*	
Pied Cormorant	*Phalacrocorax varius*	

Mangrove Honeyeater	*Lichenostomus fasciogularis*	
Brown Honeyeater	*Lichmera indistincta*	
Striped Honeyeater	*Plectorhyncha lanceolata*	
Silver Eye	*Zosterops lateralis*	Marine
Grey Teal	*Anas gracilis*	
HardHead	*Aythya australis*	
Black - Faced Monarch	*Monarcha melanopsis*	Marine
Leaden Flycatcher	*Myiagra rubecula*	

Summary		
Total number of species		47
Total number of Matters of National Environmental Significance (MNES) species		17
Common name	**Scientific name**	**MNES Status**
Glossy Ibis	*Plegadis falcinellus*	Marine Migratory - Bonn
Australian Reed Warbler	*Acrocephalus australis*	Marine
Little Egret	*Egretta garzetta*	Marine
Great Egret	*Ardea alba*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Cattle Egret	*Ardea ibis*	Marine
Marsh Sandpiper	*Tringa stagnatilis*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA
Latham's Snipe	*Gallinago hardwickii*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA
Red – Necked Avocet	*Recurvirostra novaehollandiae*	Marine
Rainbow Bee – Eater	*Merops ornatus*	Marine
Pied Stilt	*Himantopus himantopus*	Marine
Australian Pelican	*Pelecanus conspicillatus*	Marine
Magpie – Lark	*Grallina cyanoleuca*	Marine
Welcome Swallow	*Hirundo neoxena*	Marine
Forest Kingfisher	*Todiramphus macleayii*	Marine
Silver Eye	*Zosterops lateralis*	Marine
Black - Faced Monarch	*Monarcha melanopsis*	Marine

Site	1	
Location	Eagleby Rd, South Lake & Logan River	
Date	27th & 28th December 2018	
Survey	Dawn / Morning	
Surveyor	TR	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Spotted Dove	*Spilopelia chinensis*	
Pacific Koel	*Eudynamys orientalis*	
Australasian Grebe	*Tachybaptus novaehollandiae*	
Hardhead	*Aythya australis*	
Chestnut Teal	*Anas castanea*	
Grey Teal	*Anas gracilis*	
Pacific Black Duck	*Anas superciliosa*	
Black Swan	*Cygnus atratus*	
Channel - Billed Cuckoo	*Scythrops novaehollandiae*	Marine
Fairy Martin	*Petrochelidon ariel*	
Australasian Fig Bird	*Malurus lamberti*	
Willie – Wagtail	*Rhipidura leucophrys*	
Magpie – Lark	*Grallina cyanoleuca*	Marine
Torresian Crow	*Corvus orru*	
Chestnut - Breasted Munia	*Lonchura castaneothorax*	
Australian Ibis	*Threskiornis moluccus*	Marine
Little Egret	*Egretta garzetta*	Marine
White - Bellied Sea Eagle	*Haliaeetus leucogaster*	Marine
Latham's Snipe	*Gallinago hardwickii*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA (2)
Dusky Moorhen	*Gallinula tenebrosa*	
White - Faced Heron	*Egretta novaehollandiae*	
Australasian Darter	*Anhinga novaehollandiae*	
Silver Eye	*Zosterops lateralis*	Marine
Wandering Whistling - Duck	*Dendrocygna arcuata*	
Black - Necked Stork	*Ephippiorhynchus asiaticus*	
Little Friarbird	*Philemon citreogularis*	
Welcome Swallow	*Hirundo neoxena*	Marine
Eurasian Coot	*Fulica atra*	
Little Black Cormorant	*Phalacrocorax sulcirostris*	
Masked Lapwing	*Vanellus miles*	
Pied Stilt	*Himantopus himantopus*	Marine
Australasian Swamphen	*Porphyrio melanotus*	
Grey Shrike-thrush	*Colluricincla harmonica*	
Marsh Sandpiper	*Tringa stagnatilis*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA (1)
Australian Magpie	*Cracticus tibicen*	
Red - Backed Fairywren	*Malurus melanocephalus*	
Superb Fairywren	*Malurus cyaneus*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Sulphur - Crested Cockatoo	*Cacatua galerita*	

Sacred Kingfisher	*Todiramphus sanctus*	Marine
Royal Spoonbill	*Platalea regia*	
Cattle Egret	*Ardea ibis*	Marine
Australian Pelican	*Pelecanus conspicillatus*	Marine
Black - Shouldered Kite	*Elanus axillaris*	
Pied Butcherbird	*Cracticus nigrogularis*	
Spotless Crake	*Porzana tabuensis*	Marine
Red – Kneed Dotterel	*Erythrogonys cinctus*	
Rufous Fantail	*Rhipidura rufifrons*	Marine
Variegated Fairywren	*Malurus lamberti*	
Rainbow Bee – Eater	*Merops ornatus*	Marine
Red – Necked Avocet	*Recurvirostra novaehollandiae*	Marine
Sharp - Tailed Sandpiper	*Calidris acuminata*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA (4)
Rufous Whistler	*Pachycephala rufiventris*	

Summary		
Total number of species		53
Total number of Matters of National Environmental Significance (MNES) species		18
Common name	**Scientific name**	**MNES Status**
Australian Ibis	*Threskiornis moluccus*	Marine
Little Egret	*Egretta garzetta*	Marine
White - Bellied SeaEagle	*Haliaeetus leucogaster*	Marine
Latham's Snipe	*Gallinago hardwickii*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA
Rainbow Bee – Eater	*Merops ornatus*	Marine
Red – Necked Avocet	*Recurvirostra novaehollandiae*	Marine
Cattle Egret	*Bubulcus ibis*	Marine
Sharp - Tailed Sandpiper	*Calidris acuminata*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA
Marsh Sandpiper	*Tringa stagnatilis*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA
Channel - Billed Cuckoo	*Scythrops novaehollandiae*	Marine
Magpie – Lark	*Grallina cyanoleuca*	Marine
Silver Eye	*Zosterops lateralis*	Marine
Welcome Swallow	*Hirundo neoxena*	Marine
Pied Stilt	*Himantopus himantopus*	Marine
Sacred Kingfisher	*Todiramphus sanctus*	Marine
Australian Pelican	*Pelecanus conspicillatus*	Marine
Spotless Crake	*Porzana tabuensis*	Marine
Spotless Crake	*Porzana tabuensis*	Marine

Site	2	
Location	Skinners Park (Carbrook) and Logan River	
Date	1st and 2nd November 2018	
Survey	Dawn / Morning	
Surveyor	BS	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Wandering Whistling Duck	*Dendrocygna arcuata*	Marine
Pacific Black Duck	*Anas superciliosa*	
Peaceful Dove	*Geopelia placida*	
Bar- shouldered Dove	*Geopelia humeralis*	
Channel-billed Cuckoo	*Scythrops novaehollandiae*	Marine
Dusky Moorhen	*Gallinula tenebrosa*	
Eurasian Coot	*Fulica atra*	
Australasian Swamphen	*Porphyrio melanotus*	
Masked Lapwing	*Vanellus miles*	
Pied Butcherbird	*Cracticus nigrogularis*	
Australian Magpie	*Cracticus tibicen*	
Olive backed Oriole	*Oriolus sagittatus*	
Australasian Figbird	*Sphecotheres vieilloti*	
Willie- wagtail	*Rhipidura leucophrys*	
Magpie-lark	*Grallina cyanoleuca*	Marine
Torresian Crow	*Corvus orru*	
Welcome Swallow	*Hirundo neoxena*	Marine
Tawny Grassbird	*Megalurus timoriensis*	
Australian Ibis	*Threskiornis moluccus*	Marine
Cattle Egret	*Ardea ibis*	Marine
Whistling Kite	*Haliastur sphenurus*	Marine
Laughing Kookaburra	*Dacelo novaeguineae*	
Hardhead	*Aythya australis*	
Australasian Grebe	*Tachybaptus novaehollandiae*	
Pied Cormorant	*Phalacrocorax varius*	
Wood Duck	*Chenonetta jubata*	
Crested Pigeon	*Ocyphaps lophotes*	
Royal Spoonbill	*Platalea regia*	
Azure Kingfisher	*Alcedo azurea*	
Mangrove Gerygone	*Gerygone levigaster*	
Mangrove Honeyeater	*Lichenostomus fasciogularis*	
Blue-faced Honeyeater	*Entomyzon cyanotis*	
Grey Butcherbird	*Cracticus torquatus*	
Grey Shrikethrush	*Colluricincla harmonica*	
Rufous Fantail	*Rhipidura rufifrons*	
Mistletoe bird	*Dicaeum hirundinaceum*	
Grey Teal	*Anas gracilis*	
Little Black Cormorant	*Phalacrocorax sulcirostris*	
Great Egret	*Ardea alba*	Marine
Striated Heron	*Butorides striata*	
Dollarbird	*Eurystomus orientalis*	Marine

Sulphur-crested Cockatoo	*Cacatua galerita*	
Little Friarbird	*Philemon citreogularis*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Pied Currawong	*Strepera graculina*	
Galah	*Eolophus roseicapilla*	
Common Myna	*Acridotheres tristis*	
Little Corella	*Cacatua sanguinea*	

Summary		
Total number of species		48
Total number of Matters of National Environmental Significance (MNES) species		9
Common name	**Scientific name**	**MNES Status**
Australian Ibis	*Threskiornis moluccus*	Marine
Cattle Egret	*Ardea ibis*	Marine
Great Egret	*Ardea alba*	Marine
Wandering Whistling Duck	*Dendrocygna arcuata*	Marine
Dollarbird	*Eurystomus orientalis*	Marine
Channel-billed Cuckoo	*Scythrops novaehollandiae*	Marine
Magpie-lark	*Grallina cyanoleuca*	Marine
Welcome Swallow	*Hirundo neoxena*	Marine
Whistling Kite	*Haliastur sphenurus*	Marine

Site	2	
Location	Skinners Park (Carbrook) and Logan River	
Date	2nd and 3rd December2018	
Survey	Dawn / Morning	
Surveyor	TR	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Plumbed Whistling Duck	*Dendrocygna eytoni*	
Wood Duck	*Chenonetta jubata*	
Pacific Black Duck	*Anas superciliosa*	
Crested Pigeon	*Ocyphaps lophotes*	
Peaceful Dove	*Geopelia placida*	
Bar- shouldered Dove	*Geopelia humeralis*	
Comb-crested Jacana	*Irediparra gallinacea*	
Dusky Moorhen	*Gallinula tenebrosa*	
Australasian Darter	*Anhinga novaehollandiae*	
Little Black Cormorant	*Phalacrocorax sulcirostris*	
Eurasian Coot	*Fulica atra*	
Noisy Minor	*Manorina melanocephala*	
Australasian Swamphen	*Porphyrio melanotus*	
Pied Stilt	*Himantopus himantopus*	Marine
Common Myna	*Acridotheres tristis*	
Australian Ibis	*Threskiornis moluccus*	Marine
Cattle Egret	*Ardea ibis*	Marine
Blue-faced Honeyeater	*Entomyzon cyanotis*	
Grey Butcherbird	*Cracticus torquatus*	
Grey Shrike-thrush	*Colluricincla harmonica*	
Rufous Fantail	*Rhipidura rufifrons*	
Golden-headed Cisticola	*Cisticola exilis*	
Masked Lapwing	*Vanellus miles*	
Pied Butcherbird	*Cracticus nigrogularis*	
Australian Magpie	*Cracticus tibicen*	
Olive backed Oriole	*Oriolus sagittatus*	
Australasian Figbird	*Sphecotheres vieilloti*	
Willie- wagtail	*Rhipidura leucophrys*	
Magpie-lark	*Grallina cyanoleuca*	Marine
Torresian Crow	*Corvus orru*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Brahminy Kite	*Haliastur indus*	Marine
Laughing Kookaburra	*Dacelo novaeguineae*	
Hardhead	*Aythya australis*	
Australasian Grebe	*Tachybaptus novaehollandiae*	
Pied Cormorant	*Phalacrocorax varius*	
Leaden flycatcher	*Myiagra rubecula*	
Royal Spoonbill	*Platalea regia*	
Forest Kingfisher	*Todiramphus macleayii*	Marine
Mangrove Greygone	*Gerygone levigaster*	
Mangrove Honeyeater	*Lichenostomus fasciogularis*	

Pied Currawong	*Strepera graculina*	
Galah	*Eolophus roseicapilla*	
Grey Teal	*Anas gracilis*	
Great Egret	*Ardea alba*	Marine
Glossy Ibis	*Plegadis falcinellus*	Marine Migratory – Bonn (1)
Little Corella	*Cacatua sanguinea*	
Sulphur-crested Cockatoo	*Cacatua galerita*	

Summary		
Total number of species		50
Total number of Matters of National Environmental Significance (MNES) species		8
Common name	**Scientific name**	**MNES Status**
Australian Ibis	*Threskiornis moluccus*	Marine
Cattle Egret	*Bubulcus ibis*	Marine
Great Egret	*Ardea alba*	Marine
Glossy Ibis	*Plegadis falcinellus*	Marine Migratory – Bonn
Pied Stilt	*Himantopus himantopus*	Marine
Magpie-lark	*Grallina cyanoleuca*	Marine
Brahminy Kite	*Haliastur indus*	Marine
Forest Kingfisher	*Todiramphus macleayii*	Marine

Site	2	
Location	Skinners Park (Carbrook) and Logan River (end of Wharf Road)	
Date	2nd April 2020	
Survey	Afternoon	
Surveyor	TR	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Wood Duck	*Chenonetta jubata*	
Pacific Black Duck	*Anas superciliosa*	
Australian Pelican	*Pelecanus conspicillatus*	Marine
Black-faced Cuckoo-shrike	*Coracina novaehollandiae*	Marine
Cattle Egret	*Ardea ibis*	Marine
Great Egret	*Ardea alba*	Marine
White-faced Heron	*Egretta novaehollandiae*	
Rock dove	*Columba livia*	
Peaceful Dove	*Geopelia placida*	
Common Myna	*Acridotheres tristis*	
Dusky Moorhen	*Gallinula tenebrosa*	
Noisy Miner	*Manorina melanocephala*	
Australasian Swamphen	*Porphyrio melanotus*	
Crested Pigeon	*Ocyphaps lophotes*	
Eurasian Coot	*Fulica atra*	
Australian Ibis	*Threskiornis moluccus*	Marine
Straw-necked Ibis	*Threskiornis spinicollis*	Marine
Blue-faced Honeyeater	*Entomyzon cyanotis*	
Silver Gull	*Chroicocephalus novaehollandiae*	Marine
Grey Butcherbird	*Cracticus torquatus*	
Willie- wagtail	*Rhipidura leucophrys*	
Sacred Kingfisher	*Todiramphus sanctus*	Marine
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Laughing Kookaburra	*Dacelo novaeguineae*	

Summary		
Total number of species		24
Total number of Matters of National Environmental Significance (MNES) species		8
Common name	**Scientific name**	**MNES Status**
Cattle Egret	*Ardea ibis*	Marine
Great Egret	*Ardea alba*	Marine
Australian Pelican	*Pelecanus conspicillatus*	Marine
Black-faced Cuckoo-shrike	*Coracina novaehollandiae*	Marine
Straw-necked Ibis	*Threskiornis spinicollis*	Marine
Silver Gull	*Chroicocephalus novaehollandiae*	Marine
Sacred Kingfisher	*Todiramphus sanctus*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine

Site	2	
Location	Skinners Park (Carbrook) and Logan River	
Date	20th and 21st February 2019	
Survey	Dawn / Morning	
Surveyor	TR	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Wood Duck	*Chenonetta jubata*	
Pacific Black Duck	*Anas superciliosa*	
Silver Gull	*Chroicocephalus novaehollandiae*	Marine
Australian Pelican	*Pelecanus conspicillatus*	Marine
Common Myna	*Acridotheres tristis*	
Dusky Moorhen	*Gallinula tenebrosa*	
Australasian Darter	*Anhinga novaehollandiae*	
Noisy Minor	*Manorina melanocephala*	
Australasian Swamphen	*Porphyrio melanotus*	
Pied Stilt	*Himantopus himantopus*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Cattle Egret	*Ardea ibis*	Marine
Great Egret	*Ardea alba*	Marine
Chestnut Teal	*Anas castanea*	
Rainbow Bee-eater	*Merops ornatus*	Marine
Blue-faced Honeyeater	*Entomyzon cyanotis*	
Grey Butcherbird	*Cracticus torquatus*	
Grey Shrikethrush	*Colluricincla harmonica*	
Dollarbird	*Eurystomus orientalis*	Marine
Willie- wagtail	*Rhipidura leucophrys*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Pale-headed Rossella	*Platycercus adscitus*	
Laughing Kookaburra	*Dacelo novaeguineae*	
Royal Spoonbill	*Plotalea regia*	
Forest Kingfisher	*Todiramphus macleayii*	Marine
Mangrove Gerygone	*Gerygone levigaster*	
Mangrove Honeyeater	*Lichenostomus fasciogularis*	

Summary		
Total number of species		29
Total number of Matters of National Environmental Significance (MNES) species		9
Common name	**Scientific name**	**MNES Status**
Australian Ibis	*Threskiornis moluccus*	Marine
Cattle Egret	*Bubulcus ibis*	Marine
Great Egret	*Ardea alba*	Marine
Rainbow Bee-eater	*Merops ornatus*	Marine
Silver Gull	*Chroicocephalus novaehollandiae*	Marine
Australian Pelican	*Pelecanus conspicillatus*	Marine

Pied Stilt	*Himantopus himantopus*	Marine
Dollarbird	*Eurystomus orientalis*	Marine
Forest Kingfisher	*Todiramphus macleayii*	Marine

Site	2	
Location	Skinners Park (Carbrook) and Logan River (end of Wharf Road)	
Date	8th July 2020	
Survey	Late Afternoon	
Surveyor	TR	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Wood Duck	*Chenonetta jubata*	
Pacific Black Duck	*Anas superciliosa*	
Scaly-breasted Lorikeet	*Trichoglossus chlorolepidotus*	
Cattle Egret	*Ardea ibis*	Marine
Great Egret	*Ardea alba*	Marine
Variegated Fairy-wren	*Malurus lamberti*	
Peaceful Dove	*Geopelia placida*	
Dusky Moorhen	*Gallinula tenebrosa*	
Noisy Miner	*Manorina melanocephala*	
Australasian Swamphen	*Porphyrio melanotus*	
Crested Pigeon	*Ocyphaps lophotes*	
Australian Ibis	*Threskiornis moluccus*	Marine
Blue-faced Honeyeater	*Entomyzon cyanotis*	
Pied Butcherbird	*Cracticus nigrogularis*	
Willie- wagtail	*Rhipidura leucophrys*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Laughing Kookaburra	*Dacelo novaeguineae*	

Summary		
Total number of species		20
Total number of Matters of National Environmental Significance (MNES) species		6
Common name	**Scientific name**	**MNES Status**
Cattle Egret	*Ardea ibis*	Marine
Great Egret	*Ardea alba*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine

Site	2	
Location	Skinners Park (Carbrook) and Logan River	
Date	9th & 10th September 2018	
Survey	Dawn / Morning	
Surveyor	BS	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Wood Duck	*Chenonetta jubata*	
Pacific Black Duck	*Anas superciliosa*	
Grey Teal	*Anas gracilis*	
Crested Pigeon	*Ocyphaps lophotes*	
Dusky Moorhen	*Gallinula tenebrosa*	
Pied Stilt	*Himantopus himantopus*	
Masked Lapwing	*Vanellus miles*	
Red-kneed Dotterel	*Erythrogonys cinctus*	
Little Egret	*Egretta garzetta*	Marine
Brahminy Kite	*Haliastur indus*	Marine
Pale-headed Rosella	*Platycercus adscitus*	
Mangrove Honeyeater	*Lichenostomus fasciogularis*	
Eurasian Coot	*Fulica atra*	
Glossy Ibis	*Plegadis falcinellus*	Marine Migratory – Bonn (1)
Royal Spoonbill	*Platalea regia*	
Little Corella	*Cacatua sanguinea*	
Willie-wagtail	*Rhipidura leucophrys*	
Common Myna	*Acridotheres tristis*	
Australasian Grebe	*Tachybaptus novaehollandiae*	
Laughing Kookaburra	*Dacelo novaeguineae*	
Brown Honeyeater	*Lichmera indistincta*	
Sulphur-crested Cockatoo	*Cacatua galerita*	
Galah	*Eolophus roseicapilla*	
Australian Ibis	*Threskiornis moluccus*	Marine

Summary		
Total number of species		25
Total number of Matters of National Environmental Significance (MNES) species		3
Common name	**Scientific name**	**MNES Status**
Little Egret	Egretta garzetta	Marine
Glossy Ibis	Plegadis falcinellus	Marine Migratory - Bonn
Brahminy Kite	*Haliastur indus*	Marine
Australian Ibis	Threskiornis moluccus	Marine

Site	2	
Location	Skinners Park (Carbrook) and Logan River	
Date	11th and 12th April 2019	
Survey	Dawn / Morning	
Surveyor	BS	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Wood Duck	*Chenonetta jubata*	
Pacific Black Duck	*Anas superciliosa*	
Dusky Moorhen	*Gallinula tenebrosa*	
Australasian Swamphen	*Porphyrio melanotus*	
Common Myna	*Acridotheres tristis*	
Australian Ibis	*Threskiornis moluccus*	Marine
Little Egret	*Egretta garzetta*	Marine
Straw-necked Ibis	*Threskiornis spinicollis*	Marine
Little Pied Cormorant	*Microcarbo melanoleucos*	
Whistling Kite	*Haliastur sphenurus*	Marine
Noisy Minor	*Manorina melanocephala*	
Rainbow Bee-eater	*Merops ornatus*	Marine
Sulphur-crested Cockatoo	*Cacatua galerita*	
Scaly -breasted Lorikeet	*Trichoglossus chlorolepidotus*	
Cattle Egret	*Ardea ibis*	Marine
Chestnut Teal	*Anas castanea*	
Blue-faced Honeyeater	*Entomyzon cyanotis*	
Lewins Honeyeater	*Meliphaga lewinii*	
Wedge-tailed eagle	*Aquila audax*	
White-faced Heron	*Egretta novaehollandiae*	
Superb Fairy Wren	*Malurus cyaneus*	
Masked Lapwing	*Vanellus miles*	
Pied Butcherbird	*Cracticus nigrogularis*	
Australian Magpie	*Cracticus tibicen*	
White-throated Gerygone	*Gerygone olivacea*	
Olive backed Oriole	*Oriolus sagittatus*	
Australasian Figbird	*Sphecotheres vieilloti*	
Willie- wagtail	*Rhipidura leucophrys*	
Magpie-lark	*Grallina cyanoleuca*	Marine
Torresian Crow	*Corvus orru*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Crested Pigeon	*Ocyphaps lophotes*	
Laughing Kookaburra	*Dacelo novaeguineae*	
Leaden flycatcher	*Myiagra rubecula*	
Brown Honeyeater	*Lichmera indistincta*	
Forest Kingfisher	*Todiramphus macleayii*	Marine
Mangrove Gerygone	*Gerygone levigaster*	
Mangrove Honeyeater	*Lichenostomus fasciogularis*	
Pied Currawong	*Strepera graculina*	
Grey Fantail	*Rhipidura albiscapa*	
Pale-headed Rosella	*Platycercus adscitus*	

Summary		
Total number of species		43
Total number of Matters of National Environmental Significance (MNES) species		8
Common name	**Scientific name**	**MNES Status**
Australian Ibis	*Threskiornis moluccus*	Marine
Little Egret	*Egretta garzetta*	Marine
Straw-necked Ibis	*Threskiornis spinicollis*	Marine
Whistling Kite	*Haliastur sphenurus*	Marine
Magpie-lark	*Grallina cyanoleuca*	Marine
Forest Kingfisher	*Todiramphus macleayii*	Marine
Rainbow Bee-eater	*Merops ornatus*	Marine
Cattle Egret	*Ardea ibis*	Marine

Site	2	
Location	Skinners Park (Carbrook) and Logan River (end of Wharf Road)	
Date	18th March 2020	
Survey	Late Afternoon	
Surveyor	TR	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Wood Duck	*Chenonetta jubata*	
Eastern Osprey	*Pandion cristatus*	Marine Migratory - Bonn
Pacific Black Duck	*Anas superciliosa*	
Scaly-breasted Lorikeet	*Trichoglossus chlorolepidotus*	
Cattle Egret	*Ardea ibis*	Marine
Great Egret	*Ardea alba*	Marine
Forest Kingfisher	*Todiramphus macleayii*	Marine
Variegated Fairy-wren	*Malurus lamberti*	
Peaceful Dove	*Geopelia placida*	
Dusky Moorhen	*Gallinula tenebrosa*	
Red-browed Finch	*Neochmia temporalis*	
Noisy Miner	*Manorina melanocephala*	
Australasian Swamphen	*Porphyrio melanotus*	
Crested Pigeon	*Ocyphaps lophotes*	
Australian Ibis	*Threskiornis moluccus*	Marine
Blue-faced Honeyeater	*Entomyzon cyanotis*	
Pied Butcherbird	*Cracticus nigrogularis*	
Willie- wagtail	*Rhipidura leucophrys*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Laughing Kookaburra	*Dacelo novaeguineae*	

Summary		
Total number of species		20
Total number of Matters of National Environmental Significance (MNES) species		6
Common name	**Scientific name**	**MNES Status**
Eastern Osprey	*Pandion cristatus*	Marine Migratory - Bonn
Cattle Egret	*Ardea ibis*	Marine
Great Egret	*Ardea alba*	Marine
Australian Pelican	*Pelecanus conspicillatus*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Forest Kingfisher	*Todiramphus macleayii*	Marine

Site	2	
Location	Skinners Park (Carbrook) and Logan River (end of Wharf Road)	
Date	14th January 2020	
Survey	Mid-afternoon	
Surveyor	TR	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Wood Duck	*Chenonetta jubata*	
Brahminy Kite	*Haliastur indus*	Marine
Channel-billed Cuckoo	*Scythrops novaehollandiae*	Marine
Pacific Black Duck	*Anas superciliosa*	
Silver Gull	*Chroicocephalus novaehollandiae*	Marine
Australian Pelican	*Pelecanus conspicillatus*	Marine
Peaceful Dove	*Geopelia placida*	
Common Myna	*Acridotheres tristis*	
Dusky Moorhen	*Gallinula tenebrosa*	
Red-browed Finch	*Neochmia temporalis*	
Noisy Miner	*Manorina melanocephala*	
Australasian Swamphen	*Porphyrio melanotus*	
Crested Pigeon	*Ocyphaps lophotes*	
Australian Ibis	*Threskiornis moluccus*	Marine
Blue-faced Honeyeater	*Entomyzon cyanotis*	
Grey Butcherbird	*Cracticus torquatus*	
Willie- wagtail	*Rhipidura leucophrys*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Laughing Kookaburra	*Dacelo novaeguineae*	

Summary		
Total number of species		19
Total number of Matters of National Environmental Significance (MNES) species		5
Common name	**Scientific name**	**MNES Status**
Brahminy Kite	*Haliastur indus*	Marine
Channel-billed Cuckoo	*Scythrops novaehollandiae*	Marine
Silver Gull	*Chroicocephalus novaehollandiae*	Marine
Australian Pelican	*Pelecanus conspicillatus*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine

Site	2	
Location	Skinners Park (Carbrook) and Logan River	
Date	15th and 16th October 2018	
Survey	Dawn / Morning	
Surveyor	TR	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Wood Duck	*Chenonetta jubata*	
Grey Teal	*Anas gracilis*	
Eurasian Coot	*Fulica atra*	
Australasian Swamphen	*Porphyrio melanotus*	
Pied Stilt	*Himantopus himantopus*	Marine
Dusky Moorhen	*Gallinula tenebrosa*	
Masked Lapwing	*Vanellus miles*	
Little Black Cormorant	*Phalacrocorax sulcirostris*	
Great Egret	*Ardea alba*	Marine
Royal Spoonbill	*Platalea regia*	
Pacific Black Duck	*Anas superciliosa*	
Crested Pigeon	*Ocyphaps lophotes*	
Black -fronted Dotterel	*Elseyornis melanops*	
Hardhead	*Aythya australis*	
Australian Pelican	*Pelecanus conspicillatus*	Marine
Glossy Ibis	*Plegadis falcinellus*	Marine Migratory – Bonn (1)
Little Friarbird	*Philemon citreogularis*	
Noisy Friarbird	*Philemon corniculatus*	
Mangrove gerygone	*Gerygone levigaster*	
Grey Butcherbird	*Cracticus torquatus*	
Common Cicadabird	*Coracina tenuirostris*	Marine
Leaden flycatcher	*Myiagra rubecula*	
Mistletoe bird	*Dicaeum hirundinaceum*	
Little Corella	*Cacatua sanguinea*	
Willie-wagtail	*Rhipidura leucophrys*	
Australian Ibis	*Threskiornis moluccus*	Marine
Cattle Egret	*Bubulcus ibis*	Marine
Sacred Kingfisher	*Todiramphus sanctus*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
White-bellied Sea Eagle	*Haliaeetus leucogaster*	Marine Migratory
Blue-faced Honeyeater	*Entomyzon cyanotis*	
Pied Butcherbird	*Cracticus nigrogularis*	

Summary

Total number of species		32
Total number of Matters of National Environmental Significance (MNES) species		8
Common name	**Scientific name**	**MNES Status**
Great Egret	*Ardea alba*	Marine
Glossy Ibis	*Plegadis falcinellus*	Marine Migratory - Bonn
Australian Ibis	*Threskiornis moluccus*	Marine
Cattle Egret	*Bubulcus ibis*	Marine
White-bellied Sea Eagle	*Haliaeetus leucogaster*	Marine Migratory
Pied Stilt	*Himantopus himantopus*	Marine
Australian Pelican	*Pelecanus conspicillatus*	Marine
Common Cicadabird	*Coracina tenuirostris*	Marine

Site No.	2
Location	Skinners Park and Logan River, Carbrook
Date	16 October 2019
Survey	Dawn / Morning
Surveyor(s)	TR/LT

No.	Common name	Scientific name	MNES Status and Migratory (Quantity)
1.	Wood Duck	*Chenonetta jubata*	
2.	Pacific Black Duck	*Anas superciliosa*	
3.	Australian Pelican	*Pelecanus conspicillatus*	Marine
4.	Whistling Kite	*Haliastur sphenurus*	Marine
5.	Common Myna	*Acridotheres tristis*	
6.	Dusky Moorhen	*Gallinula tenebrosa*	
7.	Australasian Darter	*Anhinga novaehollandiae*	
8.	Noisy Minor	*Manorina melanocephala*	
9.	Magpie-lark	*Grallina cyanoleuca*	Marine
10.	Purple Swamphen	*Porphyrio porphyrio*	
11.	Scarlet honeyeater	*Myzomela sanguinolenta*	
12.	Pied Stilt	*Himantopus himantopus*	Marine
13.	Australian Ibis	*Threskiornis moluccus*	Marine
14.	Torresian Crow	*Corvus orru*	
15.	Tawny Frogmouth (Nest)	*Podargus strigoides*	
16.	Australian Magpie	*Gymnorhina tibicen*	
17.	Great Egret	*Ardea alba*	Marine
18.	Cattle Egret	*Ardea ibis*	Marine
19.	Chestnut Teal	*Anas castanea*	
20.	Grey Butcherbird	*Cracticus torquatus*	
21.	Willie- wagtail	*Rhipidura leucophrys*	
22.	Rainbow Lorikeet	*Trichoglossus moluccanus*	
23.	Laughing Kookaburra	*Dacelo novaeguineae*	
24.	Mangrove Gerygone	*Gerygone levigaster*	
25.	Mangrove Honeyeater	*Lichenostomus fasciogularis*	
26.	Australasian Figbird	*Sphecotheres vieilloti*	

Summary		
Total number of species		26
Total number of Matters of National Environmental Significance (MNES) species		7
Common name	**Scientific name**	**MNES Status**
Australian Ibis	*Threskiornis moluccus*	Marine
Cattle Egret	*Ardea ibis*	Marine
Great Egret	*Ardea alba*	Marine
Australian Pelican	*Pelecanus conspicillatus*	Marine
Pied Stilt	*Himantopus himantopus*	Marine
Whistling Kite	*Haliastur sphenurus*	Marine
Magpie-lark	*Grallina cyanoleuca*	Marine

Site	2	
Location	Skinners Park (Carbrook) and Logan River (end of Wharf Road)	
Date	17th and 27th February 2020	
Survey	Afternoon	
Surveyor	TR	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Wood Duck	*Chenonetta jubata*	
Brahminy Kite	*Haliastur indus*	Marine
Eastern Koel	*Eudynamys orientalis*	
Pacific Black Duck	*Anas superciliosa*	
Silver Gull	*Chroicocephalus novaehollandiae*	Marine
Australian Pelican	*Pelecanus conspicillatus*	Marine
Common Myna	*Acridotheres tristis*	
Dusky Moorhen	*Gallinula tenebrosa*	
Purple Swamphen	*Porphyro melanotus*	
Eurasian Coot	*Fulica atra*	
Red-browed Finch	*Neochmia temporalis*	
Noisy Miner	*Manorina melanocephala*	
Crested Pigeon	*Ocyphaps lophotes*	
Australian Ibis	*Threskiornis moluccus*	Marine
Straw-necked Ibis	*Threskiornis spinicollis*	Marine
Blue-faced Honeyeater	*Entomyzon cyanotis*	
Grey Butcherbird	*Cracticus torquatus*	
Willie- wagtail	*Rhipidura leucophrys*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Cattle Egret	*Ardea ibis*	Marine
Great Egret	*Ardea alba*	Marine
Magpie Goose	*Anseranas semipalmata*	Marine
Laughing Kookaburra	*Dacelo novaeguineae*	

Summary		
Total number of species		23
Total number of Matters of National Environmental Significance (MNES) species		8
Common name	**Scientific name**	**MNES Status**
Straw-necked Ibis	*Threskiornis spinicollis*	Marine
Channel-billed Cuckoo	*Scythrops novaehollandiae*	Marine
Silver Gull	*Chroicocephalus novaehollandiae*	Marine
Cattle Egret	*Ardea ibis*	Marine
Great Egret	*Ardea alba*	Marine
Magpie Goose	*Anseranas semipalmata*	Marine
Australian Pelican	*Pelecanus conspicillatus*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine

Site	2	
Location	Skinners Park (Carbrook) and Logan River (end of Wharf Road)	
Date	18th March 2020	
Survey	Mid-afternoon	
Surveyor	TR	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Wood Duck	*Chenonetta jubata*	
Brahminy Kite	*Haliastur indus*	Marine
Pacific Black Duck	*Anas superciliosa*	
Australian Pelican	*Pelecanus conspicillatus*	Marine
Cattle Egret	*Ardea ibis*	Marine
Great Egret	*Ardea alba*	Marine
Peaceful Dove	*Geopelia placida*	
Common Myna	*Acridotheres tristis*	
Dusky Moorhen	*Gallinula tenebrosa*	
Red-browed Finch	*Neochmia temporalis*	
Noisy Miner	*Manorina melanocephala*	
Australasian Swamphen	*Porphyrio melanotus*	
Crested Pigeon	*Ocyphaps lophotes*	
Australian Ibis	*Threskiornis moluccus*	Marine
Blue-faced Honeyeater	*Entomyzon cyanotis*	
Grey Butcherbird	*Cracticus torquatus*	
Willie- wagtail	*Rhipidura leucophrys*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Laughing Kookaburra	*Dacelo novaeguineae*	

Summary		
Total number of species		19
Total number of Matters of National Environmental Significance (MNES) species		5
Common name	**Scientific name**	**MNES Status**
Brahminy Kite	*Haliastur indus*	Marine
Cattle Egret	*Ardea ibis*	Marine
Great Egret	*Ardea alba*	Marine
Australian Pelican	*Pelecanus conspicillatus*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine

Site	2	
Location	Skinners Park (Carbrook) and Logan River (end of Wharf Road)	
Date	21st January 2020	
Survey	Mid-afternoon	
Surveyor	TR	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Wood Duck	*Chenonetta jubata*	
Whistling Kite	*Haliastur sphenurus*	Marine
Pacific Black Duck	*Anas superciliosa*	
Silver Gull	*Chroicocephalus novaehollandiae*	Marine
Sacred Kingfisher	*Todiramphus sanctus*	Marine
Australian Pelican	*Pelecanus conspicillatus*	Marine
Peaceful Dove	*Geopelia placida*	
Common Myna	*Acridotheres tristis*	
Dusky Moorhen	*Gallinula tenebrosa*	
Australasian Darter	*Anhinga novaehollandiae*	
Red-browed Finch	*Neochmia temporalis*	
Noisy Miner	*Manorina melanocephala*	
Australasian Swamphen	*Porphyrio melanotus*	
Crested Pigeon	*Ocyphaps lophotes*	
Australian Ibis	*Threskiornis moluccus*	Marine
Blue-faced Honeyeater	*Entomyzon cyanotis*	
Cattle Egret	*Ardea ibis*	Marine
Grey Butcherbird	*Cracticus torquatus*	
Willie- wagtail	*Rhipidura leucophrys*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	

Summary		
Total number of species		20
Total number of Matters of National Environmental Significance (MNES) species		6
Common name	**Scientific name**	**MNES Status**
Whistling Kite	*Haliastur sphenurus*	Marine
Sacred Kingfisher	*Todiramphus sanctus*	Marine
Cattle Egret	*Ardea ibis*	Marine
Silver Gull	*Chroicocephalus novaehollandiae*	Marine
Australian Pelican	*Pelecanus conspicillatus*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine

Site	2	
Location	Skinners Park (Carbrook) and Logan River (Dam being dewatered)	
Date	22th October 2019	
Survey	Dawn / Morning	
Surveyor	BS	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Wood Duck	*Chenonetta jubata*	
Pacific Black Duck	*Anas superciliosa*	
Grey Teal	*Anas gracilis*	
Dusky Moorhen	*Gallinula tenebrosa*	
Masked Lapwing	*Vanellus miles*	
Australasian Swamphen	*Porphyrio melanotus*	
Little Pied Cormorant	*Microcarbo melanoleucos*	
Buff – Banded Rail	*Gallirallus philippensis*	Marine
Latham's Snipe	*Gallinago hardwickii*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA (1)
Welcome Swallow	*Hirundo neoxena*	Marine
Comb-created Jacana	*Irediparra gallinacea*	
Spotted Dove	*Spilopelia chinensis*	
Galah	Eolophus roseicapilla	
Glossy Ibis	*Plegadis falcinellus*	Marine Migratory – Bonn(1)
Black-faced Cuckooshrike	*Coracina novaehollandiae*	
Sulphur – Crested Cockatoo	*Cacatua galerita*	
Little Corella	Cacatua sanguinea	
Grey Butcherbird	*Cracticus torquatus*	
Australasian Figbird	*Sphecotheres vieilloti*	
Noisy Minor	Manorina melanocephala	
Grey Fantail	*Rhipidura albiscapa*	
Intermediate Egret	*Ardea intermedia*	Marine
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Cattle Egret	*Ardea ibis*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Blue-faced honeyeater	*Entomyzon cyanotis*	
Torresian Crow	*Corvus orru*	
Willie – Wagtail	*Rhipidura leucophrys*	
Pale—headed Rosella	*Platycercus adscitus*	
Magpie – Lark	*Grallina cyanoleuca*	Marine
Australian Magpie	*Gymnorhina tibicen*	

Summary		
Total number of species		31
Total number of Matters of National Environmental Significance (MNES) species		8
Common name	**Scientific name**	**MNES Status**

Buff – Banded Rail	Gallirallus philippensis	Marine
Latham's Snipe	*Gallinago hardwickii*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA
Intermediate Egret	*Ardea intermedia*	Marine
Glossy Ibis	Plegadis falcinellus	Marine
Cattle Egret	*Ardea ibis*	Marine
Magpie – Lark	*Grallina cyanoleuca*	Marine
Welcome Swallow	*Hirundo neoxena*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine

Site	2	
Location	Skinners Park (Carbrook) and Logan River	
Date	24th and 25th March 2019	
Survey	Dawn / Morning	
Surveyor	BS	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Wood Duck	*Chenonetta jubata*	
Pacific Black Duck	*Anas superciliosa*	
Dusky Moorhen	*Gallinula tenebrosa*	
Australasian Swamphen	*Porphyrio melanotus*	
Welcome Swallow	*Hirundo neoxena*	Marine
Common Myna	*Acridotheres tristis*	
Australian Ibis	*Threskiornis moluccus*	Marine
Little Egret	*Egretta garzetta*	Marine
Intermediate Egret	*Ardrea intermedia*	Marine
Little Pied Cormorant	*Microcarbo melanoleucos*	
Noisy Minor	*Manorina melanocephala*	
Rainbow Bee-eater	*Merops ornatus*	Marine
Sulphur-crested Cockatoo	*Cacatua galerita*	
Scaly -breasted Lorikeet	*Trichoglossus chlorolepidotus*	
Cattle Egret	*Ardea ibis*	Marine
Chestnut Teal	*Anas castanea*	
Blue-faced Honeyeater	*Entomyzon cyanotis*	
Latham's Snipe	*Gallinago hardwickii*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA (1)
Grey Butcherbird	*Cracticus torquatus*	
White-faced Heron	*Egretta novaehollandiae*	
Grey Shrikethrush	*Colluricincla harmonica*	
Rufous Fantail	*Rhipidura rufifrons*	
Superb Fairy Wren	*Malurus cyaneus*	
Masked Lapwing	*Vanellus miles*	
Pied Butcherbird	*Cracticus nigrogularis*	
Australian Magpie	*Cracticus tibicen*	
Olive backed Oriole	*Oriolus sagittatus*	
Australasian Figbird	*Sphecotheres vieilloti*	
Dollarbird	*Eurystomus orientalis*	Marine
Willie- wagtail	*Rhipidura leucophrys*	
Magpie-lark	*Grallina cyanoleuca*	Marine
Torresian Crow	*Corvus orru*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Crested Pigeon	*Ocyphaps lophotes*	
Spangled Drongo	*Dicrurus bracteatus*	Marine
Pale-headed Rossella	*Platycercus adscitus*	
Laughing Kookaburra	*Dacelo novaeguineae*	
Leaden flycatcher	*Myiagra rubecula*	
Brown Honeyeater	*Lichmera indistincta*	

Forest Kingfisher	*Todiramphus macleayii*	Marine
Mangrove Greygone	*Gerygone levigaster*	
Mangrove Honeyeater	*Lichenostomus fasciogularis*	
Pied Currawong	*Strepera graculina*	
Galah	*Eolophus roseicapilla*	
Tawny Grassbird	*Megalurus timoriensis*	

Summary		
Total number of species		46
Total number of Matters of National Environmental Significance (MNES) species		11
Common name	**Scientific name**	**MNES Status**
Australian Ibis	*Threskiornis moluccus*	Marine
Little Egret	*Egretta garzetta*	Marine
Rainbow Bee-eater	*Merops ornatus*	Marine
Cattle Egret	*Bubulcus ibis*	Marine
Latham's Snipe	*Gallinago hardwickii*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA
Welcome Swallow	*Hirundo neoxena*	Marine
Intermediate Egret	*Ardrea intermedia*	Marine
Dollarbird	*Eurystomus orientalis*	Marine
Magpie-lark	*Grallina cyanoleuca*	Marine
Spangled Drongo	*Dicrurus bracteatus*	Marine
Forest Kingfisher	*Todiramphus macleayii*	Marine

Site	2	
Location	Skinners Park (Carbrook) and Logan River (Dam being dewatered)	
Date	24th September 2019	
Survey	Dawn / Morning	
Surveyor	BS	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Wood Duck	*Chenonetta jubata*	
Pacific Black Duck	*Anas superciliosa*	
Grey Teal	*Anas gracilis*	
Dusky Moorhen	*Gallinula tenebrosa*	
Brahminy Kite	*Haliastur indus*	
Australasian Swamphen	*Porphyrio melanotus*	
Little Pied Cormorant	*Microcarbo melanoleucos*	
Buff – Banded Rail	*Gallirallus philippensis*	Marine
Latham's Snipe	*Gallinago hardwickii*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA (1)
Welcome Swallow	*Hirundo neoxena*	Marine
Spotted Dove	*Spilopelia chinensis*	
Galah	Eolophus roseicapilla	
White – Faced Heron	*Egretta novaehollandiae*	
Rufous Whistler	*Pachycephala rufiventris*	
Sulphur – Crested Cockatoo	*Cacatua galerita*	
Little Corella	Cacatua sanguinea	
Grey Butcherbird	*Cracticus torquatus*	
Australasian Figbird	*Sphecotheres vieilloti*	
Noisy Minor	Manorina melanocephala	
Grey Fantail	*Rhipidura albiscapa*	
Intermediate Egret	*Ardea intermedia*	Marine
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Masked Lapwing	*Vanellus miles*	
Cattle Egret	*Ardea ibis*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Blue-faced honeyeater	*Entomyzon cyanotis*	
Brown Honeyeater	*Lichmera indistincta*	
Willie – Wagtail	*Rhipidura leucophrys*	
Pale—headed Rosella	*Platycercus adscitus*	
Magpie – Lark	*Grallina cyanoleuca*	Marine
Fairy Martin	*Petrochelidon ariel*	
Australian Magpie	*Gymnorhina tibicen*	

Summary		
Total number of species		32
Total number of Matters of National Environmental Significance (MNES) species		7
Common name	**Scientific name**	**MNES Status**

Buff – Banded Rail	Gallirallus philippensis	Marine
Latham's Snipe	*Gallinago hardwickii*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA
Intermediate Egret	*Ardea intermedia*	Marine
Cattle Egret	*Ardea ibis*	Marine
Magpie – Lark	*Grallina cyanoleuca*	Marine
Welcome Swallow	*Hirundo neoxena*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine

Site	2	
Location	Skinners Park (Carbrook) and Logan River	
Date	30th and 31st January 2019	
Survey	Dawn / Morning	
Surveyor	BS	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Wood Duck	*Chenonetta jubata*	
Pacific Black Duck	*Anas superciliosa*	
Crested Pigeon	*Ocyphaps lophotes*	
Spotted Dove	*Spilopelia chinensis*	
Dusky Moorhen	*Gallinula tenebrosa*	
Australasian Darter	*Anhinga novaehollandiae*	
Noisy Minor	*Manorina melanocephala*	
Australasian Swamphen	*Porphyrio melanotus*	
Pied Stilt	*Himantopus leucocephalus*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Cattle Egret	*Ardea ibis*	Marine
Great Egret	*Ardea alba*	Marine
Blue-faced Honeyeater	*Entomyzon cyanotis*	
Grey Butcherbird	*Cracticus torquatus*	
Rufous Fantail	*Rhipidura rufifrons*	
Masked Lapwing	*Vanellus miles*	
Pied Butcherbird	*Cracticus nigrogularis*	
Australian Magpie	*Cracticus tibicen*	
Olive backed Oriole	*Oriolus sagittatus*	
Australasian Figbird	*Sphecotheres vieilloti*	
Willie- wagtail	*Rhipidura leucophrys*	
Magpie-lark	*Grallina cyanoleuca*	Marine
Torresian Crow	*Corvus orru*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Pale-headed Rossella	*Plotycercus adscitus*	
Laughing Kookaburra	*Dacelo novaeguineae*	
Australasian Grebe	*Tachybaptus novaehollandiae*	
Leaden flycatcher	*Myiagra rubecula*	
Royal Spoonbill	*Platalea regia*	
Forest Kingfisher	*Todiramphus macleayii*	Marine
Mangrove Greygone	*Gerygone levigaster*	
Mangrove Honeyeater	*Lichenostomus fasciogularis*	
Pied Currawong	*Strepera graculina*	
Galah	*Eolophus roseicapilla*	
Common Myna	*Acridotheres tristis*	
Little Corella	*Cacatua sanguinea*	
Sulphur-crested Cockatoo	*Cacatua galerita*	
White-bellied Sea-Eagle	*Haliaeetus leucogaster*	Marine

Summary		
Total number of species		37
Total number of Matters of National Environmental Significance (MNES) species		7
Common name	**Scientific name**	**MNES Status**
Australian Ibis	*Threskiornis moluccus*	Marine
Cattle Egret	*Bubulcus ibis*	Marine
Great Egret	*Ardea alba*	Marine
Pied Stilt	*Himantopus leucocephalus*	Marine
Magpie-lark	*Grallina cyanoleuca*	Marine
Forest Kingfisher	*Todiramphus macleayii*	Marine
White-bellied Sea-Eagle	*Haliaeetus leucogaster*	Marine

Site	4	
Location	Eagleby Wetlands / Albert River	
Date	2nd April 2020	
Survey	Late-afternoon	
Surveyor	TR	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Pacific Black Duck	*Anas superciliosa*	
Wandering Whistling Duck	*Dendrocygna arcuata*	Marine
Crested Pigeon	*Ocyphaps lophotes*	
Peaceful Dove	*Geopelia placida*	
Pied Stilt	*Himantopus leucocephalus*	Marine
Osprey	*Pandion cristatus*	Marine Migratory
Australasian Grebe	*Tachybaptus novaehollandiae*	
Pied Currawong	*Strepera graculina*	
Dusky Moorhen	*Gallinula tenebrosa*	
Australasian Swamphen	*Porphyrio melanotus*	
Sacred Kingfisher	*Todiramphus sanctus*	Marine
Eurasian Coot	*Fulica atra*	
Masked Lapwing	*Vanellus miles*	
Great Egret	*Ardea alba*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Straw-necked Ibis	*Threskiornis spinicollis*	Marine
Magpie Goose	*Tachybaptus novaehollandiae*	Marine
Galah	*Eolophus roseicapilla*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Noisy Miner	*Manorina melanocephala*	
Pied Butcherbird	*Cracticus nigrogularis*	
Australian Magpie	*Cracticus tibicen*	
Magpie-lark	*Grallina cyanoleuca*	Marine
Torresian Crow	*Corvus orru*	
Welcome Swallow	*Hirundo neoxena*	Marine
Cattle Egret	*Ardea ibis*	Marine
Willie-wagtail	*Rhipidura leucophrys*	
Little Black Cormorant	*Phalacrocorax sulcirostris*	
Scaly-breasted Lorikeet	*Trichoglossus chlorolepidotus*	
Double-barred Finch	*Taeniopygia bichenovii*	
White-faced Heron	*Egretta novaehollandiae*	
Superb Fairywren	*Malurus cyaneus*	

Summary		
Total number of species		32
Total number of Matters of National Environmental Significance (MNES) species		12
Common name	**Scientific name**	**MNES Status**
Great Egret	*Ardea alba*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Sacred Kingfisher	*Todiramphus sanctus*	Marine
Pied Stilt	*Himantopus leucocephalus*	Marine
Magpie-lark	*Grallina cyanoleuca*	Marine
Pied Stilt	*Himantopus leucocephalus*	Marine
Welcome Swallow	*Hirundo neoxena*	Marine
Osprey	*Pandion cristatus*	Marine Migratory
Wandering Whistling Duck	*Dendrocygna arcuata*	Marine
Straw-necked Ibis	*Threskiornis spinicollis*	Marine
Magpie Goose	*Tachybaptus novaehollandiae*	Marine
Cattle Egret	*Ardea ibis*	Marine

Site	4	
Location	Eagleby Wetlands/Albert River	
Date	4th & 5th April 2019	
Survey	Dawn / Morning	
Surveyor	TR	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Wood Duck	*Chenonetta jubata*	
Pacific Black Duck	*Anas superciliosa*	
Spotted Dove	*Spilopelia chinensis*	
Australasian Swamphen	*Porphyrio melanotus*	
Masked Lapwing	*Vanellus miles*	
Little Pied Cormorant	*Microcarbo melanoleucos*	
Pied Butcherbird	*Cracticus nigrogularis*	
Australian Magpie	*Cracticus tibicen*	
Pied Currawong	*Strepera graculina*	
Silver-eye	*Zosterops lateralis*	Marine
Red-browed Finch	*Neochmia temporalis*	
Double-barred Finch	*Taeniopygia bichenovii*	
Australasian Grebe	*Tachybaptus novaehollandiae*	
Osprey	*Pandion haliaetus*	Marine Migratory
Azure Kingfisher	*Alcedo azurea*	
Australian Pelican	*Pelecanus conspicillatus*	Marine
Great Egret	*Ardea alba*	Marine
Little Egret	*Egretta garzetta*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Brahminy Kite	*Haliastur indus*	Marine
White-bellied Sea-Eagle	*Haliaeetus leucogaster*	Marine Migratory
Forest Kingfisher	*Todiramphus macleayii*	Marine
Rainbow Bee-eater	*Merops ornatus*	Marine
Sulphur-crested Cockatoo	*Cacatua galerita*	
Magpie Goose	*Anseranas semipalmata*	Marine
Peaceful Dove	*Geopelia placida*	
Cattle Egret	*Ardea ibis*	Marine
Brown Quail	*Coturnix ypsilophora*	
Pied Cormorant	*Phalacrocorax varius*	
Mangrove Honeyeater	*Lichenostomus fasciogularis*	
Pale-headed Rosella	*Platycercus adscitus*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Variegated Fairywren	*Malurus lamberti*	
Superb Fairywren	*Malurus cyaneus*	
Yellow-faced Honeyeater	*Lichenostomus chrysops*	
Noisy Miner	*Manorina melanocephala*	
Noisy Friarbird	*Philemon corniculatus*	
Pied Stilt	*Himantopus himantopus*	Marine
Glossy Ibis	*Plegadis falcinellus*	Marine

		Migratory – Bonn (1)
Spotless Crake	*Porzana tabuensis*	Marine

Summary		
Total number of species		40
Total number of Matters of National Environmental Significance (MNES) species		15
Common name	**Scientific name**	**MNES Status**
Osprey	*Pandion haliaetus*	Marine Migratory
Great Egret	*Ardea alba*	Marine
Little Egret	*Egretta garzetta*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
White-bellied Sea-Eagle	*Haliaeetus leucogaster*	Marine Migratory
Rainbow Bee-eater	*Merops ornatus*	Marine
Magpie Goose	*Anseranas semipalmata*	Marine
Cattle Egret	*Bubulcus ibis*	Marine
Glossy Ibis	*Plegadis falcinellus*	Marine Migratory – Bonn
Spotless Crake	*Porzana tabuensis*	Marine
Silver-eye	*Zosterops lateralis*	Marine
Australian Pelican	*Pelecanus conspicillatus*	Marine
Brahminy Kite	*Haliastur indus*	Marine
Forest Kingfisher	*Todiramphus macleayii*	Marine
Pied Stilt	*Himantopus himantopus*	Marine

Site	4	
Location	Eagleby Wetlands/Albert River	
Date	8th & 9th November 2018	
Survey	Dawn / Morning	
Surveyor	BS / TR	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Wood Duck	*Chenonetta jubata*	
Pacific Black Duck	*Anas superciliosa*	
Grey Teal	*Anas gracilis*	
Australasian Grebe	*Tachybaptus novaehollandiae*	
Spotted Dove	*Spilopelia chinensis*	
Bar-shouldered Dove	*Geopelia humeralis*	
Pacific Koel	*Eudynamys orientalis*	Marine
Forest Kingfisher	*Todiramphus macleayii*	Marine
White-throated Gerygone	*Gerygone olivacea*	
Buff-banded Rail	*Gallirallus philippensis*	Marine
White-faced Heron	*Egretta novaehollandiae*	
Glossy Ibis	*Plegadis falcinellus*	Marine Migratory – Bonn (2)
Olive-backed Oriole	*Oriolus sagittatus*	
Common Cicadabird	*Coracina tenuirostris*	
Black Swan	*Cygnus atratus*	
Osprey	*Pandion haliaetus*	Marine Migratory – Bonn (1)
Australian Hobby	*Falco longipennis*	
Red-necked Avocet	*Recurvirostra novaehollandiae*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Galah	*Eolophus roseicapilla*	
Sulphur-crested Cockatoo	*Cacatua galerita*	
Scaly-breasted Lorikeet	*Trichoglossus chlorolepidotus*	
Variegated Fairwren	*Malurus lamberti*	
Lewin's Honeyeater	*Meliphaga lewinii*	
Torresian Crow	*Corvus orru*	
Welcome Swallow	*Hirundo neoxena*	Marine
Azure Kingfisher	*Alcedo azurea*	
Willie-wagtail	*Rhipidura leucophrys*	
Rufous Fantail	*Rhipidura rufifrons*	Marine
Australasian Swamphen	*Porphyrio melanotus*	
Australian Pelican	*Pelecanus conspicillatus*	Marine
Great Egret	*Ardea alba*	Marine
Royal Spoonbill	*Platalea regia*	
White-bellied Sea-Eagle	*Haliaeetus leucogaster*	Marine Migratory
Laughing Kookaburra	*Dacelo novaeguineae*	
Little Corella	*Cacatua sanguinea*	
Pale-headed Rosella	*Platycercus adscitus*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	

Common name	Scientific name	MNES Status and Migratory (Quantity)
Red-backed Fairywren	*Malurus melanocephalus*	
Brown Honeyeater	*Lichmera indistincta*	
Grey Butcherbird	*Cracticus torquatus*	
Australian Magpie	*Cracticus tibicen*	
Grey Fantail	*Rhipidura albiscapa*	
Tawny Grassbird	*Megalurus timoriensis*	
Golden-headed Cisticola	*Cisticola exilis*	
Crested Pigeon	*Ocyphaps lophotes*	
Peaceful Dove	*Geopelia placida*	
Masked Lapwing	*Vanellus miles*	
Great Cormorant	*Phalacrocorax carbo*	
Cattle Egret	*Ardea ibis*	Marine
Spotless Crake	*Porzana tabuensis*	Marine
Intermediate Egret	*Ardea intermedia*	Marine
Whistling Kite	*Haliastur sphenurus*	Marine
Striated Pardalote	*Pardalotus striatus*	
Mangrove Gerygone	*Gerygone levigaster*	
Australasian Figbird	*Sphecotheres vieilloti*	
Spangled Drongo	*Dicrurus bracteatus*	Marine
Magpie-lark	*Grallina cyanoleuca*	Marine
Leaden Flycatcher	*Myiagra rubecula*	
Australian Reed Warbler	*Acrocephalus australis*	Marine
Mistletoebird	*Dicaeum hirundinaceum*	
Magpie Goose	*Anseranas semipalmata*	Marine
Comb-crested Jacana	*Irediparra gallinacea*	
Dollarbird	*Eurystomus orientalis*	Marine
Rainbow Bee-eater	*Merops ornatus*	Marine
Pied Butcherbird	*Cracticus nigrogularis*	
Silver-eye	*Zosterops lateralis*	Marine
Marsh Sandpiper	*Tringa stagnatilis*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA (3)
Little Wattlebird	*Anthochaera chrysoptera*	
Black-necked stork	*Ephippiorhynchus asiaticus*	
Red-kneed Dotterel	*Erythrogonys cinctus*	
Sharp-tailed Sandpiper	*Calidris acuminata*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA (2)
Black-fronted Dotterel	*Elseyornis melanops*	
Little Egret	*Egretta garzetta*	Marine

Summary		
Total number of species		74
Total number of Matters of National Environmental Significance (MNES) species		23
Common name	**Scientific name**	**MNES Status**
Glossy Ibis	*Plegadis falcinellus*	Marine Migratory – Bonn
Osprey	*Pandion haliaetus*	Marine Migratory – Bonn
Red-necked Avocet	*Recurvirostra novaehollandiae*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Great Egret	*Ardea alba*	Marine
White-bellied Sea-Eagle	*Haliaeetus leucogaster*	Marine Migratory
Cattle Egret	*Ardea ibis*	Marine
Spotless Crake	*Porzana tabuensis*	Marine
Intermediate Egret	*Ardea intermedia*	Marine
Australian Reed Warbler	*Acrocephalus australis*	Marine
Magpie Goose	*Anseranas semipalmata*	Marine
Rainbow Bee-eater	*Merops ornatus*	Marine
Marsh Sandpiper	*Tringa stagnatilis*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA
Sharp-tailed Sandpiper	*Calidris acuminata*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA
Little Egret	*Egretta garzetta*	Marine
Forest Kingfisher	*Todiramphus macleayii*	Marine
Welcome Swallow	*Hirundo neoxena*	Marine
Australian Pelican	*Pelecanus conspicillatus*	Marine
Whistling Kite	*Haliastur sphenurus*	Marine
Spangled Drongo	*Dicrurus bracteatus*	Marine
Magpie-lark	*Grallina cyanoleuca*	Marine
Dollarbird	*Eurystomus orientalis*	Marine
Silver-eye	*Zosterops lateralis*	Marine

Site	4	
Location	Eagleby Wetlands / Albert River	
Date	8th July 2020	
Survey	Late-afternoon	
Surveyor	TR	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Pacific Black Duck	*Anas superciliosa*	
Whistling Kite	*Haliastur sphenurus*	Marine
Wandering Whistling Duck	*Dendrocygna arcuata*	Marine
Pied Stilt	*Himantopus leucocephalus*	Marine
Dusky Moorhen	*Gallinula tenebrosa*	
Australasian Swamphen	*Porphyrio melanotus*	
Eurasian Coot	*Fulica atra*	
Masked Lapwing	*Vanellus miles*	
Great Egret	*Ardea alba*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Magpie Goose	*Tachybaptus novaehollandiae*	Marine
Galah	*Eolophus roseicapilla*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Noisy Miner	*Manorina melanocephala*	
Pied Butcherbird	*Cracticus nigrogularis*	
Australian Magpie	*Cracticus tibicen*	
Magpie-lark	*Grallina cyanoleuca*	Marine
Torresian Crow	*Corvus orru*	
Welcome Swallow	*Hirundo neoxena*	Marine
Cattle Egret	*Ardea ibis*	Marine
Willie-wagtail	*Rhipidura leucophrys*	
Pied Cormorant	*Phalacrocorax varius*	
Scaly-breasted Lorikeet	*Trichoglossus chlorolepidotus*	
Superb Fairywren	*Malurus cyaneus*	

Summary	
Total number of species	32

Total number of Matters of National Environmental Significance (MNES) species		9
Common name	**Scientific name**	**MNES Status**
Great Egret	*Ardea alba*	Marine
Whistling Kite	*Haliastur sphenurus*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Pied Stilt	*Himantopus leucocephalus*	Marine
Magpie-lark	*Grallina cyanoleuca*	Marine
Welcome Swallow	*Hirundo neoxena*	Marine
Wandering Whistling Duck	*Dendrocygna arcuata*	Marine
Magpie Goose	*Tachybaptus novaehollandiae*	Marine
Cattle Egret	*Ardea ibis*	Marine

Site	4	
Location	Eagleby Wetlands/Albert River	
Date	11th & 12th March 2019	
Survey	Dawn / Morning	
Surveyor	BS/TR	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Wood Duck	*Chenonetta jubata*	
Pacific Black Duck	*Anas superciliosa*	
Bar-shouldered Dove	*Geopelia humeralis*	
Masked Lapwing	*Vanellus miles*	
Australasian Darter	*Anhinga novaehollandiae*	
Little Pied Cormorant	*Microcarbo melanoleucos*	
White-faced Heron	*Egretta novaehollandiae*	
Glossy Ibis	*Plegadis falcinellus*	Marine Migratory – Bonn (2)
Royal Spoonbill	*Platalea regia*	
Australian Pelican	*Pelecanus conspicillatus*	Marine
Cattle Egret	*Ardea ibis*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Azure Kingfisher	*Alcedo azurea*	
Laughing Kookaburra	*Dacelo novaeguineae*	
Rainbow Bee-eater	*Merops ornatus*	Marine
Galah	*Eolophus roseicapilla*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Swamp Harrier	*Circus approximans*	Marine
Satin Flycatcher	*Myiagra cyanoleuca*	Marine Migratory
Australian Reed Warbler	*Acrocephalus australis*	Marine
Fairy Martin	*Petrochelidon ariel*	
Black Swan	*Cygnus atratus*	
Grey Butcherbird	*Cracticus torquatus*	
Australian Magpie	*Cracticus tibicen*	
Rufous Whistler	*Pachycephala rufiventris*	
Australasian Figbird	*Sphecotheres vieilloti*	
Spangled Drongo	*Dicrurus bracteatus*	Marine
Willie-wagtail	*Rhipidura leucophrys*	
Grey Fantail	*Rhipidura albiscapa*	
Black-faced Monarch	*Monarcha melanopsis*	Marine
Leaden Flycatcher	*Myiagra rubecula*	
Torresian Crow	*Corvus orru*	
Scaly-breasted Lorikeet	*Trichoglossus chlorolepidotus*	
Variegated Fairywren	*Malurus lamberti*	
Red-backed Fairywren	*Malurus melanocephalus*	
Noisy Miner	*Manorina melanocephala*	
Brown Honeyeater	*Lichmera indistincta*	
White-throated Honeyeater	*Melithreptus albogularis*	

Common name	Scientific name	MNES Status and Migratory (Quantity)
Striped Honeyeater	*Plectorhyncha lanceolata*	
Little Friarbird	*Philemon citreogularis*	
Striated Pardalote	*Pardalotus striatus*	
Plumed Whistling Duck	*Dendrocygna eytoni*	
Grey Teal	*Anas gracilis*	
Magpie Goose	*Anseranas semipalmata*	Marine
Olive-backed Oriole	*Oriolus sagittatus*	
Collared Sparrowhawk	*Accipiter cirrocephalus*	
Channel-billed Cuckoo	*Scythrops novaehollandiae*	Marine
Chestnut teal	*Anas castanea*	
Latham's Snipe	*Gallinago hardwickii*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA (1)
Marsh Sandpiper	*Tringa stagnatilis*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA (1)
Spotless Crake	*Porzana tabuensis*	Marine
Welcome Swallow	*Hirundo neoxena*	Marine
Tawny Grassbird	*Megalurus timoriensis*	
Silver-eye	*Zosterops lateralis*	Marine
Wedge-tailed Eagle	*Aquila audax*	
Great Egret	*Ardea alba*	Marine
Forest Kingfisher	*Todiramphus macleayii*	Marine
Dusky Moorhen	*Gallinula tenebrosa*	
Australasian Swamphen	*Porphyrio melanotus*	
Pied Stilt	*Himantopus himantopus*	Marine
Brown Goshawk	*Accipiter fasciatus*	Marine
Pied Butcherbird	*Cracticus nigrogularis*	
Common Myna	*Acridotheres tristis*	

Summary		
Total number of species		65
Total number of Matters of National Environmental Significance (MNES) species		18
Common name	**Scientific name**	**MNES Status**
Glossy Ibis	*Plegadis falcinellus*	Marine Migratory – Bonn
Cattle Egret	*Bubulcus ibis*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Rainbow Bee-eater	*Merops ornatus*	Marine
Australian Reed Warbler	*Acrocephalus australis*	Marine
Magpie Goose	*Anseranas semipalmata*	Marine
Latham's Snipe	*Gallinago hardwickii*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA
Marsh Sandpiper	*Tringa stagnatilis*	Marine

		Migratory – Bonn, JAMBA, CAMBA, ROKAMBA
Spotless Crake	*Porzana tabuensis*	Marine
Great Egret	*Ardea alba*	Marine
Australian Pelican	*Pelecanus conspicillatus*	Marine
Spangled Drongo	*Dicrurus bracteatus*	Marine
Black-faced Monarch	*Monarcha melanopsis*	Marine
Channel-billed Cuckoo	*Scythrops novaehollandiae*	Marine
Welcome Swallow	*Hirundo neoxena*	Marine
Silver-eye	*Zosterops lateralis*	Marine
Forest Kingfisher	*Todiramphus macleayii*	Marine

Site	4	
Location	Eagleby Wetlands/Albert River	
Date	12th & 13th December 2018	
Survey	Dawn / Morning	
Surveyor	TR	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Magpie Goose	*Anseranas semipalmata*	Marine
Black Swan	*Cygnus atratus*	
Pacific Black Duck	*Anas superciliosa*	
Grey Teal	*Anas gracilis*	
Hardhead	*Aythya australis*	
Australasian Grebe	*Tachybaptus novaehollandiae*	
Crested Pigeon	*Ocyphaps lophotes*	
Dusky Moorhen	*Gallinula tenebrosa*	
Australasian Swamphen	*Porphyrio melanotus*	
Pied Stilt	*Himantopus himantopus*	Marine
Masked Lapwing	*Vanellus miles*	
Australasian Darter	*Anhinga novaehollandiae*	
Little Pied Cormorant	*Microcarbo melanoleucos*	
Australian Pelican	*Pelecanus conspicillatus*	Marine
Great Egret	*Ardea alba*	Marine
Intermediate Egret	*Ardea intermedia*	Marine
Little Egret	*Egretta garzetta*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Laughing Kookaburra	*Dacelo novaeguineae*	
Sacred Kingfisher	*Todiramphus sanctus*	Marine
Galah	*Eolophus roseicapilla*	
Pale-headed Rosella	*Platycercus adscitus*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Red-backed Fairywren	*Malurus melanocephalus*	
Noisy Miner	*Manorina melanocephala*	
Brown Honeyeater	*Lichmera indistincta*	
White-throated Honeyeater	*Melithreptus albogularis*	
Pied Butcherbird	*Cracticus nigrogularis*	
Australian Magpie	*Cracticus tibicen*	
Olive-backed Oriole	*Oriolus sagittatus*	
Australasian Figbird	*Sphecotheres vieilloti*	
Magpie-lark	*Grallina cyanoleuca*	Marine
Torresian Crow	*Corvus orru*	
Welcome Swallow	*Hirundo neoxena*	Marine
Tawny Grassbird	*Megalurus timoriensis*	
Common Myna	*Acridotheres tristis*	
Cattle Egret	*Bubulcus ibis*	Marine
Brahminy Kite	*Haliastur indus*	Marine
Variegated Fairywren	*Malurus lamberti*	
Pacific Koel	*Eudynamys orientalis*	
Willie-wagtail	*Rhipidura leucophrys*	

Common name	Scientific name	Status
Chestnut teal	Anas castanea	
Sulphur-crested Cockatoo	*Cacatua galerita*	
Scaly-breasted Lorikeet	*Trichoglossus chlorolepidotus*	
Silver Gull	*Chroicocephalus novaehollandiae*	Marine
White-faced Heron	*Egretta novaehollandiae*	
Superb Fairywren	*Malurus cyaneus*	
Mistletoebird	*Dicaeum hirundinaceum*	
Rainbow Bee-eater	*Merops ornatus*	Marine
White-throated Gerygone	*Gerygone olivacea*	
Shining Bronze-Cuckoo	*Chrysococcyx lucidus*	Marine
Mangrove Honeyeater	*Lichenostomus fasciogularis*	
Leaden Flycatcher	*Myiagra rubecula*	
Wedge-tailed Eagle	*Aquila audax*	
Striated Heron	*Butorides striata*	
Latham's Snipe	Gallinago hardwickii	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA (2)
Mangrove Gerygone	*Gerygone levigaster*	
Common Bronzewing	*Phaps chalcoptera*	
Peaceful Dove	*Geopelia placida*	
Spotless Crake	*Porzana tabuensis*	Marine
Black-necked stork	*Ephippiorhynchus asiaticus*	
Spangled Drongo	*Dicrurus bracteatus*	Marine
Spotted Pardalote	*Pardalotus punctatus*	

Summary		
Total number of species		63
Total number of Matters of National Environmental Significance (MNES) species		17
Common name	**Scientific name**	**MNES Status**
Magpie Goose	*Anseranas semipalmata*	Marine
Great Egret	*Ardea alba*	Marine
Intermediate Egret	*Ardea intermedia*	Marine
Little Egret	*Egretta garzetta*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Cattle Egret	*Bubulcus ibis*	Marine
Rainbow Bee-eater	*Merops ornatus*	Marine
Latham's Snipe	Gallinago hardwickii	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA
Spotless Crake	*Porzana tabuensis*	Marine
Pied Stilt	*Himantopus himantopus*	Marine
Australian Pelican	*Pelecanus conspicillatus*	Marine
Sacred Kingfisher	*Todiramphus sanctus*	Marine
Welcome Swallow	*Hirundo neoxena*	Marine
Brahminy Kite	*Haliastur indus*	Marine

Silver Gull	*Chroicocephalus novaehollandiae*	Marine
Shining Bronze-Cuckoo	*Chrysococcyx lucidus*	Marine
Spangled Drongo	*Dicrurus bracteatus*	Marine

Site	4	
Location	Eagleby Wetlands / Albert River	
Date	13th May 2020	
Survey	Late-afternoon	
Surveyor	TR	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Pacific Black Duck	*Anas superciliosa*	
Wandering Whistling Duck	*Dendrocygna arcuata*	Marine
Crested Pigeon	*Ocyphaps lophotes*	
Pied Stilt	*Himantopus leucocephalus*	Marine
Australasian Grebe	*Tachybaptus novaehollandiae*	
Dusky Moorhen	*Gallinula tenebrosa*	
Australasian Swamphen	*Porphyrio melanotus*	
Sacred Kingfisher	*Todiramphus sanctus*	Marine
Eurasian Coot	*Fulica atra*	
Masked Lapwing	*Vanellus miles*	
Australian Pelican	*Pelecanus conspicillatus*	Marine
Great Egret	*Ardea alba*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Straw-necked Ibis	*Threskiornis spinicollis*	Marine
Magpie Goose	*Tachybaptus novaehollandiae*	Marine
Galah	*Eolophus roseicapilla*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Noisy Miner	*Manorina melanocephala*	
Pied Butcherbird	*Cracticus nigrogularis*	
Australian Magpie	*Cracticus tibicen*	
Magpie-lark	*Grallina cyanoleuca*	Marine
Torresian Crow	*Corvus orru*	
Welcome Swallow	*Hirundo neoxena*	Marine
Cattle Egret	*Ardea ibis*	Marine
Willie-wagtail	*Rhipidura leucophrys*	
Pied Cormorant	*Phalacrocorax varius*	
Scaly-breasted Lorikeet	*Trichoglossus chlorolepidotus*	
White-faced Heron	*Egretta novaehollandiae*	
Variegated Fairy-wren	*Malurus lamberti*	
Superb Fairywren	*Malurus cyaneus*	

Summary		
Total number of species		32
Total number of Matters of National Environmental Significance (MNES) species		12
Common name	**Scientific name**	**MNES Status**
Great Egret	*Ardea alba*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Sacred Kingfisher	*Todiramphus sanctus*	Marine
Pied Stilt	*Himantopus leucocephalus*	Marine
Magpie-lark	*Grallina cyanoleuca*	Marine
Pied Stilt	*Himantopus leucocephalus*	Marine
Welcome Swallow	*Hirundo neoxena*	Marine
Australian Pelican	*Pelecanus conspicillatus*	Marine
Wandering Whistling Duck	*Dendrocygna arcuata*	Marine
Straw-necked Ibis	*Threskiornis spinicollis*	Marine
Magpie Goose	*Tachybaptus novaehollandiae*	Marine
Cattle Egret	*Ardea ibis*	Marine

Site	4	
Location	Eagleby Wetlands/Albert River	
Date	14th & 15th February 2019	
Survey	Dawn / Morning	
Surveyor	BS / TR	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Magpie Goose	*Anseranas semipalmata*	Marine
Black Swan	*Cygnus atratus*	
Wood Duck	*Chenonetta jubata*	
Pacific Black Duck	*Anas superciliosa*	
Brown Quail	*Coturnix ypsilophora*	
Spotted Dove	*Spilopelia chinensis*	
Crested Pigeon	*Ocyphaps lophotes*	
Bar-shouldered Dove	*Geopelia humeralis*	
Silver-eye	*Zosterops lateralis*	Marine
Mistletoebird	*Dicaeum hirundinaceum*	
Double-barred Finch	*Taeniopygia bichenovii*	
Chestnut teal	*Anas castanea*	
Great Egret	*Ardea alba*	Marine
Cattle Egret	*Bubulcus ibis*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Brahminy Kite	*Haliastur indus*	Marine
Rainbow Bee-eater	*Merops ornatus*	Marine Migratory
Rufous Whistler	*Pachycephala rufiventris*	
Black-necked stork	*Ephippiorhynchus asiaticus*	
Australasian Swamphen	*Porphyrio melanotus*	
Pied Stilt	*Himantopus himantopus*	Marine
Masked Lapwing	*Vanellus miles*	
Little Pied Cormorant	*Microcarbo melanoleucos*	
Australian Pelican	*Pelecanus conspicillatus*	Marine
Glossy Ibis	*Plegadis falcinellus*	Marine
Royal Spoonbill	*Platalea regia*	
Laughing Kookaburra	*Dacelo novaeguineae*	
Galah	*Eolophus roseicapilla*	
Sulphur-crested Cockatoo	*Cacatua galerita*	
Pale-headed Rosella	*Platycercus adscitus*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Superb Fairywren	*Malurus cyaneus*	
Noisy Miner	*Manorina melanocephala*	
Little Egret	*Egretta garzetta*	Marine
Striated Heron	*Butorides striata*	
Grey Butcherbird	*Cracticus torquatus*	
Straw-necked Ibis	*Threskiornis spinicollis*	Marine
Mangrove Honeyeater	*Lichenostomus fasciogularis*	
Noisy Friarbird	*Philemon corniculatus*	
Striated Pardalote	*Pardalotus striatus*	

Common name	Scientific name	MNES Status and Migratory (Quantity)
Australian Magpie	*Cracticus tibicen*	
Pied Butcherbird	Cracticus nigrogularis	
Pied Currawong	*Strepera graculina*	
Australasian Figbird	*Sphecotheres vieilloti*	
Spangled Drongo	*Dicrurus bracteatus*	Marine
Willie-wagtail	*Rhipidura leucophrys*	
Torresian Crow	*Corvus orru*	
Welcome Swallow	*Hirundo neoxena*	Marine
Latham's Snipe	Gallinago hardwickii	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA (1)
White-faced Heron	*Egretta novaehollandiae*	
Spotless Crake	*Porzana tabuensis*	Marine
Azure Kingfisher	*Alcedo azurea*	
Striped Honeyeater	*Plectorhyncha lanceolata*	
Plumed Whistling Duck	*Dendrocygna eytoni*	

Summary		
Total number of species		55
Total number of Matters of National Environmental Significance (MNES) species		10
Common name	**Scientific name**	**MNES Status**
Magpie Goose	*Anseranas semipalmata*	Marine
Great Egret	*Ardea alba*	Marine
Cattle Egret	*Bubulcus ibis*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Rainbow Bee-eater	*Merops ornatus*	Marine
Glossy Ibis	*Plegadis falcinellus*	Marine
Little Egret	*Egretta garzetta*	Marine
Straw-necked Ibis	*Threskiornis spinicollis*	Marine
Latham's Snipe	Gallinago hardwickii	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA
Spotless Crake	*Porzana tabuensis*	Marine
Silver-eye	*Zosterops lateralis*	Marine
Brahminy Kite	*Haliastur indus*	Marine
Pied Stilt	*Himantopus himantopus*	Marine
Spangled Drongo	*Dicrurus bracteatus*	Marine
Welcome Swallow	*Hirundo neoxena*	Marine

Site	4	
Location	Eagleby Wetlands (very dry) / Albert River	
Date	12th January 2020	
Survey	Afternoon	
Surveyor	TR	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Pacific Black Duck	*Anas superciliosa*	
Crested Pigeon	*Ocyphaps lophotes*	
Dusky Moorhen	*Gallinula tenebrosa*	
Australasian Swamphen	*Porphyrio melanotus*	
Masked Lapwing	*Vanellus miles*	
Great Egret	*Ardea alba*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Laughing Kookaburra	*Dacelo novaeguineae*	
Sacred Kingfisher	*Todiramphus sanctus*	Marine
Galah	*Eolophus roseicapilla*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Red-backed Fairywren	*Malurus melanocephalus*	
Noisy Miner	*Manorina melanocephala*	
Brown Honeyeater	*Lichmera indistincta*	
Pied Butcherbird	*Cracticus nigrogularis*	
Australian Magpie	*Cracticus tibicen*	
Magpie-lark	*Grallina cyanoleuca*	Marine
Torresian Crow	*Corvus orru*	
Welcome Swallow	*Hirundo neoxena*	Marine
Tawny Grassbird	*Megalurus timoriensis*	
Common Myna	*Acridotheres tristis*	
Cattle Egret	*Bubulcus ibis*	Marine
Brahminy Kite	*Haliastur indus*	Marine
Willie-wagtail	*Rhipidura leucophrys*	
Sulphur-crested Cockatoo	*Cacatua galerita*	
Scaly-breasted Lorikeet	*Trichoglossus chlorolepidotus*	
Silver Gull	*Chroicocephalus novaehollandiae*	Marine
White-faced Heron	*Egretta novaehollandiae*	
Superb Fairywren	*Malurus cyaneus*	
Rainbow Bee-eater	*Merops ornatus*	Marine
Peaceful Dove	*Geopelia placida*	

Summary		
Total number of species		31
Total number of Matters of National Environmental Significance (MNES) species		9
Common name	**Scientific name**	**MNES Status**
Great Egret	*Ardea alba*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Sacred Kingfisher	*Todiramphus sanctus*	Marine
Magpie-lark	*Grallina cyanoleuca*	Marine
Welcome Swallow	*Hirundo neoxena*	Marine
Cattle Egret	*Bubulcus ibis*	Marine
Brahminy Kite	*Haliastur indus*	Marine
Silver Gull	*Chroicocephalus novaehollandiae*	Marine
Rainbow Bee-eater	*Merops ornatus*	Marine

Site	4	
Location	Eagleby Wetlands/Albert River	
Date	16th and 17th September 2018	
Survey	Dawn / Morning	
Surveyor	BS	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Magpie Goose	*Anseranas semipalmata*	Marine
Peaceful Dove	*Geopelia placida*	
Pied Stilt	*Himantopus himantopus*	Marine
Masked Lapwing	*Vanellus miles*	
Red-kneed Dotterel	*Erythrogonys cinctus*	
Little Pied Cormorant	*Microcarbo melanoleucos*	
Glossy Ibis	*Plegadis falcinellus*	Marine Migratory – Bonn (2)
Rufous Whistler	*Pachycephala rufiventris*	
Wood Duck	*Chenonetta jubata*	
Pacific Black Duck	*Anas superciliosa*	
Grey Teal	*Anas gracilis*	
Australasian Grebe	*Tachybaptus novaehollandiae*	
Spotted Dove	*Spilopelia chinensis*	
Australasian Swamphen	*Porphyrio melanotus*	
Sharp-tailed Sandpiper	*Calidris acuminata*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA (4)
Australian Ibis	*Threskiornis moluccus*	Marine
Royal Spoonbill	*Platalea regia*	
Laughing Kookaburra	*Dacelo novaeguineae*	
Red-backed Fairywren	*Malurus melanocephalus*	
Brown Honeyeater	*Lichmera indistincta*	
Grey Butcherbird	*Cracticus torquatus*	
Australian Magpie	*Cracticus tibicen*	
Grey Fantail	*Rhipidura albiscapa*	
Welcome Swallow	*Hirundo neoxena*	Marine
Tawny Grassbird	*Megalurus timoriensis*	
Pheasant Coucal	*Centropus phasianinus*	
Straw-necked Ibis	*Threskiornis spinicollis*	Marine
Galah	*Eolophus roseicapilla*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Variegated Fairywren	*Malurus lamberti*	
Noisy Miner	*Manorina melanocephala*	
Willie wagtail	*Rhipidura leucophrys*	
Rufous Fantail	*Rhipidura rufifrons*	
Magpie-lark	*Grallina cyanoleuca*	Marine
Leaden Flycatcher	*Myiagra rubecula*	
Torresian Crow	*Corvus orru*	
Silver-eye	*Zosterops lateralis*	Marine

Common name	Scientific name	MNES Status and Migratory (Quantity)
Hard Head	*Aythya australis*	
Crested Pigeon	*Ocyphaps lophotes*	
Sacred Kingfisher	*Todiramphus sanctus*	Marine
Chestnut Teal	*Anas castanea*	
Pacific Heron	*Ardea pacifica*	
Great Egret	*Ardea alba*	Marine
Collared Sparrowhawk	*Accipiter cirrocephalus*	
Scaly-breasted Lorikeet	*Trichoglossus chlorolepidotus*	
Blue-faced Honeyeater	*Entomyzon cyanotis*	
Pied Butcherbird	*Cracticus nigrogularis*	
Pied Currawong	*Strepera graculina*	
Australasian Figbird	*Sphecotheres vieilloti*	
Fairy Martin	*Petrochelidon ariel*	
Golden-headed Cisticola	*Cisticola exilis*	
Common Myna	*Acridotheres tristis*	
Mistletoebird	*Dicaeum hirundinaceum*	
Little Egret	*Egretta garzetta*	Marine
Forest Kingfisher	*Todiramphus macleayii*	Marine
Spotless Crake	*Porzana tabuensis*	Marine
Wedge-tailed Eagle	*Aquila audax*	
Black Kite	*Milvus migrans*	
Mangrove Gerygone	*Gerygone levigaster*	
Golden Whistler	*Pachycephala pectoralis*	
Wandering Whistling-Duck	*Dendrocygna arcuata*	Marine
Cattle Egret	*Bubulcus ibis*	Marine
Rainbow Bee-eater	*Merops ornatus*	Marine
Dollarbird	*Eurystomus orientalis*	Marine
Black-necked Stork	*Ephippiorhynchus asiaticus*	
Striped Honeyeater	*Plectorhyncha lanceolata*	
Latham's Snipe	*Gallinago hardwickii*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA (1)
White-throated Needletail	*Hirundapus caudacutus*	Vulnerable Marine Migratory
Red-necked Avocet	*Recurvirostra novaehollandiae*	Marine
Australian Brushturkey	*Alectura lathami*	
Plumed Whistling Duck	*Dendrocygna eytoni*	
White-throated Treecreeper	*Cormobates leucophaea*	

Summary		
Total number of species		71
Total number of Matters of National Environmental Significance (MNES) species		20
Common name	**Scientific name**	**MNES Status**
Magpie Goose	*Anseranas semipalmata*	Marine
Glossy Ibis	*Plegadis falcinellus*	Marine Migratory – Bonn
Sharp-tailed Sandpiper	*Calidris acuminata*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA
Australian Ibis	*Threskiornis moluccus*	Marine
Straw-necked Ibis	*Threskiornis spinicollis*	Marine
Great Egret	*Ardea alba*	Marine
Little Egret	*Egretta garzetta*	Marine
Spotless Crake	*Porzana tabuensis*	Marine
Cattle Egret	*Bubulcus ibis*	Marine
Rainbow Bee-eater	*Merops ornatus*	Marine
Latham's Snipe	*Gallinago hardwickii*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA
Red-necked Avocet	*Recurvirostra novaehollandiae*	Marine
Pied Stilt	*Himantopus himantopus*	Marine
Welcome Swallow	*Hirundo neoxena*	Marine
Magpie-lark	*Grallina cyanoleuca*	Marine
Silver-eye	*Zosterops lateralis*	Marine
Sacred Kingfisher	*Todiramphus sanctus*	Marine
Forest Kingfisher	*Todiramphus macleayii*	Marine
Wandering Whistling-Duck	*Dendrocygna arcuata*	Marine
Dollarbird	*Eurystomus orientalis*	Marine

Site	4	
Location	Eagleby Wetlands/Albert River/Maurice Park	
Date	16th October 2019	
Survey	Morning	
Surveyor	TR / LR	
Common name	**Scientific name**	**Status**
Wood Duck	*Chenonetta jubata*	
Pacific Black Duck	*Anas superciliosa*	
Dusky Moorhen	*Gallinula tenebrosa*	
Australasian Swamphen	*Porphyrio melanotus*	
Pied Stilt	*Himantopus himantopus*	Marine
Masked Lapwing	*Vanellus miles*	
Little Pied Cormorant	*Microcarbo melanoleucos*	
Australian Pelican	*Pelecanus conspicillatus*	Marine
Glossy Ibis	*Plegadis falcinellus*	Marine Migratory – Bonn (2)
Sulphur-crested Cockatoo	*Cacatua galerita*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Superb Fairywren	*Malurus cyaneus*	
Red-backed Fairywren	*Malurus melanocephalus*	
Mangrove Honeyeater	*Lichenostomus fasciogularis*	
White-throated Honeyeater	*Melithreptus albogularis*	
Little Friarbird	*Philemon citreogularis*	
Pied Butcherbird	*Cracticus nigrogularis*	
Australian Magpie	*Cracticus tibicen*	
Willie-wagtail	*Rhipidura leucophrys*	
Torresian Crow	*Corvus orru*	
Welcome Swallow	*Hirundo neoxena*	Marine
Silvereye	*Zosterops lateralis*	Marine
Laughing Kookaburra	*Dacelo novaeguineae*	
Great Egret	*Ardea alba*	Marine
Cattle Egret	*Ardea ibis*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Grey Teal	*Anas gracilis*	
Scaly-breasted Lorikeet	*Trichoglossus chlorolepidotus*	
Variegated Fairywren	*Malurus lamberti*	
Black-faced Cuckoo-shrike	*Coracina novaehollandiae*	Marine
Silver Gull	*Chroicocephalus novaehollandiae*	Marine
White-faced Heron	*Egretta novaehollandiae*	
White-bellied Sea-Eagle	*Haliaeetus leucogaster*	Marine Migratory

Summary		
Total number of species		33
Total number of Matters of National Environmental Significance (MNES) species		11
Common name	**Scientific name**	**MNES Status**
Glossy Ibis	*Plegadis falcinellus*	Marine Migratory – Bonn
Great Egret	*Ardea alba*	Marine
Cattle Egret	*Ardea ibis*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Black-faced Cuckoo-shrike	*Coracina novaehollandiae*	Marine
White-bellied Sea-Eagle	*Haliaeetus leucogaster*	Marine Migratory
Pied Stilt	*Himantopus himantopus*	Marine
Australian Pelican	*Pelecanus conspicillatus*	Marine
Welcome Swallow	*Hirundo neoxena*	Marine
Silvereye	*Zosterops lateralis*	Marine
Silver Gull	*Chroicocephalus novaehollandiae*	Marine

Site	4	
Location	Eagleby Wetlands (full again following rain) / Albert River	
Date	17th and 27th Febraury 2020 (trails/tracks closed 17th due to flooding)	
Survey	Late-afternoon	
Surveyor	TR	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Pacific Black Duck	*Anas superciliosa*	
Wandering Whistling Duck	*Dendrocygna arcuata*	Marine
White-bellied Sea-eagle	*Haliaeetus leucogaster*	Marine
Crested Pigeon	*Ocyphaps lophotes*	
Australasian Grebe	*Tachybaptus novaehollandiae*	
Pied Currawong	*Strepera graculina*	
Dusky Moorhen	*Gallinula tenebrosa*	
Black-faced Cuckoo-shrike	*Coracina novaehollandiae*	Marine
Australasian Swamphen	*Porphyrio melanotus*	
Sacred Kingfisher	*Todiramphus sanctus*	Marine
Masked Lapwing	*Vanellus miles*	
Great Egret	*Ardea alba*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Straw-necked Ibis	*Threskiornis spinicollis*	Marine
Magpie Goose	*Tachybaptus novaehollandiae*	Marine
Galah	*Eolophus roseicapilla*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Noisy Miner	*Manorina melanocephala*	
Scarlet Honeyeater	*Strepera graculina*	
Pied Butcherbird	*Cracticus nigrogularis*	
Australian Magpie	*Cracticus tibicen*	
Magpie-lark	*Grallina cyanoleuca*	Marine
Torresian Crow	*Corvus orru*	
Welcome Swallow	*Hirundo neoxena*	Marine
Common Myna	*Acridotheres tristis*	
Cattle Egret	*Ardea ibis*	Marine
Willie-wagtail	*Rhipidura leucophrys*	
Scaly-breasted Lorikeet	*Trichoglossus chlorolepidotus*	
White-faced Heron	*Egretta novaehollandiae*	
Superb Fairywren	*Malurus cyaneus*	

Summary		
Total number of species		30
Total number of Matters of National Environmental Significance (MNES) species		10
Common name	**Scientific name**	**MNES Status**
Great Egret	*Ardea alba*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Magpie-lark	*Grallina cyanoleuca*	Marine
Welcome Swallow	*Hirundo neoxena*	Marine
Wandering Whistling Duck	*Dendrocygna arcuata*	Marine
White-bellied Sea-eagle	*Haliaeetus leucogaster*	Marine
Black-faced Cuckoo-shrike	*Coracina novaehollandiae*	Marine
Straw-necked Ibis	*Threskiornis spinicollis*	Marine
Magpie Goose	*Tachybaptus novaehollandiae*	Marine
Cattle Egret	*Ardea ibis*	Marine

Site	4	
Location	Eagleby Wetlands / Albert River	
Date	18th March 2020	
Survey	Late-afternoon	
Surveyor	TR	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Pacific Black Duck	*Anas superciliosa*	
Wandering Whistling Duck	*Dendrocygna arcuata*	Marine
Crested Pigeon	*Ocyphaps lophotes*	
Peaceful Dove	*Geopelia placida*	
Australasian Grebe	*Tachybaptus novaehollandiae*	
Pied Currawong	*Strepera graculina*	
Dusky Moorhen	*Gallinula tenebrosa*	
Australasian Swamphen	*Porphyrio melanotus*	
Sacred Kingfisher	*Todiramphus sanctus*	Marine
Masked Lapwing	*Vanellus miles*	
Great Egret	*Ardea alba*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Straw-necked Ibis	*Threskiornis spinicollis*	Marine
Magpie Goose	*Tachybaptus novaehollandiae*	Marine
Galah	*Eolophus roseicapilla*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Noisy Miner	*Manorina melanocephala*	
Pied Butcherbird	*Cracticus nigrogularis*	
Australian Magpie	*Cracticus tibicen*	
Magpie-lark	*Grallina cyanoleuca*	Marine
Torresian Crow	*Corvus orru*	
Welcome Swallow	*Hirundo neoxena*	Marine
Common Myna	*Acridotheres tristis*	
Cattle Egret	*Ardea ibis*	Marine
Willie-wagtail	*Rhipidura leucophrys*	
Scaly-breasted Lorikeet	*Trichoglossus chlorolepidotus*	
White-faced Heron	*Egretta novaehollandiae*	
Superb Fairywren	*Malurus cyaneus*	

Summary		
Total number of species		27
Total number of Matters of National Environmental Significance (MNES) species		8
Common name	**Scientific name**	**MNES Status**
Great Egret	*Ardea alba*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Sacred Kingfisher	*Todiramphus sanctus*	Marine
Magpie-lark	*Grallina cyanoleuca*	Marine
Welcome Swallow	*Hirundo neoxena*	Marine
Wandering Whistling Duck	*Dendrocygna arcuata*	Marine
Straw-necked Ibis	*Threskiornis spinicollis*	Marine
Magpie Goose	*Tachybaptus novaehollandiae*	Marine
Cattle Egret	*Ardea ibis*	Marine

Site	4	
Location	Eagleby Wetlands/Albert River	
Date	20th September 2019	
Survey	Dawn / Morning	
Surveyor	BS	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Peaceful Dove	*Geopelia placida*	
Pied Currawong	*Strepera graculina*	
Little Egret	*Egretta garzetta*	Marine
Pied Stilt	*Himantopus himantopus*	Marine
Australian Pelican	*Pelecanus conspicillatus*	
Black-shouldered Kite	*Elanus axillaris*	
Masked Lapwing	*Vanellus miles*	
Pheasant Coucal	*Centropus phasianinus*	
Glossy Ibis	*Plegadis falcinellus*	Marine Migratory – Bonn (2)
Pacific Black Duck	*Anas superciliosa*	
White bellied Sea-eagle	*Haliaeetus leucogaster*	Marine
Cattle Egret	*Bubulcus ibis*	Marine
Eurasian Coot	*Fulica atra*	
Australasian Swamphen	*Porphyrio melanotus*	
Australian Ibis	*Threskiornis moluccus*	Marine
Superb Fairywren	*Malurus cyaneus*	
Brown Honeyeater	*Lichmera indistincta*	
Grey Butcherbird	*Cracticus torquatus*	
Australian Magpie	*Cracticus tibicen*	
Laughing Kookaburra	*Dacelo novaeguineae*	
Striated Pardalote	*Pardalotus striatus*	
Lathams Snipe	*Gallinago hardwickii*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA
Galah	*Eolophus roseicapilla*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Pale-headed Rosella	*Platycercus adscitus*	
Willie-wagtail	*Rhipidura leucophrys*	
Forest Kingfisher	*Todiramphus macleayii*	Marine
Common Myna	*Acridotheres tristis*	
Torresian Crow	*Corvus orru*	
Striped Honeyeater	*Plectorhyncha lanceolata*	
Silver-eye	*Zosterops lateralis*	Marine
Chestnut Teal	*Anas castanea*	
Brown Quail	*Synoicus ypsilophorus*	
Pacific Heron	*Ardea pacifica*	
Collared Sparrowhawk	*Accipiter cirrocephalus*	
Rainbow Bee-eater	*Merops ornatus*	Marine
Australian Brush Turkey	*Alectura lathami*	
Blue-faced Honeyeater	*Entomyzon cyanotis*	

Common name	Scientific name	MNES Status and Migratory (Quantity)
Australasian Figbird	Sphecotheres vieilloti	
Pied Butcherbird	*Cracticus nigrogularis*	

Summary		
Total number of species		40
Total number of Matters of National Environmental Significance (MNES) species		10
Common name	**Scientific name**	**MNES Status**
Glossy Ibis	*Plegadis falcinellus*	Marine Migratory – Bonn
Australian Ibis	*Threskiornis moluccus*	Marine
Little Egret	*Egretta garzetta*	Marine
Cattle Egret	*Bubulcus ibis*	Marine
Rainbow Bee-eater	*Merops ornatus*	Marine
Lathams Snipe	*Gallinago hardwickii*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA
White bellied Sea-eagle	*Haliaeetus leucogaster*	Marine
Pied Stilt	*Himantopus himantopus*	Marine
Silver-eye	*Zosterops lateralis*	Marine
Forest Kingfisher	*Todiramphus macleayii*	Marine

Site	4	
Location	Eagleby Wetlands (areas ponded following rainfall) / Albert River	
Date	21st January 2020	
Survey	Late-afternoon	
Surveyor	TR	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Pacific Black Duck	*Anas superciliosa*	
Crested Pigeon	*Ocyphaps lophotes*	
Pied Currawong	*Strepera graculina*	
Black-faced Cuckoo-shrike	*Coracina novaehollandiae*	
Australasian Swamphen	*Porphyrio melanotus*	
Masked Lapwing	*Vanellus miles*	
Great Egret	*Ardea alba*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Galah	*Eolophus roseicapilla*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Noisy Miner	*Manorina melanocephala*	
Scarlet Honeyeater	*Strepera graculina*	
Pied Butcherbird	*Cracticus nigrogularis*	
Australian Magpie	*Cracticus tibicen*	
Magpie-lark	*Grallina cyanoleuca*	Marine
Torresian Crow	*Corvus orru*	
Welcome Swallow	*Hirundo neoxena*	Marine
Common Myna	*Acridotheres tristis*	
Cattle Egret	*Ardea ibis*	Marine
Willie-wagtail	*Rhipidura leucophrys*	
Scaly-breasted Lorikeet	*Trichoglossus chlorolepidotus*	
White-faced Heron	*Egretta novaehollandiae*	
Superb Fairywren	*Malurus cyaneus*	
Peaceful Dove	*Geopelia placida*	

Summary		
Total number of species		24
Total number of Matters of National Environmental Significance (MNES) species		5
Common name	**Scientific name**	**MNES Status**
Great Egret	*Ardea alba*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Magpie-lark	*Grallina cyanoleuca*	Marine
Welcome Swallow	*Hirundo neoxena*	Marine
Cattle Egret	*Ardea ibis*	Marine

Site	4	
Location	Eagleby Wetlands/Albert River	
Date	22nd & 23rd October 2018	
Survey	Dawn / Morning	
Surveyor	TR	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Australasian Grebe	*Tachybaptus novaehollandiae*	
Masked Lapwing	*Vanellus miles*	
Sacred Kingfisher	*Todiramphus sanctus*	Marine
Tawny Grassbird	*Megalurus timoriensis*	
Black Swan	*Cygnus atratus*	
Brahminy Kite	*Haliastur indus*	Marine
Noisy Friarbird	*Philemon corniculatus*	
Pied Butcherbird	*Cracticus nigrogularis*	
Australian Magpie	*Cracticus tibicen*	
Golden Whistler	*Pachycephala pectoralis*	
Australasian Figbird	*Sphecotheres vieilloti*	
Spangled Drongo	*Dicrurus bracteatus*	Marine
Willie-wagtail	*Rhipidura leucophrys*	
Spotted Dove	*Spilopelia chinensis*	
Little Black Cormorant	*Phalacrocorax sulcirostris*	
Intermediate Egret	*Ardea intermedia*	Marine
Rainbow Bee-eater	*Merops ornatus*	Marine
Galah	*Eolophus roseicapilla*	
Scaly-breasted Lorikeet	*Trichoglossus chlorolepidotus*	
Superb Fairy Wren	*Malurus cyaneus*	
Lewin's Honeyeater	*Meliphaga lewinii*	
Mangrove Honeyeater	*Lichenostomus fasciogularis*	
Grey Butcherbird	*Cracticus torquatus*	
Silver-eye	*Zosterops lateralis*	Marine
Grey Teal	*Anas gracilis*	
Straw-necked Ibis	*Threskiornis spinicollis*	Marine
Royal Spoonbill	*Platalea regia*	
White-bellied Sea-Eagle	*Haliaeetus leucogaster*	Marine Migratory
Dollarbird	*Eurystomus orientalis*	Marine
Little Friarbird	*Philemon citreogularis*	
Magpie Goose	*Anseranas semipalmata*	Marine
Pied Stilt	*Himantopus himantopus*	Marine
Forest Kingfisher	*Todiramphus macleayii*	Marine
Double-barred Finch	*Taeniopygia bichenovii*	
Brown Goshawk	*Accipiter fasciatus*	
Spotless Crake	*Porzana tabuensis*	Marine
Marsh Sandpiper	*Tringa stagnatilis*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA (2)

Common name	Scientific name	Status
Glossy Ibis	*Plegadis falcinellus*	Marine Migratory – Bonn (1)
Sharp-tailed Sandpiper	*Calidris acuminata*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA (4)
Buff-banded Rail	*Gallirallus philippensis*	Marine
Pied Cormorant	*Phalacrocorax varius*	
Peaceful Dove	*Geopelia placida*	
Little Wattlebird	*Anthochaera chrysoptera*	
Olive-backed Oriole	*Oriolus sagittatus*	
Grey Fantail	*Rhipidura albiscapa*	
Welcome Swallow	*Hirundo neoxena*	Marine
Mistletoebird	*Dicaeum hirundinaceum*	
Wood Duck	*Chenonetta jubata*	
Australian Ibis	*Threskiornis moluccus*	Marine
Sulphur-crested Cockatoo	*Cacatua galerita*	
Pale-headed Rosella	*Platycercus adscitus*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Red-backed Fairywren	*Malurus melanocephalus*	
Noisy Miner	*Manorina melanocephala*	
Brown Honeyeater	*Lichmera indistincta*	
Rufous Whistler	*Pachycephala rufiventris*	
Pacific Black Duck	*Anas superciliosa*	
Hardhead	*Aythya australis*	
Dusky Moorhen	*Gallinula tenebrosa*	
Australasian Swamphen	*Porphyrio melanotus*	
Great Egret	*Ardea alba*	Marine
Cattle Egret	*Ardea ibis*	Marine
Silver Gull	*Chroicocephalus novaehollandiae*	Marine

Summary		
Total number of species		63
Total number of Matters of National Environmental Significance (MNES) species		12
Common name	**Scientific name**	**MNES Status**
Intermediate Egret	*Ardea intermedia*	Marine
Rainbow Bee-eater	*Merops ornatus*	Marine
Straw-necked Ibis	*Threskiornis spinicollis*	Marine
White-bellied Sea-Eagle	*Haliaeetus leucogaster*	Marine Migratory
Magpie Goose	*Anseranas semipalmata*	Marine
Spotless Crake	*Porzana tabuensis*	Marine
Marsh Sandpiper	*Tringa stagnatilis*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA
Glossy Ibis	*Plegadis falcinellus*	Marine Migratory – Bonn

Common name	Scientific name	MNES Status
Sharp-tailed Sandpiper	*Calidris acuminata*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA
Australian Ibis	*Threskiornis moluccus*	Marine
Great Egret	*Ardea alba*	Marine
Cattle Egret	*Ardea ibis*	Marine
Sacred Kingfisher	*Todiramphus sanctus*	Marine
Spangled Drongo	*Dicrurus bracteatus*	Marine
Silver-eye	*Zosterops lateralis*	Marine
Dollarbird	*Eurystomus orientalis*	Marine
Pied Stilt	*Himantopus himantopus*	Marine
Forest Kingfisher	*Todiramphus macleayii*	Marine
Buff-banded Rail	*Gallirallus philippensis*	Marine
Welcome Swallow	*Hirundo neoxena*	Marine
Silver Gull	*Chroicocephalus novaehollandiae*	Marine

Site	4	
Location	Eagleby Wetlands/Albert River	
Date	24th October 2019	
Survey	Dawn / Morning	
Surveyor	BS	
Common name	**Scientific name**	**MNES Status and Migratory (Quantity)**
Brahminy Kite	*Haliastur indus*	
Peaceful Dove	*Geopelia placida*	
Pied Currawong	Strepera graculina	
Little Egret	*Egretta garzetta*	Marine
Pied Stilt	*Himantopus himantopus*	Marine
Masked Lapwing	*Vanellus miles*	
Pheasant Coucal	*Centropus phasianinus*	
Glossy Ibis	*Plegadis falcinellus*	Marine Migratory – Bonn (2)
Pacific Black Duck	*Anas superciliosa*	
White bellied Sea-eagle	*Haliaeetus leucogaster*	Marine
Cattle Egret	*Bubulcus ibis*	Marine
Australasian Grebe	*Tachybaptus novaehollandiae*	
Australasian Swamphen	*Porphyrio melanotus*	
Australian Ibis	*Threskiornis moluccus*	Marine
Variegated Fairywren	*Malurus lamberti*	
Brown Honeyeater	*Lichmera indistincta*	
Grey Butcherbird	*Cracticus torquatus*	
Australian Magpie	*Cracticus tibicen*	
Spangled Drongo	*Dicrurus bracteatus*	
Grey Fantail	*Rhipidura albiscapa*	
Lewins Honeyeater	*Meliphaga lewinii*	
Striated Pardalote	*Pardalotus striatus*	
Galah	*Eolophus roseicapilla*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Willie-wagtail	*Rhipidura leucophrys*	
Magpie-lark	*Grallina cyanoleuca*	Marine
Forest Kingfisher	*Todiramphus macleayii*	Marine
Common Myna	*Acridotheres tristis*	
Torresian Crow	*Corvus orru*	
Striped Honeyeater	*Plectorhyncha lanceolata*	
Silver-eye	*Zosterops lateralis*	Marine
Chestnut Teal	Anas castanea	
Pacific Heron	*Ardea pacifica*	
Collared Sparrowhawk	*Accipiter cirrocephalus*	
Rainbow Bee-eater	*Merops ornatus*	Marine
Australian Brush Turkey	*Alectura lathami*	
Blue-faced Honeyeater	*Entomyzon cyanotis*	
Australasian Figbird	Sphecotheres vieilloti	
Pied Butcherbird	*Cracticus nigrogularis*	

Summary		
Total number of species		39
Total number of Matters of National Environmental Significance (MNES) species		10
Common name	**Scientific name**	**MNES Status**
Glossy Ibis	*Plegadis falcinellus*	Marine Migratory – Bonn
Australian Ibis	*Threskiornis moluccus*	Marine
Little Egret	*Egretta garzetta*	Marine
Cattle Egret	*Bubulcus ibis*	Marine
Rainbow Bee-eater	*Merops ornatus*	Marine
White bellied Sea-eagle	*Haliaeetus leucogaster*	Marine
Pied Stilt	*Himantopus himantopus*	Marine
Magpie-lark	*Grallina cyanoleuca*	Marine
Silver-eye	*Zosterops lateralis*	Marine
Forest Kingfisher	*Todiramphus macleayii*	Marine

Site	4	
Location	Eagleby Wetlands/Albert River/Maurice Park	
Date	28th & 29th January 2019	
Survey	Dawn / Morning	
Surveyor	BS / TR	
Common name	**Scientific name**	**Status**
Magpie Goose	*Anseranas semipalmata*	Marine
Black Swan	*Cygnus atratus*	
Wood Duck	*Chenonetta jubata*	
Pacific Black Duck	*Anas superciliosa*	
Brown Quail	*Coturnix ypsilophora*	
Spotted Dove	*Spilopelia chinensis*	
Crested Pigeon	*Ocyphaps lophotes*	
Bar-shouldered Dove	*Geopelia humeralis*	
Dusky Moorhen	*Gallinula tenebrosa*	
Australasian Swamphen	*Porphyrio melanotus*	
Pied Stilt	*Himantopus himantopus*	Marine
Masked Lapwing	*Vanellus miles*	
Little Pied Cormorant	*Microcarbo melanoleucos*	
Australian Pelican	*Pelecanus conspicillatus*	Marine
Glossy Ibis	*Plegadis falcinellus*	Marine Migratory – Bonn (2)
Sacred Kingfisher	*Todiramphus sanctus*	Marine
Sulphur-crested Cockatoo	*Cacatua galerita*	
Pale-headed Rosella	*Platycercus adscitus*	
Rainbow Lorikeet	*Trichoglossus moluccanus*	
Superb Fairywren	*Malurus cyaneus*	
Red-backed Fairywren	*Malurus melanocephalus*	
Mangrove Honeyeater	*Lichenostomus fasciogularis*	
White-throated Honeyeater	*Melithreptus albogularis*	
Little Friarbird	*Philemon citreogularis*	
Pied Butcherbird	*Cracticus nigrogularis*	
Australian Magpie	*Cracticus tibicen*	
Olive-backed Oriole	*Oriolus sagittatus*	
Australasian Figbird	*Sphecotheres vieilloti*	
Willie-wagtail	*Rhipidura leucophrys*	
Torresian Crow	*Corvus orru*	
Lewin's Rail	Lewinia pectoralis	
Welcome Swallow	*Hirundo neoxena*	Marine
Silver-eye	*Zosterops lateralis*	Marine
Mistletoebird	*Dicaeum hirundinaceum*	
Great Egret	*Ardea alba*	Marine
Cattle Egret	*Bubulcus ibis*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Rainbow Bee-eater	*Merops ornatus*	Marine
Sharp-tailed Sandpiper	*Calidris acuminata*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA (4)

Common name	Scientific name	MNES Status
Tawny Grassbird	*Megalurus timoriensis*	
Little Egret	*Egretta garzetta*	Marine
Mangrove Gerygone	*Gerygone levigaster*	
Grey Butcherbird	*Cracticus torquatus*	
Leaden Flycatcher	*Myiagra rubecula*	
Scaly-breasted Lorikeet	*Trichoglossus chlorolepidotus*	
Variegated Fairywren	*Malurus lamberti*	
Grey Fantail	*Rhipidura albiscapa*	
Silver Gull	*Chroicocephalus novaehollandiae*	Marine
White-faced Heron	*Egretta novaehollandiae*	
White-bellied Sea-Eagle	*Haliaeetus leucogaster*	Marine Migratory
Azure Kingfisher	*Alcedo azurea*	
Latham's Snipe	*Gallinago hardwickii*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA (1)
Collared Sparrowhawk	*Accipiter cirrocephalus*	

Summary		
Total number of species		53
Total number of Matters of National Environmental Significance (MNES) species		16
Common name	**Scientific name**	**MNES Status**
Magpie Goose	*Anseranas semipalmata*	Marine
Glossy Ibis	*Plegadis falcinellus*	Marine Migratory – Bonn
Great Egret	*Ardea alba*	Marine
Cattle Egret	*Ardea ibis*	Marine
Australian Ibis	*Threskiornis moluccus*	Marine
Rainbow Bee-eater	*Merops ornatus*	Marine
Sharp-tailed Sandpiper	*Calidris acuminata*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA
Little Egret	*Egretta garzetta*	Marine
White-bellied Sea-Eagle	*Haliaeetus leucogaster*	Marine Migratory
Latham's Snipe	*Gallinago hardwickii*	Marine Migratory – Bonn, JAMBA, CAMBA, ROKAMBA
Pied Stilt	*Himantopus himantopus*	Marine
Australian Pelican	*Pelecanus conspicillatus*	Marine
Sacred Kingfisher	*Todiramphus sanctus*	Marine
Welcome Swallow	*Hirundo neoxena*	Marine
Silver-eye	*Zosterops lateralis*	Marine
Silver Gull	*Chroicocephalus novaehollandiae*	Marine